



Delft University of Technology

## LDE Heritage Conference on Heritage and the Sustainable Development Goals Proceedings

Pottgiesser, U.; Fatorić, Sandra; Hein, C.M.; de Maaker, Erik; Pereira Roders, A.

### Publication date

2021

### Document Version

Final published version

### Citation (APA)

Pottgiesser, U., Fatorić, S., Hein, C. M., de Maaker, E., & Pereira Roders, A. (Eds.) (2021). *LDE Heritage Conference on Heritage and the Sustainable Development Goals: Proceedings*. TU Delft OPEN Publishing. <https://books.bk.tudelft.nl/index.php/press/catalog/book/781>

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26<sup>TH</sup> – 28<sup>TH</sup> NOVEMBER 2019 – DELFT

# **LDE HERITAGE CONFERENCE**

on Heritage and  
the Sustainable Development Goals

## **PROCEEDINGS**

### **Editors**

Uta Pottgiesser  
Sandra Fatoric  
Carola Hein  
Erik de Maaker  
Ana Pereira Roders

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NOVEMBER 26<sup>TH</sup> - 28<sup>TH</sup> DELFT  
**LDE CONFERENCE**

The International LDE Heritage Conference 2019 on Heritage and Sustainable Development Goals (SDGs) took place from 26 to 28 November 2019 at TU Delft, in the Netherlands. The conference examined the theories, methodologies and practices of heritage and SDGs. The conference was organized in collaboration with the TU Delft, the LDE Center for Global Heritage and Development (CGHD), heritage researchers at the three partner universities of Leiden, Delft and Rotterdam and with other consortium and international partners.

**Publisher**

TU Delft Open  
TU Delft / Faculty of Architecture and the Built Environment  
Julianalaan 134, 2628 BL Delft, The Netherlands

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**Design & layout**

Nienke Blaauw, TU Delft  
Vero Crickx, Sirene Ontwerpers  
Franklin van der Hoeven, TU Delft

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ISBN 978-94-6366-356-4  
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ARCHITECTURE

# Preface

Heritage—natural and cultural, material and immaterial—plays a key role in the development of sustainable cities and communities. Goal 11, target 4, of the Sustainable Development Goals (SDGs) emphasizes the relation between heritage and sustainability. The International LDE Heritage conference on Heritage and Sustainable Development Goals, which took place from 26 to 28 November 2019 at TU Delft in the Netherlands, examined the theories, methodologies, and practices of heritage and SDGs. It asked: How is heritage produced and defined? By whom and in what contexts? What are the conceptions of sustainability, and in what ways are these situational and contextual? How can theoretical findings on heritage and SDGs engage with heritage practice?

The conference built on the multidisciplinary expertise of academics in the humanities, social, and spatial sciences, notably the interdisciplinary crossover research program, Design & History, the new theme of Heritage Futures at TU Delft, on active collaboration within the LDE Center for Global Heritage and Development (CGHD), and on heritage-related research conducted by the three partner universities Leiden, Delft and Erasmus in Rotterdam by further associated partners in the consortium and internationally.

At TU Delft the research programs bring together different departments and disciplines: architecture, urbanism, history, landscape architecture, real estate and management, and engineering. They aim to further an interdisciplinary understanding of the transformation of the built environment and, through the consistent use of the past, to enable buildings, cities, and landscapes to become more sustainable, resource-efficient, resilient, safe, and inclusive. Researchers from Leiden University approach heritage from a broad variety of disciplinary perspectives, such as archaeology, museum studies, cultural anthropology, and area studies. Heritage research at Leiden University explores processes of heritage creation, and the appreciation and evaluation of material and immaterial heritage, to gain new insights into the cultural constitution of societies. Creating, acknowledging, and contesting heritage tends to be politically sensitive as it involves assertions and redefinitions of memory and identity. History and social studies scholars from Erasmus University in Rotterdam add further insights into heritage practice.

This conference created a setting where academics and heritage practitioners could explore these questions from specific perspectives. It brought together 120 academics and practitioners keen to develop their understanding of and their input into heritage conservation, and to increase their contributions towards the development of sustainable cities and communities. The three-day conference combined a variety of formats. Participants engaged in nine academic sessions with peer-reviewed papers, eight roundtables on strategic goals, and six workshops spent applying specific methods and tools.

*Uta Pottgiesser  
Sandra Fatoric  
Carola Hein  
Erik de Maaker  
Ana Pereira Roders*

## Online

<https://collegerama.tudelft.nl/Mediasite/Channel/lde-heritage-and-the-sustainable-development-goals>



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**Mike Turner**, Bezalel University, Israel

**Gerdy Verschuure**, Delft University of Technology, The Netherlands

**Ege Yildirim**, ICOMOS, Ankara, Turkey

**Hielkje Zijlstra**, Delft University of Technology, The Netherlands



# KEYNOTE LECTURES

- 1 **Mike Turner**, Bezalel Academy of Arts and Design, Jerusalem, Israel
- 2 **Ana Tostoes**, IST, Lisbon, Portugal
- 3 **Randall F. Mason**, UPenn, Philadelphia, USA
- 4 **Giulio Boccaletti**, The Nature Conservancy, London, UK
- 5 **Amareswar Galla**, Anant National University, Ahmedabad, India
- 6 **Ege Yildirim**, ICOMOS, Ankara, Turkey
- 7 **Susan Macdonald**, Getty Conservation Institute, Los Angeles, USA

# Mike Turner

## THE MICROSCOPIC LAYERS OF VERMEER AND LEEUWENHOEK - THE INTER-DISCIPLINARITY OF SUSTAINABILITY

Interdisciplinarity is based on knowledge circulation—transferred or exchanged—and is the essence of scientific innovation and social transformation. In the newly independent Netherlands, the mid-17<sup>th</sup> century was a Golden Age peopled by such illustrious figures as the philosopher Baruch Spinoza, the painter Johannes Vermeer, and the scientist Antonie Philips van Leeuwenhoek. This period set the scene for the industrial revolution when, to supply the needs of the glass industry and in protest against the denuding of the forests, the demand for wood was exchanged for coal. By the 19<sup>th</sup> century the resulting issues of increased poverty were being addressed by Thomas Robert Malthus, who noted the disparities between supply and demand, while Alfred Russell Wallace castigated the efforts to supply industry as the 'plunder of the Earth'. These early insights would later be echoed in the 1987 Brundtland Report which called for long-term environmental limits. However, based on Karl Mannheim's 1928 essay, *The Problem of Generations*, with the current speed of change we have little understanding of how future generational needs will be met, instead questioning the current generational mantra on sustainable development and demanding a dynamic approach to address the challenges through integrating new disciplines of the digital era.

### Online

<https://collegerama.tudelft.nl/Mediasite/Channel/lde-heritage-and-the-sustainable-development-goals/watch/4856cea3e000439c85e08394730435dd1d>



*Professor Michael Turner is a practicing architect, the UNESCO Co-Chairholder in Urban Design and Conservation Studies at the Bezalel Academy of Arts and Design, Jerusalem with research encompassing social inclusion, urban sustainability, heritage, and design. He is special envoy at UNESCO and an advocate of the UNDRR Resilient Cities Programme.*

# Ana Tostoes

## HOW TO KEEP MODERN HERITAGE AND BE SUSTAINABLE

The key role of reuse in providing a sustainable future was the basis of the Seoul-Eindhoven statement, which specifically incorporated the concept of reuse into Docomomo's updated constitution. The longevity of the Modern Movement has demonstrated its legitimacy as an enduring concept. Relating technology, spatial form, and social commitment to one another, and animated by an optimistic faith in progress, modern architects sought to attain new heights of functionality while meeting contemporary demands. Yet dramatic developments in society since then have created incredibly damaging effects on a vast scale: irreparable environmental damage, the breakdown of traditions and cultures, mass consumerism, hyper-individualization, etc. The challenge is to find ways to deal with this recent legacy, promoting sustainability in today's continually changing context, including physical, economic, and functional aspects, as well as fast-moving normative, socio-cultural, and political values.

### Online

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*Architect, architecture critic and historian. President of Docomomo International and Editor of the Docomomo Journal. Full Professor at IST-University of Lisbon, where she coordinates the Architectural Area. She has also been a visiting professor at multiple universities worldwide. Her research field is the Critical History and Theory of Modern Movement Architecture, focusing on the relationship between European, Asian, African, and American cultures. She has published 13 books and 95 essays, curated nine exhibitions, served on juries and scientific committees and lectured in universities worldwide. She coordinated the research projects "Exchanging World Visions (1943-1974)" and "Cure and Care the rehabilitation". She was awarded the Gulbenkian Prize 2014, the X Bienal Ibero-Americana de Arquitectura y Urbanismo Prize 2016 and was honored by his Excellency the President of the Portuguese Republic with a Commander in the Order of Infante Dom Henrique (2006).*

# Randall F. Mason

## LAGS, GAPS, BARRIERS: CHALLENGES TO CONNECTING THEORY, POLICY & PRACTICE

While it is our dearest wish to connect theory, policy, and practice through our work on conservation, there remain very substantial barriers, gaps, and lags in making these connections. Values-based conservation frameworks give us a means (in practice as well as in theory) to align and integrate these different spheres of work. My appeal is that we recognize the centrality of values, integrate the clarity as well as the problems of values theory into practices/policies, and respond ethically and politically to the histories we want contemporary society to reckon with. One result will be messier diagrams (in contrast to the perfect circle of SDGs)—but also, I believe, more meaningful engagement outside our professional domains. Through a quick analysis of the history and current practices of the field—and lessons gained from a few practical projects in the US and Rwanda—I reflect on the prospects for overcoming these obstacles for better integration. A realistic engagement with barriers to integration will advance our work to implement the SDGs and other progressive policies as well.

### Online

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*At the University of Pennsylvania's Weitzman School of Design, Randall Mason serves as Associate Professor of City & Regional Planning; Senior Fellow at PennPraxis; and faculty in the Graduate Program in Historic Preservation (chair from 2009-2017). Before arriving at Penn in 2004, he taught at University of Maryland and RISD, and worked at the Getty Conservation Institute and in private practice. Educated in geography, history, and urban planning (PhD, Columbia, 1999), his published work includes *The Once and Future New York* (winner of the SAH Antoinette Forrester Downing Award) and several other books on urban history and preservation theory. Mason's professional work includes projects at many scales, addressing preservation, planning, public space, and memorial issues, commissioned by the Getty Conservation Institute, William Penn Foundation, Brookings Institution, National Park Service, City of Philadelphia, and the Government of Rwanda. (Examples of his recent work can be viewed at [www.design.upenn.edu/pennpraxis/work](http://www.design.upenn.edu/pennpraxis/work); [www.cultural-landscape.org](http://www.cultural-landscape.org) and [www.design.upenn.edu/historic-preservation/people/randall-f-mason](http://www.design.upenn.edu/historic-preservation/people/randall-f-mason).) Mason was a Rome Prize fellow at the American Academy in Rome (2012-13) and holds an honorary doctorate from the University of Gothenburg.*

# Giulio Boccaletti

## NATURE AS WATER SECURITY INFRASTRUCTURE

Water on the planet is scarce. It is not scarce in the same way that an exhaustible resource like oil is scarce—the amount of water on the planet is more or less fixed—but water is limited and finite. And as a limited, finite resource it is supremely vulnerable. One of the key indicators of this vulnerability is the health of freshwater ecosystems, which has deteriorated catastrophically over the last forty years. Correspondingly, the vulnerability of those parts of society that depend on those ecosystems to sustain their water security has increased substantially.

But there is a solution. The health of freshwater ecosystems and the delivery of water security to society are both dependent on a viable system of governance for the landscape contained in watersheds. An increasing number of examples show that it is possible to integrate heterogeneous values into multi-stakeholder processes that result in “regulation by contract,” in which upstream and downstream water users can both achieve water security and invest in the ecological health of their watershed. Examples from the Catskills in New York to the Rio Grande in New Mexico show both the challenges and opportunities of developing models of watershed-wide governance that enable the stewardship of landscape for both ecosystem health and water security. Today there are dozens of such examples around the world, suggesting that a new model of landscape management can be seamlessly integrated into the water sector, helping to define natural assets as fundamental water security infrastructure.

### Online

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*Giulio Boccaletti, Ph.D., is the Chief Strategy Officer and Global Ambassador of Water at The Nature Conservancy. Trained as a physicist and atmospheric scientist, Giulio is an expert on environmental and economic sustainability. In his role as Chief Strategy Officer, Giulio works to develop the organization's strategy and apply economic and scientific practice to its conservation agenda.*

*Immediately prior to joining the Conservancy, Giulio was a partner at McKinsey and Company, where he founded the firm's Global Water Resource initiative and was one of the leaders of its Sustainability and Resource Productivity Practice. He co-authored the "Charting Our Water Future" report, one of the first to address the question of global water scarcity through multilateral, private-public collaboration, defining a cost-curve for investment in water infrastructure.*

# Amareswar Galla (Amar)

## SDGs AND THE PRAXIS OF APPLIED HERITAGE

Amar is currently conducting participatory cultural mapping through autoethnography and deep participant observation in Amaravathi Heritage Village, a national demonstration project in India. The broader project is to address the rhetoric and reality of SDGs in Village India. Approximately 80% of Indians live in villages, the substantial base of Indian heritage in all its diversity. Yet the main focus is on cities and their elite, upwardly mobile middle classes representing about 2% of the population.

In order to achieve SDGs, a critical understanding of village atmosphere is imperative. How does one decolonize hegemonic urban heritage discourses and negotiate borders and encounters in an inclusive paradigm? What are the challenges of addressing sustainable heritage development across the SDGs, especially SDG 5? These are some of the questions Amar addressed with reference not just to Village India but beyond on a global scale, drawing on his work over four decades and on all continents. Periodic progress reports on the project can be accessed free at: <http://inclusivemuseums.org/index.php/heritage-matters/>

### Online

<https://collegerama.tudelft.nl/Mediasite/Channel/lde-heritage-and-the-sustainable-development-goals/watch/e34fe37d38564ccfa294b22035402f971d>



*Professor Dr. Amareswar Galla (Amar) is Professor of Inclusive Cultural Leadership, Dean of Faculty Development and Leadership & Director, International Centre for Inclusive Cultural Leadership (ICICL), Anant National University, Ahmedabad, India. It provides a platform for his extensive work as the Founding Executive Director, International Institute for the Inclusive Museum, Australia/India/USA. For the past four years he has been the Chief Curator, Amaravathi Heritage Village (birthplace of Mahayana Buddhism) India. An alumnus of the Jawaharlal Nehru University, New Delhi, and the Australian National University, Canberra, he was formerly full Professor of Museum Studies, University of Queensland, Brisbane and prior to that full Professor of Sustainable Heritage Development at the Australian National University, Canberra. His extensive publication record ranges from World Heritage: Benefits Beyond Borders, Cambridge University Press & UNESCO Publishing, 2012 (French and Korean translations 2013) to Heritage Curricula and Cultural Diversity, Prime Minister & Cabinet, Australia, 1993. (a.galla@yahoo.com.au; <http://inclusivemuseums.org/>)*

# Ege Yildirim

## HERITAGE PROFESSIONALS' NETWORKS & ADDRESSING THE CHALLENGES OF SDG IMPLEMENTATION: INSIGHTS FROM ICOMOS

This keynote, focusing on the work of the ICOMOS Sustainable Development Goals Working Group (SDGWG), aims to share insights into how heritage professionals' networks can address certain challenges in the implementation of SDGs. In particular, it stresses the importance of bridging certain systemic divides, such as between theory and practice, or policy and practice, through more applied research relevant to societal concerns; between the high-level & grassroots, through more localization of sustainable development concepts, with good case studies presented in evidence-based, compelling ways; between the Heritage and Non-heritage sectors, through balancing specialization and mainstreaming, engaging inter-sectorality and strengthening the socio-economic perspectives of heritage practice. Among experiences worth sharing, are the centrality of communication issues, i.e. outreach to the communities of (sustainable) development, for making the case for heritage, for more funding/finance, and for more upstream decision-making to avoid losses to cultural heritage, and the urgent need to integrate climate, sustainability, and human rights concerns into heritage work to achieve transformative action. To these ends, ICOMOS has been making efforts to mobilize the enormous resource of its global and local network, through experts, doctrines, and emerging new guidance for heritage and development communities

### Online

<https://collegerama.tudelft.nl/Mediasite/Channel/lde-heritage-and-the-sustainable-development-goals/watch/71ec505a72a147d792d227a2134708081d>



*Dr. A. Ege Yildirim is an urban planner specializing in heritage conservation and management, with over 20 years of experience working in Turkey and internationally. Based in Istanbul as an independent consultant/ lecturer, she currently serves as the Heritage Site Manager of the Historic Guild Town of Mudurnu, and the ICOMOS Focal Point for the UN Sustainable Development Goals*

# Susan Macdonald

## SUSTAINABLE APPROACHES TO THE PRACTICE OF CONSERVING CULTURAL HERITAGE

The relationship between sustainable development and heritage stewardship is now formally recognized internationally, providing opportunities for heritage conservation to be better integrated into the relevant SDG frameworks that operate locally and nationally. However, how this is operationalized, is yet to be well developed and widely implemented. The Getty Conservation Institute (GCI) works internationally to advance conservation practice by tackling challenges that require a strategic approach and where research, the creation of information, and capacity building is needed to advance conservation efforts.

This keynote presents two case studies illustrating the GCI's holistic and multidisciplinary approach to conservation. The work aligns with a number of the SDGs, although this has been implicit in the GCI's approach, rather than explicitly communicated within the SDG reporting framework. The Seismic Retrofit project aims to identify, develop, and secure acceptance for viable methods of repairing and retrofitting historic earthen architecture in South America, and thus sustaining this historic material's use and the associated architecture and construction practices. Drawing on traditional knowledge and methods, in combination with current seismic engineering techniques, it aims to develop methods that are appropriate to local conditions and cognizant of the role of local communities in the care of this earthen heritage. The Bagan Conservation project aims to address a multitude of natural and anthropogenic threats to this vast cultural landscape, which was recently inscribed on the World Heritage List.

### Online

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*Susan Macdonald trained as an architect and has qualifications in conservation and urban planning. She worked in Australia and the UK, in the private and government sectors, before joining the Getty Conservation Institute as head of Buildings and Sites. Susan oversees over 20 international projects that aim to advance conservation across a number of practice areas, such as archeological, architectural, and urban heritage.*





# SESSION 1

## Time: Evolution and Dynamics

### **Carola Hein**

The Culture & Sustainability field has experienced rapid development in the past decade, with governments, heritage organizations, and academics exploring the role that culture and heritage might play in achieving sustainable development. Past research aimed at the integration of culture and heritage in the United Nations' international agendas for sustainable development led in 2016 to heritage being mentioned in SDG number 11.4: "Strengthen efforts to protect and safeguard the world's cultural and natural heritage", to be measured through a financial indicator. Yet existing research supports a broader contribution of heritage to sustainable development. Other management and policy frameworks have been developed to underline this role globally, such as the UN New Urban Agenda and UNESCO 2011 Recommendation on the HUL. What is being done to develop and implement these frameworks and to deal with the radical transformations taking place in urban and rural areas? Which actors trigger these dynamics and how does this affect heritage professionals' ambitions and goals? How is heritage being defined, and how has it changed over time? How has conservation and its relation to heritage evolved over time?

# (Re)inhabit the Ruin: Adaptive Reuse of Vernacular Heritage and Cultural Landscapes as Reactivation Strategy for depopulated Territories by local Communities. The Case of Susín in Sobrepuerto, at Spanish Pyrenees

**Ignacio Galán<sup>1\*</sup>, Yves Schoonjans<sup>2</sup>**

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## Abstract

*In the current scenario of rural depopulation which many European regions are experiencing, there is an urgent need of redefining the role of these territories for society. In this context, different emergent practices of land-use and recovery in some of these abandoned rural settlements are detected. This paper develops the study-case of the village of Susín, depopulated in 1960s but maintained by a local community with the aim of preserving its material and immaterial heritage, and adapt its spaces for the organization of cultural activities in which other external visitors get involved. This paper investigates the initial conditions, the recovery process and impact which this studied initiative has, not only for the urban spaces and their surrounding landscape, but also for the territory. Different socio-spatial research methods are combined in order to analyse the spatial impact which the expectations of the users and their interventions in existing places have. This investigation reflects about the current extreme change of land-use in remote inner-regions. It shows the adaptation potential of vernacular heritage for new activities in transformed cultural landscapes. It reveals the importance of active involvement of local communities in its maintenance, and its contribution to a territorial sustainable development.*

## Keywords

*Vernacular heritage, shrinking rural territories, adaptive reuse, cultural landscape, local community*

## 1 INTRODUCTION

### 1.1 DEPOPULATION OF RURAL TERRITORIES AND RECOVERY INITIATIVES

Depopulation of rural areas is an increasing phenomenon in many European regions, which is triggering urgent challenges (ESPON, 2017). This study focuses in the Spanish Pyrenees, one of the most affected areas, where more than three hundred villages remain empty. The fast shift of socio-economic system caused the massive migration from remote and outdated areas towards main urban production centres, which was especially intense during the second half of 20<sup>th</sup> century, provoked an unequal territorial development and heritage preservation issues (Collantes & Pinilla, 2011).

However, since the 1980s some important changes are traced. Transformation of abandoned cultural landscapes and change of urban population perception about the countryside has triggered the emergence of different activities related to natural-cultural recreation. This societal change and the emotional attachment of some local users to these places induced the recovery of certain spaces that were depopulated during several decades. In this process different types of actors and interventions become present. Their interests and expectations about these areas differ widely, conditioning their actions on cultural, natural and architectural heritage (Marín, 2018).

## 1.2 ISSUES AT STAKE. OBJECTIVES AND METHODS

Despite the variety of emergent land-occupation practices detected, an unequal territorial development under the pressure of urbanization processes is still present. While some areas get rapidly urbanized, the population rate in rural mountain territories continues decreasing, raising many challenges: deficient provision of services, accessibility and connectivity; loss of young and qualified potential inhabitants; and population ageing, amongst others. The future fulfilment of Sustainable Development Goals is therefore questioned, particularly in matters of “sustainable settlements and communities – SDG11”, “work and economic growth - SDG8” and “innovation and infrastructure – SDG9”, but also taking into account the “sustainable use of ecosystems – SDG15” (United Nations 2015). The development of measures to face depopulation in rural areas and the study of strategies for sustainable management of shrinking territories has become lately a prevalent debate topic among politicians and spatial planners (ESPON, 2017).

Cultural landscape, defined by UNESCO as “the result of combined works of nature and man” is transforming in the Pyrenees, due to the decrease of human pressure on land. The agropastoral “organically evolved landscape”, which possesses a great cultural value, needs to remain active in order to be maintained and continue evolving, avoiding to become a “fossil or relict landscape” (UNESCO, 2008). But when socio-economic patterns of livelihood cannot be continued, the definition of current value and potential territorial role of these places, become important to determine their future.

However, the state of vacancy in these landscapes induces the transformation of existing conditions, providing new opportunities: space provision for local social engagement; increase of ecosystem services dispensed by nature in regeneration; transformation of spatial configuration which enable new spatial experiences; the capacity and flexibility to reprogram the land (Lokman 2017). Depopulation of territories leaves many human spaces empty, which progressively tend to deteriorate and merge with the landscape. Ruins of empty vernacular villages attract many different visitors, personally engaged with their past memory or fascinated by their suggesting and evocative power (Woodward 2001). At the same time, their fragile state and permanent threaten of disappearance awakes consciousness and triggers interventions in forgotten places (Jackson, 1980). Certain spaces which were created for a specific purpose can be reformulated when a new need arises, through its adaptive reuse.

Some of the practices developed in these reclaimed ruined spaces could therefore have a positive impact in the sustainable development of the territory. Different experiences studied in Alpine regions reflect positive results for the area through the adaptation of their terraced cultural landscapes, based on the combination of traditional activities with other external economic sources such as tourism, integrating innovative techniques, and engaging local communities (Scaramellini & Varotto 2008).

Several investigations have been developed around the phenomenon of depopulation and re-occupation practices of vacant places in the geographic area of the Pyrenees (Laliena, 2004; Marín, 2018; Ruiz-Varona, 2018; Saiz, 2016). However, there is a need of deepening in specific cases to understand the socio-spatial conditions, processes and impact from those experiences. This paper focuses on the village of Susín.

Different objectives are aimed in this research: To understand the spatial-programmatic-symbolic transformation of Susín; To analyse the interest of certain users about this place, and the specific conditions which enable this initiative; To inquire about the impact generated for the area, as well as the limitations and opportunities detected for implementation of better integrated approaches (Selman, 2006); To discuss the role of heritage in the sustainable development of the territory.

In order to achieve this goal, both physical-spatial and social aspects are analysed, through several tools and methods. Mapping and spatial representation at different scales are developed to explore some spatial and functional parameters. It encompasses the realisation of plans, sections and other three-dimensional drawings. Information on social aspects, like interest from users or the set of actions developed, is obtained from semi-structured interviews realised to different involved actors, both from the local community and external visitors, as well as from the review of existing literature and other online sources. Data obtained from maps, pictures and other graphic documents is overlapped and contrasted with social information obtained from interviews and existing literature, which spatial aspects get also represented. From the interrelation of both, a closer understanding of the phenomenon is obtained.

## 2 THE CASE OF SUSÍN, AT SOBREPUERTO TERRITORY

### 2.1 SUSÍN: TRANSFORMATION OF A DEPOPULATED TERRITORY AND RE-ACTIVATION CONDITIONS

Sobrepuerto is a mountainous territory of 15 by 15 kilometers delimited by two main rivers and their respective valleys, which was completely depopulated in the decade of 1960, due mainly to socio-economic outdate, and aggravated by National Reforestation Policies (Tarazona, 2019). During the last sixty years this territory has suffered a deep and unequal transformation due to several factors: the decrease of human pressure on the traditional agropastoral cultural landscape, at depopulated higher lands; and the economic development and urbanization processes of tourism, at the lower areas (Lasanta & Garcia, 1990)

In the perimeter lower or flatter parts at the valley-bottoms, new transportation infrastructures have been implemented, improving accessibility. Villages and towns have increased their size through touristic residential development. Mechanization of agriculture has prompted the combination of small farming lots into bigger surfaces, enabling to cultivate more area efficiently. But it has also implied that a large part of the permanent population work in service-provision sector for visitors, due to loss of fertile soil, decrease of manpower needed, and certain expectative of life-quality improvement by the economic profitability of tourism. In less accessible areas, most of the settlements have been depopulated. Lack of exploitation of the surrounding landscape, and the realisation of afforestation actions in some sectors, have allowed vegetation to regenerate widely through processes of nature succession, invading farming terraces and pastures. Accessibility

has improved notably, due to realisation of earth roads for the execution and maintenance of reforestation projects by the government (Fig. 1). Since 1980s several interventions were developed by different types of stakeholders in some depopulated villages and cultural landscapes, indicating interest and new opportunities provided by these spaces, contributing to the reactivation of the area (Fig. 2).

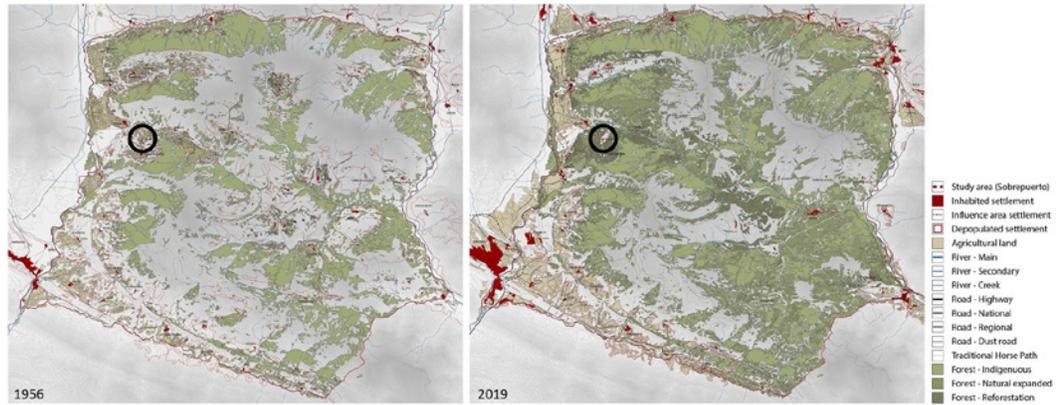


FIG. 1 Transformation of Sobrepuerto -land use: infrastructures and vegetation - (1956-2019) Source: PNOA American Flight, 1956. Elaboration: Galán, 2019.

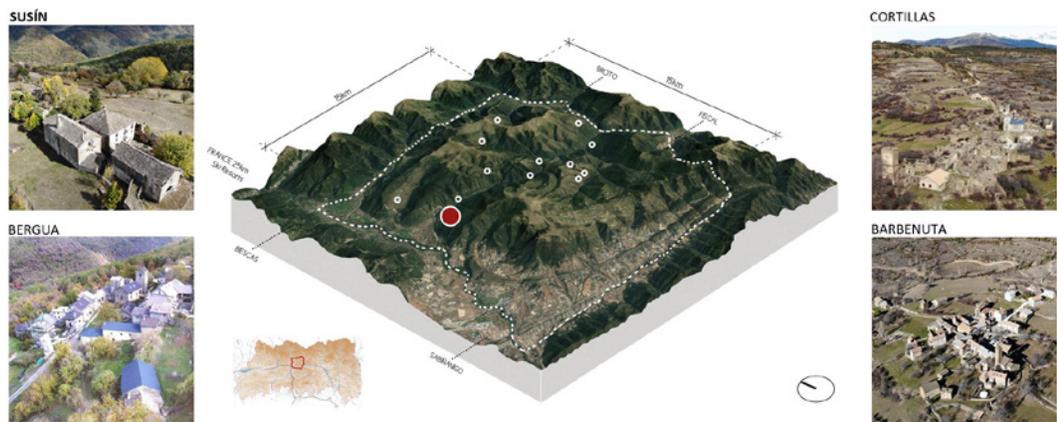


FIG. 2 Area of Sobrepuerto - representative recovery cases: Susín, Bergua, Cortillas, Barbenuta. Source: Galán, 2019; Marín, 2018.

Susín is a representative case of reoccupation of a vacant settlement in the area. Like all villages in the valley, this small hamlet was depopulated in the 1960s (Fig. 3). However, it never got abandoned since the owners, which belong to two different families, continued visiting and maintaining it. Although one of the groups was much attached to the area and involved in the maintenance of the village, the other migrated to a distant region, visiting the site only during holiday periods. One of the last intermittent inhabitants, Angelines Villacampa, dedicated big efforts to protect and transmit

the tradition of this place, rebuilding some damaged elements and guiding visitors through the village. After her decease, an organization formed by her descendants, friends, and other people engaged with Susín, was created with the goal of continuing her work (Mallau Association, personal communication, October 2019).



FIG. 3 Drone image and picture of Susín. Source: Galán, 2019.

Several conditions met by the village in relation to its territory facilitated the recovery:

- 1 **Accessibility:** The improvement of infrastructures, often linked to urbanization processes, provide mobility and become a crucial reactivation factor for rural territories nowadays. The construction of an earth road network to implement the afforestation interventions next to Susín, enables the access with vehicles, facilitates the transportation of materials, goods and tools, and provides an easier mobility for people who visit it regularly.
- 2 **Proximity - Connectivity:** The settlement is located close to the bottom of the valley, at one of the accesses points to the area of Sobrepuerto, and at only two kilometres distance from Oliván, a small village which continued being inhabited, and accessible through asphalted road.
- 3 **Land tenure:** Differently from many other villages which were sold to the government, the ownership of land and buildings was kept by their original inhabitants despite the depopulation. This ensured a certain engagement and responsibility-feeling by their owners, who maintain the buildings and visit the places regularly to avoid their deterioration or vandalization.
- 4 **Architecture-landscape value and authenticity:** Spatial quality and authenticity are very important in the process. The characteristic vernacular typologies, in combination with a rich natural environment triggered the recovery of some buildings and the regular presence of visitors. Tourists find here an example of an unchanged traditional village of this area, and are able to understand the original way of life. The image of Susín contrasts with most of the bigger villages in the valley which spatial configuration has much transformed. Within this settlement, different remarkable buildings can be identified, acknowledged by different authors (Fig. 4). Nevertheless, it is the ensemble of well-preserved original constructions in this monumental setting that confers this unique character on Susín. The analysis of pictures shared by different users in social media shows a clear interest not only for architecture, but also for its direct dialogue with the surrounding landscape (Fig. 5).
- 5 **Social engagement:** Interest and involvement of local communities engaged with this place results in different actions to maintain certain spaces and bring activity to Susín. It highlights the important role of local communities in vernacular heritage preservation, where public administrations do not always have enough means to intervene.

The variation of these conditions also generate a different evolution in other cases: Remoteness and inaccessibility limit the capacity of intervention in many settlements which remain depopulated and ruined although temporarily visited, such as Ainielle and OtaI, at Spanish Pyrenees; When spatial configuration resulting from long time of abandonment loses its value and social engagement, some settlements get even forgotten and disappear completely; Accessible and well connected places located close to other settlements which can provide basic services are easily re-inhabited, like in Succiso -Italy-, or Barbenuta -Spain- ; Accessibility, a spatially attractive location despite its remoteness, and capacity to intervene in large proportion of land enables a big-scale touristic development, such as in Castello di Postignano -Italy-, or Kayaköy -Turkey-; Expropriation of land from original owners by public administrations often creates a reaction on them, increasing social engagement and interest to recover their properties, like in Doel -Belgium-, or Jánovas -Spain-; When land-tenure remains in power of public administrations, and social interest or engagement decreases, it gives the opportunity to other communities of external users, often known as neo-rurals to occupy these vacant spaces, either formally or illegally, such as Matavenero -Spain- or Torri Superiore -Italy- (Berizzi & Rocchelli, 2019).

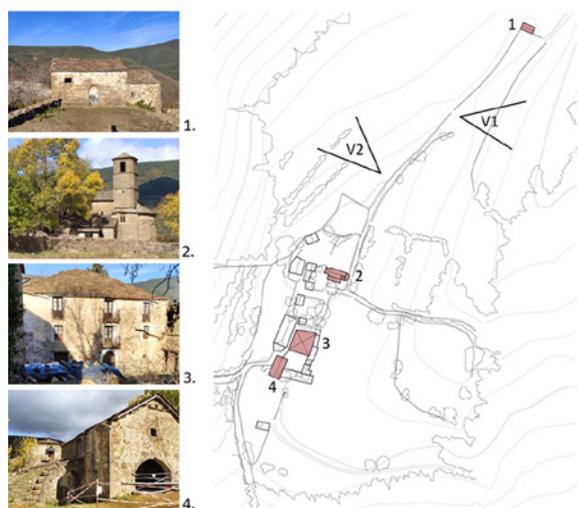


FIG. 4 Spatially qualitative buildings. Source: Galán, 2019.



FIG. 5 Images of surrounding landscape. Source: Galán, 2019.

## 2.2 EMERGENT SPATIAL PRACTICES FROM LOCAL COMMUNITIES

Over the last years several spatial interventions have been developed in Susín, promoted and realised by local and external agents (Fig. 6). The interest from each type of user triggers different types of developments: Firstly, the restoration of Santa Eulalia Church, listed as heritage building, was promoted by the association Amigos del Serrablo, with funding support of the regional government; Secondly, Casa Ramón has experienced several restorations by their owners, being less faithful to the original image. However, other constructions which belong to the same family remained unrestored, and do not seem to have a future recovery planned; Thirdly Casa Mallau and some buildings which belong to the family Villacampa, as well as many other public spaces have been maintained by the cultural organization and by them. Most of these interventions are developed with active participation of volunteers, in the case of simple constructions, and executed by artisans in the case of more complex buildings. (Mallau Association, personal communication, October 2019).

During the realisation of their initiative, the local community has been facing different challenges dealing with spatial interventions, which will be further described.



FIG. 6 Intervened constructions.  
Source: Mallau, 2020, Elaboration: Galán, 2019.



FIG. 7 State of preservation.  
Source: Mallau, 2020, Elaboration: Galán, 2019.

Therefore, the state of preservation of buildings and open spaces differ (Fig. 7). The main buildings are generally well preserved, together with streets and open spaces, where most of activities are performed. However, other smaller agricultural service-buildings, often less spatially-remarkable, are worse preserved and some of them ruined. A third housing building next to the church, which currently belongs to the least involved users, has not been maintained neither. Several future interventions are planned by the cultural organization Amigos de Susín, who aim to recover some of the damaged buildings to enable the development of different activities which at the moment do not have a suitable space. (Mallau Association, personal communication, October 2019).

## 2.3 ADAPTIVE REUSE OF VERNACULAR SPACES FOR DEVELOPMENT OF NEW ACTIVITIES

As a result of the maintenance actions developed, different activities are able to be performed in indoor and outdoor spaces, overlapping their traditional function but preserving its original spatial configuration almost unchanged. External visitors, as well as other members of local communities perform different activities, most of which occur in the interstitial spaces between buildings and landscape. The arrival of visitors represent an economic and cultural opportunity for the area, although the effects of unsustainable tourism could jeopardize some of the present values (Papageorgiou & Guitton, 2009). The objective of Mallau Association with the organisation these events is to keep the village alive by raising awareness of the value of Susín and its history, and by getting visitors involved in its preservation, some of whom collaborate physically and economically with the association.

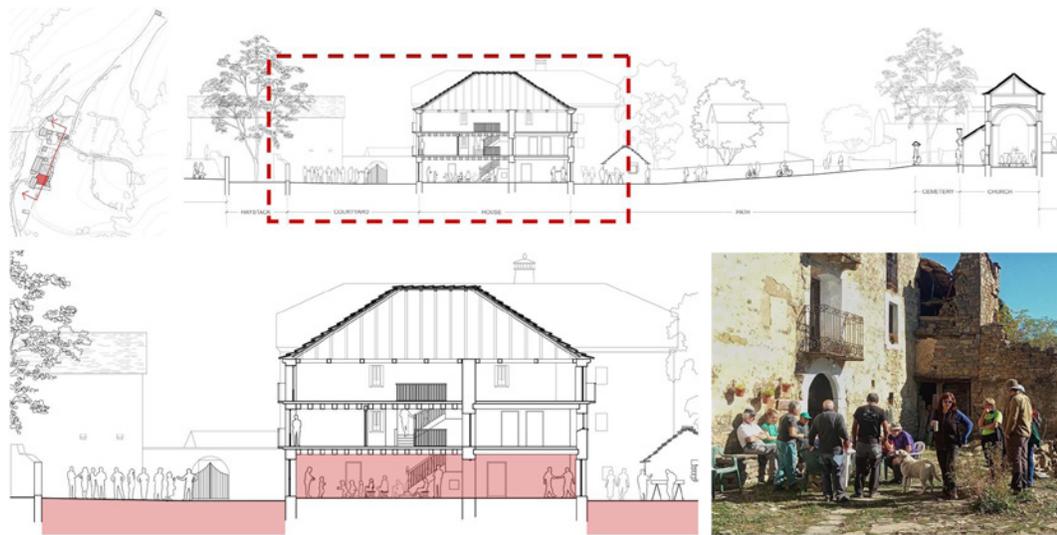


FIG. 8 Use of house entrance, courtyard and path as collective activity space. Source: Mallau, 2020. Elaboration: Galán, 2020

The village, which was not able to adapt to socio-economic conditions in the area, has been recently transformed in a place to experience spatially the cultural landscape. Due to change of functions, the former use of spaces and building elements and their accessibility get transformed, acquiring new meanings. Most of buildings and spaces, which in the past used to be private, are nowadays collectively or publicly used, due to the arrival of visitors and the open character obtained. At the same time, the mainly practical and productive purpose of the spaces, most of them linked to agriculture adapted to this particular location, have been replaced by recreational functions.

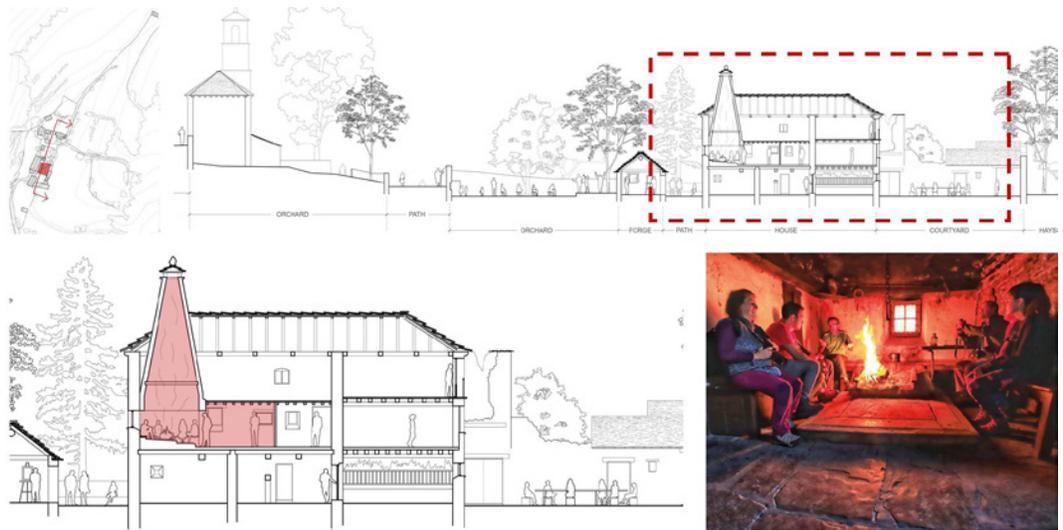


FIG. 9 Use of traditional family fireplace as collective meeting space. Source: Mallau, 2020.  
Elaboration: Galán, 2020.

Concerning interior spaces, only the main residential buildings are still privately used by their owners, especially in warmer seasons. However, Casa Mallau is also temporarily open as a public space for visitors. Cultural events, organized in most of the cases at the entrance hall and stables on ground floor (Fig. 8), and meetings in smaller groups around the fireplace on first floor occur in it (Fig. 9). Those spaces, which were originally used by the family who lived in the house are now shared with visitors, although they are limited spatially depending on the amount of visitors and the type of activity. The church and the chapel, the most ceremonial and collective spaces in the village, now shelter religious and cultural events.



FIG. 10 Use of the orchard of Casa Mallau as public events space. Source: Mallau, 2020.  
Elaboration: Galán, 2020.

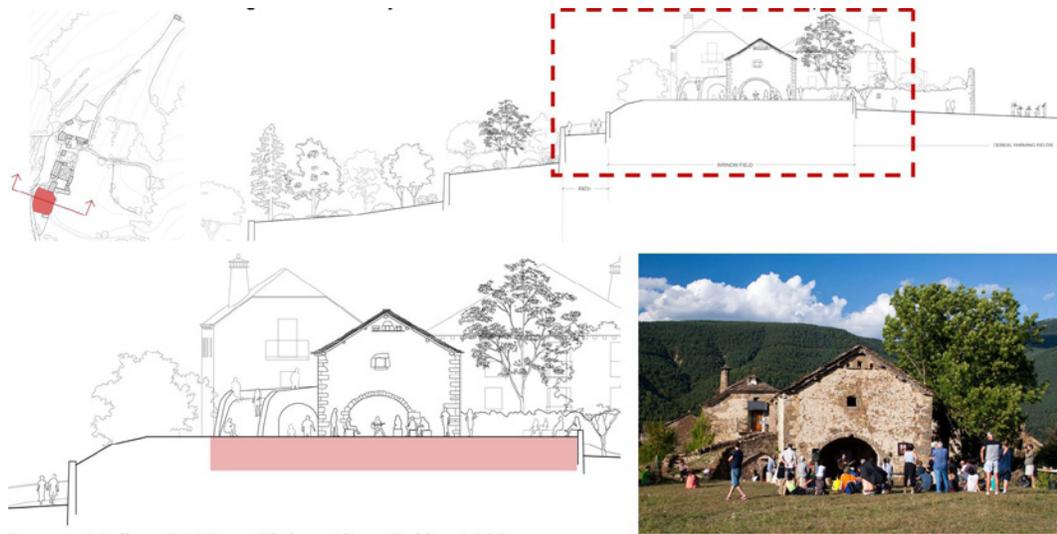


FIG. 11 Use of traditional winnow field as public event space. Source: Mallau, 2020. Elaboration: Galán, 2020.

Most of activities that gather the biggest visitor groups, are performed mainly during warmer months, in the urban open spaces created by buildings, stone walls and trees. Streets, orchards (Fig. 10), cultivation meadows, winnow fields (Fig. 11-12) and farming terraces become setting for different presentations, art, music, exhibition, crafts markets, collective meals and meeting events.

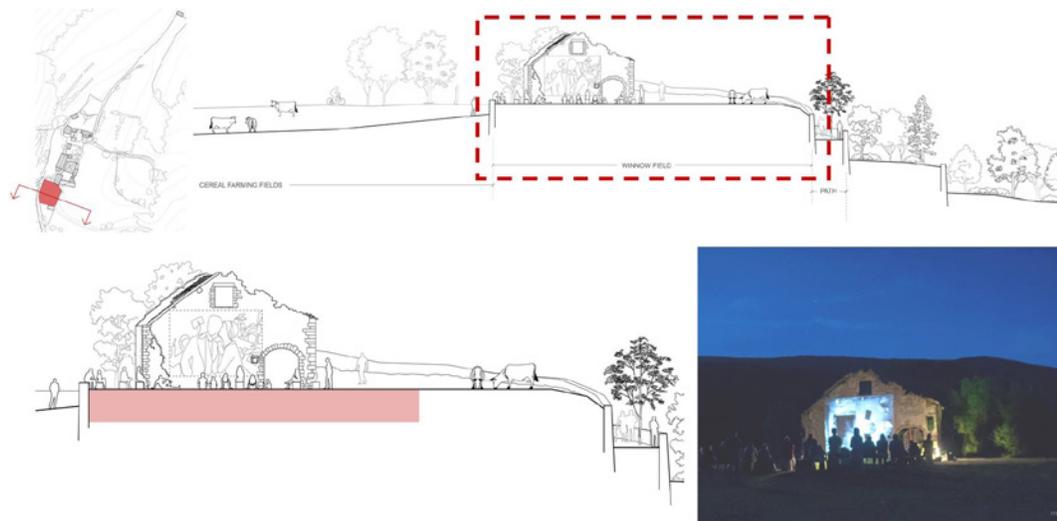


FIG. 12 Use of traditional winnow field as public event space. Source: Mallau, 2020. Elaboration: Galán, 2020.

The maintenance of farming terraces and fields is combined with temporary cattle raising, which also develop an important role in clearing the invading vegetation. The roots of rapidly growing nature affect the stability of building elements, creating fast deterioration. Weeds and bushes also hinder accessibility by blocking paths and streets, and disabling the visibility of the surrounding fields. The integrated perception of the village and its surroundings within the cultural landscape enable to understand how people used to live in the area, adapting to the difficult conditions of the mountain territory.

The combination of cultural activities with productive functions has been proven as an effective tool to enable the adaptation of organically evolved landscapes, compensating the limited productive capacity of fields which cannot be easily mechanized, and taking advantage of their positive role in preserving their cultural values. The case of the project for "Parco del sole", in the terraced valley of Mattiotti and Casarette at Italian's Vicenza, exemplifies a successful integrated approach of symbiosis between tourists and local producers, by maintaining the cultural landscape and producing high quality local stock which is highly appreciated by external visitors (Fontanari & Patassini 2008).

## 2.4 DISCUSSION: IMPACT AND CHALLENGES OF THE RECOVERY OF SUSÍN

As a result of the interventions developed, new conditions are created, enabling different emergent activities to be performed. Realisation of these initiatives has an impact in the area, and rises different challenges to be addressed:

The spatial practices developed in Susín have a positive impact in certain scales: in the village itself and its immediate cultural landscape, in the valley of River Oliván, and in the entire territory of Sobrepuerto and Valley of Tena. Maintenance of existing spaces, which today are in a much better state, enable their preservation and reuse for cultural activities. This fact indicates that vernacular architecture has spatial qualities allowing it to be reclaimed and adapted. Their active preservation represents an important action for cultural enhancement in the territory, keeping the spaces which enable visitors to understand how mountain peasants lived and adapted to their environmental conditions. At the same time, it contributes to the reinforcement of local identity, and social engagement of communities. It emerges as a reference case for other similar places, which can learn from this experience and get motivated by the positive results. The presence of both locals and tourists increases the social control and level of activity in the area, favouring the maintenance of accesses, enabling their shared use with other agents. Susín becomes an intermediate reference stop for hikers and cyclists who follow longer routes through the territory (Satue et al. 2014). Tourism generates economic benefits for the area, as an alternative income-source for local inhabitants, complementing the practice of agriculture and farming. Particularly in this area, where most of economic development was linked to winter sports, cultural tourism becomes a sustainable option to compensate the seasonal use of ski resorts.

On the other hand, other threats or limitations are detected, which nonetheless could be compensated through alternative strategies. The current balance found in Susín is rather fragile. The strict idea of preservation aimed by the organization, which pursue the restoration of the village to its original image, presents a high spatial vulnerability to possible external changes. Conflicts on land use or image transformation might occur between owners, when the interventions developed modify the desired configuration aimed by each of them. At the same time, physical space changes unavoidably throughout time, due to environmental conditions and adaptation to programmatic needs. Currently the actions in Susín are highly dependent on the work of volunteers, although other economic resources are needed to be able to guarantee the continuation of their initiative. In order to incorporate other users, the spaces need to be updated and evolve, even though an insensitive intervention could damage the existing authentic or picturesque values as perceived by local communities and tourists. In that sense, existing regulations do not contribute much to the adaptation or growth, limiting the allowed intervention only to maintaining the existing building volumes, and not enabling other uses further than residential (Fig. 13). On the other hand, tourism, which is a potential asset for the area, can become a problem for both, the village and the area,

when developed unsustainably. Local economy is getting increasingly dependent from tourism, displacing other traditional labours. However, the continuation of extensive agropastoral activities is crucial for the maintenance of landscapes, whose biodiversity and heterogeneity diminish as these interdependent functions disappear. Picturesque heritage is an often coveted product, by external users who aim to privatize it. Local communities could feel displaced when big transformations occur or if they are deprived from decision-making about spaces that are meaningful for them. At the same time the protection status applied does not cover the entire village, being it continuously exposed to possible radical changes (Olano y Mendo Arquitectos, 2010) (Fig. 14). The bad state of preservation of some buildings threatens the image integrity of the village.

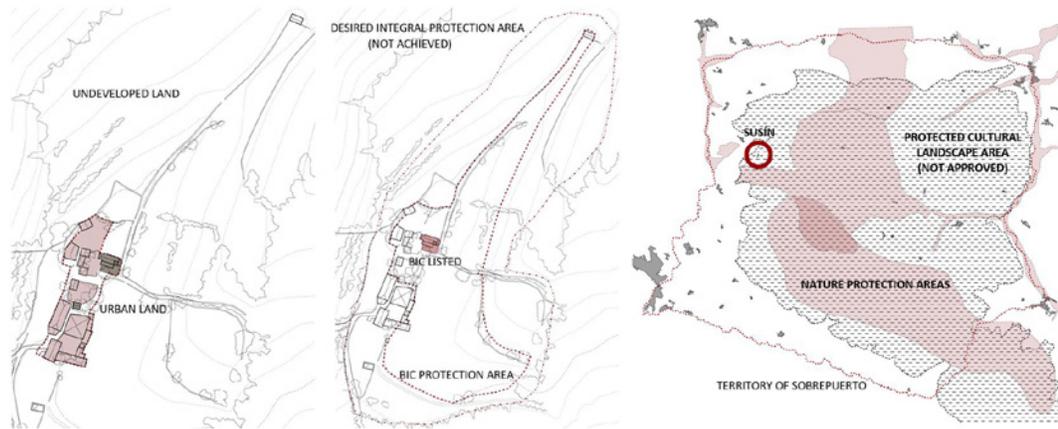


FIG. 13 Land-use regulations  
 FIG. 14 Protected-listed buildings  
 FIG. 15 Territorial protection plans. Sources: Olano y Mendo Arquitectos, 2010; DGA, 2008. Elaboration: Galán, 2019.

Nevertheless, this study also shows other opportunities, related to alternative strategies that could be tested. The interest of people in the remaining urban structure and buildings, and the adaptability of some spaces for new functions shows their value. It suggests that other sorts of activities, based on different temporary use, could be investigated, as a tool for reactivation. Some of the buildings, as well as many other settlements around remain unaltered and inactive, offering the opportunity to be redesigned in a near future. The possibility of coordinating and linking these initiatives to other locations, local actors, and ongoing activities in the area, offers new potentials for the sustainable development of this territory. In order to achieve it, two approaches are needed: a global strategy to maintain and reformulate the cultural landscape in the territory of Sobrepuerto (Fig. 15), and a more flexible perspective towards the reuse and adaptation of heritage, contributing to define an updated identity for this area, where both local and external actors can be integrated.



FIG. 16 Summary of users, participation and roles in the recovery of Susín. Source: Mallau Association, personal communication, October 2019. Elaboration: Galán, 2019.

### 3 CONCLUSIONS

The experience of Susín shows an interesting and successful case of recovery and reactivation of an outdated and depopulated place. It differs from the evolution of other settlements in the area where the traditional urban configuration was intensively transformed in order to be adapted for new activities. In this location, the impossibility of facing the shift of the economic system and update to current conditions of livelihood has triggered the reconceptualization of the village space from a mainly peasant productive-residential location to a site of spatial-cultural experience. The landscape changes from a space of production to a space of consumption. Evolution of urban society increases the demand for local vernacular spaces, to which local communities contribute by revaluing modest heritage.

These places acquire different meanings for both, local and external users, for whom heritage has respectively a sentimental, cultural or aesthetic value. Ruins of buildings created under purely practical reasons obtain an aesthetic value by the increasing uniformity generated by globalization. Their spatial quality and simplicity enable their adaptive reuse. However, the reprogramming of these places implies necessarily a spatial intervention, which intensity will determine the transformation from the former image. A high sensitivity is needed by the intervening actors in finding a right balance to enable the place to evolve and update, without compromising the existing qualities. In the case of Susín, difficulties met by local community reflect that a more flexible vision towards the adaptation of certain spaces might be needed, enabling some new activities and external users which could bring more stability to their initiative. In this process, an intense dialogue gets established between the existing vernacular spaces and the overlapping new functions, revealing the strong integration that exists between the village and its direct context, between ruins and nature, being architecture part of the landscape. The state of vacancy and the spatial conditions of ruins provide a framework to rethink the future of these territories based on updated values.

The shift of function does not only affect to the settlements, but to the entire cultural landscape in which they are embedded, whose characteristic image is the result of a process of human adaptation to the environment. The disconnection of landscape from the original function which shaped it, makes the effort of maintenance highly demanding. Their active use facilitates this task, which at the same time is required to perceive and understand the settlements in their context. Nevertheless, it is crucial to acknowledge the environmental value provided by regenerating nature through the ecosystem services generated, in an area where human pressure on landscapes reached threatening levels of erosion and soil exhaustion. A rational balance must be aimed in cultural landscapes, where natural and cultural values should be equally respected. Their maintenance needs to be coupled to other agropastoral traditional activities, which besides their key role in the care of land and silviculture, provide a complementary activity to tourism for local communities, and reinforce the cultural narrative of landscapes to which they are closely associated. But traditional activities must evolve, by incorporating elements of technology which facilitate their tasks, and by encouraging them through economic compensation, acknowledging their important role as part of the landscape functions. It is therefore important to coordinate a vision among local communities which currently develop different initiatives independently, trying to link them to other economic and environmentally responsible uses of land which can bring remuneration, while protecting nature. This way the organically evolved cultural landscape continues adapting to new needs and conditions, enabling a sustainable preservation instead of remaining fossil, frozen in time.

Depopulated territories in transformed conditions offer spatial opportunities for alternative functions, which can become a tool for the sustainable development of rural areas. Local initiatives which promote -material and immaterial- cultural heritage contribute to the achievement of the

Sustainable Development goals: Economically, through the promotion of a symbiosis of cultural-natural responsible tourism in combination with traditional productive activities; Socio-culturally, by increasing job opportunities and improving life conditions for inhabitants, while reinforcing local identity and community engagement; Environmentally, maintaining nature, while enabling its enjoyment. Further research, the process of recovery from other types of cases, presenting different conditions and evolution in this territory must be studied. The analysis of their physical-programmatic transformation, as well as the interest of users about them, in relation to other examples, facilitates the formulation of alternative strategies, while looking for potential areas while these successful tactics and other possible measures could be implemented.

## ACKNOWLEDGEMENTS

This research forms part of a PhD project founded by FWO (Fonds Wetenschappelijk Onderzoek in Flanders, Belgium).

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# Re-interpreting Urban Palimpsest

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## Abstract

*'Palimpsest' has etymological origins in the Ancient Greek meaning "again" and "scratch", and refers to the repetitive process of writing and deleting texts in parchments. In this paper, we pursue an analogy of the layers of "texts" within the development of the city. A contemporary interpretation and analysis of the concept is followed by a specific methodology seeking to explore urban morphology and the role of spatial designers. As described in literature, a city is a totality of locations, where each location has its own, distinct identity. Locations are shaped through the narratives as well as the collective memory of all who have inhabited them. Before re-inhabiting, each 'author' (spatial designer, policy maker, user) interprets the meanings that already exist, and then adds meaning in relation to previous one, by either preserving or demolishing buildings. Historic and contemporary case studies at different scales demonstrate the variety of interventions. This paper examines prominent paradigms of the 'palimpsestuous city' such as the 'museum city', 'utopian city', 'collage city' and 'dialectic city'. As a conclusion, the concept of 'archive city' emerges as the one that addresses the dialectics between city's layers and their management. The ideal palimpsestuous city constitutes the archive, where every 'author' selects meaningful inscriptions from the city's evolution and development, while, at the same time respects the past as part of their identity. This procedure creates a new urban consciousness.*

## Keywords

*palimpsest, memory, trace, archive city*

## 1 INTRODUCTION

Why should the concept of 'palimpsest' be re-examined today, since its relation to architecture has already been exhaustively discussed in the past? The aim of this paper is to approach the way 'authors', namely spatial designers, policy makers, users and stakeholders, shape the city.

After having examined the concept of palimpsest and its origins, the paper will investigate its connection to urban space. It focuses on the evolution of the city's palimpsest, since it becomes more important than a simple superimposition of interventions on the same location, as it is connected to some space reference points. The existence of palimpsest requires a place and its habitation. Each location calls for a different approach, as it acquires its own memory, and identity that have synergistically resulted from a passage of time and human presence. There are tangible traces such as buildings of the past that remain visible in the present and remind of values of previous eras and other intangible traces such as values and ideas. However, are all artifacts of the past memorable and useful for the future? The 'author' needs some criteria to realize how he will re-inhabit the place and will intervene on it.

Next, we thoroughly examine palimpsest in relation to different types of intervention in the built environment, such as preservation, imitation, addition, reuse and upcycling through contemporary examples. The author's proposal shapes the urban landscape. Questions raised are: how does palimpsest affect the existing city and its evolution? How does someone manage heritage and which values should be preserved?

Pondering these questions, the paper pursues the ideal city model based on criteria derived by the analyses of selected city concepts, such as the museum city, generic city, utopian city and collage city. This research provides spatial designers palimpsest-based guidelines in order to analyse, design and assess urban renewal projects.

## 2 URBAN PALIMPSEST

### 2.1 DEFINITION

Palimpsest first appeared when parchments were used as writing surfaces. The word is etymologically derived from the ancient Greek word “palimpsistos”, which is composed of the words “palin” and “psao”, which mean “again” and “scratch”, that describe the process by which a text is read, deleted or scratched to write a new text on the same surface (Liddell and Scott, 1889). The original text is not completely destroyed, but always leaves some traces that can reappear over time. This does not mean that the new layers were necessarily related to the previous ones (Dillon, 2007). The act of creating a new layer over existing ones or traces of them is called superimposition or layering.



FIG. 1 The Archimedes' palimpsest, 10<sup>th</sup> century BC.

Source: <https://dmwordoftheweek.wordpress.com/2014/04/25/palimpsest/>, last visit: 05 Jan 2020

## 2.2 URBAN PALIMPSEST AS A “READING” TOOL

Until the mid-19<sup>th</sup> century ‘palimpsest’ was commonly referred to palaeographical manuscripts. However, in 1845 Thomas De Quincey in his essay “The palimpsest of the human brain”, likened the human brain to palimpsest, as it is capable of layering experiences and memories on each other (Quotidiana, 2006).

In 1961, Sigmund Freud used in “Civilization and Discontent” the palimpsest’s metaphor to refer to human mind, describing the city of Rome as a layered city, an agglomeration of multiple constructions exists below each other (Freud, 1961). Therefore, the concept ‘palimpsest’ may refer to urban space as a transformation that happens over time and involves archaeology, art, architecture and urban planning. The relationships created allow a storytelling. In 1983, the Swiss urban planner and historian André Corboz proposed the “reading” of urban landscape as palimpsest, mentioning that the terrain was unique (Corboz, 1983):

“Cities and landscapes are constantly reused, periodically cleaned and ‘rewritten’ to create space for new structures for the residents’ needs”.

## 2.3 SPACE REFERENCE POINTS

In order to address and evaluate the city as the “parchment” that receives continuously human interventions, we examine the relationship between palimpsest and urban space through specific reference points that will be used as criteria that determine the architectural intervention of various authors (Kordonouri, 2018). These are:

**Place | Space** consists of places linked to people through dwelling. Heidegger, using Hölderlin’s use of the phrase “... poetically man dwells...” mentions that ‘poiein’, which in Greek means ‘making’, builds the essence of ‘dwelling’ (Heidegger, 1971). Man interprets the place, he inhabits, which consequently shapes both individual’s identity and the societies as well. The place is palimpsestuous, overlapped by tangible and intangible elements which include memories. As each place stores memory, the interpretation that someone does in order to construct their own “dwelling” depends on the layers that are revealed around it. An example is the proposal “Landscaping of the Acropolis Surrounding Area” by Dimitris Pikionis, where he reorganized the fragmented Attic landscape, creating a new layer that combines the memory of the past with the interpretation of the present.

**Memory | Memory** is necessary in understanding places. It is an active process defined by the society. Palimpsest allows people to record events and experiences in their consciousness and continuously affect their actions. Through the recall of mental recording, processes of comparing, connecting and restoring are encouraged, while at the same time it gives rise to the creation of the identity of a space (Rossi, 2007).

**Trace | Memory** can be perceived through absence, which can be revealed through the traces. The trace is the presence of an absence (Eisenman, 2006) and palimpsest is a process where the architect brings to the surface some lost traces. Coexistence of traces with elements such as terrain vagues (Solà-Morales, 1996), causes discontinuities.

Such an example is Giovanni Battista Piranesi’s “Campo Marzio” plan (1762). Piranesi replaced the existing urban fabric with a palimpsest of traces of heterogeneous elements: buildings in Rome

that never existed and others from different periods. It is a juxtaposition of different conditions: the demolition of modern Rome, as a precondition for the development of a new city, designed through the preservation of its ancient ruins (Aureli, 2011). Piranesi's aim was to present a trace of time and space as a theoretical base for urbanization as a memory fabric (Eisenman, 2006).

Ruin | The traces are linked to another reference point: the ruin. It is the record of absence and memory, as an uncanny fragmented space belonging to the palimpsest of the city. Ruin's aesthetic, historical and memory value is not about its former status, but derives from its ruined condition (Patrik, 1986). Thus, ruin creates new meaning that leads to re-thinking its role in cities.

In this framework, the ruin was incorporated through history in art's and architecture's interpretation of the past. For example, in Baroque art and picturesque works of Romanticism, it played a principal role highlighting the decay of natural and beautiful, in contrast to the perfection of classicism. Architecture of the antiquity was recognised as heritage incorporated in the modern world. Therefore, beauty was linked to duration and "an object of knowledge" that included previous layers (Benjamin, 1998).

Monument | The representations of ruins were followed by those of monuments that reflect each period's ideology and entrench the ideal architecture of the future. Such a representation is J. Stuart and N. Revett's plan of Parthenon's restoration, where the ruin is converted to a monument, by reaching an ideal form. While the ruin calls on the past, the monument calls on the future and manages to be a permanent trace of collective memory that creates urban consciousness.

Kevin Lynch (1979) argues that the establishment of monuments as landmarks is important for palimpsest's development. Such an example is the Athens plans in the 19<sup>th</sup> century. Nowadays, a contemporary landmark in Athens is the Acropolis Museum, a result of the palimpsest's process: the floor plan is reproduced and multiplied, while the entire museum is located over an archaeological site.

Oblivion | Beyond the recordings, Palimpsest's process involves deletion or oblivion. As history proves, after periods of crisis, social oblivion and erasure are entailed obliterating traces of the past and retaining others that meet current needs. In order to create a new layer or "enhance" an old one, the author should first re-examine all the aspects of the destruction of "non-functional" buildings (decayed buildings, or buildings or sites that are not in use). Though preservation strategies were generally advocated, in Athens' Charter (1933) only important traces (monuments, buildings, and areas) were selected to remain, so as to promote place's identity.

## 2.4 INTERVENTION METHODS

From the aforementioned reference points, it can be concluded that palimpsest is connected to time and space. These criteria will determine the author's intervention. The next section will consider which methods of intervention are used for the creation of a new layer on each place. The types of intervention that are cited below introduce different ways of a creation of palimpsest.

Preservation | In our era 'preservation' belongs to the wider group of 'conservation' processes. The latter characterises all the actions that protect the cultural value of an historic place. Building on these foundations, 'preservation' is the maintenance of existing materials, forms and integrity of an historic place, as well as the significance of its heritage (Canada's Historic Places, 2010).

The concept of preservation has been based on discourses between architects and theorists, starting from John Ruskin and Eugene Emmanuel Viollet-le-Duc, in the 19<sup>th</sup> century. Ruskin (1889) suggested that all buildings could be preserved and that restoration would mean the destruction of the integrity of the building, while Le-Duc (1886), argued that buildings are living structures that, via restoration and reuse, can also fulfil future needs.

Nowadays, protection of cultural heritage widely applies in cities, aiming at historic coherence. One may argue that preservation is an opposite process to that of palimpsest, since it does not allow the addition of new layers, but requires the maintenance of the original structure of the buildings. However, the preservation of historic buildings, not as exhibition objects, but as palimpsests, may reveal complex relationships between layers of a place where new meanings are added to the urban experience as an invention of modernity (Koolhaas,2014).

Imitation | Imitation is related to memory (Yates, 2014) and plays a supportive role in revealing the truth. It is connected to the concepts of 'model' and 'prototype' both of which designers refer to when they create. The 'model' is the 'paradigm' to be followed that leads to creation and reflects the archetypal 'ideal type'. A 'prototype' is considered as the innovation that produces other similar objects. Cities tend to be formed by prototypes, but the connection between a prototype form and architectural meaning is often weak. Thus, in order to strengthen its position, western civilization relies on the past by constructing memory, and converting the prototypes to memory objects.

A relative example is the Berlin's "Neues Museum", where David Chipperfield architects 'imitated' the old museum by incorporating Schinkel and Stüler's architecture into the new museum.

Addition/ Subtraction | The addition of new layers can be revealed through the following aspects that adopt palimpsest as a design tool (Klanten & Fereiss, 2009):

- Wrapping refers to skins that enclose the existing building (e.g. the Thomas Heatherwick Boiler Suit in London).
- Weaving. The intertwining of the new with the existing one. The final outcome makes no distinction between the old and the new (e.g. James Stirling's work for Stuttgart's Neue Staatsgalerie).  
Importation refers to new elements placed on existing buildings or sites. It is categorized in 3 subcategories:
  - Juxtaposition: The new construction is placed next to the existing one (e.g. the aforementioned Lacaton & Vassal's Frac Nord).
  - Insertion: The new construction invades the existing one either partially or completely (e.g. Rodrigo Pérez de Arce's Chandigarh Capitol redevelopment proposal).
  - Superimposition: The new construction is superimposed on the existing one (e.g. the Caixa Museum of Herzog and de Meuron in Madrid).
  - Subtraction. The creator removes part of the existing building to improve either its form or function (e.g. Renzo Piano's work at the Harvard Art Museum).

Reuse | The re-writing on the parchment relates to the re-inhabitation and reuse of a site where the prerequisite for designing is the consistency to the existing context (Habraken, 1988). Therefore, as spaces become mnemonic devices promoting certain values of an era, a complex palimpsest is created where different meanings are stratified into each other.

Changing use is an alternative to demolition. It restores the shell to accommodate an adapted interior, since “form provokes function” (Venturi, 1966). Moreover, ‘adaptive reuse’ is adopted when reuse becomes an “act of respect” to high-value buildings and urban landscapes, like Scarpa’s “Museo di Castelvecchio”. It is mainly a hermeneutical tool that the designer uses to “continue” the past into the future by tackling cultural and social issues that are connected to the architectural work and its character (Freschi & Maas, 2017).

An example of adaptive reuse that may highlight the negative impact on the architectural meaning is the reuse of religious heritage. Temples are often used as prototypes that merely serve a function and designers change their uses, neglecting cultural aspects. As a result, the architectural meaning becomes questionable.

Upcycling – Spacecycling | Upcycling is the conversion of waste materials to something useful or valuable (Yi et al, 2019). Through superimposition “upcycling” differentiates from recycling, by preserving memory and the function it offers. Such an example is Whang Shu’s Ningbo Museum, a building that stands as mnemonic device of the past, where the façades were constructed by collected debris from demolished buildings.

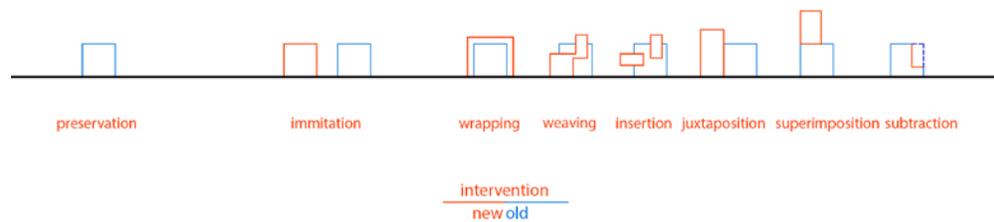


FIG. 2 The interventions methods. Source: Diagram drawn by the author

The aforementioned interventions present the city as an unfinished or open-ended work, not only in terms of forms, but also in terms of cultural and conceptual meanings that are created through the personal interpretation of each author.

## 2.5 URBAN LANDSCAPE: FROM THE MUSEUM CITY TO THE ARCHIVE CITY

Having examined the city as a ‘palimpsest’, the research pursues the ‘palimpsestuous city’ as an ideal city. In doing so, we study specific city models in terms of palimpsest: the ‘museum city’, the ‘generic city’, the ‘utopian city’ and the ‘city-archive’.

The museum city and the preservation of the urban heritage | The preservation of cities undoubtedly implies transferring the values of one era to the ones of the following (Rossi, 2007). Innovative conservation theories have been introduced by Camillo Sitte, Patrick Geddes, Gustavo Giovannoni. Historic cities, such as Athens, Rome, Paris (Rowe & Koetter, 1978), can contribute to preservation theory by providing concepts and methods for new architectural and urban interventions.

Generic city – The reverse archaeology | In order to achieve land economy and accommodate fast-paced urbanization, Generic city is characterized by skyscrapers and earth-scraped constructions. Koolhaas and Mau (1995) define the latter “reverse archaeology”. By building new city layers beneath older ones, the chronological hierarchy of spatial palimpsest is reversed. Reverse archaeology may also recall the original memory of a place, as in the case of Aristeidis Antonas’ “Athens Trench Project” about Omonoia Square in Athens. He tackles the Athenian landscape exactly as it is: “like an essay written with concrete excavations on the historic street” (Antonas, 2012).

From the Ideal to the Utopian city | In the pursue of the ideal city since Renaissance, paradigms of the 20<sup>th</sup> century include Le Corbusier’s Ville Radieuse and Takis Zenetos’ Electronic Urbanism and Constant Nieuwenhuys’s New Babylon, which are proposals for a utopian city, where urban development is detached from the ground. Ville Radieuse concerns the deletion of layers, while the in the other two cases layers are inverted.

Towards the Ideal city: From Collage city to Archive city | Collage city acknowledges dialectics as a process, whereby position and contrast create new places and denotations. Collin Rowe and Fred Koetter (1978) argue that urban spaces should combine tradition, utopia and innovation, as ‘Collage city’ brings out qualities derived from their dialectics. They remarked that the city is the product of conflicts and compromises, in analogy to society’s dynamic evolution. Using the term ‘contextualism’ that addresses the relations between architecture and its context, they emphasized the need to adapt new architectural typologies to it.

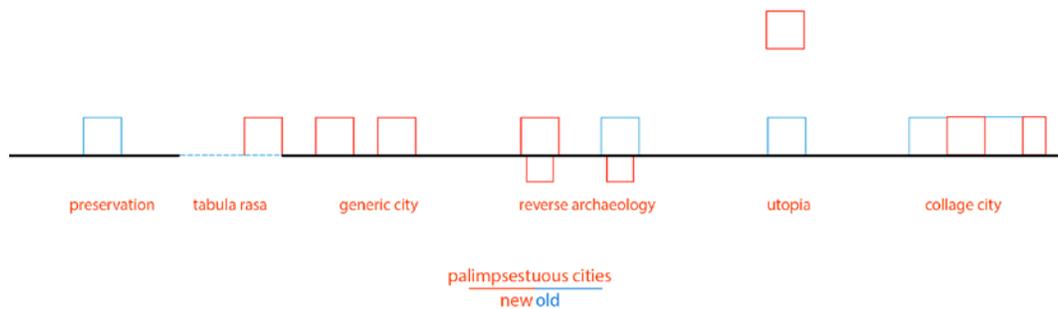


FIG. 3 The palimpsestuous cities. Source: Diagram drawn by the author

The case of Athens is studied as the place that gave birth to dialectics and democracy. To this day, its urban landscape is shaped by a pluralism of various recordings from classical and byzantine to neoclassical and post-modern developments. While significant monuments and ruins have been preserved, oblivion has also been enforced by “erasing” layers and building over them via the system of ‘antiparochi’ (“quid pro quo”) that led to urban homogenization. The modern ‘polykatoikias’ were produced massively and were built after removing previous neoclassical buildings. In order to turn Athens into the ideal palimpsestuous city, a management of the recordings and their interconnections based on an architectural and urban archive is necessary.

The archivist is an educated on cultural heritage author who preserves only the elements of the past he deems useful for the future (Derrida, 1995). The decisions on storing and prioritizing recordings, are based on research that reveal author’s identity. Moreover, by archiving, one organises

"fragmented entities" in space (Zografos, 2019). In an ideal city the choices and identities of all authors are highlighted. The open archive-city allows the coexistence of various collections and promotes the values that emerge through it, in a democratic way.

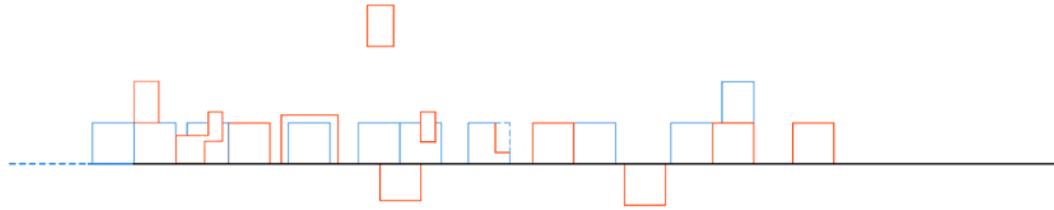


FIG. 4 The archive - city. Source: Diagram drawn by the author

### 3 CONCLUSION

This paper pointed out that the concept of palimpsestuous city remains prominent nowadays and is constantly renewed by collecting recordings, in an intense and conscious way. The new layers, either co-exist or contrast the previous ones. Since cities are complex urban systems with multiple and diverse crises (economic, social, environmental), the emergence of ideal models is not an easy task to accomplish.

During urban interventions at various scales, 'authors' either adopt the memory of the past or construct a new one. Therefore, the urban landscape is enriched with meanings derived from existing prototypes or innovative ideas. Rather than focusing and indulging only to the memory of the past, it is important to develop the city through selective memory. In analogy to what archivist does, designers, policy makers, stakeholders and citizens accumulate concepts, meanings and tangible/intangible traces that shape both their own and the city's identity.

In this framework the architect's role is to contribute to city's continuity by creating projects with cultural meanings and values of memory, history and aesthetics, that will transform the urban landscape and the consciousness of its inhabitants. In order to achieve this, a constant re-interpretation of the existing urban space towards existing and new city models should be pursued.

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# Assessing Impact: A Reflection on how ICOMOS as a Global Heritage Organization can meaningfully help achieve the SDGs

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## Abstract

*The historic UN Agenda 2030 and the Sustainable Development Goals (SDGs) includes the protection of cultural heritage, both explicitly through Target 11.4 under the 'Urban Goal' (SDG11), and more implicit references in other Targets. While this entry point into global development discussions is invaluable, it still leaves a large domain of work to be done to achieve full integration and impact of cultural heritage for a more sustainable world. This domain of work includes the contributions of stakeholders, synergies between sectors and governance levels, meaningful action to affect change and an effective means to monitor and measure progress achieved. ICOMOS is well-positioned, as a global non-governmental organization dedicated to the protection of cultural heritage, to play a role in this context and has been developing a consistent portfolio of relevant experience. However, the challenges particular to the field of cultural heritage are well-recognized and vary greatly, from making the case of relevance and linking heritage and development concerns, to self-assessing, organizing and channeling scientific activities into impactful advocacy and policy action. This paper provides an overview of the work coordinated by the ICOMOS Working Group on the SDGs, in particular the effort to quantitatively measure and report on the organization's national and scientific committees' activities using the UN-given Indicator 11.4.1. The main results of this exercise show that ICOMOS might be contributing more than 20 million euros to the annual expenditure to protect the world's cultural heritage, if voluntary hours are taken into account, that more awareness is needed among members of how their activities already contribute to the SDGs and how to express this in ICOMOS' annual reporting.*

## Keywords

*SDGs, impact, cultural heritage, ICOMOS, measurement*

## 1 INTRODUCTION

The historic 2030 Agenda and the Sustainable Development Goals (SDGs), set by the United Nations in 2015, aim to create an ambitious roadmap for peace, prosperity, equality, and security for all people and all living things by 2030. Broken down into 17 distinct Goals, they address the most pressing development challenges facing the world today, and call for all the nations to come together to achieve the Goals. Under each of the 17 Goals are a set of specific Targets for achieving their particular Goal, and Indicators under each Target that act as tangible metrics for success.

The SDGs include the protection of cultural heritage, both through the explicit policy heading of Target 11.4 under the 'Urban Goal' (SDG11), and more implicit references in other Targets. While this entry point into global development discussions is invaluable, it still leaves a large domain of work to be done to achieve full integration and impact of cultural heritage for a more sustainable world. This domain of work includes the contributions of stakeholders, synergies between sectors and governance levels, meaningful action to affect change and an effective means to monitor and measure progress achieved through these actions.



FIG. 1 The 17 Icons of the SDGs. Source: UN, 2015

The International Council on Monuments and Sites (ICOMOS), as a global non-governmental organization dedicated to the protection of cultural heritage, is well-positioned to play a role in this context. ICOMOS has been developing a consistent portfolio of experience to contribute to the sustainable development policy and practice, particularly since the 2011 Paris Declaration on 'Heritage as a Driver of Development', which was reinforced by the 2016 Concept Note, 2017 General Assembly Resolution and the knowledge development and advocacy activities of the ICOMOS SDGs Working Group (SDGWG) based on the 2017 Action Plan on Cultural Heritage and the SDGs.

However, the challenges particular to the field of cultural heritage, which ICOMOS also continues to face, are well-recognized and vary greatly, from making the case of relevance and linking heritage and development concerns, to self-assessing, organizing and channelling scientific activities into impactful advocacy and policy action. This paper presents a particular project undertaken by the ICOMOS SDGWG with a concern for the above-mentioned challenges, in an effort to measure, assess and report on the organization's activities using the UN-given Indicator 11.4.1.

## HERITAGE SUPPORTS THE GLOBAL GOALS!



**CULTURAL AND NATURAL HERITAGE  
@ THE UN HIGH-LEVEL POLITICAL FORUM**  
#HLPF2018Heritage #SDG11.4 #CultureNature

FIG. 2 Special logo prepared by ICOMOS on the occasion on HLPF 2018. Source: ICOMOS

## 2 THE SDGWG PROJECT 'MEASURING THE SDGS': SCOPE AND METHODOLOGY

### 2.1 PROJECT SCOPE: "HOW IS ICOMOS CONTRIBUTING TO THE SDGS AND HOW CAN WE MEASURE IT?"

SDG 11 for Sustainable Cities and Communities includes Target 11.4 to Protect the World's Cultural and Natural Heritage, for which the official given indicator to measure progress consists of "total expenditure (public and private) per capita spent on the preservation, protection, and conservation of all cultural and natural heritage, by type of heritage, level of government, type of expenditure and type of private funding".



FIG. 3 Hierarchy of Indicator 11.4.1

The project titled "ICOMOS and Sustainable Development – Measuring SDG 11.4" was commissioned by the ICOMOS SDGs Focal Point to assess the applicability of Target 11.4.1 and design a system to measure the contribution of ICOMOS activities to the SDGs. In addition to synthesizing and measuring ICOMOS activities data across the National Committees (NCs), International Scientific Committees (ISCs), and Working Groups (WGs) that submitted a 2018 Annual Report, this pilot survey gathered data on the number of volunteer hours committed by ICOMOS Committee members. The intention of this analysis is to provide a baseline assessment of how ICOMOS activities are related to the SDGs, develop a workable framework to analyze future Committee Annual Reports in order to standardize measurement and reporting over the years.

The report was prepared by the US/ICOMOS 2019 International Exchange Program (IEP) intern Anashya Srinivasan, under the guidance of SDGs Focal Point, Dr. Ege Yildirim, from June-August 2019 in Istanbul, Turkey.

## 2.2 METHODOLOGY

To measure the impact of ICOMOS activities and their contribution to sustainable development, the Annual Reports of ICOMOS NCs and ISCs were analyzed, so as to feed into a global ICOMOS report.

The NC data was evaluated based on the 62 out of 104 NCs that submitted their 2018 Annual Report to the ICOMOS International Secretariat, and a data analysis framework was created to categorize and quantify the data afterwards. The framework was subsequently adapted to analyze the data from the 22 out of 29 ISCs as well as from four WGs. The template is divided in several categories: quantitative (Committee Members, Total Income, and Total Expenditure), scoring (SDG Marked, Activity Description, "Score", and Evaluative Summary), and SDG categorization (Total Number of Goals and Targets Activity is Related To).

The analysis involves two components: 1) Committee budgets ('income' and 'expenditure') as per their reports of 2018; 2) Committees' SDG-related activities as per their reports of 2017 and 2018.

In component 1, which is a quantitative assessment, the official UN indicator was employed in an attempt to test its validity for ICOMOS. Despite the current international debate on the need for more indicators, the SDGWG still considered it worthy to have an economic overview of ICOMOS Committees' work, because a) 11.4.1 is the official provided indicator, which could enable ICOMOS to present a report in the same language as the UN; b) it would function as an occasion for ICOMOS and Committees to reflect on the financial aspects of their operations, offering insights on ways to improve ICOMOS financial models.

In component 2, which is a qualitative assessment, the characteristics of Committee activities were mapped, by creating a framework of typologies and criteria to assess the reported activities, to identify general trends and statistics. This would be an opportunity to reflect on how these activities may also contribute to the impact that cultural heritage makes to sustainable development. The statistics acquired in component 2 were then compared with those of component 1, to see if there are correlations between budget size and SDG-related activities.

The UNESCO Culture 2030 Indicators Report was released during the data collection phase of the project. The project team considered including the UNESCO Thematic Indicators for Culture, but ultimately decided to use the Global Goals as reference points in order to speak to a wider audience. This allowed the model to remain flexible and responsive to ICOMOS' program data.

## 2.3 COMPARATIVE ANALYSIS

The project team analysed 28 culture-focused NGOs affiliated with UNESCO to determine whether other organizations had conducted similar SDG measurement activities. Although preliminary research yielded no congruous model, the project team has personal knowledge of organizations that do have long-standing measurement systems for SDG-related programming. In-depth interviews with prominent national, regional, and international NGOs would yield more verifiable information.

## 3 PROJECT RESULTS

### 3.1 PART ONE (QUANTITATIVE): EVALUATING INDICATOR 11.4.1 FOR ICOMOS

For the category to measure ICOMOS' financial contribution towards Indicator 11.4.1, the project team agreed that all expenditure related to ICOMOS activities, including overhead or administrative spending, counted towards Target 11.4.1. According to the Annual Reports, the 62 NC's reported 8,868 members, 2,209,304.64 euros in total annual income and 2,116,797.71 euros in total annual expenditure. In 2018, ICOMOS reported a total of 10,546 members, so it is safe to say that the NC Annual Report data reflects about 84% of the total ICOMOS membership.

Of the 62 NC's that submitted Annual Reports, nine reported zero income and expenditures and six did not report any data at all. As it is unlikely that there were actually no income and no expenditure, some NC's may have misunderstood what information to provide, or may not be keeping rigorous financial records. In future analyses, it should be ensured that there is more accurate reporting and thorough understanding why collecting this financial data is important for ICOMOS.

It was decided to omit NC's from the quantitative assessment that either submitted no information or reported zero income and expenditures, which left 47 NC's. The project team then regressed the following variables: Number of Committee members to total annual income, Number of Committee members to total annual expenditure, and Percent income gained per Committee member and Percent expenditure spent per Committee member.

The regression results indicate a roughly comparable correlation between NC members and reported annual income and expenditure.<sup>1</sup> However, while positive, there is not a strong linear relationship between the two variables. Conversely, the relationship between how much each NC earned and spent on their members has a far more linear correlation. The NC's seem to be spending roughly what they are earning for their activities, with a few exceptions. This might mean that NC's raise money as needed or specifically for certain activities, and consequently may not be saving their financial resources for reserves. ICOMOS as an organization is fairly decentralized when it comes to its NC's, and therefore the onus of strategic planning and sustainability falls on the Committees themselves.

It should be noted that these are preliminary analyses and do not allow for any definitive conclusions. It is also important to note that the regression analysis do not give an indication as to whether the SDG Indicator 11.4.1 is applicable to the organization. SDG Indicator 11.4 is controversial within the cultural and natural heritage sectors for being vague and measuring impact solely through increased resource allocation. However, after analyzing the submitted Annual Reports, ICOMOS has enough data to provide a solid estimate of its financial expenditure on cultural heritage protection activities.

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<sup>1</sup> An R2 value is statistical measure for how close the data points are to the regression line (also known as the trendline), or the percentage of the response variable that is explained by the regression model. In general, high R2 values indicate a high percentage of the variance in the response variable. However, simply assessing the strength of correlation by the R2 value alone can be misleading without consulting the actual dataset.

Although the ISC's and the WG's were also asked to provide estimates for their total annual income and expenditure, four out of 26 ISC's and WG's submitted financial data. This was deemed not to be a significant enough representation, and chose not to run quantitative regressions.

Additionally, the project team sought to find other ways ICOMOS could measure and quantify its contribution to Indicator 11.4.1, such as measuring the financial contribution of ICOMOS members' volunteer hours for the organization. The project team created an online survey and sent it out to Committee points of contact, receiving 15 responses by 11 individuals from 11 discrete Committees. These individuals collectively spent about 889 hours on average per month on ICOMOS activities, 27 hours on activities related to April 18<sup>th</sup> International Monuments and Sites Day, and 472 hours on World Heritage Site nominations and desk reviews. Eight of the respondents identified as in executive positions in their Committees and spent about 10,030 hours annually in total, and seven of the respondents estimated that their Committees spent about 3,256 hours annually in total.

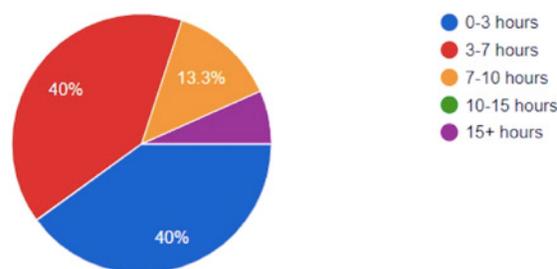


FIG. 4 Breakdown of voluntary hours the 11 ICOMOS members spent per week:

The results suggest that even from a small sample, ICOMOS members (particularly those in executive positions) are spending a significant amount of time on Committee activities. It is standard practice to measure the value of volunteer hours for an organization by calculating the cost of hiring employees for the number of hours, based on the average hourly wage rate a worker might receive in the local context (in this case, 14.5 USD was used as it is the average rate for freelance labor in the US).

While, the sample size of 15 responses is too small to calculate a statistically significant estimate of volunteer hours, a rough projection was nonetheless made based on the number of total ICOMOS Committee members and added to ICOMOS' projected total expenditure towards cultural heritage protection, to begin to have an idea on the capacity of voluntary contribution, which may be an important factor in improving Indicator 11.4.1. The 1.82 million euros customarily reported by the ICOMOS International Secretariat becomes 4.0 million euros when the number of submitted Committee and WG expenditure is added, 6.1 million euros when this is projected to include all 139 Committees and WGs, and 21 million euros (almost 12 times more) when the figure includes the rough projection of voluntary hours.

ICOMOS COMMITTEES (AND WGS)		NO. COMTS. SUBMITTING NON-ZERO BUDGETS	TOTAL NO. COMTS.	BUDGET SUBMISSION RATE
<b>Expenditure</b>				
National Committees	2,116,797.71	47	104	45%
International Scientific Committees	19,121	22	29	76%
Working Groups	49,690	2	6	33%
Total Expenditure (submitted)	2,185,608.71	71	139	51%
Total Expenditure (projected)	4,278,867.76			
<b>Income</b>				
International Scientific Committees	12,955			
Working Groups	49,690			
Total Income (submitted)	2,271,949.64			
Total Income (projected)	4,447,901.41			
<b>ICOMOS International Secretariat</b>				
Total Expenditure	1,824,001			
Total Income	1,823,984			
<b>Voluntary Hours Analysis</b>		<b>W/o vol. hours</b>	<b>Vol. hours monetized</b>	<b>With vol. hours</b>
SDGWG Expenditure		49,690	124,800 (200 eur/day, 624 hours)	174,490
		28%	72%	100%
		1	2.51	3.51
All Comts. Expenditure (projected)		4,278,867.76	10,746,683.36	15,025,551.11
Expenditure per country (104 NCs) (projected)		41,142.96	103,333.49	144,476.45
<b>ICOMOS Total (Intl. Sec. &amp; Comts./ WGs)</b>		6,102,868	-	<b>21,128,419.87</b>
				<b>EUR</b>

TABLE 1 Committees' income and expenditures, with International Secretariat 2018 Budget (euros).

### 3.2 PART TWO (QUALITATIVE): CREATING A TYPOLOGY FOR SDG RELATED ACTIVITIES

Every activity that ICOMOS undertakes is assumed to be under Target 11.4, since the purpose of ICOMOS is to protect the world’s cultural heritage. However, some activities were deemed more closely aligned to the spirit and intent of the SDGs, as well as addressing multiple Goals and Targets outside Target 11.4. After deliberation, a scoring system was devised to segment ICOMOS Committee activity based on their perceived alignment with the SDGs. The scoring is kept intentionally broad to accommodate the diversity of ICOMOS activities. The system was devised inductively by grouping ICOMOS activities into five categories and inputting them into a word cloud generator to deduce common themes. The impact or the content of some activities were not made clear in the Annual Report, so there may be some mis-scoring or biases in interpretation.

SCORE	DESCRIPTION	EXAMPLE
0	“Too vague”: Committee involvement unclear; activity described not actually an activity	“Committee members were part of teams of professors in postgraduate courses.”
1	“Specialized Content for Specialized Audience”: Cultural heritage or preservation activities of a technical or specialized nature aimed at a specialized or technical heritage audience	“Historical Dachas of and Resorts of the Gulf of Finland: Conservation and Use;’ International seminar, 23 - 24 August, Helsinki”
2	“Non-Specialist Outreach in Content or Audience”: Cultural heritage or preservation activities aimed at an external audience (non-specialist), public outreach, government or stakeholder engagement on cultural and natural heritage issues; activities with broad heritage sector participation that also focus on societal issues	“Participation of ICOMOS Chile in meetings with authorities of the Government of Chile, related to the status of the World Heritage Sites ‘Historic Area of the City-Port of Valparaíso’ and ‘Churches of Chiloé.’”
3	“Directly SD/SDG-related”: Activities directly and intentionally related to the SDGs or sustainable development aimed at both a heritage and external (non-specialist) audience	“A seminar on Sustainable Tourism was held in February. The seminar included three presentations - a historical perspective, a present-day perspective and a future perspective. The seminar was linked to UNESCO’s theme “World Heritage Journeys” and the approaches to tourism that is found in the work of ICOMOS. The meeting was also the starting point for the Swedish working group on cultural tourism. The seminar gathered about 30 participants.”
Exemplary	Activities chosen out of those assigned a score of 3 that embody exemplary contributions of the Committee towards the SDGs	“ICOMOS- ICORP Project ‘On the Road’: ICOMOS-ICORP On The Road Project is now preparing a series of documentaries that are narrating the inspiring stories of recovery after disasters from the voices of heritage experts and local communities who are the heroes of those stories; raising awareness among the public to provide social support to efforts to protect cultural heritage. The project is serving UN SDG #11 by building meaningful connections via communities recovering culture and heritage, which helps them to survive and build a future for their societies.”

TABLE 2 Activity scoring system:

The tables below present the scoring breakdown of Committees:

SCORES	NUMBER OF ACTIVITIES	PERCENT OF TOTAL
0	11	3%
1	185	44%
2	161	38%
3	42	10%
Exemplary	21	5%
<b>TOTAL</b>	<b>420</b>	<b>100%</b>

TABLE 3 NC Activity Scores (scored by the SDGWG)

SCORES	NUMBER OF ACTIVITIES	PERCENT OF TOTAL
0	0	0%
1	19	49%
2	5	13%
3	8	21%
Exemplary	7	18%
<b>TOTAL</b>	<b>39</b>	<b>100%</b>

TABLE 4 NCs' 'SDG-related Activities' as Evaluated by NCs themselves in Annual Reports

Of the 39 activities that were marked by NCs as relating to the SDGs, only 15 actually did so, according to the scoring system. Additionally, the scoring system identified 63 activities out of 420 as relating to the SDGs (scoring 3 or Exemplary). Possible explanations for this discrepancy are that there is little understanding about what the SDGs are and how ICOMOS Committee activities contribute to them, or that there is a discrepancy in understanding between how the NC's and the SDGWG interprets the SDGs and how ICOMOS can contribute.

SCORES	NUMBER OF ACTIVITIES	PERCENT OF TOTAL
0	0	0%
1	39	46%
2	34	40%
3	11	13%
Exemplary	1	1%
<b>TOTAL</b>	<b>85</b>	<b>100%</b>

TABLE 5 ISC Activity Scores (scored by the SDGWG)

REGION	NO. NCS	ANNUAL REPORTS	0	1	2	3	EXEMPLARY	TOTAL
Africa	6	2	0	1	2	0	0	3
Arab States	9	4	0	5	16	4	0	25
Latin and S. America	19	9	7	34	28	6	2	77
Asia-Pacific	22	11	1	17	18	3	4	43
Europe and N. America	48	36	3	128	97	29	15	272
<b>TOTAL</b>	<b>104</b>	<b>62</b>	<b>11</b>	<b>185</b>	<b>161</b>	<b>42</b>	<b>21</b>	<b>420</b>

TABLE 6 ISC Activity Scores by Region (scored by the SDGWG)

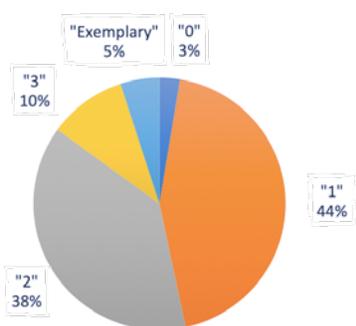


FIG. 5 Activity Score Distribution for NCS

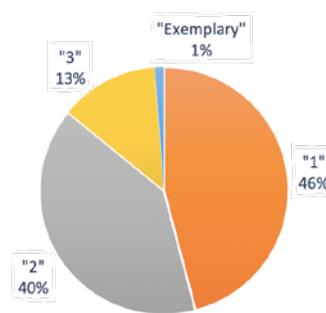


FIG. 6 Activity Score Distribution for ISCs

SCORES	NUMBER OF ACTIVITIES	PERCENT OF TOTAL
0	0	0%
1	0	0%
2	4	50%
3	3	38%
Exemplary	1	13%
<b>TOTAL</b>	<b>8</b>	<b>100%</b>

TABLE 7 ISCs' 'SDG-related Activities' as Evaluated by ISCs themselves in Annual Reports

Of the 8 activities that were marked as relating to the SDGs, only 4 actually did so, according to the scoring system. The scoring system identified 12 activities out of 85 as relating to the SDGs. The gap between what was in the Annual Reports and what the scoring system deemed relating to the SDGs is narrower than for the NC's. Similar reasons as for the NC's might exist for this gap.

ISC	0	1	2	3	EXEMPLARY	TOTAL
CAR (Rock Art)	0	3	0	0	0	3
CIAV (Vernacular Architecture)	0	1	1	2	0	4
CIIC (Cultural Routes)	0	2	2	0	0	4
CIF (Training)	0	0	1	0	1	2
CIPA (Documentation)	0	7	1	0	0	8
CIVVIH (Historic Towns and Villages)	0	2	2	1	0	5
ICAHM (Archaeological Heritage Management)	0	2	1	1	0	4
ICICH (Intangible Cultural Heritage)	0	2	4	0	0	6
ICIP (Interpretation and Presentation)	0	2	4	0	0	6
ICLAFI (Legal, Administrative & Financial)	0	2	0	0	0	2
ICTC (Cultural Tourism)	0	1	3	2	0	6
ICUCH (Underwater Cultural Heritage)	0	0	3	4	0	7
IIRC (Wood Conservation)	0	2	5	0	0	7
ISC20 (20 <sup>th</sup> Century Heritage)	0	0	1	0	0	1
ISCARSAH (Analysis and Restoration of Structures)	0	3	2	0	0	5
ISCCSG (Stained Glass Conservation)	0	3	0	0	0	3
ISCEACH (Earthen Architectural Heritage)	0	1	3	1	0	5
ISCS Wood Conservation)	0	1	0	0	0	1
SBH (Shared Built Heritage)	0	2	1	0	0	3
TheoPhil (Theory & Philosophy of Conservation)	0	3	0	0	0	3
<b>TOTAL</b>	<b>0</b>	<b>39</b>	<b>34</b>	<b>11</b>	<b>1</b>	<b>85</b>

TABLE 8 Activity Scoring Breakdown by ISC.

HOW MANY TIMES DID AN NC OR ISC ACTIVITY HAVE A SCORE OF 3?			
1X	2X	3X	4X
Bulgaria	Australia	Turkey	Honduras
Canada	CIAV	USA	ICUCH
Chile	ICTC		Mexico
CIVVIH	Ireland		
Colombia	Mali		
Cyprus	Slovenia		
Czech Republic	Spain		
France	Sweden		
Germany	Wallonie Bruxelles		
ICAHM			
ISCEACH			
Macedonia			
New Zealand			
Norway			
Russia			
Tunisia			
UAE			
HOW MANY TIMES DID AN NC OR ISC ACTIVITY HAVE A SCORE OF EXEMPLARY?			
Bangladesh	Philippines	Ireland	
Canada		Turkey	
CIF			
Honduras			
Macedonia			
Malaysia			
Panama			
Poland			
Wallonie Bruxelles			

TABLE 9 Committees with SDG-related Activities (Scoring 3 or Exemplary).

After the scoring exercise, the activities of the Committees and WG's were evaluated to identify which Goals and Targets the content of the activity relates to. However, in order for the activity to be fully counted towards the Goals, it had to fit into one the Targets. The result is that each activity is listed under a specific Target as well as a Goal. If an activity counted for more than one Target or Goal, it was listed across those multiple categories. Given the premise that all activities fall automatically under Target 11.4, the activities below listed under Goal 11 fall under other Goal 11 Targets besides Target 11.4.

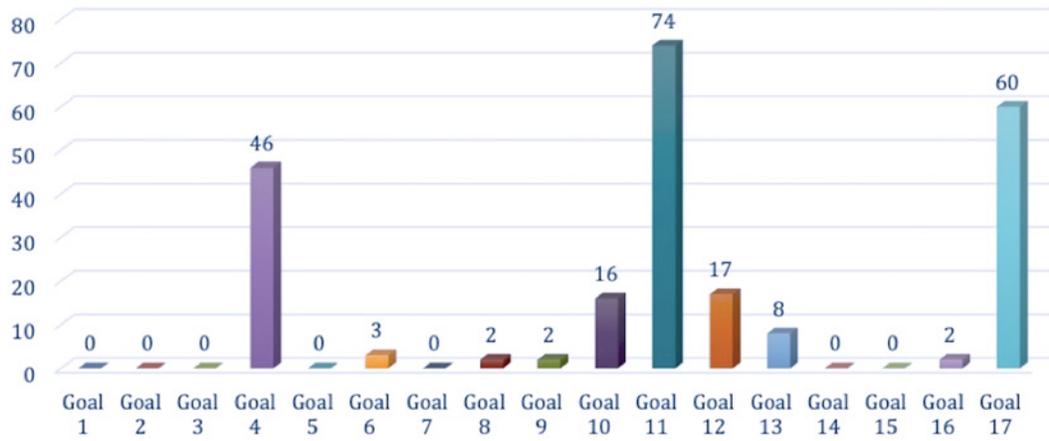


FIG. 7 NC Activities and Related Goals

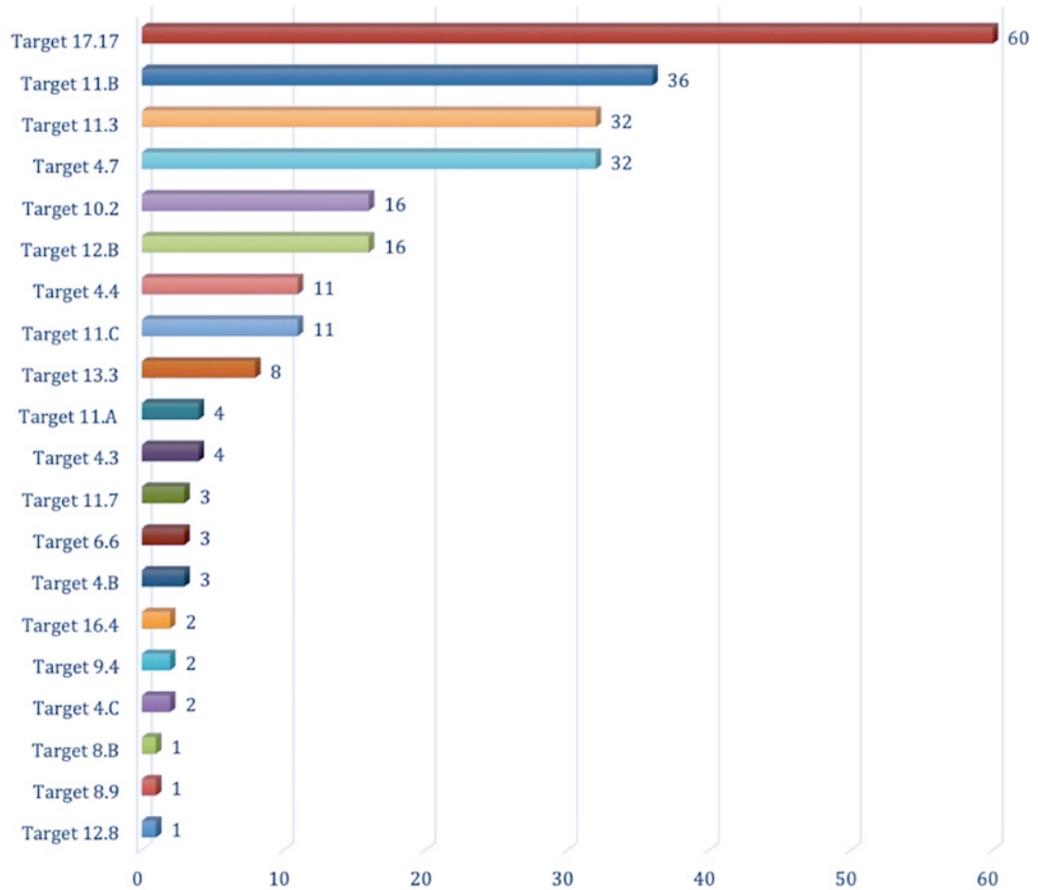


FIG. 8 NC Activities and Related Targets.

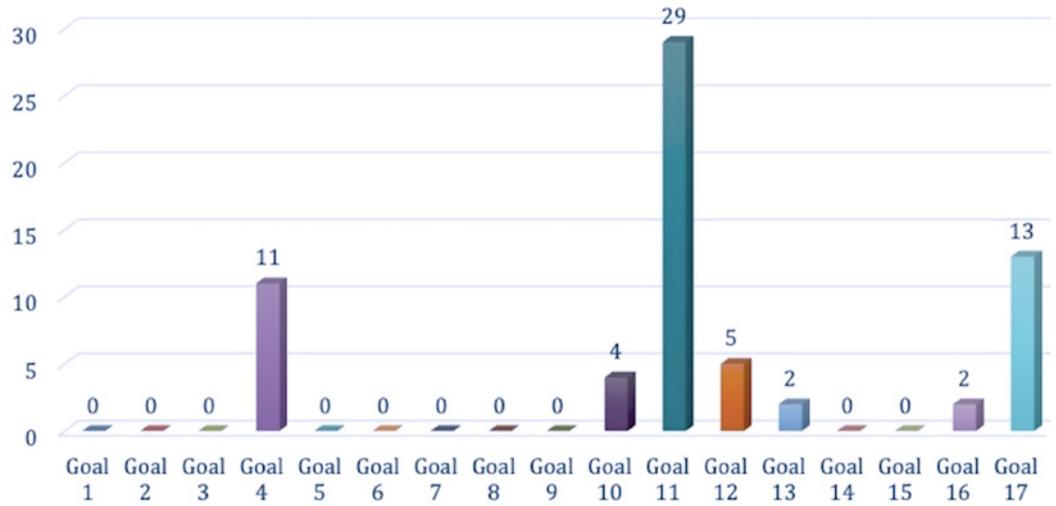


FIG. 9 ISC Activities and Related Goals.

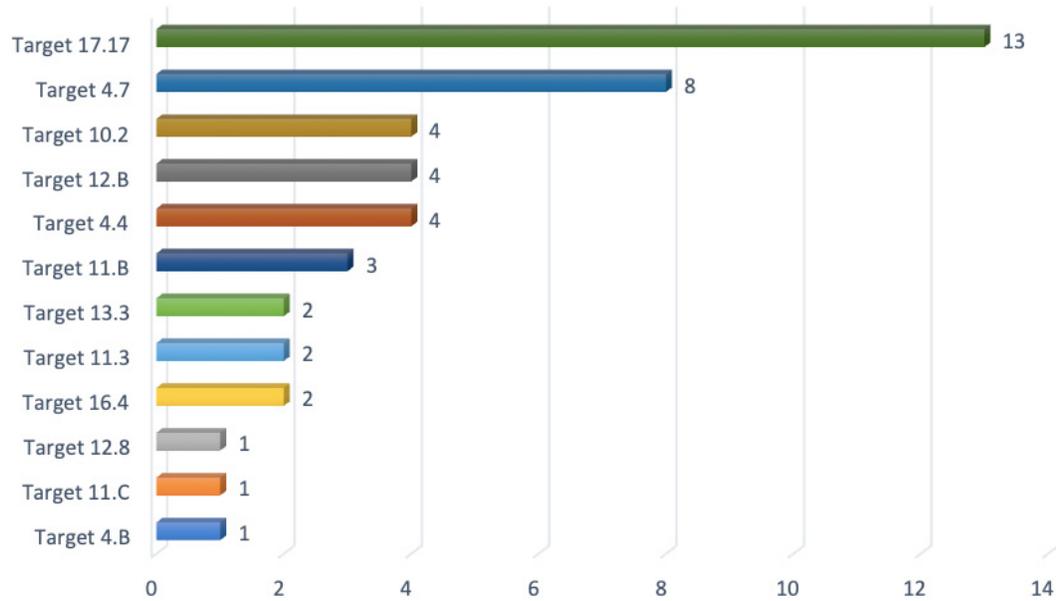


FIG. 10 ISC Activities and Related Targets.

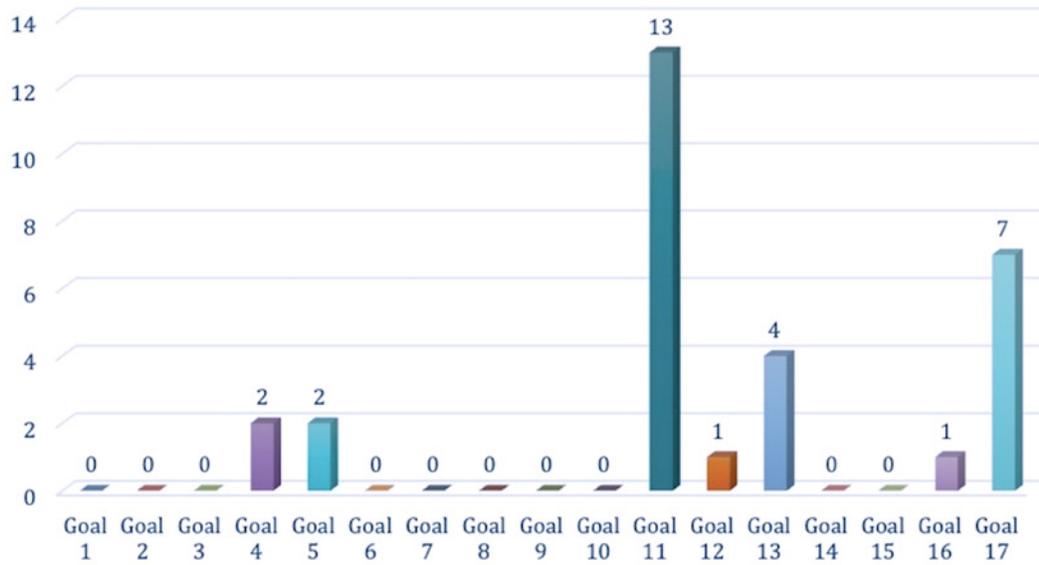


FIG. 11 WG Activities and Related Goals.

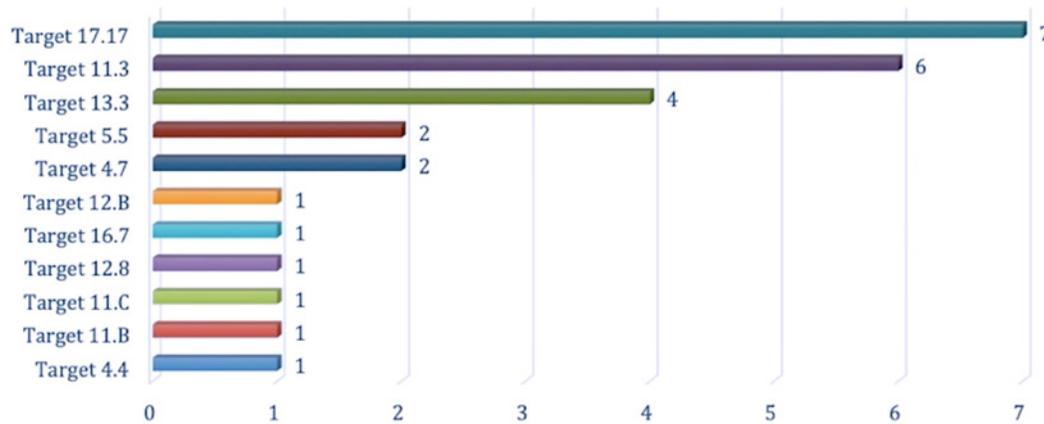


FIG. 12 WG Activities and Related Targets.

The top five Goals for the NC's and the ISC's were Goals 11 (sustainable cities and communities), 17 (partnerships for the Goals), 4 (quality education), 12 (responsible consumption and production), and 10 (reduced inequalities). The WG's differed by including Goal 13 (climate action) and Goal 5 (gender equality). While it is possible that some of these activities were undertaken without being cognizant of the SDG impact, categorizing activities in this way allows one to understand how an external international development framework might see ICOMOS' contribution to the SDG agenda outside of purely Target 11.4.

The questions around this information become much more meaningful when put alongside two other key datasets. The first is the informal survey data that the SDGWG collected during the 2017 Triennial ICOMOS General Assembly in Delhi, two resulting charts are presented below (the survey responses were given anonymously).

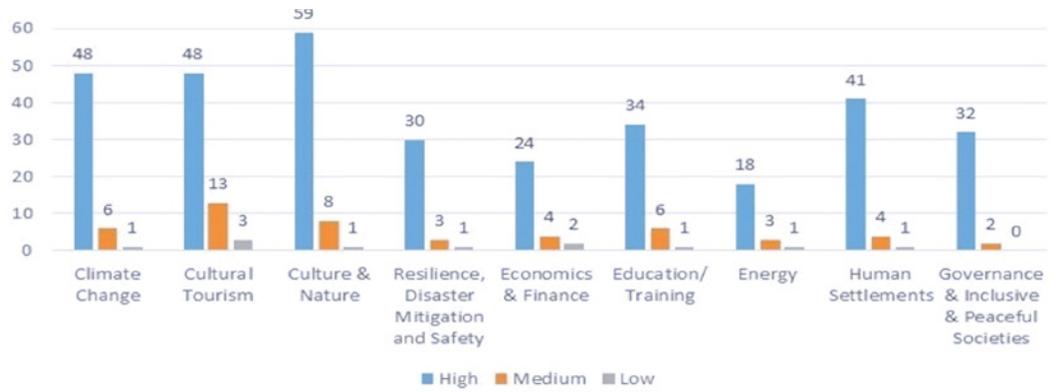


FIG. 13 Results of Delhi survey, question “Which heritage topics have the most potential for sustainable development?”

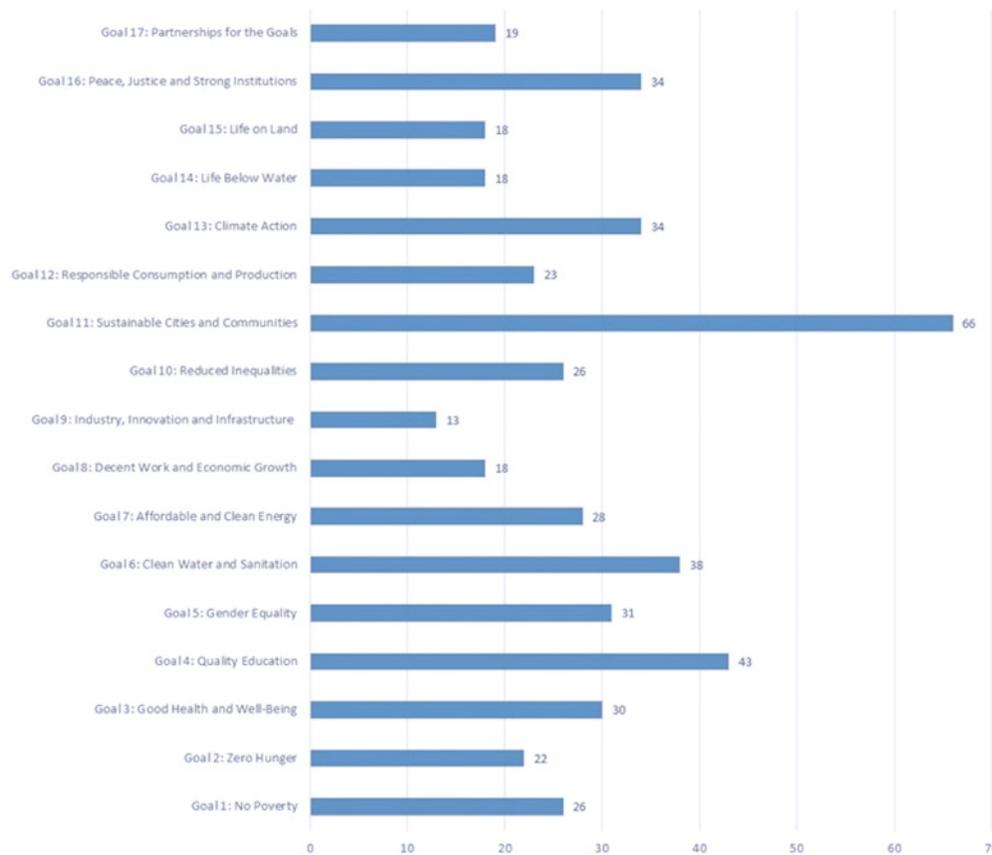


FIG. 14 Results of Delhi survey, question “Which SDGs are most relevant for you?”

This public opinion survey found that the top five heritage topics that ICOMOS members identified as having the most potential for the SDGs were Culture and Nature, Cultural Tourism, Climate Change, Human Settlements, and Education/Training. This is largely in line with the ICOMOS activities in the Annual Reports, except for Climate Change, which did not feature substantially in

the Committee activities. Furthermore, the Goals that members identified as most relevant were Goals 11 (sustainable cities and communities), 4 (quality education), 6 (clean water and sanitation), 13 (climate action), and 16 (peace, justice, and strong institutions). Goals 11 and 4 are captured in the Annual Report analysis, but there was very little activity surrounding the other Goals mentioned. This demonstrates a departure from what ICOMOS members feel is important within the context of heritage and the SDGs and what is actually done in practice. Committees are vastly underestimating the SDG relevance of their activities given that the public opinion survey cited that 90% of respondents were familiar with the SDGs.

The second dataset is the 2018 Annual Report released by the ICOMOS International Secretariat, which cites several SDG-related priority areas. Along with a reinforcement of implementing and localizing Target 11.4, the Report emphasizes the need to focus on the issues of climate action and the culture-nature journey, women and gender equality, and education and professional development, among others. Again, this assertion differs from what is actually seen in disaggregated Committee activities. Given that these areas have been articulated by the International Secretariat as key areas for growth, ICOMOS should pay attention to whether the Committee Annual Report analysis is following that same trajectory.

## 4 LESSONS AND CONCLUSIONS

### 4.1 KEY RECOMMENDATIONS OF IEP REPORT

The "ICOMOS and Sustainable Development – Measuring SDG 11.4" report has enabled several recommendations to be formulated for ICOMOS to use the results of the analyses:

- Raise awareness among and incentivise Committee members on the importance of accurately reporting financial data on Annual Reports.
- Leverage the most active Committees and Working Groups (such as the Emerging Professionals Working Group) to disseminate basic information about the SDGs and what ICOMOS Committee SDG-related activity might look like.
- Investigate whether the NCs, ISCs, and WGs are saving money or allocating enough income into their reserves.
- Investigate why the majority of ISCs and WGs listed their total annual income and expenditures as zero.
- Resend the volunteer hours survey to ICOMOS Committee members to measure the value of volunteerism, raising awareness on why this data is important and how to report volunteer hours.
- Investigate the discrepancy between what Committees list in Annual Reports as relating to the SDGs and the Global Goals, and clarify this discrepancy in the Annual Report template.
- Examine ways in which the International Secretariat could influence Committee activity to be more along its focus areas as articulated in the 2018 ICOMOS Annual Report (the most straightforward way would be through setting the topic for International Monuments and Sites Day on April 18<sup>th</sup>. An examination of the Annual Report data from 2017 revealed a sharp spike in cultural tourism related activities and consequently in Goal 12. That spike diminished substantially to be replaced with a surge in activity surrounding education and Goal 4 in the 2018 Annual Reports. The subject of International Monuments and Sites Day in 2017 revolved around sustainable tourism practices, while the topic in 2018 was on cultural heritage across generations. These topics correlate with (and likely

cause) the spikes in activity around certain Goals and Targets. Given the assumption that they are the most influential body within ICOMOS, the International Secretariat can initially assume the lead for directing more SDG related Committee activities).

- Discuss the results of the public opinion survey conducted in the Delhi General Assembly to continue the conversation around what Global Goals are important to individual Committees and ICOMOS as a whole.

## 4.2 CHALLENGES, OPPORTUNITIES AND FUTURE PROSPECTS

The main results of this exercise show that ICOMOS might be contributing more than 20 million euros to the annual expenditure to protect the world's cultural heritage, if voluntary hours are taken into account, that more awareness is needed among members of how their activities already contribute to the SDGs and how to express this in ICOMOS' annual reporting.

On whether this exercise helps to demonstrate the relevance of Indicator 11.4.1 indicator, one could say this is moderate at best. If voluntary contributions are taken into account, the expenditure volume increases drastically, which should be a point that should be considered in improving Target 11.4 indicators. The activity-to-Goal/Target mapping exercise demonstrates a diversity of activity that ICOMOS committees undertake, and the relatively untapped potential to report this information more accurately and fully.

As next steps, the SDGWG work should help ICOMOS develop a consistent system of measurement, self-assessment and reporting that is relevant, reliable and consistent over a long period going forward. This system would be useful to improve activities (and more targeted and strategic budgeting), to showcase ICOMOS work to the heritage and development community, to contribute to national governments and international organizations' reporting work, and advocate stronger messages with more concrete data.

ICOMOS may explore a suitable way of reporting its activities to UN stakeholders, as a contribution to the annual figures obtained for "total expenditure (public and private) per capita spent on the preservation, protection, and conservation of all cultural and natural heritage [...]". The fact that the data can be disaggregated at national level, using the 104 ICOMOS NCs, is further useful to this reporting, as UN data is based on national statistics.

### Acknowledgment

The authors would like to thank Brian Leone and other administrators of US/ICOMOS for facilitating the internship project that this paper is based on, Ilaria Rosetti, former IEP intern who supported the SDGWG's IEP application, and Gaia Jungeblodt and Marie-Laure Lavenir of the International Secretariat for facilitating access to ICOMOS reports.

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# A Framework to Assess Post-Intervention Sustainability of Urban Heritage Places

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## Abstract

*Heritage places have become the arena of various interventions due to their socio-cultural and economic values. However, new interventions for urban regeneration may have a destructive impact on the physical, social and economic aspects of urban heritage places. As a result, the sustainability of heritage places becomes questionable. The study aims to examine interventions and their impact on sustainability in two urban heritage places in Turkey: Tarlabası, İstanbul and Kemeraltı, İzmir. In Tarlabası, historic buildings were expropriated and destroyed while people living in the area were displaced. A completely different approach was used in Kemeraltı, where a bottom-up approach has been adopted and holistic strategies have been developed considering both residents' needs and the values of heritage place. While interventions in Tarlabası represent unsustainable modes of implementation; interventions in Kemeraltı suggest that there is scope for sustainability where the physical setting is preserved, the social environment is not changed but empowered, and economic activities continue together with control in rent increase. Looking at interventions in Tarlabası and Kemeraltı, and bearing in mind the international documents published by ICOMOS and UNESCO, the study aims to assess the post-intervention sustainability of urban heritage places. To do this, it focuses on intervention approaches, assess their impact on physical setting, social environment, and economic context and categorizes each of them from the most destructive to the most sustainable.*

## Keywords

*Heritage impact assessment (HIA), urban heritage places, sustainability, İstanbul, İzmir*

## 1 INTRODUCTION

Heritage places have been the subject of various interventions to solve diverse problems related to the degradation of physical fabric, the poor socio-economic profile of inhabitants, and the low real-estate value contrary to their economic potential. However, as a result of these interventions, the sustainability of urban heritage places becomes questionable due to the impact of interventions on the physical setting, the social environment and the economic context.<sup>1</sup>

In a general manner, sustainability can be defined as "meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987, Article 27). For urban areas, the definition of sustainability can be narrowed down as maximizing economic and social benefits to enhance living standards considering environmental limitations and socio-economic equity (Mori and Yamasita, 2015). In the traditional definition of sustainable

1

UNESCO Recommendation on the Historic Urban Landscape Historic Urban Landscape Approach (UNESCO, 2011) and New Urban Agenda (UN, 2016) contribute to the current debate by implicitly emphasizing the necessity of relevant indicators for the assessment of alternative interventions in urban heritage places. Besides, ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (ICOMOS, 2011) proposes indicators for measuring the impact of intervention on World Heritage Sites.

development, there are three pillars to be considered to achieve overall sustainability: social, environmental and economic.<sup>2</sup> As Purvis et al. states (2018, p.682), the three pillars of sustainability are also explicitly embedded in the current sustainability debate revolving around UN SDGs.<sup>3</sup>

The three pillars correspond to the definition of "cultural heritage" in UNESCO Recommendation on the Historic Urban Landscape Historic Urban Landscape Approach (2011) and The Valletta Principles of ICOMOS (2011). These two documents, which also refer to integrating the principles of sustainable development into safeguarding and management of urban heritage places, define cultural heritage as the broader urban context with its natural environment, buildings and open spaces, social and cultural practices as well as economic processes. Therefore, the three pillars (environmental, social and economic) should be considered together during interventions to achieve the overall sustainability of urban heritage places. In this study we define three milieus which correspond to the three pillars within the sustainability debate: (i) the physical setting including natural and man-made components (the physical component of urban areas and buildings) refers to the environmental pillar, (ii) the social environment (the users, i.e. inhabitants, residents, visitors and tourists, their relation with the physical settings and the meanings that they attribute to them) refers to the social pillar, and (iii) the economic context (the economic value of urban heritage places as well as the uses and practices of different users) refers to the economic pillar.

Interventions in urban heritage places may have a positive or negative impact on the three pillars. The negative or positive impact of interventions may either lead to destruction or sustainability. In this research, destructive refers to interventions that cause damage to the physical setting, social environment and economic context such as demolition, displacement of residents and expropriation of private properties. On the contrary, sustainable corresponds to interventions that conserve the urban heritage places and empower their inhabitants.

Considering the potential positive and negative impact of interventions on the destruction or sustainability of urban heritage places, this paper aims to present a framework for assessing post-intervention sustainability. The paper attempts to answer the following question: *"How is the impact of interventions on physical, social and economic aspects of urban heritage places assessed, especially in places where the data is limited?"* To answer this question, the paper introduces seven approaches to assess the impact of interventions on sustainability in urban heritage places.

This paper will first explain the legal context and then introduce the contrasting interventions in Tarlabaşı, İstanbul and Kemeraltı, İzmir, emphasizing the different motivations of public decision-makers.<sup>4</sup> Afterwards, considering what is learnt from the documents published by UNESCO and ICOMOS, the paper illustrates seven intervention approaches. Then, the paper makes a retrospective assessment and attempts to understand the impact of interventions on the sustainability of urban heritage places.

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2 Culture was proposed as the fourth pillar of sustainable development within Agenda 21 and it is contended 'as an enabler for sustainable development' indicating that culture is all embracing (UCLG, 2010)

3 Cultural heritage protection and safeguard has been included in the United Nations Sustainable Development Goals (UN SDGs) as one of the targets necessary to "make cities and human settlements inclusive, safe, resilient and sustainable". Within this goal, Target 11.4 aims to "strengthen efforts to protect and safeguard the world's cultural and natural heritage".

4 In renewal areas, public decision-maker initiates the project. Then, he/she invites various stakeholders to realize the project according to their priorities and motivations, i.e. architects and planners for project design, real estate developers for project funding.

## 2 THE LEGAL CONTEXT: A POLICY INSTRUMENT CHALLENGING THE SUSTAINABILITY OF URBAN HERITAGE PLACES IN TURKEY

To control the potential negative impact of interventions on preservation and sustainability, heritage places in Turkey are subject to regulations. However, in recent years, new policy instruments have been configured in order to overcome the existing control mechanisms and allow extensive interventions on heritage places in line with the interests and priorities of decision makers. The Law No. 5366/2005 on *Renovating, Conserving and Actively Using Dilapidated Historical and Cultural Immovable Assets* (also known as “renewal law”), which was introduced for the transformation of registered urban heritage places, is one example of these new policy instruments. The significance of the renewal law compared to other legal instruments lies on the extensive rights that it gives to local authorities, such as expropriation and displacement of residents in the renewal areas identified within registered urban heritage places.

As a result of the introduction of the renewal law, urban heritage places in Turkey are currently under more threat compared to the previous years, and new interventions may imply drastic changes in the physical, social and economic aspects of urban heritage places. These changes in registered urban heritage places necessitate an evidence-based framework for heritage impact assessment to reduce the (potentially) negative impact of interventions on the sustainability of cultural heritage.

However, heritage impact assessment is challenging in Turkey due to the lack of transparency of government institutions and the unavailability of official statistics related to the socio-economic profile of inhabitants. For example, in Turkey, if official data about ongoing projects is needed for prospective, accompanying and retrospective impact assessment, governmental agencies are hesitant to share them due to large number of legal cases against the ongoing projects.

To assess the impact of interventions on sustainability, the paper focuses on two projects in İstanbul and İzmir: Taksim 360 and İzmir History. The reason behind selecting these projects is the fact that they represent two totally contrasting intervention approaches (while the former is top-down, the latter is bottom-up), that have had different impact.

## 3 TWO URBAN HERITAGE PLACES WITH OPPOSING INTERVENTION APPROACHES: TARLABAŞI IN İSTANBUL AND KEMERALTI IN İZMİR

Since 2005, six projects have been implemented by the use of renewal law in Turkey and these projects have had different impact on the sustainability of urban heritage places. Due to their totally different approaches, two projects are of special interest: Tarlabası in İstanbul and Kemeraltı in İzmir. While Taksim 360<sup>5</sup> in Tarlabası had an irreversible negative impact on the sustainability of an urban heritage place, İzmir History<sup>6</sup> project in Kemeraltı has contributed to the preservation of heritage places and the empowerment of the inhabitants.

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5 The renewal project in Tarlabası is entitled “Taksim 360”. In İstanbul, Tarlabası has negative connotation for being characterized with crime and “problematic” social groups. Thus, the investor chose to give the name of Taksim to the project, since Taksim is the cultural and commercial district in the center of İstanbul and it is very close to Tarlabası.

6 İzmir History is the name of the renewal project in Kemeraltı.

Tarlabaşı, which is a central district of İstanbul, was built in the late-nineteenth and early-twentieth centuries as a primarily middle-income, non-Muslim neighborhood. However, the area lost its original population, particularly after the 1950s, and consequently the buildings became attractive residences for incoming rural migrants. From the 1980s until now, Tarlabaşı was a predominantly housing area inhabited by migrants. The area was characterized by crimes related to robbers and drug dealers.

The project in Tarlabaşı was initiated in 2007 and it aimed at constructing luxurious mixed-use complex through the demolition of historic buildings except for the façade. In order to solve “social problems” in the area, buildings were expropriated and destroyed while people living in the area were displaced. Consequently, the rent value of Tarlabaşı has dramatically increased, while socio-cultural values are almost totally lost.

A completely different approach was adopted in Kemeraltı, a central heritage place with residential, commercial, administrative and religious buildings in Izmir. Despite the distinctive architectural features of Kemeraltı, with more than 1000 registered building belonging to different periods such as Hellenistic, Roman and Ottoman, the area had significant social and physical problems. Kemeraltı, which stood out as a prestigious living area turned out to be a depressed urban area, when the original inhabitants started to leave and moved to new districts. Currently, the social structure of the area is diverse consisting mostly of immigrants from eastern cities of Turkey and Syria.

Contrary to the top-down approach in Tarlabaşı, İzmir Metropolitan Municipality initiated İzmir History Project adopting a bottom-up approach, the principal aim of which is to empower the residents and consider their needs while preserving the heritage place.

	PHYSICAL SETTING	SOCIAL ENVIRONMENT	ECONOMIC CONTEXT
TARLABAŞI	Demolishment of many buildings, keeping only facades	Expropriation of buildings and displacement of residences	Dramatic increase in real estate value
KEMERALTI	Restoration of historic buildings, construction of new buildings which are in harmony with heritage	Different users are involved through workshops, participatory meetings, etc.	Control mechanisms to avoid rent increases

TABLE 1 Summary of Interventions inTarlabaşı (İstanbul) and Kemeraltı (İzmir).

## 4 A NEW FRAMEWORK FOR ASSESSING THE IMPACT: SEVEN INTERVENTION APPROACHES

This study proposes a new framework for heritage impact assessment by breaking interventions into seven approaches, which define the main topics to categorize the attitudes of decision-makers. The seven intervention approaches are the following: governance, ownership, urban land, existing social structure, existing uses and functions, design, rent increase and post intervention control mechanisms

In order to compare the impact, an "intervention bar" is prepared for each approach and the interventions in İstanbul and İzmir are scaled according to the impact of interventions on sustainability (from the most destructive to the most sustainable), physical setting [phy], social environment [soc], and economic context [eco].

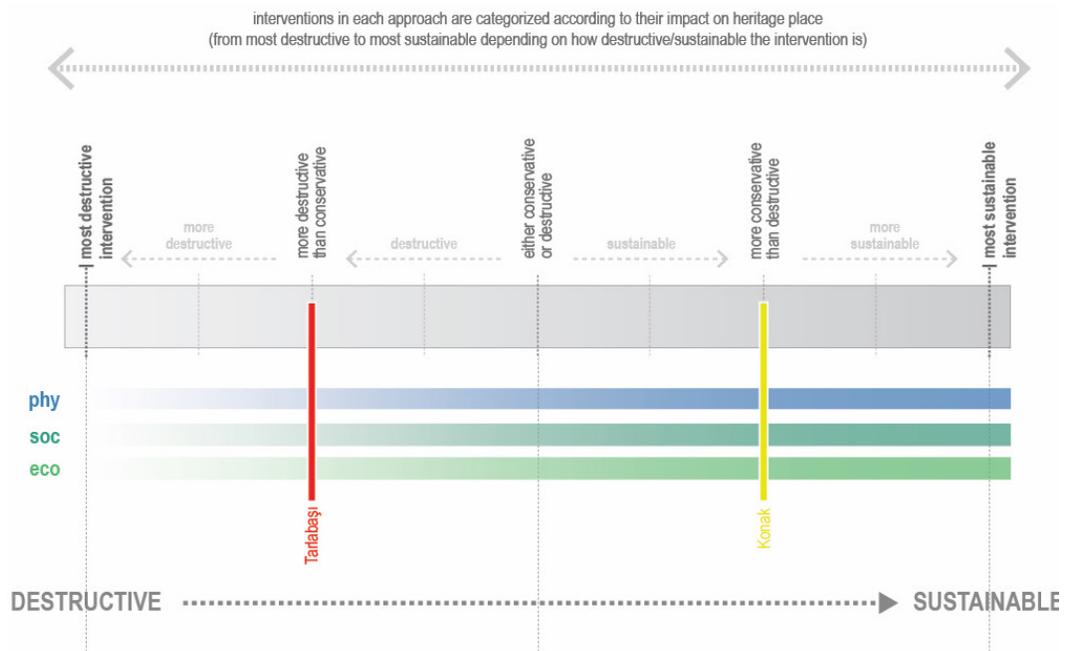


FIG. 1 Intervention Bar. Source: Özçakır, 2018

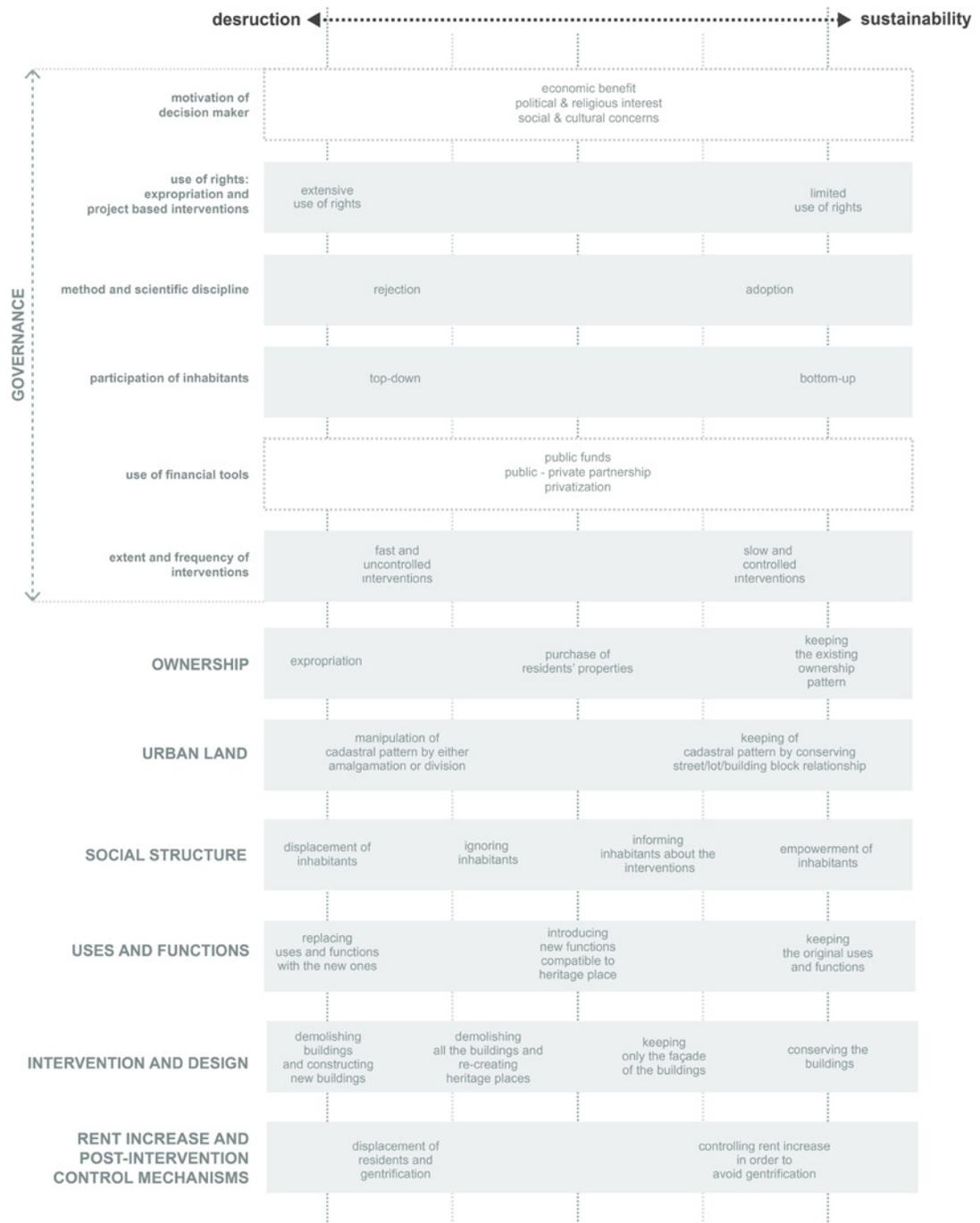


FIG. 2 Seven Intervention Approaches and Different Degrees of Intervention in Each Approach<sup>7</sup>. Source: Özçakır, 2018

7

In the figure, sub-approaches in "motivation of stakeholder" and "use of financial tools" are given in a white rectangle. The sub-approaches are also located in the middle, without categorizing them according to their impact on destruction or sustainability. The sub-approaches in "motivation of stakeholder" and "use of financial tools" do not have a direct impact on the sustainability or destruction of the heritage places, instead, they refer to general tendencies of public-decision makers for interventions and way of financing the interventions.

## 4.1 GOVERNANCE APPROACH

The governance approach relates to defining the general framework of interventions. Hence, it is a general approach which defines the principal motivation behind the interventions. This approach consists of six sub-approaches: motivation of decision makers, use of rights (expropriation and project-based interventions), adoption of methods and scientific discipline, participation of inhabitants, use of financial tools, and the extent and frequency of interventions.

### 4.1.1 Motivation of Decision Makers

The motivation of the public decision-maker, which often corresponds to the mayor as the local elected representative of the voters living in the town or city, is the main determinant of the aim and scope of interventions. While the motivation of decision makers in Taksim 360 concentrated on economic benefit, İzmir History aims at the preservation of physical settings and the empowerment of inhabitants. The motivations of decision-makers can also be understood from the speeches of the decision makers in public media.

Ahmet Misbah Demircan, the mayor of Beyoğlu<sup>8</sup> in İstanbul, states that “[w]ith the Tarlabası project, the economic value of the dilapidated buildings has already increased by 40 times and the area has become one of the most valuable districts in the region”. On the contrary, Aziz Kocaoğlu, the mayor of İzmir Metropolitan Municipality, defines the aim of İzmir History Project as to regenerate the historic center of İzmir, by organizing workshops with architects, city planners, craftsmen, businessmen and academicians who contribute through a participatory approach.

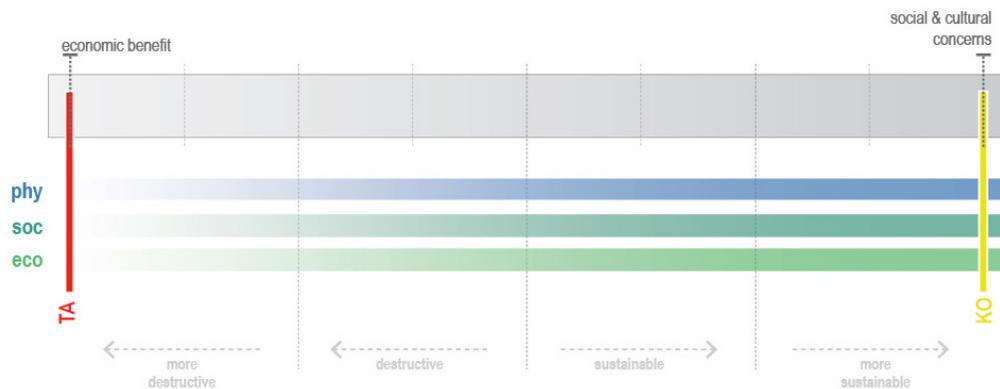


FIG. 3 Motivation of Decision Maker

### 4.1.2 Use of rights given by the legal instrument

Before the renewal law, it was almost impossible to implement partial projects in entire registered conservation sites, since Law No. 2863 on Conservation of Cultural and Natural Properties required the preparation of comprehensive conservation master plans before the initiation of any new projects. Considering the huge sizes of legally protected (registered) conservation areas both in

İstanbul and İzmir, Taksim 360 and İzmir History projects are partial projects implemented in huge conservation areas.

As for expropriation, nearly all the historic buildings were expropriated in Tarlabası and the inhabitants were displaced after the expropriation. In İzmir, instead, there was a limited number of expropriations, in İzmir only for the construction of generator projects which aim at attracting new people to the heritage place such as the fish market or the university research center.

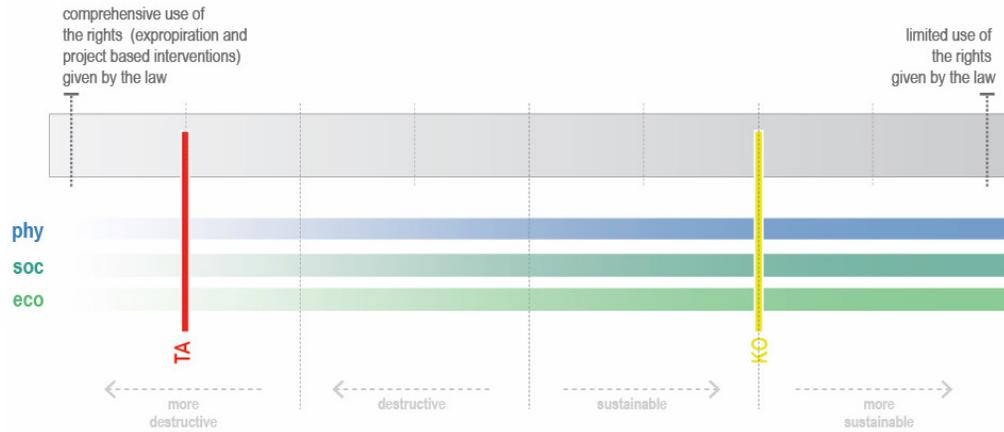


FIG. 4 Use of Rights

### 4.1.3 Method and scientific discipline

In terms of adoption of the conservation methods defined by ICOMOS and UNESCO, as well as scientific knowledge provided by the participation of academicians, interventions in İzmir are more promising. In İzmir History project, conservation specialists from two public universities prepared the street rehabilitation and restoration projects. The participation of academicians specialized in heritage conservation has had a positive impact on the project in İzmir.

Though an advisory council composed of academicians was established for Taksim 360 project, the academicians in the advisory body were not specialized in the conservation of cultural heritage.

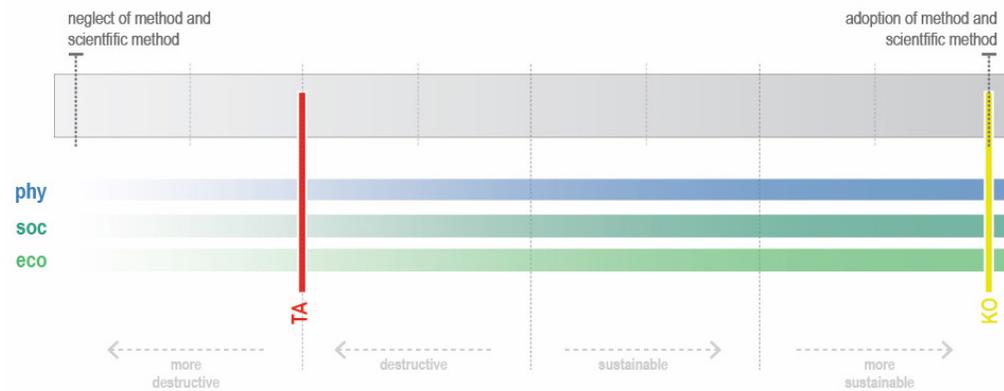


FIG. 5 Method and scientific discipline

#### 4.1.4 Participation of inhabitants

Participation of different stakeholders, especially the inhabitants, is one of the success criteria of projects to achieve sustainability. With reference to this aspect, interventions in Tarlabaşı and Kemeraltı adopted totally different strategies. In İstanbul, the residents were only informed about the project and asked to sell their properties otherwise their apartments would be expropriated. In İzmir, projects for the empowerment of women and young population were introduced. Moreover, participatory meetings were arranged in İzmir to get feedback from different stakeholders.



FIG. 6 Participation of Inhabitants

#### 4.1.5 Use of financial tools

Today, as a result of neo-liberal policies, the governments pay less and less for the preservation of cultural heritage and thus, there is a rising interest in using “Public Private Partnership” for funding the conservation of cultural heritage. Both in İstanbul and İzmir, the Public-Private Partnership model has been used for the implementation of the projects. But, there is a very crucial difference between these two projects in terms of implementation. In İstanbul, after the expropriation of the properties by the municipality, all the property rights were transferred to GAP, a private construction company, which is responsible for the implementation of the project. On the other hand, the urban project in İzmir is funded by TARKEM (Historic Kemeraltı Cooperation), which is a company with multiple shareholders, among which the biggest is İzmir Metropolitan Municipality. Hence, the municipality has still right to voice its main concerns for the implementation.

#### 4.1.6 Extent and Frequency of Interventions

The degree of interventions in Tarlabası was too extensive compared to a very limited amount of time. Thus, nearly all of the historic properties were expropriated, then the residents were displaced, and the historic buildings were demolished. Contrary to this, interventions in İzmir were controlled and relatively time-consuming, also because of the use of participatory meetings with different stakeholders.

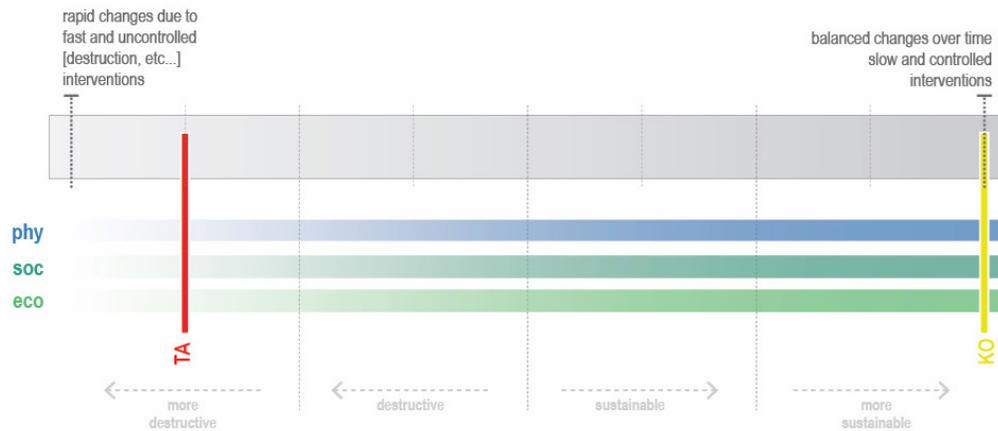


FIG. 7 Extent and Frequency of Interventions

#### 4.2 APPROACH TO OWNERSHIP

Ownership refers to the right to possess urban land, it may be altered (i.e. through expropriations) for new interventions in heritage places. In Tarlabası, existing ownership was totally modified; nearly all of the properties were expropriated and those not expropriated were purchased by the construction company. In İzmir, instead, the existing ownership pattern was kept, and only some of the properties were expropriated for the implementation of generator projects aiming at attracting new visitors from diverse backgrounds such as university students.

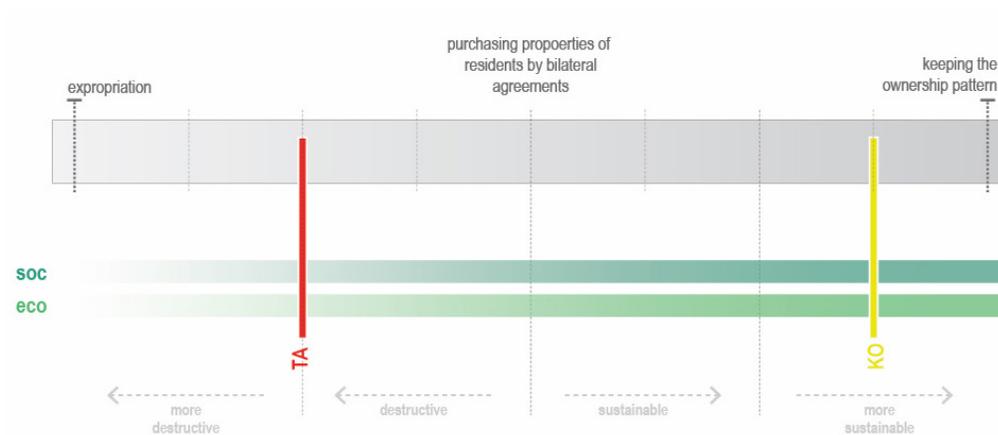


FIG. 8 Approach to Ownership

## 4.3 APPROACH TO URBAN LAND AND CADASTRAL PATTERN

Urban land is defined as the cadastral pattern which is composed of building lots and blocks. In urban heritage places, the cadastral pattern becomes the evidence of continuous inhabitation throughout time. In Tarlabası, following the expropriation of historic buildings, nearly all the building lots were amalgamated and the whole cadastral pattern was changed in order to obtain larger building lots for constructing new mixed-use complex. However, in İzmir, the existing cadastral pattern was kept. In fact, some of the building lots have been amalgamated in exceptional cases for the implementation of generator projects.

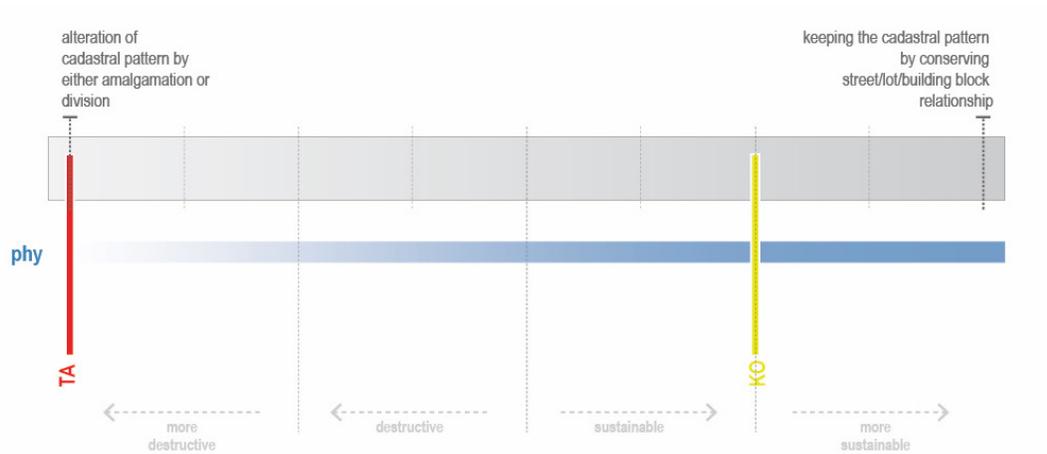


FIG. 9 Approach to Urban Land

## 4.4 SOCIAL STRUCTURE

In Tarlabası, the residents were displaced after the expropriation of historic properties. In İzmir, instead, there are many projects for the empowerment of disadvantaged inhabitants to help them gain new vocational skills through educational programs.

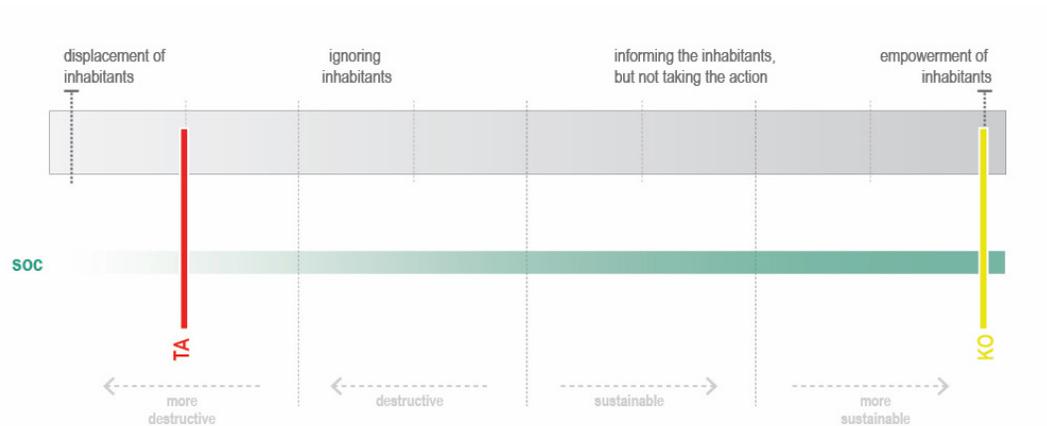


FIG. 10 Approach to Social Structure

## 4.5 APPROACH TO EXISTING USES AND FUNCTIONS

Before the initiation of Taksim 360, Tarlabası was a residential quarter. The new project replaced the existing uses and functions with new income generating ones and proposed a high-end mixed-use complex, composed of offices, hotel and mall. On the contrary, many of the original functions of the existing buildings have been kept in İzmir.

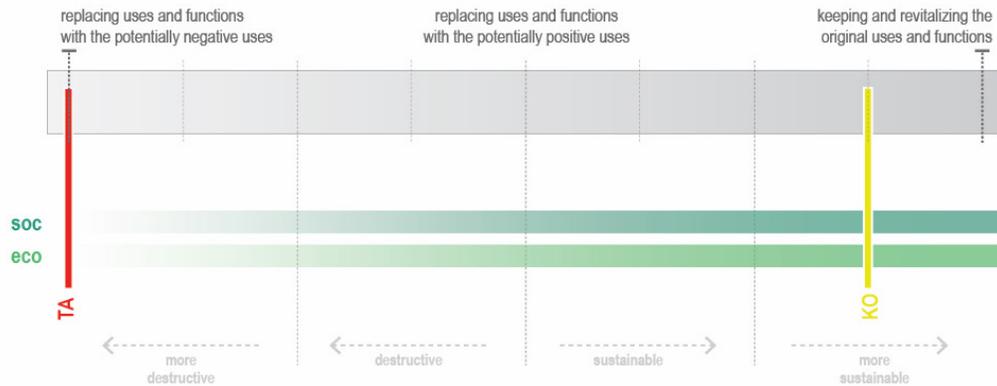


FIG. 11 Approach to Existing Uses and Functions

## 4.6 INTERVENTION AND DESIGN APPROACH

The interventions in heritage places may range from the demolition of historic buildings and the construction of new ones, to the conservation of historic buildings in their own contexts. The project in Tarlabası proposed to demolish the historic buildings by keeping only their façades. As such, Taksim 360 adopted a façadist approach in which the original plan layout of the buildings was destroyed. On the contrary, the conservation of historic buildings in their own contexts was the principal concern at İzmir History Project.

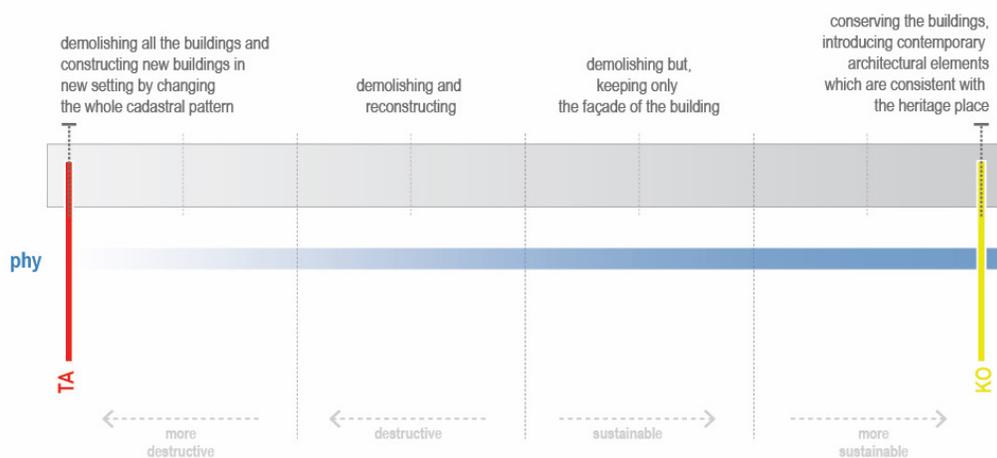


FIG. 12 Intervention and Design Approach

## 4.7 RENT INCREASE AND POST-INTERVENTION CONTROL MECHANISMS

Following the initiation of the project in Tarlabası, there has been a dramatic rent increase in the area according to official data regarding real estate prices. In Tarlabası, because of the interventions, real estate prices have increased by 500% (Fig. 13). In fact, some increase in rent is also evident in İzmir (Fig. 14), but it is much lower compared to Tarlabası. Additionally, İzmir Metropolitan Municipality plans to take measurement against gentrification in urban heritage places in order to avoid the displacement of the existing inhabitants.

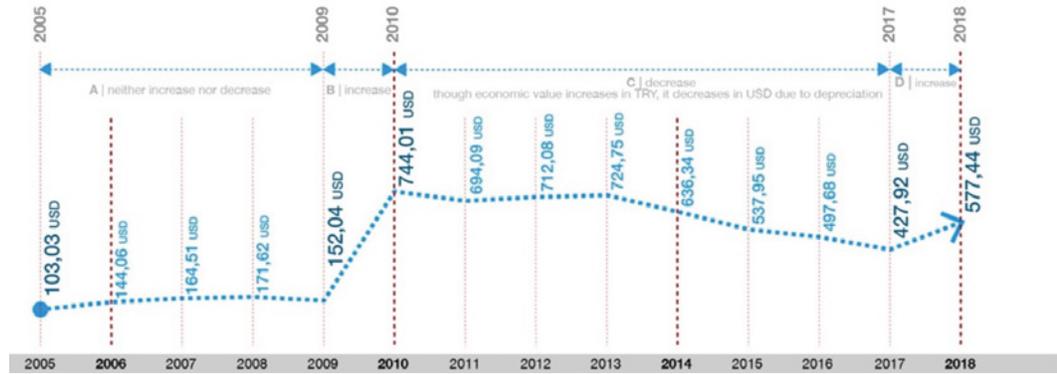


FIG. 13 Rent Increase in Tarlabası, İstanbul. Source: Özçakır, 2018

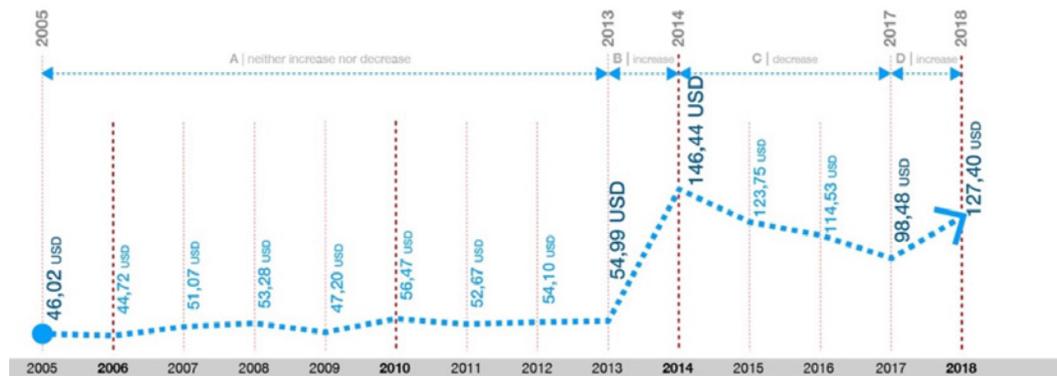


FIG. 14 Rent Increase in Kemeraltı, İzmir. Source: Özçakır, 2018

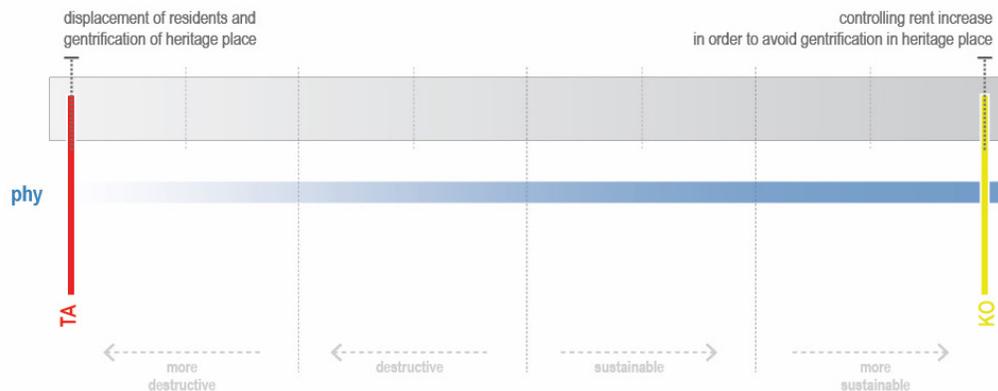


FIG. 15 Rent Increase and Post-Intervention Control Mechanisms

## 5 ASSESSING THE POST-INTERVENTION SUSTAINABILITY IN TARLABAŞI & KEMERALTI

This paper aims to introduce a new conceptual framework understanding and assessing the changes in urban heritage places using seven intervention approaches. The analysis considered two cases in İstanbul and İzmir. The top-down interventions in Taksim 360 implied the expropriation of historic buildings and the displacement of the existing residents, the demolition of the buildings keeping only the façades and constructing new luxurious building complex. As a result of the project, real estate values increased since private construction company sells residences, offices and shops in a mall at very high prices. On the contrary, the bottom-up interventions in İzmir, where the project considered the needs of different stakeholders such as residents, academicians and private enterprises in its decision-making process, attempted to establish common ground among them for the planning and design. Though there were several control mechanisms to avoid rent increases in İzmir, some rent increase has been observed.

Fig. 16, which aims at depicting seven approaches together for the overall assessment of post-intervention sustainability, clearly illustrates that while interventions in Tarlabası represent unsustainable modes of implementation; interventions in Kemeraltı suggest that there is scope for sustainability where physical setting is preserved, social environment is empowered and the rent increase is controlled.

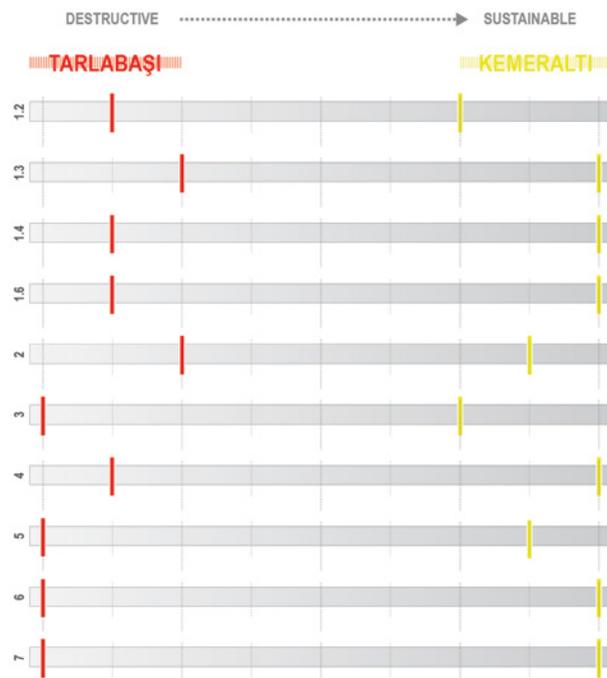


FIG. 16 Post-Intervention Sustainability in Tarlabası, İstanbul and Kemeraltı, İzmir

## Acknowledgment

This paper is an output of Özgün Özçakır's PhD thesis entitled "In-Between Preservation and Economics: Establishing Common Ground Between Socio-Cultural and Economic Values for the Sustainability of Urban Heritage Places in Turkey" which is co-supervised by A. Güliz Bilgin Altınöz and Anna Mignosa.

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# Toward Sustainable Heritage Conservation: Military Dependents' Villages in Taiwan after World War II

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## **Abstract**

*Military dependents' villages (MD villages) are special communities in Taiwan. They served as provisional housing for soldiers and their dependents starting in 1945, when the Chiang Kai-shek regime retreated from mainland China to Taiwan. Kuomintang soldiers and their dependents followed Chiang Kai-shek to Taiwan between 1945 and 1949. After 1949, 600,000 such immigrants had arrived and spread across 897 MD villages, accounting for 8.8% of the population. Since the 1980s, when the government began considering village renewal, MD villages have been progressively demolished and reconstructed. Therefore, historic conservators promoted efforts to preserve the traditional MD villages. Since the 1990s, the government has implemented multiple policies to conserve at least 55 MD villages or buildings sites. This paper focuses on the processes and results of these policies through documentary analysis and the observational method. Sustainability must integrate social, economic, and environmental dimensions. In addition, this paper discusses the processes and problems concerning these conservation policies with regard to Sustainable Development Goals.*

## **Keywords**

*Military dependents' village, cultural heritage, conservation, reuse, revitalization*

## **1 INTRODUCTION**

Military dependents' villages (MD villages) are special communities in Taiwan. They have served as provisional housing for soldiers and their dependents since 1945, when the nationalist Chiang Kai-shek regime retreated from mainland China to Taiwan. However, because Chiang Kai-shek and his armed forces did not launch a successful counterattack against mainland China, these MD villages became the permanent homes of nationalist soldiers and their dependents from China. Some MD villages reused the official residences built during the Japanese colonial period between 1895 and 1945, and others were constructed by the government after 1950. At least 897 MD villages had been established in Taiwan after 1949 (Guo, G. L. ed., 2005; Hsieh, H. Y., 2013).

The lifestyle in MD villages reflected that of the residents' hometowns in mainland China. Since the 1980s, when the government began considering village renewal, MD villages have been progressively demolished and reconstructed. Tall apartment complexes are the predominant housing type of new MD villages. Some people noticed lifestyle changes and cultural erosion after the military families moved into new MD villages. Therefore, historical conservators promoted the preservation of traditional MD villages. Since the 1990s, the government has implemented numerous policies for their preservation. Approximately 55 original MD villages or buildings sites are currently under preservation, and challenges in the conservation process are emerging (Lin, S. L., 2018); MD villages span large urban areas and are not easily restored. In addition, they require renewal after residents move out.

The conservation policies that have been implemented involve restoring buildings, establishing museums, and holding events to evoke the memory of life in MD villages. Recently, the Regeneration of Historic Sites Project, which combines cultural heritage preservation and regional spatial governance, was launched. This interdisciplinary program entwines local culture, history, and culture technology, helping locals connect to the land and recall relevant historical memories.

Through documentary analysis and an observational method, this paper discusses the processes and results of the policies for conserving MD villages implemented by the Taiwanese government. are adopted by this paper. Sustainability must integrate social, economic, and environmental dimensions. This paper also discusses the processes and results of these conservation policies in relation to Sustainable Development Goals.

## 2 DEVELOPMENT OF MD VILLAGES

The civil war between the Kuomintang Party (KMT) and the Communist Party of China began in 1927. As defeat loomed, the KMT army and their dependents began transferring to Taiwan. On October 1, 1949, the People's Republic of China was established in Beijing. After 1949, links between Taiwan and mainland China were officially severed.

These MD villages were managed by the Ministry of National Defense. To live in these villages, residents had to have a residence certificate or public military document. Officially defined as buildings built before 1980, MD villages are divided into four housing types. Most preserved MD villages were built under Japanese colonial rule (before 1945). The others were donated between 1957 and 1980 by the United Women's Federation of Anti-communist and Soviet Union, later renamed to the National Women's League of the Republic of China, which was founded and led by First Lady Soong Mei-ling (Li, K. C., 2013; Chen, C. X. et al., 2009).



FIG. 1 Almost 20,000 Zhejiang Province residents followed the KMT army in its retreat to Taiwan after 1945.

Source: Retrieved from <http://taiwanpenny.pixnet.net/blog/post/62172220-1949%E5%B9%B4%E5%B5%99%E6%B1%9F%E5%B1%85%E6%B0%91%E9%9A%A8%E5%9C%8B%E6%B0%91%E9%BB%A8%E6%88%B0%E6%95%97%E9%81%B7%E5%8F%B0%E7%8F%8D>



FIG. 2 After 1945, the KMT soldiers and their dependents moved to Taiwan by boat.

Source: Retrieved from <http://www.tonyhuang39.com/tony0850/tony0850.html>



FIG. 3 A MD village residence certificate issued in 1969. Source: Photographed by Szu-Ling Lin in 2012



FIG. 4 Fuxing New Village was the Japanese official dormitory in Hualien County. Source: Photographed by Szu-Ling Lin in 2015



FIG. 5 General Ge and his dependents, photographed here in their Japanese-style home in Shengli New Village, Pingtung City. Source: Originally photographed in 1955; collected by Szu-Ling Lin



FIG. 6 Guishan MD village, donated by the United Women's Federation of Anti-communist and Soviet Union. Source: Retrieved from <http://hk.crntt.com/crn-webapp/touch/detail.jsp?coluid=217&kindid=0&docid=104331218>



FIG. 7 MD village in Taipei City, donated by the United Women Federation of Anti-communist and Soviet Union. Source: Retrieved from <https://www.setn.com/News.aspx?NewsID=167959>

At first, the KMT government planned to return to mainland China; therefore, the MD villages were considered to be temporary residences. The bamboo fences that divided the yards became a cultural symbol of MD villages (Guo, G. L. ed., 2005). Five years later, as children were born and grew up amid no signs of a return, the residents began constructing additional living spaces connected to the original buildings. As a result, most of the villages had disorganized layouts.



FIG. 8 A family is photographed against a bamboo fence backdrop in Lequn New Village, Tainan City. Source: Retrieved from <https://cyberisland.teldap.tw/P/qzhLSTesmyi>



FIG. 9 Bamboo fence in Haiguang Fourth Village, Kaohsiung City. Source: Retrieved from <http://blog.udn.com/wang32488/6367911>

### 3 CULTURE AND THE EFFECTS OF RECONSTRUCTION ON MD VILLAGES

MD village culture is distinct from traditional Taiwanese culture; residents of MD villages had a strong allegiance to the KMT government, instilling them with strong patriotic sentiment. These immigrants became known as “people from other provinces” by the people who lived in Taiwan before the retreat. To bridge the cultural differences, they encountered and the unease they felt in their new environment, the village residents developed a strong sense of self-awareness. As a result, MD villages were both spatially and culturally isolated from the rest of Taiwanese society. These cultural differences gave rise to the “provincial complexity” between the “original Taiwanese people” who had settled in Taiwan before the retreat and the “people from other provinces,” which has resulted in mutual enmity between Taiwanese people and immigrants from mainland China (Lin, S. L., 2018).



FIG. 10 The military supplies water to residents of Zhengqi New Village in Gangshan, Kaohsiung City, in 1961. Source: Retrieved from <http://blog.udn.com/ourmemory/10053722>



FIG. 11 Residents play mah jong in Fuxing New Village, Zuoying. Source: Retrieved from <https://www.mobile01.com/topicdetail.php?f=248&t=2002278>

Because the government was unable to return to mainland China, it implemented policies to modify MD villages into more durable permanent residences. In 1980 and 1996, respectively, the government launched two reconstruction projects that converted the villages to apartment buildings that could be transacted on the market. Although housing quality was improved, the lifestyle and population changes associated with the reconstruction triggered a cultural conservation movement.



FIG. 12 Futai New Village, Zhongli City. Source: Retrieved from <https://piyenchen.blogspot.com/2016/09/2-1.html>



FIG. 13 A reconstructed MD village in Pingtung City. Source: Photographed by Szu-Ling Lin in 2018

## 4 CONSERVATION OF MD VILLAGES

Since 2009, the Ministry of National Defense and local governments have preserved some MD villages through legislation. As of the end of 2018, 13 MD villages have been selected by the Ministry of National Defense as cultural parks, and 37 MD villages and buildings have been registered as cultural heritage sites by local governments. In addition, four buildings have been reused as MD village cultural exhibition rooms (Lin, S. L., 2018). These 55 MD villages or buildings sites are mapped in Fig. 14 on page 083.

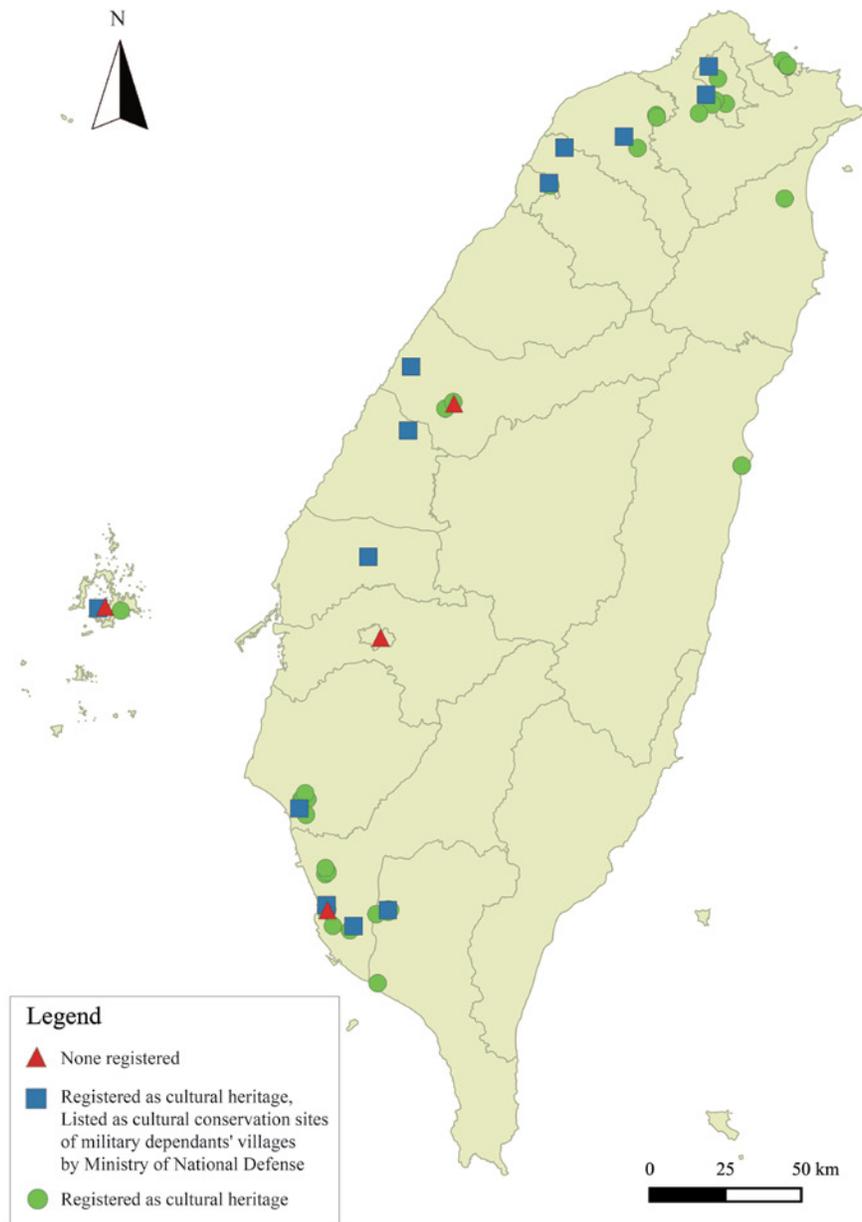


FIG. 14 As of the end of 2018, 55 MD villages or buildings sites in Taiwan have been conserved. Source: Szu-Ling Lin

## 4.1 CULTURAL PRESERVATION OF MD VILLAGES

Some preserved MD villages are awaiting restoration, such as Jianguo First Village and Shuijiaoshe Village. Some buildings are being reused as restaurants, art and cultural performance rooms, specialty retail stores, and experience shops celebrating MD village culture. Exhibition galleries are also a popular form of reused building spaces.



FIG. 15 Jianguo First Village in Yunlin County, one of 13 MD village cultural parks established by the Ministry of National Defense, awaits restoration. Source: Photographed by Szu-Ling Lin in 2016



FIG. 16 Shuijiaoshe Village in Tainan City, one of 13 MD village cultural parks established by the Ministry of National Defense, awaits restoration. Source: Photographed by Szu-Ling Lin in 2015



FIG. 17 A building reused as a restaurant in Shengli New Village, Pingtung. Source: Photographed by Szu-Ling Lin in 2012



FIG. 18 A building reused as a specialty retail store in Shengli New Village, Pingtung. Source: Photographed by Szu-Ling Lin in 2012



FIG. 19 A building reused as an MD village cultural exhibition gallery in Xinyi New Village, Taichung City. Source: Photographed by Szu-Ling Lin in 2018

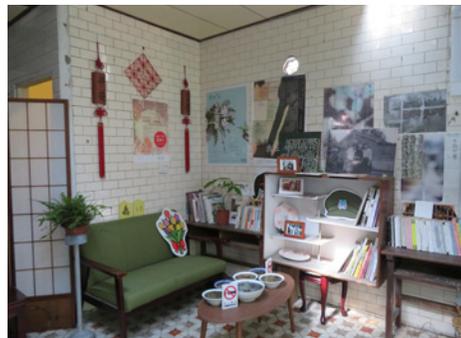


FIG. 20 A building reused as a MD village cultural exhibition gallery at Xinyi New Village, Taichung City. Source: Photographed by Szu-Ling Lin in 2018

## 4.2 PROCESSING PROJECT: REGENERATION OF THE HISTORIC SITES PROJECT

In 2018, the government launched the Regeneration of Historic Sites Project, which established a comprehensive cultural preservation policy involving both central and local governments, thereby integrating cultural preservation into civilian life. The project promotes the sustainable goals of cultural heritage conservation. Five MD villages were selected for inclusion. Two of them are introduced as follows:



FIG. 21 Regeneration of Historic Sites Project. Source: Retrieved from <https://www.rhs-moc.tw/index.php?inter=about&id=2>

#### 4.2.1 Project 1: Regeneration of Historic Sites in Pingtung City: Shengli New Village and Chongren New Village

Shengli New Village and Chongren New Village in Pingtung City were the locations of the Japanese aviation force dormitories prior to 1945. After 1945, they became a MD village. Today, many buildings in this village have become repurposed as restaurants and shops (Lin, S. L., 2013). Some of the buildings are being restored, and numerous events have been held to continue transmitting the culture and memories of MD villages.



FIG. 22 Original residents of Shengli New Village. Source: Photographed by Szu-Ling Lin in 2015



FIG. 23 Buildings in Shengli New Village. Source: Photographed by Szu-Ling Lin in 2015



FIG. 24 Environmental sustainability aspect: Building restoration. Source: Photographed by Szu-Ling Lin in 2018



FIG. 25 Social sustainability aspect: A lecture on a documentary was given by some original residents of MD villages on April 16, 2019. Source: Facebook

## 4.2.2 Project 2: Regeneration of a Japanese Colonial Historic Site in Hsinchu City: Zhongzhen New Village

Zhongzhen New Village in Hsinchu City is where the Sixth Fuel Factory of the Japanese navy was located. Established in 1944, it was the first systematic, large-scale military–industrial complex in Taiwan. After 1945, it became an MD village. Current reuse plans for the site involve the construction of a landscape representing the alleyways of the original MD village. In addition, visitors can visualize the original buildings through virtual reality.



FIG. 26 : Original MD village. Source: Retrieved from <https://www.thenewslens.com/article/14931>



FIG. 27 Original MD village. Source: Retrieved from <https://www.thenewslens.com/article/14931> and <http://library.taiwanschoolnet.org/cyberfair2013/superman/201war5.htm>



FIG. 28 Environmental sustainability aspect: Reuse plans for Zhongzhen New Village. Source: Retrieved from [https://hiiarchitects.com/type\\_project/hcjnsfp/](https://hiiarchitects.com/type_project/hcjnsfp/)



FIG. 29 Social sustainability aspect: Virtual reality is used for visualizing the original buildings in Zhongzhen New Village. Source: Retrieved from <https://news.pts.org.tw/article/436052>

## 4.3 DIFFICULTIES IN THE PRESERVATION OF MD VILLAGE CULTURE

### 4.3.1 Erosion of MD Village Culture

Although some MD villages are preserved, the residents have gone, and with them, some of the culture has disappeared as well. Although some local governments actively promote events related to MD village culture, the number of participants is decreasing.



FIG. 30 Costume display at the Shengli New Village Cultural Festival organized by Pingtung City Government. Source: Photographed by Szu-Ling Lin in 2014



FIG. 31 Costume display at Shengli New Village Cultural Festival organized by Pingtung City Government. Source: Photographed by Szu-Ling Lin in 2014

### 4.3.2 Restoration Problems

Because most of the remaining MD village buildings require large-scale restoration, their reuse faces high financial costs. Moreover, some village buildings are Japanese style. During restoration, the additional structures built by the residents would likely be removed. As a result, the restored space would represent Japanese colonial culture rather than MD village culture. Restoration is facing an authenticity issue.



FIG. 32 Authenticity issue: Many additional structures built by the residents of the MD villages were removed after conservation. Source: Photographed by Szu-Ling Lin in 2017



FIG. 33 Authenticity issue: After restoration, Shengli New Village buildings reflect the Japanese colonial style. Source: Photographed by Szu-Ling Lin in 2018

### 4.3.3 Reuse Function Problems

Reuse of some MD village buildings is sought after restoration. However, the goal of cultural preservation of all the buildings through the establishment of the same theme is not pragmatic. Some local governments are attempting to reuse MD villages as cultural and creative parks, which yield greater economic benefits. However, the loss of cultural value associated with such reuse functions is often questioned. Regarding the reuse of MD villages, economic benefits and conservation are occasionally at odds.



FIG. 34 Qingshui New Village in Taichung City awaits reuse. Source: Photographed by Szu-Ling Lin in 2018



FIG. 35 Street vendors of cultural goods in Sanchong First Village, New Taipei City. Source: Facebook

## 5 CONCLUSION

Amid increased awareness of the importance of cultural heritage conservation, approximately 55 original MD villages or buildings sites are currently being preserved. However, the villages also face problems after preservation. From a social perspective, the issue is the disappearance of MD village culture; from an economic perspective, the high cost of restoration is a concern; and from an environmental perspective, restoration authenticity is an issue. The debate on new reuse functions of MD villages concerns both social and economic aspects. Sustainability must integrate the social, economic, and environmental dimensions. We must devote more effort to achieving sustainable heritage conservation.

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# Viewing the City of Mangaluru as a Historic Urban Landscape and Understanding its Values

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## Abstract

*India with its peninsular location subjected to monsoon winds made it an apt location for annual cyclic trade through marine routes leading to the establishment of several ports all along its drawn out coastline. Mangaluru, an active port along the Konkan Coast by the Arabian Sea has observed recorded international trade activities take place from the beginning of the 1<sup>st</sup> millennia. Traditionally the port town of Mangaluru belongs to the cultural landscape of Tulunadu which rolls off the Western Ghats towards the Arabian Sea in the West, resulting in a complex web of tributaries which feed the farmlands of the landscape. The geographical characteristics and the proximity to various other principal trading and defence ports, garnered the interest of many a contemporary kingdoms over the course of the centuries. The resultant intertwined web of cultures helped the landscape evolve into an intricate urban ecology, unique to this port town. This paper aims at establishing the significance of the historic urban landscape of Mangaluru via study of its natural and historic layering from primary and secondary sources and the values in this layered heterogeneous town that form its core.*

## Keywords

*Historic Urban Landscape, Port Town, Tulunadu, Mangaluru.*

## 1 INTRODUCTION

The heterogeneous port town of Mangaluru which is the administrative headquarters of the Dakshin Kannada District is the largest urban coastal center of Karnataka in the Southern part of India. It is a Tier II city which is undergoing rapid urbanization and falls under the gamut of the Smart Cities Mission which was launched by the Indian Ministry of Urban Development in the year 2015. In addition to a plethora of features under the Smart Cities Mission, it also includes key features which have an impact on the urban landscape of the city; like mixed landuse – “planning” for unplanned areas, expansion of housing for all, creating walk-able localities, preserving and developing open spaces to avoid urban heat affects and giving identity to a city. (Smart City Features, 2017)

Mangaluru, like most other rapidly developing urban centres today, faces similar challenges, those of population growth leading to extensive urbanization and globalization due to increased trade – therefore undergoing loss of its unique identity (tangible and intangible) and environmental changes due to exploitation of natural resources. In fact the municipal wards which comprise of the historic port settlement/waterfront area are so high in its population density that the Mangalore Municipal Corporation deems its potential for growth ‘low’. (ASCI, 2011)

These challenges however can be transformed into opportunities; it is here that the urban question becomes strongly interrelated with environmental, economic and social development. (Schubert, 2008) The key to understanding the scope and framework of sustainable urban regeneration can be

brought about by the Historic Urban Landscape Approach where it considers the larger context of the urban area as a historical stratification of natural and cultural values which includes its natural setting and geographical environment. (UNESCO, 2011)

This paper aims at reiterating the significance of the Historic Urban Landscape of the city of Mangaluru via study of its ecology, evolution of its historic layering and thereby bringing about the significant values of which could be saved when designing for a sustainable and resilient city.

## 2 NATURAL ECOLOGY

### 2.1 LOCATION

#### 2.1.1 Larger Context: Mangaluru as a part of the Cultural Landscape of Tulunadu

Tulunadu is a distinct cultural landscape in South India along the West Coast whose geographical boundaries include the Western Ghats on the West and the Arabian Sea towards the East. Through the course of time this strip of the coastal plain stemming from the undulating lowlands, rolling off the Ghats has remained a land apart separated from the elevated hinterland that forms the Deccan Plateau. (Michelle, 2012) The present day geographical boundaries include the districts of Uttara Kannada and Dakshin Kannada. However pre-modern historiography and sources consider the extent of Tulunadu ranging from Bhatkal in the North to Kasargod in the present day state of Kerala. (Rao N., 2019) The ecological cultural landscape, with undulating landforms and riverine tributaries arising from the Western Ghats, led to the organic composition of a number of pre modern ports along the coast of Tulunadu, namely Barkur, Malpe/Udupi, Kundapur, Barsur, Udyavara and Mangalore. (Chakraborti, 2010)

This cultural landscape nestled by the Western Ghats towards the East ensured the non Brahminisation of society. This ensured the survival of indigenous knowledge which propagated Ecological Management of forestry and hydrology in the form of Sacred Groves, Wildlife Management in the form of Nagaradhane (Snake/Cobra Worship) and Daivaradhane (Spirit/Animal Worship) and Heritage Management with the belief that an old home is the abode of the spirits of one's ancestors. Tulu Culture also embodied oral genre epics called the Paddanas, in addition to folk games, dances and a revolutionary matrilineal system of social order - Aliyasantana. (Rao & Gowda, 2003) The region conversed in a separate language, Tulu which is one of the languages of South India, in addition to Telegu, Kannada, Tamil, Malyalam, Toda and Kodagu that belong to the Dravidian family.<sup>1</sup> (Karashima, 2014)

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In 1816, F.W. Ellis first expressed the idea that some of the languages spoken in South India belonged to a family different from that to which Sanskrit and many North Indian languages belonged. Forty years later this thesis was confirmed by Robert Caldwell. (Caldwell, 1856)

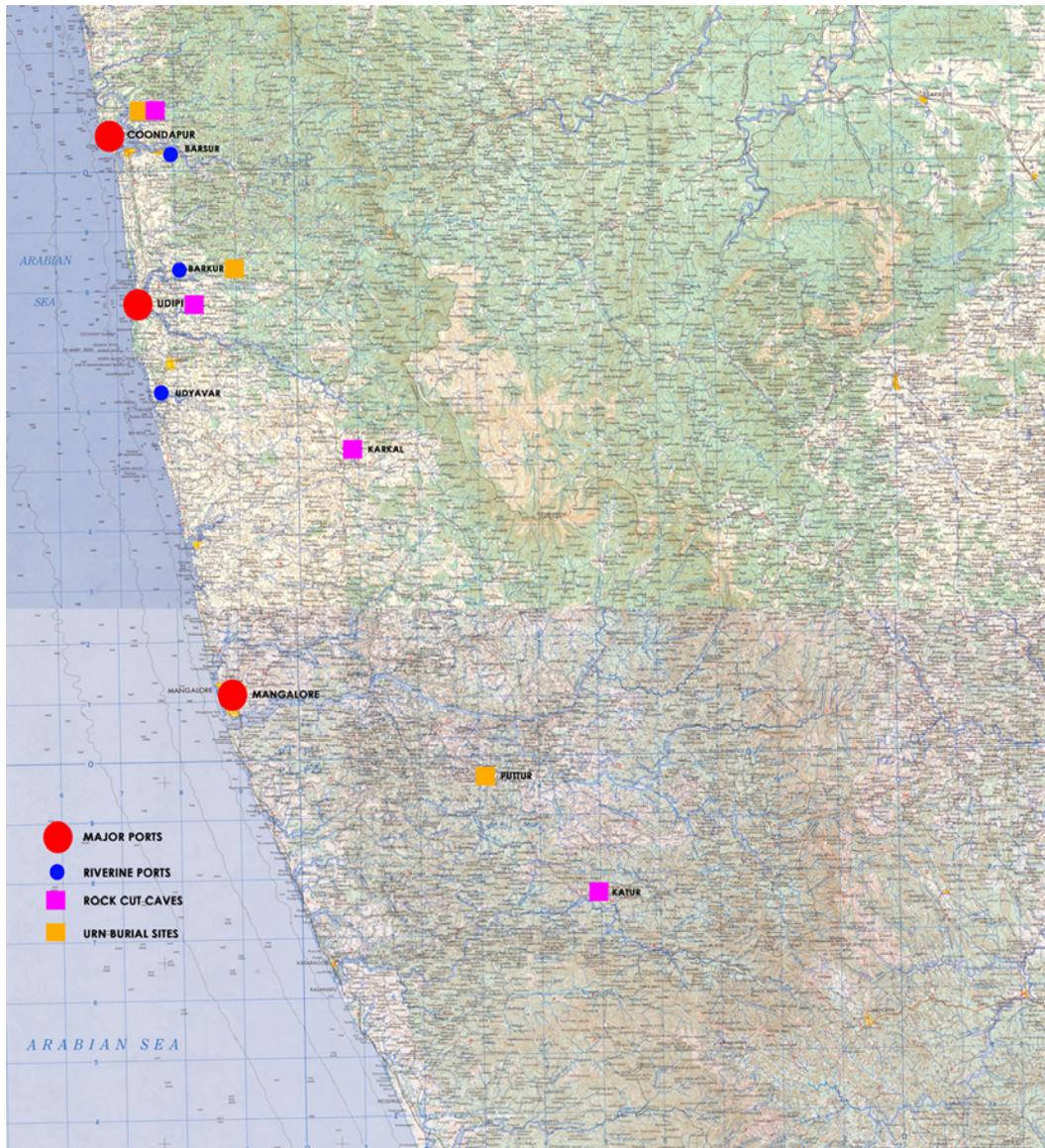


FIG. 1 A Regional Map indicating the extent of the Cultural Landscape of Tulunadu, Major Ports today, riverine ports and prehistoric sites of the past. *Source: Author. Base Map: 1. Army Map Service (GDRC), Corps of Engineers, U.S. Army, Washington DC, 1954, Series U502, Sheet ND 43-11, Ed 1-AMS, Shimoga, India, 1:250,000, Retrieved from: <http://legacy.lib.utexas.edu/maps/ams/india/nd-43-11.jpg> 2. Army Map Service (GDRC), Corps of Engineers, U.S. Army, Washington DC, 1954, Series U502, Sheet ND 43-15, Ed 1-AMS, Mangalore, India, 1:250,000, Retrieved from: <http://legacy.lib.utexas.edu/maps/ams/india/nd-43-11.jpg>*

The Arabian Sea towards the West ensured constant contact from sea farers of the western world like the Romans, the Greeks and Pre Islamic Arabs since the beginning of the first millennia and later on the Portuguese, French, Dutch and the British which contributed towards the shaping of cosmopolitan port towns.

## 2.1.2 Connections with the hinterland

Although the landscape was isolated from the elevated hinterland, connections were made through the Ghat passes. Local produce and precious metal would be brought to the various ports for trade. In addition to this the passes that connected the ports to the hinterland also connected the harbor to the seats of political power towards the East through various times in history. (Chakraborti, 2010) Abdul Razzak Lari a historian for the Deccani kingdoms specifically states that the port of Mangalore was important for the import of war horses from Persia for the Vijayanagara army. (Doddamane, 1993) The hinterland of Mangaluru city would include Madikeri, Puttur, Bantwal, Balthangadi, Vittla and Moodbidri (Fig. 1) all connected via the Western Ghats through the Agumbe, Shiradi and Samajpe alignments. (Chakraborti, 2010)

## 2.1.3 Natural Setting and the Locational Distinctiveness of the Port City of Mangaluru

The city of Mangaluru is circumvented by two rivers; the River Gurpura on the North and the River Nethravathi towards the South.(Fig. 2) These rivers flow westwards to form an estuary and have parallel sand spits formed by littoral waves running along their length which abuts the Arabian Sea. This landform protects the city from inundation during the heavy Monsoons. Strategic positioning and the proximity of the port of Mangaluru to the principal Ports of Mumbai, Goa and Kerala garnered the interest of Portuguese, French, Dutch, British, German sailors and Jesuit and Capuchin missionaries over the course of the centuries contributing to the urban planning and diverse architectural manifestations in the city.

## 2.2 TOPOGRAPHY

Mangalore is made up of undulating terrain with a 5m elevation at the sand spits with the elevation increasing to as much as 80 m to 100 m towards the East.

This terrain is attributed to the initiation of the Sea Floor spreading phenomenon; the addition of new crustal material at the Carlsberg Ridge in the Indian Ocean, has continuously applied stress that led to the development of anticlinal upwarps in the coastal pediplain. With perpetuation and increase in the horizontal stress, the anticlinal flexure breaks into blocks that vertically slide past each other forming grabens and horsts. (Mundkur & Reddy, 2011). The valleys were initially used as agrarian land with urban settlements and connections spreading along ridges. The elevated portions this region are flat-topped, owing to the lateritic cap. (Jayappa, 1987) (Fig. 2).

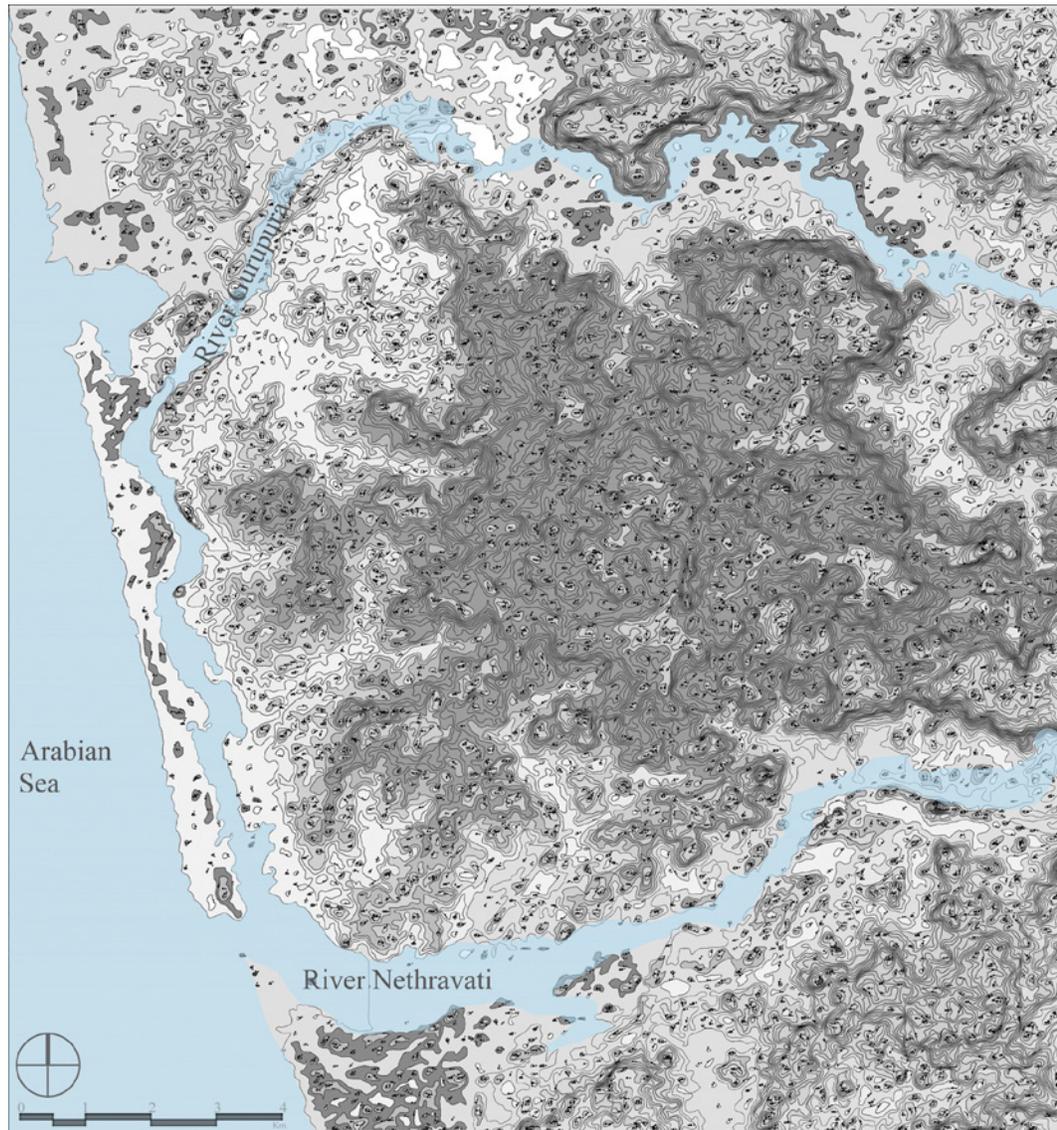


FIG. 2 Contour Map indicating elevations and depressions in the landform thereby creating drainage patterns to feed the River Gurupura on the North and the River Nethravathi on the South. Source: Author; Contour Base Map: (Kumar, 2018)

## 2.3 GEOLOGY

An extensive Laterite rock cap cover (Fig. 3) over a granite gneiss in the Mangaluru region has in turn become one of the main building materials of the area. Laterite was first described by Francis Hamilton Buchanan who was stationed as a medical officer by the East India Company in the Malapuram District of Kerala. (Buchanan, 1807)<sup>2</sup>

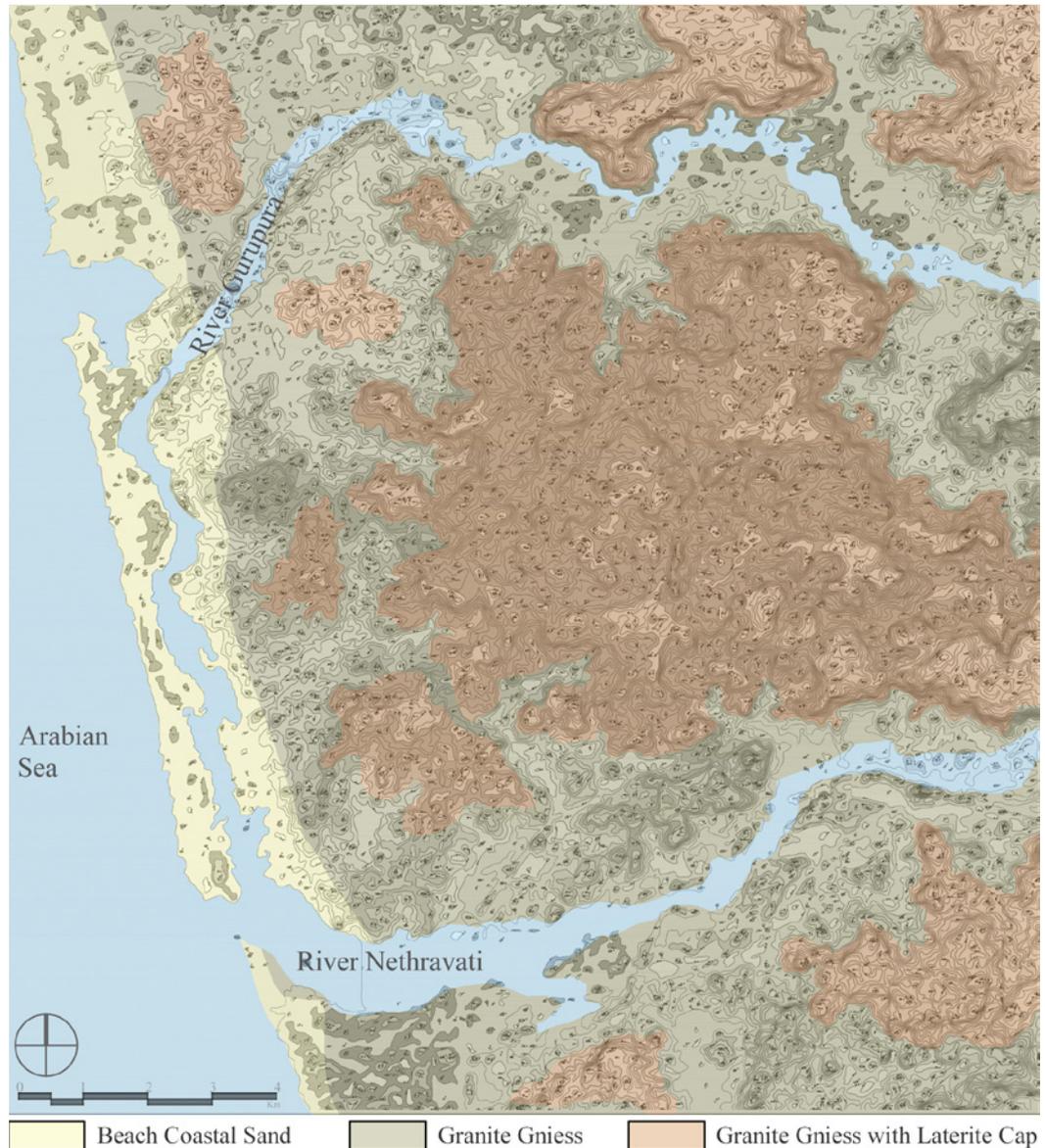


FIG. 3 Geological Map. Source: Author; Contour Base Map: (Kumar, 2018); Geology Information: Director General, Geological Survey of India, Kolkata (2005). District Resource Map, Geology and Minerals (Sheet Map) 1:250,000

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He writes that he discovered a type of weathered material which was clay, full of cavities and pores, containing large quantity of iron in the form of red and yellow ochre. It was soft when fresh and could be cut easily and when exposed, it became hard and resisted air and water much better than bricks. He used the term laterite to designate this material (laterite in Latin means 'brick stone'). He defined it as "a residual product of weathering, rich in secondary oxides of iron and aluminum or both—nearly devoid of bases and primary silicates and commonly found with quartz and kaolin and developed in tropical or warm temperate climatic regions"

## 2.4 HYDROLOGY

The city receives an average rainfall of around 3661.4mm every year. Weathered and fractured gneiss is the predominant aquifer found. (Fig. 5) Groundwater occurs under phreatic (water table) condition in weathered zones of gneiss, schist and granite and under semi-confined to confined conditions in joints and fractures of these rocks at deeper levels. The average groundwater development is nearly 60%. In spite of copious rainfall, during summer season many parts of the district face acute scarcity of water due to highly undulating nature of the terrain and surface run-off. (Hegde & Najeeb, 2009) This may be attributed to the low permeability of the ground seen in large parts of the city.



GEOHYDROLOGICAL DATA	GEOTECHNICAL DATA
<p><span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> Aquifers with granular porosity 1-5/5-10 lts/s</p> <p><span style="display: inline-block; width: 15px; height: 15px; background-color: green; border: 1px solid black; margin-right: 5px;"></span> Aquifers with secondary porosity &gt;10 lts/s</p>	<p>High Permeability. Low Soil Bearing Capacity 1-2 Kg/Sqm Foundational Characteristics - Poor</p> <p>Low Permeability. Medium Soil Bearing Capacity 500 Kg/Sqm Foundational Characteristics - Good</p>

FIG. 4 Geohydrological and Geotechnical Data. Source: Author; Contour Base Map: (Kumar, 2018); Geology Information: Director General, Geological Survey of India, Kolkata (2005). District Resource Map, Geotechnical Map & Geohydrological Map (Sheet Map) 1:1,000,000

### 3 BUILT ENVIRONMENT

As mentioned earlier in this paper the Arabian Sea towards the West of the city of Mangaluru served as an entry-way to the rest of the world which led to a creation of a heterogenous cosmopolitan city with a varied built environment. For the purpose of explaining the layering of the built environment over time this section has been divided into various sections based on a historic timeline.

#### 3.1 PREHISTORY AND MYTHOLOGY

Appropriate studies and surveys/excavations haven't been carried out in the city of Mangaluru to determine the evidence of any Paleolithic or Neolithic sites. Some Megalithic sites in the district have been chanced upon by enthusiasts and then studied by archeologists. Sites like Port-Holed chambers, Urn Burials and Rock Cut caves were found in Dakshin Kannada district. (Bhatt, 1975) (Fig. 1)

Mythological accounts of the land of Tulunadu state that Lord Parsurama provided land to the natives along the West coast by yielding his axe to the ground which made the seas roll back and reveal land for man to live on. Historian and anthropologists like John Fryer of the East India Company have stated that the reference made to the axe has references to the weapons used during the Iron Age which could have been used to clear forests descending from the Western Ghats in order to make land available for agrarian communities to settle down.

#### 3.2 1<sup>ST</sup> CENTURY CE TO 10<sup>TH</sup> CENTURY CE. – THE ALUPA DYNASTY

Evidence of settlements from the 1<sup>st</sup> to the 10<sup>th</sup> century AD exist in the presence of the Kadri temple which is said to have been built by the Alupas in the 10<sup>th</sup> century AD and the presence of the Mangaldevi temple which is one of the two nationally protected structures in Mangaluru city. The native Tulu community would have a number of Temples and Daiva structures dotted across the land, although its architectural manifestation would be ephemeral in nature. In addition to these local settlements there was a settlement of Arab traders along the port at the mouth of the estuary. The first mosque of Mangalore was erected along the port by the Arab traders in around 8 CE. This mosque (in its 18 CE architectural manifestation) still serves as the Jama Masjid for the Muslim Community in the Bunder area in Mangaluru today.

#### 3.3 10<sup>TH</sup> CENTURY CE TO 15<sup>TH</sup> CENTURY CE. – INTERNATIONAL TRADE WITH ADEN, THE COMING OF THE PORTUGUESE, THE PANDYAN, HOYSLA AND VIJAYANAGARA KINGDOMS

Documents and accounts of travellers from the 10<sup>th</sup> to 15<sup>th</sup> century AD reveal the importance of the port of Mangalore in those centuries. The Cairo Geniza talks of an Adenese Jewish merchant, Abraham Ben Yiju who had trade relations with Mangalore (Goitein & Mordechai, 2011). Since he was a practising Jew and married into the community there are is a possibility that there would have been a synagogue there, the manifestation of which is not seen on ground today. The accounts of Ibn Battuta (Doddamane, 1993) in the Rehla of Ibn Battuta talk of a large Muslim populace along the port which lived separately from the locals who lived away from the port. By this time in the history Mangaluru city and the port see the growth of various settlements with the establishment of

a Portuguese factory comprising of a fort and a chapel to meet the spiritual needs of the Portuguese soldiers and sailors who settled in Mangalore. (Fig. 5) More Tuluva settlements were also established along the banks of the River Netravati and along the sandspits.

### 3.4 16<sup>TH</sup> CENTURY CE TO THE 20<sup>TH</sup> CENTURY CE – THE DECCANI KINGDOMS, THE BRITISH, THE COMING OF THE BASEL MISSION

This period is one of the most important when it came to the establishment of a legible urban morphology which laid the foundations of the city we have today. A Portuguese map drawn out in the 16<sup>th</sup> century shows a trapezoidal complex with 4 bastions at the corners and a building within it. It also depicts layouts laid out in a neat grid pattern on the Western side of the fort and in Ullal area as well. This indicates that a tangible town morphology was beginning to evolve by the end of the 16<sup>th</sup> century albeit separate from the other important nodes already established by the native community like Kadri, Bolar and Jeppinamogaru in towards the East and Mangaladevi towards the South.

In the 18<sup>th</sup> century, it was Tipu Sultan's father Hyder Ali who took a liking to this part of the kingdom and developed it actively, installing new industries especially military ones, in and around the city, modernizing its fortifications and renovating the port where he set up a military dockyard and shipbuilding facilities. (Lafont, 2001).

An invaluable document to assess the nature of the city in the 18<sup>th</sup> century is the hand drawn map by French cartographer Lafitte de Brassieron.<sup>3</sup> In addition to the administrative core the map shows a distinct urban agrarian ecology to the North of the fort. ( 6) Beyond the more densely laid out area of the settlement there seems to patches of agricultural land with a few built structures abutting each patch. They are connected by narrower and more organically laid out streets a system which was followed well into the late 20<sup>th</sup> Century. To the South of the fort in the map is indicated the presence of an industrial zone.

After the British war against Tipu in 1799 CE, the British now began to establish the cantonment next to the indigenous CBDs and it was designed East of the Fort. The ephemeral fort was done away with and a district office was created, along with other administrative offices (Fig. 8) which have remained the core of the CBD to this day.

In the late 19<sup>th</sup> century the establishment of two missions in Mangalore altered the town morphology forever. The German Basel mission came to Mangalore in 1860 and with them came the establishment of the tile factories along the rivers Gurpura and Netravati. The clayey laterite soil was deemed perfect to manufacture the Mangalore Tile and it changed the urban skyline and built form of Mangaluru forever while having a ubiquitous influence on pitched roof landscapes nationally. Around the same time various Catholic Missions set up schools, colleges and hospitals which dotted the expanding urban fabric of Mangaluru city which continued to be major revenue generators well into the 21<sup>st</sup> Century.

3

When French negotiator Saint-Lubin could not execute a general survey of Indian ports, Admiral Tronjoly, in 1777, commanding the French fleet in the Indian Ocean, was instructed to embark with Lafitte de Brassieron his flagship *Le Brillant* and to visit potential allies. Lafitte, an "ingénieur géographe", was instructed to use these ports of call to draw fresh, accurate maps of the places where the fleet could land troops and harbour during the monsoon season. When he returned to France in 1785, he made two splendid albums of these maps for Maréchal de Castries, the new naval and colonial minister. One year later, in 1786, Solminihac de Lamotte made a new album of maps for the same minister, taking for several of them inspiration from Lafitte's work.



FIG. 5 Map of Mangaluru drawn by the Portuguese in 1559. Source: : Pritchett, F. W. (1569). Mangalor Cituada. Retrieved from: [http://www.columbia.edu/itc/mealac/pritchett/00routesdata/1700\\_1799/malabar/mangalore/portuguese1630.jpg](http://www.columbia.edu/itc/mealac/pritchett/00routesdata/1700_1799/malabar/mangalore/portuguese1630.jpg)

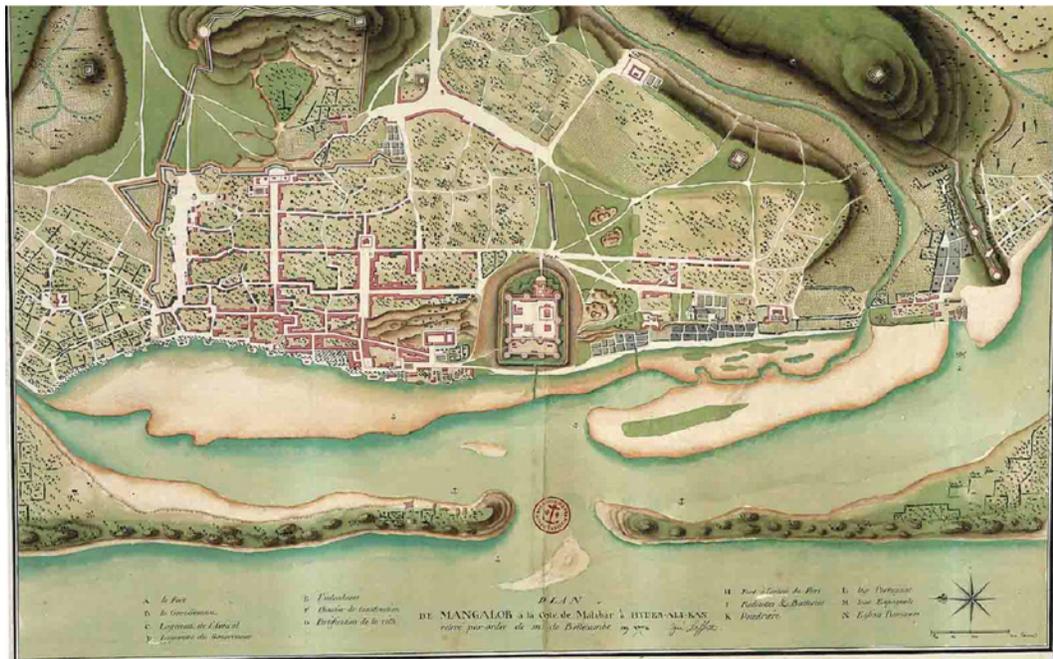


FIG. 6 18<sup>th</sup> Century French Map of Mangaluru Fort Area. Source: Brassier, L. (1778). Plan de mangalor, ala Cote de Malabar, au Nabab Hyder Ali Khan. 1/7500. In Lafont, J. M. (2001). Chitra: Cities and Monuments of Eighteenth Century India from French Archives. New Delhi: Oxford University Press.

### 3.5 MANGALURU IN THE 21<sup>ST</sup> CENTURY

Today Mangaluru forms the district headquarters of the Dakshin Kannada district. It is the chief port city of Karnataka. By the time India attained Independence in 1947 Mangaluru was considered to be a small coastal town in Karnataka which was known for its culture, educational and medical facilities.



FIG. 7 An urban street in Mangaluru in the early 20<sup>th</sup> Century. Source: Köhler (Ms), (1929) "Mangaluru: Strassenbild.," BMArchives, accessed July 8, 2020, retrieved from : <https://www.bmarchives.org/items/show/54650>



FIG. 8 19<sup>th</sup> Century Administrative Office – Present DC Office Premises. Source: Author

The 1980's saw a lot of post modern construction popping up all over the business areas in the city, owing to the rampant usage of concrete as a building construction material. However by the turn of the 21<sup>st</sup> century a lot of palatial vernacular homes were making way to apartment complexes to meet the housing needs of the growing populace. The need for accomodating vehicular parking ensured the excavation of basements, threby changing the natural slope/draingae pattern of the city forever. The undulating terrain described above always allowed for natural drainage into the rivers, the estuary and finally the Arabian Sea; however as recent as May 2018 Mangaluru witnessed flooding during the pre-monsoon showers.

Mangaluru has now been chosen as one of the 100 cities in India to fall under the Smart City Scheme – an initiative started to decongest bigger metropoli and give oppotunities to smaller towns. However the loss of identity is one of the biggest dilemmas our cities face under this scheme as insensitive approaches try to make way for development.



FIG. 9 The first high rise building of Mangaluru built in Kodialbail in 1976.. Source: [Image of PVS Building in Mangaluru](2018) Retrieved from <https://www.skyscrapercity.com/showthread.php?p=78718120>



FIG. 10 Image showing a tentative Smart City Proposal for the Area Based Development along the Port/River front of Mangaluru. Source: Smart City Office, Mangaluru City Corporation.

## 4 COMMUNITIES

As expounded in the previous sections, Mangaluru saw an influx of many a communities coming to its shores for various needs like trade, education or medical tourism. Up until the early 20<sup>th</sup> Century (Fig. 11) intra country and international trade across the Western Coast resulted in various business communities setting up residential clusters alongside the Tuluva locals and their counterparts of Arabian descent. Again vernacular architecture was built with little community nuances being followed to personalize spaces in order to make one feel at home. Today these communities have assimilated into the culture of Mangaluru city while still maintaining traces of their distinct culture. Here the presence of people of the native Tulu speaking communities, people of Arab descent, Gaud Saraswat Brahmins from Goa, Gujaratis from the trading town of Surat, Konkani speaking Catholics, the Tulu speaking Protestant Community manifest in this hybrid of culture – tangible and intangible, architecture, religious and social structure, forming a complex web of communities interdependent on each other for socio-cultural and socio-economic needs. Education, tourism and medical tourism introduced a floating population to the city. To meet the increasing demands of skilled and unskilled workers for globalization and industrialization in the 21<sup>st</sup> Century a sizeable Migrant Labour population from Northern and Eastern India has added to the community value of the city.

## 5 CONCLUSION: ASSESSMENT OF VALUES TO AIM TOWARDS A HUL APPROACH

Assessment of the values attributed to heritage is a crucial activity in any conservation effort, since values strongly shape the decisions making process. A value can be defined simply as a set of positive characteristics or qualities perceived in cultural objects or sites by certain individuals or groups. (Mason, 2002) Methodologically, assessment of values is considered difficult because of the various meanings or scope it may have; however in this chapter I will base the assessment supported by the aspects discussed above.

The scenic Cultural Landscape and its indigenous management and conservation systems of nature and society embody various values like ecological and environmental value, scenic/aesthetic value, historic value, socio-cultural value and heritage value. The Western Ghats which forms part of the Cultural Landscape is a UNESCO World Heritage Site under the natural category. The Outstanding Universal Value states that The Western Ghats are internationally recognized as a region of immense global importance for the conservation of biological diversity, besides containing areas of high geological, cultural and aesthetic values. (UNESCO, Western Ghats)

The ecologically valuable zones of the riverfront, the estuary and the sandspits abutting the Arabian Sea are of immense significance. These areas contribute to the climate, the flora and fauna of the city and have been a gateway for cross cultural exchanges through history thereby adding to the historic, economic and tourism value of the city. The geological and aesthetic value is enhanced by the undulating terrain caused by anticlinal upwarps converting the land in garbens and horsts, the ridgelines and valleys forming waterways are what give this city the unique topography ensuring beautiful views and vistas at many points. The lateritic cap (geological cap) and laterite soil unique to the Western Coastal Plain lends itself as a building material to the built heritage components in the city, thereby giving it a unique Architectural Value. The large scale prevalence of the Mangalore Tile used over the pitched roof landscape of the city creates a sense of visual identity thereby contributing to the social value of the city.

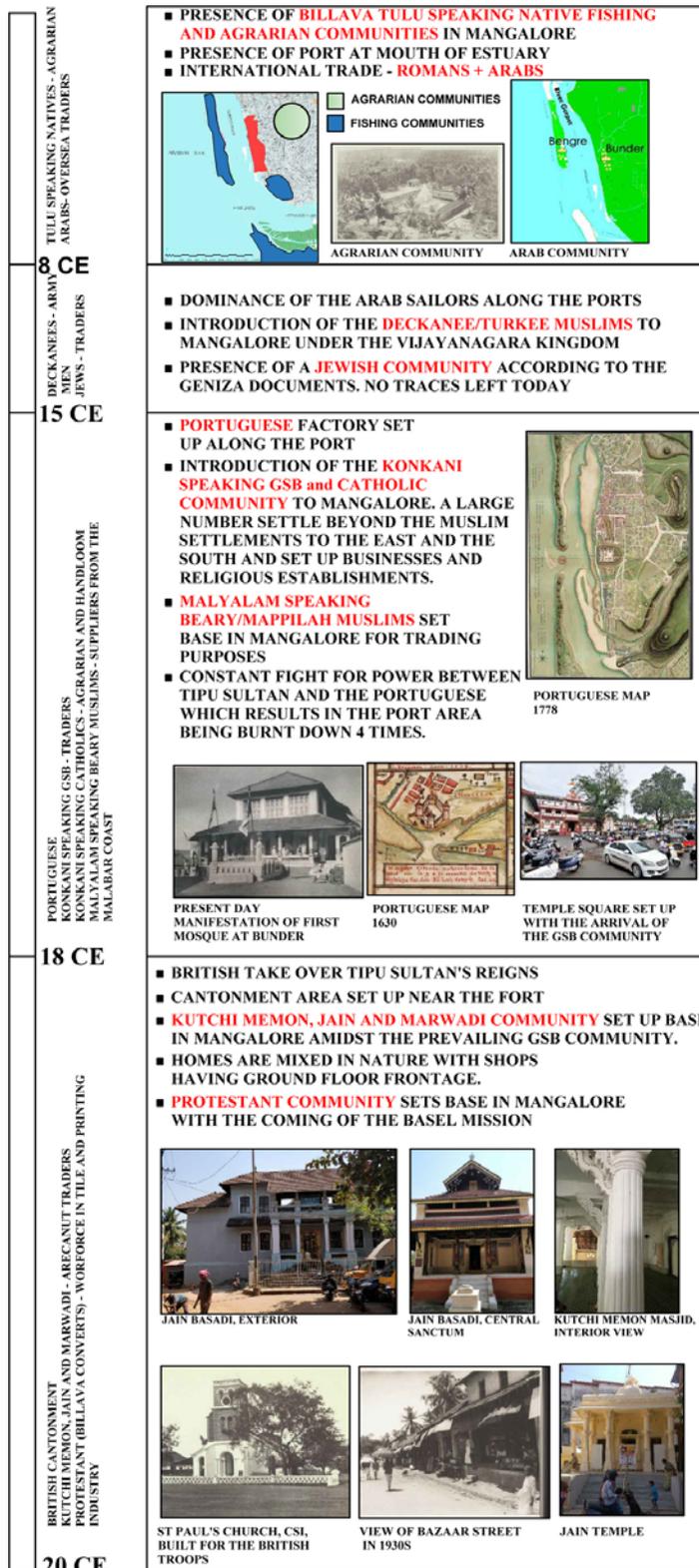


FIG. 11 Probable Chronology of Settlement of Communities until the 20 CE. Source: D'Souza, C.(2018). Conservation Plan for the Old Port Area of Mangaluru (Unpublished Thesis), New Delhi, School of Planning and Architecture, Department of Architectural Conservation.

Social value includes the 'place attachment' (Mason, 2002) aspects of heritage value which brought about by community affiliations to heritage structures like places of worship and abodes of community leaders, some of which have been shown in Fig. 11.

However these values are under threat today owing to the globalization of cities by implementation of schemes that have a 'one size fits all' perspective. The Historic Urban Landscape approach moves beyond the preservation of the physical environment and focuses on the entire human environment with all of its tangible and intangible qualities. It seeks to increase the sustainability of planning and design interventions by taking into account the existing built environment, intangible heritage, cultural diversity, socio-economic and environmental factors along with local community values. (UNESCO, Historic urban landscape Approach Explained, 2011)

The Mangaluru Urban Development Authority (MUDA) set up in the year 1988 which succeeded the Mangalore Town Planning Authority is responsible for the development of the master plan which is a planning document designed to guide the growth of the city via landuse and building code regulations. The master plan has been further divided to Planning Districts each of which has its own set of Zonal Regulations. The boundaries of these planning districts do not coincide with the Ward Boundaries drawn out by the Mangalore City Corporation which is responsible for civic amenities and the Smart City Mission. Future master plans could respectfully, equitably and sustainably align landuse, zonal regulations, transport and infrastructure planning to protect the values listed above during implementation of systemic development plan to benefit the whole community and environment. Infrastructure projects could respect the geological and topographical values and not allow for a change in drainage patterns by excessive cut and fill. The master plan could also be presented through themes of liveability for social value and sustainability for ecological value while addressing infrastructure as well. (Greater Sydney Region Plan) Sensitive zone wise building implementation regulations could be designed to ensure proper development of Mangaluru's skyline ensuring lesser impact on the aesthetic value of the coastline. Planning priorities and actions could be developed for each Planning district taking into consideration the values listed above instead of an overarching plan for all. Mangaluru has a multitude of cultural and linguistic backgrounds which is its key strength and can foster special economic opportunities and community cohesion to maintain community values. (Greater Sydney Region Plan) To further enhance social and community values a community participatory approach and an ethnographic approach could be used to design for the Area Based Development Plans developed by the Smart City Mission. Green corridors could be designed for each planning district using native flora and sustainable solutions can be planned for the waterfront edge to augment the ecological value. The master plan development strategy could take into account areas beyond Mangaluru's municipal boundary thereby ensuring the protection of social, economic, aesthetic and environmental values of the rural hinterland which is an important part of the larger Cultural Landscape.

A strong correlation exists between the Historic Urban Landscape Approach and the management systems of the ancient Dravidian culture of Tulu Nadu. A sustainable approach already exists which lends itself to respect the land, its flora and fauna and its built heritage thereby creating an indigenous set of conservation and systemic development principles; perhaps because of which so much heritage – tangible and intangible has come to see the light of day in the 21<sup>st</sup> century unlike other growing cities. These principles may have been overlooked due to the one size fits all perspective which came about with globalization the world over. Therefore one would have to look back upon our prevailing diligent and conscientious management and development systems to successfully incorporate the Historic Urban Landscape Approach.

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# SESSION 2

## Roles: Tasks and Influences of Stakeholders

### **Ana Pereira Roders**

The Heritage & Sustainable Development field is characterized by an intrinsic multiplicity. Sustainability has different dimensions—environmental, social, economic, and cultural—which are addressed by several heritage disciplines and professionals, each with their own specific perspective and language. Sustainability can therefore mean something different to scholars, heritage professionals, and stakeholders, depending on their affinities, outlook, and interests. On the other hand, heritage can include a variety of attributes and values, which are determined by different stakeholders with their own interests and ways of relating to heritage. Heritage management needs to deal with the complexity of actors involved in the process, to plan and regulate their roles on a local, national, regional, and international level. In order to do so, it is crucial to understand: Who are heritage stakeholders? What are their roles and responsibilities in heritage management?

# Deploying Heritage-Led Urban Regeneration: Three Cases from Skopje

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## Abstract

*Like many other urban settlements located on a crossroad of important transport and trade routes, the city of Skopje faced turbulent times throughout its history. As a result of a dynamic exchange of cultures, the urban fabric contains overlapped architectural layers from different historical origins: Roman, Byzantine, Ottoman, Pre-Modern, Modern, Post-socialist... Despite the fact that the most recent, 20<sup>th</sup> century architectural layer is the most visible one, there are city fragments that carry matrices related to older historical periods. An example of this are the Old Bazaar and the Medieval Fortress. Regardless of their institutional protection, today they are facing complex challenges. They are related to their administration, quality of conservation and restoration policies, with the outdated and, at times, obsolete program they provide. The aim of this paper is to present recent efforts to introduce a sequence of contemporary, heritage-led regeneration initiatives. New acupuncture interventions have been envisaged as a part of the Horizon 2020 Project (ROCK – Regeneration and Optimization of Cultural Heritage in Creative and Knowledge Cities), involving local municipalities, the University and various stakeholders. The establishing of the Urban Living Lab in the middle of the traditional tissue of the Old Bazaar has provided a hub for various cultural activities: presentations, lectures, exhibitions, discussions among professionals and the wider audience. The project “Kale – Art Fortress” has a tendency to activate the public space between the Museum of Contemporary Art and the Medieval Fortress through a sequence of small temporary structures. The segment entitled “Lost Ambiences” virtually recreates the buildings and urban ambiances that no longer exist in the physical presence of the Old Bazaar.*

## Keywords

*Cultural heritage, urban regeneration, stakeholders*

## 1 INTRODUCTION

The historic city centres have been spaces that usually carry different layers of overlapped history; the centre of Skopje is no exception to this. Especially interesting in terms of architecture and Cultural Heritage is the area in the city centre that has most of the architectural layers overlapped or juxtaposed one next to the other; the Medieval Fortress – Kale, the Old Bazaar, the Open Market, the former Jewish Quarter, as well as several exceptional modern architectural buildings, such as the Museum of Contemporary Art. Precisely this segment of the city was selected as an area of interest for the ongoing Horizon 2020 Project – ROCK.<sup>1</sup>

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ROCK is an EU funded project (GA730280), part of the Horizon 2020 research and innovation program with the idea to use the Cultural Heritage as a driver for sustainable growth. The acronym ROCK stands for a Regeneration and Optimization of Cultural Heritage in creative and Knowledge cities; the project leader is the Municipality of Bologna. The project started with a kick-off meeting in Bologna in June 2017, with a duration of 36 months. More about the project on [www.rockproject.eu](http://www.rockproject.eu)



FIG. 1 Skopje Old Bazaar

## 2 BASIC CONCEPT OF THE ROCK PROJECT

The overall concept of the project is based on the development of a shared multi-cultural, multi-heritage and multi-stakeholder vision for the historic city centre, which would integrate heritage-led regeneration, sustainable economic development, city promotion and knowledge sharing.<sup>2</sup> The intention of the project is to focus on historic city centres as they carry a potential for sustainable development. Furthermore, it aims to demonstrate ways in which Cultural Heritage could be a powerful engine for regeneration of historic centres, fostering sustainable development and bringing economic benefit for the cities. The main objective of the project is to go beyond what protection of Cultural Heritage usually means in terms of physical conservation, restoration or rehabilitation of the urban fabric, and to support the transformation of the historic city centre into a Creative and Sustainable District through involvement of different stakeholders and different contemporary tools.

The project seeks for new ways in which to access the Cultural Heritage, fostering and enlarging the usability of spaces, improving Cultural Heritage functions from a user perspective and integrating the spatial, temporal and virtual structures of the knowledge-based society. The idea is to raise the sense of owning/belonging for as many stakeholders involved as possible, and to raise the awareness about the Cultural Heritage and its values among the general public.

In terms of methodology of implementation, the project is based upon the idea of sharing knowledge among cities. A selection of European cities (role-model cities) would export their experiences in successful heritage-led initiatives to other cities (replicator cities) that are about to implement their successful strategies regarding Cultural Heritage. Through a number of mentoring and work-shadowing visits, the role-model cities (Lyon, Athens, Cluj-Napoca, Eindhoven, Turin,

Vilnius, Liverpool) would spread to the replicator cities (Bologna, Lisbon and Skopje) their knowledge, the lessons and methods learned from their own experiences. In this way, they would help them benefit from practical knowledge and enhance the knowledge exchange between cities facing similar challenges.

Considering the city and its heritage as a common asset, the project is based upon creativity as a strategic factor for sustainable development and knowledge as a prominent landmark. In order to implement the envisioned activities, the project conceptualizes an innovative circular urban system model which implies connecting systems that were initially separated through not only technical, but also organizational and institutional solutions and changes.<sup>3</sup>

### 3 SKOPJE CASE STUDIES

The segment of Skopje that is involved within the ROCK project is a wide and complex area in the city centre that encompasses several Cultural Heritage protected sites, such as the medieval fortress Kale, the Old Bazaar, the Green Market and many invaluable individual monuments of the distant and the more recent past. In spite of the institutional protection of the architectural and urban heritage, it is facing complex challenges. They are related to its administration, to the quality of conservation and restoration policies, but mostly to the outdated and at times obsolete programs it provides. The case study area is divided among two municipalities (Centar and Chair). The properties are partly private, partly institutional, while the conservation methods and the program do not meet the interests and demands of the dynamics of the contemporary city.

With Cultural Heritage and values at its base, the project stimulates closer collaboration between various groups of stakeholders, connects the Cultural Heritage with contemporary technologies, introducing a cultural program that would raise interest about this space and awareness about its values.

The project activities in Skopje are structured into four different thematic and working groups:

- Skopje Cultural Archipelago, focused on researching, collecting, analyzing, mapping, visualizing and communicating data about the selected territory;
- Skopje Art Fortress, targeting the possibilities for innovative re-use of the neglected public space between the Medieval Fortress and the Museum of Contemporary Art;
- Skopje Urban Living Lab, establishing a public hub within the historical area, with an intention to bring together various stakeholders, share ideas and participate in discussions, organize workshops etc.
- Skopje Common Sensing, intended to collect information generated by different technical sensors (movement, noise pollution, quality of light etc.), investigating their impact on the quality of space in order to enhance the security and comfort of users.

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The circular urban system model recognizes the following circles: Creative, Cultural, Regeneration, Knowledge, Security and Green, which are not vertical, siloed and isolated, but rather interconnected.

### 3.1 SKOPJE CULTURAL ARCHIPELAGO

In line with the ROCK project goal of understanding heritage as a common value, “Skopje Cultural Archipelago” is a knowledge-based section of the project working on a large demonstration city area – Skopje’s Old Bazaar and its immediate surroundings. Simultaneously, it collects information about the historical part of the city and its rich history. A large segment of this database complies with the creation of a ROCK Atlas of the Historic City as an analytical and descriptive dossier that defines the demo sites.

In addition to collecting information concerning the area of interest, an important segment of the working group is focused on the theme of “Lost ambiances” of the Old Bazaar. Namely, these are places that were once part of the Bazaar and created specific urban ensembles, but are no longer physically present (they have either been completely destroyed by the earthquake in 1963 or exist in ruins). Utilizing the availability of contemporary technologies for Augmented/Virtual reality, the lost ambiances were recreated, enabling visitors to access places that are no longer present and accessible, allowing navigation through environments that could not be physically explored. This is one of the possible ways to improve knowledge and awareness - by the introduction of contemporary tools and visitor’s experiences. By combining tangible/physical remains, historical information about the lost segments and intangible knowledge and memories, the project creates a new user experience, thus enabling the visibility of previous historical conditions and showing additional content over the real, actual view. In this way, the information about the past becomes interactive, digitally manipulative and easy to use.



FIG. 2 “Lost Ambiances”. Shengjull Hamam, present condition. Source: (the ROCK team)

Several historical buildings such as Kjurchi Han and Shengjull Hamam, together with two specific segments of the urban fabric (part of the Bazaar that was demolished during the modernization processes following the catastrophic Skopje earthquake of 1963, and the area of the former Jewish quarter in Skopje), were recognized as case studies. What followed after the archival and

research phase was completed, was a process of digitization of the found material, as well as an on-site documentation process. A documentation base was created for each building, including the necessary typological and morphological analyses. It further resulted in drawing reconstructions of the buildings in their original condition. In the following phase, the drawings of the original condition (presented in 2D and 3D) of the selected buildings served as a background for application of contemporary augmented/virtual reality technologies. By providing a comprehensive and interactive tool for visualization, the idea is to raise the public interest (especially among the younger audience), to generate a specific spatial knowledge and (re)define the new educational awareness within the traditional research context.

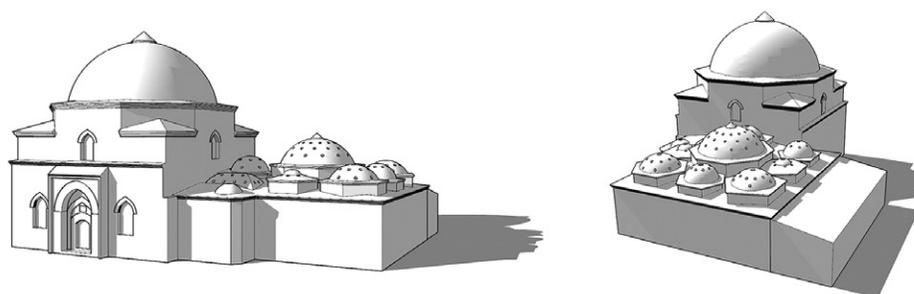


FIG. 3 "Lost Ambiences". Shengjul Hamam, reconstruction drawings. Source: (the ROCK team)

## 3.2 SKOPJE ART FORTRESS

The "Art Fortress" segment of the project is focused on the area surrounding the Mediaeval Fortress Kale and the Museum of Contemporary Art. The exceptional historical and contemporary significance of the built structures (and the area itself) led to long-term protection. It has excluded not only the buildings of value from any intervention (apart from conservation and restoration activities), but the whole area as well. Following the construction of the Museum in the late '60's, the larger area was nearly intact for decades. This approach (at least) temporarily pushed away and postponed the urban development processes,<sup>4</sup> but at the same time created an unarticulated space, partly abandoned over time, lacking any creative thought or long-term strategy for future development and in urgent need of revitalization and (re)activation. The main idea behind this was to achieve heritage-led regeneration using Cultural Heritage key elements – monuments, buildings, open spaces, cultural events etc.

The "Art Fortress" section comes as a continuation of the "Kale, Cultural Fortress"<sup>5</sup> project, an initiative started in 2015 by the Museum of Contemporary Art in order to bring up the question and foster a public discussion about the future of the Kale Hill area. Being aware of the great potential of the space on one hand and having in mind the numerous successful examples of contemporary "soft" interventions on the other, the action has foreseen an innovative re-use of the public space through new spatial and Cultural Heritage-related spatial and artistic interventions, as well as cultural events. The idea behind is to explore the possibilities for new reading, interpreting, evaluation,

<sup>4</sup> In the last decade, the territory between the Museum and the Fortress has been invaded with temporary structures that due to different legislation gaps, have a tendency to become permanent.

<sup>5</sup> In October 2016, within the project "Kale, Cultural Fortress", a one-day conference was held together with an exhibition of Master Student Projects from the Faculty of Architecture, "Ss. Cyril and Methodius" University in Skopje.

conceptualization and spatial integration of the broader Kale area. The core intention of the action is to offer a new form of cultural revitalization, relying both on architecture (new micro-architectural elements) and events as the main tool for cultivation of space as well.

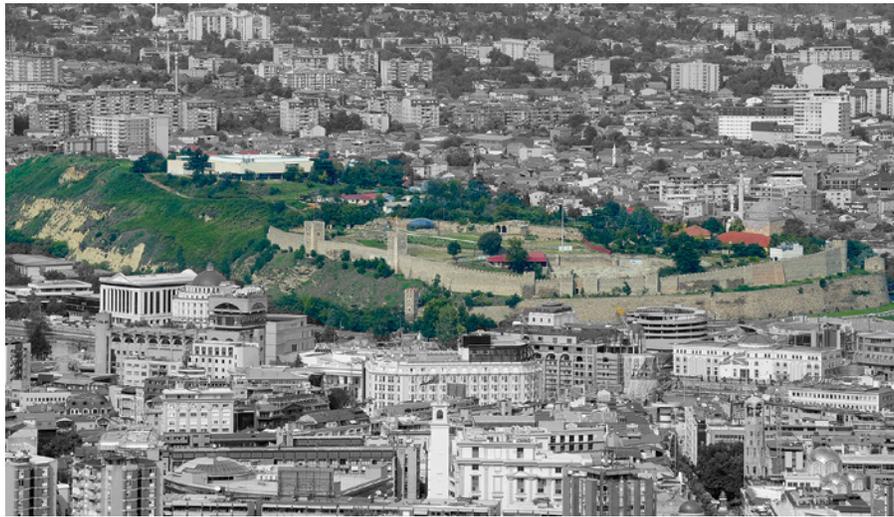


FIG. 4 "Kale, Cultural Fortress". Source: (Maja Janevska Ilieva)

In the case of the Kale Hill area, a number of possible design strategies and tactics that could initiate transformation of the unarticulated into an active landscape were recognized. The possibilities hold a wide range – from soft landscaping, to providing better accessibility and connections within the location, new public programs, temporary structures etc.

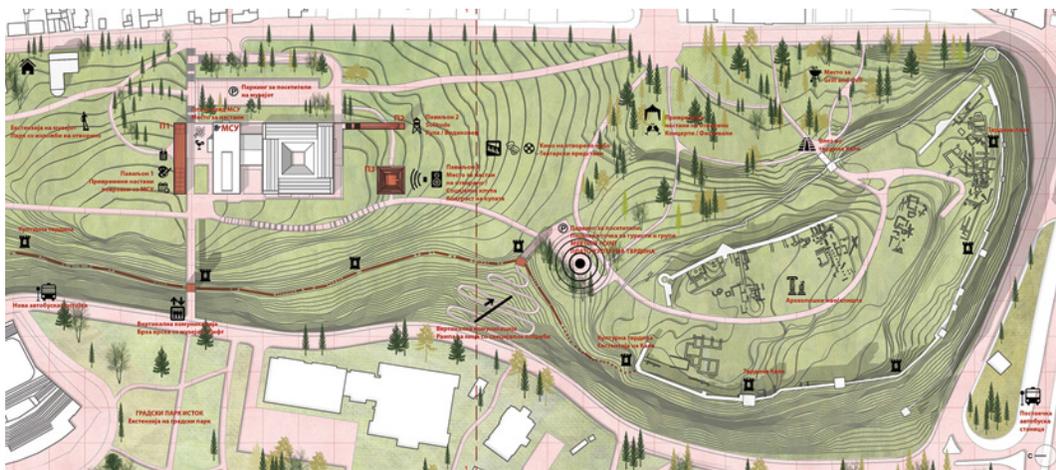


FIG. 5 Creating the Art Fortress. Source: (extracted from one of the competition entries; authors: Eleonora Popovska and Aleksandar Vrangalovski with collaborators: Lazo Lazarov and Maja Boshkovich)

In terms of methodology, the initial step was the launching of an international design competition. It was aimed at collecting fresh ideas and concepts in order to encourage the revitalization and spatial arrangement of the Kale Hill into an attractive and vibrant city attraction, with various cultural, educational and recreational functions.

The competition entries provided design proposals on three different levels: on the city scale – integration of the territory and suggestion of possible connections with the rest of the city centre; on the urban scale – they provided a landscape arrangement (well-designed landscape park) and connections within the Kale Hill area; on the scale of architecture – designs of temporary installations/pavilions that would mark the space, act as an extension of the Museum's program and provide spaces for various temporary activities, Cultural Heritage related events etc.<sup>6</sup> The competition attracted plenty of attention and two entries shared the first prize. All of the competition entries were exhibited in the Museum of Contemporary Art, an event that was formally opened by the City Mayor and attended by lots of interested visitors, parties and stakeholders, which contributed to the public debate about the future development of the area. Later in the process, a workshop was organized with the winning teams in order to proceed with the development of their architectural designs. To this day, the process is in its final phase of bidding and the construction of the installations is expected to begin shortly.<sup>7</sup>



FIG. 6 Exhibition within the premises of the Museum of Contemporary Art; one of the awardee teams – Aleksandra Shulevska and Kristof Schlussler explaining the design proposal. Source: (Mila Gavrilovska)

### 3.3 SKOPJE URBAN LIVING LAB

The Skopje Urban Living Lab (SkULL) is a hub of actions, aimed at inviting different members to the community of the Old Bazaar (being the immediate stakeholders), capable to foster novel creative industries. The challenges of SkULL are twofold; on the one hand, to learn from the existing bottom-up processes emerging in the unique organization of the Old Bazaar, and to enhance its vitality in the contemporary condition on the other.

<sup>6</sup> The interest for the competition was big and the results met the expectations.

<sup>7</sup> The stakeholders involved in this action are: the Museum of Contemporary Art, the Faculty of Architecture, Ss. Cyril and Methodius University in Skopje, the City of Skopje, the Municipality of Centre and the Institutions for protection of Cultural Heritage.

From the beginning of the project, the presence of the Skopje Urban Living Lab was understood as a cohesive part within the system of actions implemented and tested in Skopje, intended to drive the transformation of the historic area into an innovative, creative and sustainable district. Following the global-scale shift in the transformation paradigm that moved the city towards exploring new forms of collectivity and the experience of sharing, SkULL continues to introduce novel models of work and collaboration. Creating new and reinforcing the existing local green economy ecosystems, SkULL's main effort is to foster viable business solutions and empower the local community. Its attempts are focused towards reinforcing the local identity and culture and fostering participation through active engagement of all relevant stakeholders – Bazaar artisans, local craftsmen, shop owners and small business establishments, Macedonian Artisans Trade Association (MATA), the Association of Craftsmen, the local self-governments of the Municipalities of Centre and Chair, the Institutions for protection of Cultural Heritage on city and national level, the Faculty of Architecture, Ss. Cyril and Methodius University in Skopje, the City of Skopje etc.

Consequently, SkULL was opened in the middle of the vibrant space of the Old Bazaar. Prior to that, an existing shop in a neglected condition was chosen, located at one of the most frequent streets of the Bazaar. Despite being out of use for a certain period of time, the space was in a solid condition and was put into use after a process of partial restoration and refurbishment.<sup>8</sup> In that sense, the idea of renewal of a specific shop and moreover its spatial and programmatic revitalization was a practical demonstration of one the project's main goals.

Form the day of its opening, SkULL<sup>9</sup> operates as a collaborative workspace that promotes the idea of contemporary crafts and new creative industries. It also introduces different methods of creative work and communication. It invites members of the community of the Old Bazaar and its surrounding area on a regular basis in order to share their ideas and thoughts, it introduces and fosters participatory approach and social inclusion but above all - it interconnects the local stakeholders.



FIG. 7 The premises of SkULL. Source: (the ROCK team)

8 The space was put into use as a collaborative effort by the Faculty of Architecture, the City of Skopje and the Institutions for protection of Cultural Heritage.

9 The Skopje Urban Living Lab was officially opened in May 2018, on the occasion of the ROCK Steering Committee and General Assembly meeting that took place in Skopje between 14 and 16 May 2018.

In terms of the specific program of work, the actions of SkULL were mainly linked to the following:

- mapping existing urban blocks of the Bazaar in term of their size, condition, amenities, spatial features, ownership, use, conservation status etc.;
- detection of underused spaces positioned on the main frequent trajectories or in the peripheral areas, spaces used by institutions, public spaces etc.;
- hosting and organizing separate meetings with owners, institutions, NGO's; or joint meetings with stakeholders;
- instigating competition of ideas by preparing competition briefs and terms, creating action programs for various activities etc.;
- co-creation of ideas - joint meetings with stakeholders, thematic workshops, designing new products, etc.;
- implementation of viable proposals;
- promotion of collaboration with ROCK European and Local Platforms, collaboration with ROCK Atlas, link to the Urban Innovation Plan.



FIG. 8 Events in the SkULL. Source: (the ROCK team)

## 4 CONCLUSION

Being at its final phase, this project has proven that Cultural Heritage has the capacity to contribute to qualitative rethinking of the contemporary city, with each of the project sections playing its individual role and exploiting various aspects.

Skopje's Lost Ambiances section combined traditional methods of research with modern technologies in order to make the historical data publicly available, to present and communicate to the public the knowledge that currently only professional researchers usually have access to, in an

appropriate representational form. The project directly contributes to the enrichment of memories of Skopje's Old Bazaar, helps the comprehension of its architectural and cultural history and contributes to the understanding of the space as multicultural and cosmopolitan.

The Skopje Art Fortress section contributed to the general idea of the project by focusing on strengthening the identity of the area between the Kale Fortress and the Museum of Contemporary Art and preserving the natural landscape and its biodiversity. The space was further improved by series of programmatic, spatial and horticultural interventions using architecture as the main tool for cultivation.

The Skopje Urban Living Lab section fills the gap between spatial planning policies that come from an institutional level (top down) and the daily, ordinary needs of immediate users of the space, who often do not benefit from long-term strategic planning. The Urban Living Lab proved to be a space where such opposites and seemingly exclusive views of reality are being reconciled.

The results of the ROCK project are undoubtedly important for the future development of Skopje's historical core. What counts equally or more is the process itself – the process of recognizing a potential, of bringing stakeholders together, initiating and enabling an open discussion, raising public awareness, fostering the sense of identity and belonging. The challenges are manifold and the lessons learned in terms of capacities, human resources and their skills are valuable. The project proved the necessity of better integration of Cultural Heritage in the planning strategies, involvement of different stakeholders and facilitation of their dialogue and better understanding.

### Acknowledgment

This paper is an output of the science project ROCK (Regeneration and Optimization of Cultural Heritage in Creative and Knowledge cities). The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730280.

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# Challenges Between Heritage and Tourism: The Case of Cappadocia

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## Abstract

*Cappadocia in central Turkey is renowned for its idiosyncratic volcanic landscape and abundant rock-cut architecture. In 1985, the region was placed on the UNESCO World Heritage List. One of the criteria in the list states that "Cappadocia is an outstanding example of a traditional human settlement which has become vulnerable under the combined effects of natural erosion and, more recently, tourism." In fact, since the 1980s, the tourism sector in Turkey has been seen as a tool of economic growth with nationwide tourism investments being encouraged. These investments have led to rapid and irreversible developments in Cappadocia and elsewhere in Turkey. As a result, the construction of large-scale hotel facilities, which ignored the natural and historical setting of Cappadocia, accelerated after the 1980s. At the end of the 1990s, in line with international trends in developing alternatives to mass tourism, "boutique tourism" was also on the agenda in Cappadocia. Accordingly, alongside the construction of new hotel buildings, existing houses in traditional settlements began to be reused as "boutique hotels." From these opposing approaches, at first sight, the latter appears to be the more sustainable approach, yet the process of adaptive reuse currently seems to be out of control, so much so that entire neighbourhoods, where the initial inhabitants have been forced to move, are transformed into artificial "holiday villages." Municipalities intending "revitalisation" of these "deteriorated" neighbourhoods see the requests of the hospitality industry as an opportunity for financing. As a result, traditional settlements are exposed to rapid and extensive changes that lead to gentrification and to the loss of authenticity. The paper examines the impacts of the opposing approaches of tourism lodging facilities to the traditional settlements in Cappadocia. In this respect, the paper outlines the challenges and addresses conflicts between heritage and tourism.*

## Keywords

*Cultural heritage, tourism, adaptive reuse, boutique hotels, authenticity, gentrification, Cappadocia*

## 1 INTRODUCTION

Cappadocia, today a natural and cultural heritage site and a popular tourist destination in central Turkey, is internationally known for its peculiar volcanic landscape and abundant rock-cut architecture. Volcanic activity of several now dormant mountains and the continuing process of erosion are responsible for the uniqueness of Cappadocia's landscape (Fig. 1). Among others, conical rock formations called "fairy chimneys" and hundreds of painted rock-cut churches from the Byzantine period attract large public gatherings (Fig. 2). The region of Cappadocia can be defined as the land between the modern cities of Nevşehir, Kayseri, Niğde and Aksaray with international tourism focusing mainly on the province of Nevşehir with its two satellites: Ihlara (Peristrema) valley in the southwest and Soğanlı valley in the southeast (Fig. 3).<sup>1</sup>

From the beginnings of tourism in Cappadocia in 1980s to the present, a diversity of tourism lodging facilities can be seen in a spectrum ranging from large-scale hotel facilities at one end to so-called "boutique hotels" at the other. While the former is often criticised for being disharmonious with the peculiar context of Cappadocia, the physical and socio-cultural effects of the "boutique hotels" on the traditional settlements have to date received insufficient discussion.

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1 For a detailed discussion on the physical setting of Cappadocia, see Andolfato and Zucchi (1972, pp. 51-66) and Hild and Restle (1981, pp. 47-61).

In this respect, the paper first points out the natural and cultural heritage of Cappadocia and draws attention to its vulnerability. In the second part of the paper, Cappadocia is examined as a tourist destination. Different stages of tourism and the diversity of lodging facilities are outlined. Finally, boutique hotels are re-evaluated with regard to international cultural heritage policies particularly in relation to living traditional settlements.



FIG. 1 Volcanic landscape of Cappadocia. Source: By the author



FIG. 2 "Fairy Chimneys". Source: By the author

## 2 CAPPADOCIA: A NATURAL AND CULTURAL HERITAGE SITE

The history of conservation in Cappadocia began with the preparation and adoption of the Cappadocia Regional Conservation Plan in 1976. In 1986, the Cappadocia region was declared a national park.<sup>2</sup> Most recently in 2019, the Cappadocia Site Management Act was passed. Accordingly, the responsibilities and authorisations which had previously been divided between several institutions are now given to a single management entity (Alp, 2019).<sup>3</sup>

International recognition of Cappadocia as a natural and cultural heritage site goes back to 1985 when the region between the cities of Nevşehir, Ürgüp and Avanos and a few selected sites were placed on the UNESCO World Heritage List as "Göreme National Park and the Rock Sites of Cappadocia" (Fig. 3). In the description of the heritage, a special emphasis was given to the density of the rock formations and rock-cut architecture with the region being highlighted as "one of the world's most striking and largest cave-dwelling complexes." One of the criteria for the listing states that the region retains "the fossilised image of a province of the Byzantine Empire." Although the majority of surviving rock-cut architecture belongs to the Byzantine period, carved settlements in Cappadocia in fact date back to the Hittites (Bronze Age) –if not earlier – and the traditional way of life had continued well into the mid-twentieth century. Accordingly, in another criterion for the listing, it is warned that "Cappadocia is an outstanding example of a traditional human settlement which has become vulnerable under the combined effects of natural erosion and, more recently, tourism" ("Göreme National Park," n.d.).

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2 For a useful summary on the history of conservation in Cappadocia, see "Planning and Conservation Studies in Cappadocia" in Can (2007, pp. 158-63).

3 Legislators argue that the act aims at better protection of the area. Those who are sceptical are afraid of the exact opposite effect of the new act, which abolished the cabinet decision of 1986 declaring Cappadocia as national park.

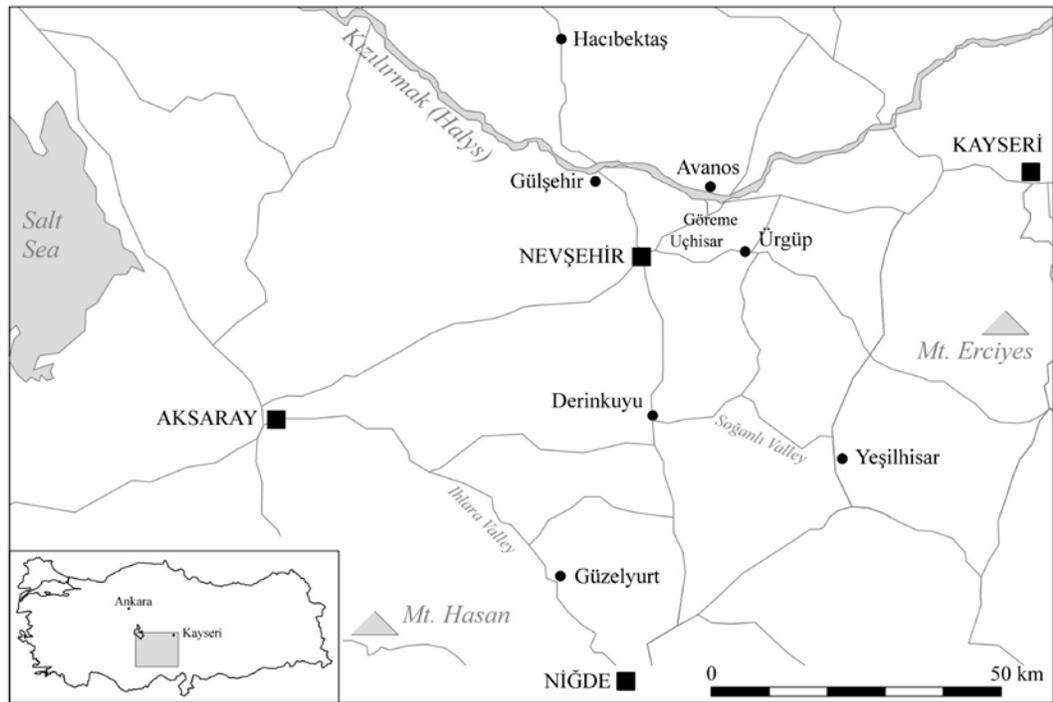


FIG. 3 Map of Cappadocia. Source: By the author

### 3 CAPPADOCIA: A POPULAR TOURISM DESTINATION

Cappadocia was not well known prior to the 1960s when new road constructions gradually opened the region to national and international tourism (Can, 2007, p. 24). Selected sites including Ürgüp and Uçhisar were officially declared tourism development areas in 1973 (Ekim, 1985, p. 43) (Fig. 3). From the 1980s onwards, as in other parts of Turkey, nature and culture have merely been seen as tools serving tourism (Madran & Özgönül, 2003, p. 141). Accordingly, the construction of large-scale hotel facilities ignoring the natural and historical settings had accelerated. By the end of the 1990s, in line with international trends in developing alternatives to mass tourism, "boutique tourism" was also on the agenda in Cappadocia (Evcil, 2012). Consequently, as an alternative to new hotel constructions, existing vernacular architecture began to be reused as boutique hotels by the hospitality industry.

Parallel to the different stages of tourism, different approaches to the architecture of lodgings are seen in Cappadocia. In the 1980s and 1990s, conventional large-scale multi-storied hotel buildings were constructed. These totally ignored the unique landscape as well as the historical and vernacular architecture of Cappadocia. The Dedeman Hotel, opened in 1989, was the first five-star hotel in Cappadocia ("Dedeman," 2015). It was a massive, tall concrete building not unlike those constructed in other parts of Turkey (Fig. 4).



FIG. 4 Dedeman Hotel Cappadocia. Source: <https://www.anitur.com/otel/dedeman-kapadokya-hotel>

In fact, there are only a few examples where investors and architects were aiming references to the Cappadocian unique context. Traditional rock-cut architecture and idiosyncratic volcanic formations were their source of inspiration. One of these is Club-Med, which was opened in 1968 on the outskirts of Uçhisar. Uçhisar, a cliff settlement in Cappadocia, was declared a disaster zone in the 1960s and partly evacuated. In the years following, building materials of the abandoned houses were reused in the construction of new buildings. Consequently, the settlements were transformed into ruins by the 1970s. With the opening of Club-Med, the site began to attract international tourists, especially the French (Sudaş, 2015). Club-Med was a new construction which was almost entirely rock-cut. Hotel rooms had standardised plans, but these were barrel-vaulted rooms carved into the rock (Uçhisar Kaya Hotel, n.d.).<sup>4</sup>

By the end of the 1980s, Merih Karaaslan, one of the leading architects of the time, designed the Peritower Hotel (1989-96) with Nuran Ünsal in Nevşehir with references to Cappadocia's unique nature. The Peritower Hotel was a concrete construction formally mimicking the conical volcanic formations, the so-called "fairy chimneys" (Bozdoğan & Akcan, 2013, pp. 223-224) (Fig. 5). The Peritower Hotel received a Turkish Architecture Chamber award in 1996 for its design language and spatial qualities which differentiate it from other hotel facilities (Ulusal Mimarlık Sergisi, n.d.). The Peritower Hotel closed in 2016 due to financial problems caused by the crisis in the tourism industry. It is argued that drastic changes in the traditional settlement pattern and loss of authenticity around the hotel made it less attractive for tourists (Peritower, 2018).

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The name and ownership of the hotel changed in 2006.



FIG. 5 The Peritower Hotel. Source: [https://archnet.org/sites/1319/media\\_contents/21924](https://archnet.org/sites/1319/media_contents/21924)

In the last two decades, the adaptive reuse of existing vernacular architecture for lodgings became a trend in Cappadocia. However, already in the early days of tourism in Cappadocia, the acceleration of conventional hotel constructions brought an awareness of danger in academic circles. These advised and supported locals to turn their houses into pensions in order to work against the increase of new hotel constructions destroying the cityscape (Alper, 1987, p. 4). Today, although only three facilities are officially certified as boutique hotels, more than dozens in Cappadocia call themselves as such.<sup>5</sup> The first of the so-called boutique hotels which reused traditional houses are: Esbelli House in Ürgüp (1990), the Ataman Hotel (1985-95) and the Göreme Saksavaşan Cave House (1992) in Göreme (Can, 2007, p. 26). In the Ataman Hotel by Merih Karaaslan and Ertan Ergin, new buildings using local stone were added to restored houses and caves.

At the end of the 1990s and the beginning of the 2000s, districts evacuated in the 1960s began to attract investors in tourism. Abandoned and deteriorated neighbourhoods began to be reconstructed as boutique hotel complexes, including the Argos Hotel in Uçhisar and the Kayakapı Hotel in Ürgüp. These projects were launched as alternatives to conventional hotel buildings and concepts. These projects were touted as being respectful to and in harmony with the traditional settlements. In Argos, architect Turgut Cansever, an Aha Khan Award winner known for his architecture influenced by Turkey's vernacular architecture, was the advisor for the project from the outset. The Argos today, with more than 50 hotel rooms, occupies approximately thirty-thousand square meters of area in the traditional settlement (Argos Yapı, n.d.).

In Ürgüp, similarly to Uçhisar, the neighbourhood of Kayakapı was declared a disaster area in 1969, and the initial habitants were forced by law to leave. The process of evacuation continued until 1984. Houses, some in good conditions, were left to their fate without any preventative measures taken by

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<sup>5</sup> Numbers for 2019 are taken from data ("Nevşehir Konaklama," 2019) published by the Republic of Turkey Ministry of Culture and Tourism. The Turkish *Regulation on the Certification and Qualifications of Tourism Facilities* (2005) outlines "authenticity," "high standards and quality" and "personalised service" as primary preconditions for the certification of boutique hotels. The regulation makes restrictions for a minimum of ten and a maximum of sixty hotel rooms for boutique hotels.

the authorities.<sup>6</sup> In 2000, the statue for the disaster area was officially revoked and in 2001, the site was reclassified as part of an urban historical site. Since then, private properties on the site have been nationalised. The Municipality of Ürgüp, intending to revitalise the deteriorated neighbourhood, decided on the “restore – operate – transfer” model as the form of project financing. Accordingly, the site was rented for 49 years to a private investor from the tourism industry (Kabaoğlu & Yıldırım, 2006; Tuna, Özgül Katlav & Dinler, 2017; Yıldırım, 2005). The boutique hotel complex here (still under construction) was partly opened in 2013, and it already irreversibly changed the silhouette of the traditional neighbourhood (Fig. 6).



FIG. 6 Kayakapı Premium Caves. Source: By the author

## 4 A REVIEW OF INTERNATIONAL CULTURAL HERITAGE POLICIES

Opposing views on the handling of monuments (restoration vs. protection) constituted the basis of the debates on heritage in the nineteenth century.<sup>7</sup> Since then, not only have approaches to heritage been diversified, its definition has also been extended. Concerning the definition and extent of heritage, now it has been generally accepted that not only isolated monuments but also more modest structures of cultural significance and historical urban and rural areas in their entirety, including the tangible and intangible components, are heritages that need to be protected (Ahunbay, 2014; Erder, 2007; Madran, 2009). In this respect, with increasing frequency international organisations outline principles and make recommendations for the protection of living traditional settlements.

Principles of the adaptive reuse of old buildings and the introduction of new buildings into existing historical settings have been among the most frequently discussed issues since the Venice Charter declared in 1964. The Venice Charter for the Conservation and Restoration of Monuments and Sites

<sup>6</sup> Alper (1987, p. 3) reports of a number of houses of high architectural quality in the districts of Ürgüp. He claims that the arguments for evacuation were not based on an intensive scientific investigation.

<sup>7</sup> See the manifesto of the Society for the Protection of Ancient Building (SPAB) (Morris, Webb, et al., 1877) written by William Morris, Philip Webb and other founder members as a reaction to Viollet-Le Duc's restoration works.

(1964) is one of the earliest guidelines that redefined heritage and extended its boundaries. Moreover, the charter advises making use of monuments “for some socially useful purpose” to facilitate their conservation. It, however, warns that this “must not change the lay-out or decoration of the building.” The charter cautiously states that “[w]herever the traditional setting exists, it must be kept. No new construction, demolition or modification which would alter the relations of mass and color must be allowed” (Venice Charter, 1964).<sup>8</sup> Likewise, Resolutions of the Symposium on the Introduction of Contemporary Architecture into Ancient Groups of Buildings (1972) determined the principles for “the harmonious introduction of contemporary architecture into ancient groups of buildings.” Accordingly, adding new buildings into an historical fabric is reasonable insofar as it does not affect “the structural and aesthetic qualities” of the existing setting. Authenticity is emphasised as the basic criterion and any imitations which would injure authenticity are dismissed. Finding new uses is recommended as a tool to revitalise monuments and groups of buildings as long as the structure and the character of the entity – externally or internally – is not compromised (Resolutions of the Symposium, 1972).<sup>9</sup>

Since the last quarter of the twentieth century, international policies have pointed to the vulnerability of local communities in addition to threats to the physical qualities of historical areas. The Declaration of Amsterdam (1975) warns that the “[t]he rehabilitation of old areas” should not lead to “a major change in the social composition of the residents” (Declaration of Amsterdam, 1975). Similarly, the European Charter of the Architectural Heritage (1975) states that “heritage should be passed on to future generations in its authentic state and in all its variety as an essential part of the memory of the human race.” The charter also states that measures taken for the rehabilitation of deteriorated historical centres and villages “should not cause the departure of the poorer inhabitants” (European Charter, 1975).<sup>10</sup> The Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas (1976) warns against “stereotyping and depersonalisation” and “irrational and inappropriate reconstruction work” while taking measures in historic areas (Recommendation concerning the Safeguarding, 1976).<sup>11</sup> The Tlaxcala Declaration on the Revitalization of Small Settlements (1982) makes statements to preserve small settlements with their local values and traditions. The declaration emphasises “the rights of local communities to be involved in decisions regarding their towns and villages” and appeals to a sensitive and interdisciplinary approach to conservation (Tlaxcala Declaration, 1982).<sup>12</sup>

At the end of the twentieth century, mass tourism was considered to be a threat to cultural and social sustainability. The Charter for Sustainable Tourism (1995) warns that in addition to its socio-economic benefits, tourism can also have “negative consequences for communities.” The charter warns against degradation of natural and cultural heritage caused by high impact tourism (Getty Conservation, n.d.). Similarly, the International Cultural Tourism Charter (1999) points to the tense relation between heritage places and tourism. The charter calls that the relation “should be managed in a sustainable way for present and future generations.” The charter advises the involvement

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8 Approved at the Second International Congress of Architects and Technicians of Historic Monuments in Venice in 1964. Adopted by the International Council on Monuments and Sites (ICOMOS) in 1965.

9 Adopted at the Third General Assembly of ICOMOS in Budapest in 1972.

10 Adopted by the Council of Europe in 1975.

11 Recommendations made at the General Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) meeting in Nairobi.

12 Recommendations made at the Third Inter-American Symposium on the Conservation of Building Heritage organised by the Mexican National Committee of ICOMOS in Tlaxcala.

of local communities in the planning processes for conservation and tourism. The charter also asserts that “tourism programs should protect and enhance natural and cultural heritage characteristics” (International Cultural Tourism, 1999).<sup>13</sup>

More recently, the Valetta Principles adapted in 2011 during the ICOMOS General Assembly warn of loss of identity and characteristics of the place and warn of the displacement of communities and of gentrification as a result of “the transformation of historic towns and urban areas into areas with a single function devoted to tourism and leisure and not suitable for day-to-day living.” The principles state that “[h]istoric towns and urban areas run the risk of becoming a consumer product for mass tourism, which may result in the loss of their authenticity and heritage value.” Under the Intervention Criteria in the Valetta Principles, it is stated that “[m]ajor quantitative and qualitative changes” as well as “[e]xcessive speed of change” should be avoided (Valetta Principles, 2011). Likewise, the Burra Charter (2013) states that “[t]he amount of change to a place and its use should be guided by the cultural significance of the place and its appropriate interpretation” (Burra Charter, 2013).<sup>14</sup> Most recently, the European Cultural Heritage Strategy for the 21<sup>st</sup> Century was adopted by the Committee of Ministers in 2017 (European Cultural Heritage Strategy, 2017). Here, Recommendation D7, entitled “Give consideration to heritage in sustainable tourism development policies” calls for the development of sustainable tourism that should consider local inhabitants’ quality of life and the preservation of heritage alongside satisfaction of visitor expectation (D7 – Give Consideration, 2017).

At the national level, the ICOMOS Turkey Architectural Heritage Conservation Charter (2013) advises that policies should be developed to protect cultural assets by maintaining their original functions as much as possible and by keeping the inhabitants in their places (ICOMOS Turkey, 2013).

## 5 CHALLENGES BETWEEN HERITAGE AND TOURISM IN CAPPADOCIA

When evaluated within the framework outlined above, the adaptive reuse of vernacular architecture may at first sight appear to be a more sustainable approach than the construction of new buildings that are not in harmony with the natural and historical setting of Cappadocia. Nevertheless, as international cultural heritage policies frequently warn, any irreversible intervention in a living historical site, including adaptive reuse of extant building stock, is a very sensitive issue and needs to be evaluated from various perspectives.

Şükran G. Can (2007), who studied traditional houses reused as boutique hotels in Ürgüp, asserts that due to “incorrect implementation and insufficient control mechanisms” (p. 136) and due to disproportionate reconstruction works, historical buildings lose their original respective value (p. 24). Accordingly, the traditional configuration between the house, the courtyard and the street is often inadequately altered and irreversible physical and spatial changes injuring authenticity are implemented (pp. 132-133). Similarly, Andus Emge warns that “the recent trend in building boutique hotels[...]have introduced new ways of building so that building styles that had previously been unique to a particular village are now replaced with standard construction and decor elements without any sub-regional differentiation” (Tucker & Emge, 2010, p. 50).

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13 Adopted at the ICOMOS General Assembly in Mexico in 1999.

14 The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance, Burra Charter, was first adopted in 1979; current version adopted in 2013.

On the other hand, the successive transformation of existing vernacular houses as seen in Uçhisar and Ürgüp, has led to a rapid and irreversible change in traditional settlements. In fact, at present, the process seems to be out of control and neighbourhoods formerly evacuated for various reasons are attracting the attention of investors. In this respect, local authorities intending “revitalisation” of these “deteriorated” neighbourhoods see the so-called “restorate – operate – transfer” model as a form of project financing. In fact, turning “deteriorated” neighbourhoods into physically and/or psychologically gated “holiday villages” for high budget customers has become a fashionable model in Cappadocia. With high probability within a decade, many traditional settlements in Cappadocia will be irreversibly transformed following this model. Likewise, current urban renewal projects applied to living neighbourhoods, such as the neighbourhood around the castle of Nevşehir, leads to the removal of inhabitants and to devoting the area to a single function, namely tourism.<sup>15</sup>

## 6 CONCLUSION

While the negative environmental and negative aesthetic effects of the conventional hotel buildings that ignore the natural and historical settings are more obvious, conflicts created by so-called “boutique hotels” need to be highlighted first. In the case of Cappadocia, the recent approaches to the adaptive reuse of vernacular architecture are in conflict with international policies in many respects. Among these, the amount and speed of change, single function devoted to tourism, inappropriate and uncontrolled implementations, loss of values and identities of local communities and places can be mentioned. Although the managements of boutique hotel complexes claim to offer an authentic experience in a traditional setting,<sup>16</sup> in the last two decades false authenticity and gentrification have become a dual threat to the cultural heritage and social sustainability in Cappadocia. In fact, not only in Cappadocia but also in other parts of Turkey, the recent attitude towards traditional settlements tends to reduce them to mere scenery for tourism. As Akın et al. (n.d.) note, instead of being a tool facilitating conservation, tourism has become the major aim of the conservation of vernacular architecture in Turkey.

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16 See the official websites of the hotel complexes “Argos in Cappadocia” (n.d.) and “Kayakapı Premium Caves” (n.d.).

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# Public Participation as a Tool to reach a Consensus: A Critical Reflection on the Historic Urban Landscape Approach

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## Abstract

*World Heritage cities (WHC), meaning urban areas, often in part, inscribed at the UNESCO World Heritage list are valuable heritages to many local and global communities and, therefore, attract efforts to conserve them. Nonetheless, these cities are increasingly under pressure, by globalization, climate change, and tourism. An integral approach, interlinking urban development, and conservation, as proposed by the 2011 UNESCO Recommendation on the Historic Urban Landscape (HUL approach), foreseen to promote a more sustainable development. This means that public participation plays an essential role in consensus building among the varied stakeholders on related decision making processes, in particular on what is a heritage (attributes) in their city and why (values) to be conserved. The HUL approach underlines people's role by proposing public participation as a tool, recommending authorities to involve the community in their urban and heritage management processes. Being an international recommendation, the HUL approach does not specify a framework for public participation, nor reference the critical factors affecting the public participation processes, as these are expected to differ, depending on the context. It does reference the aim for consensus specifically to the cultural significance (attributes and values) of the city among all stakeholders. This paper aims to present the results of a part of a systematic literature review, revealing the knowledge and gaps in the state-of-the-art in studies that focus on public participation as a tool to reach consensus. The eligible studies were evaluated on four criteria: 1) context and field of the project, 2) public participation process, 3) consensus. Besides highlighting its conceptual complexities and contradictions, this paper also puts forward recommendations to guide future research. Results can be relevant for cities seeking public participation frameworks to implement the HUL approach.*

## Keywords

*Public participation, consensus, World Heritage Cities, Historic Urban Landscape*

## 1 INTRODUCTION

The 2011 UNESCO Recommendation on the Historic Urban Landscape (HUL approach) promotes a reform of heritage management. It proposes an integral approach, interlinking urban development and conservation. The HUL approach also promotes heritage as social capital (Bandarin and Van Oers, 2012; Sonkoly, G., 2017; Veldpauw and Roders, 2017) and proposes public participation as a tool, recommending the authorities to involve more and better the community.

Being an international recommendation, the HUL approach does not reference particular methods, actors, and the level of public participation. These are expected to vary according to the context, heritage, and community. Though it does recommend using public participation, in order to reach consensus among the stakeholders on what resources in their city ought to be conserved, named as attributes, and on why should these resources be conserved, named as values (Veldpauw and Roders,

2017). That is to say, while the attributes and values of the cities can differ from person to person, public participation is suggested as a tool to reach a consensus among the stakeholders on what and why resources should be listed as heritage. Determining the attributes and values contributes to setting limits of acceptable change, distinguishing areas in cities on their level of conservation, playing a significant role in the integration of urban development and conservation. As such, determining the attributes and values which are common by all stakeholders is essential.

Investigating consensus building in public participation processes is not only covered in heritage planning but also in other planning fields. This study focusses on researches examining the public participation process to reach consensus in urban planning, including heritage planning. Through a structured search of literature and further analysis, two questions and sub-questions are formulated, namely:

- 1 What is the main focus of the literature on public participation and consensus building? What are their findings? What is the knowledge gap?
- 2 What are the main factors of the public participation process affecting consensus building, and how are they developed?

In order to address these questions, eligible studies were evaluated on three criteria: 1) context and field of the project, 2) public participation process, 3) consensus.

## 2 METHODOLOGY

This paper is based on a systematic literature review (Boland & et al., 2017), comparing researches that focus on how to reach consensus on values and attributes in a public participation process. The main concepts are, respectively, consensus, values and attributes, and public participation.

### 2.1 SEARCH PROCESS

This research focused on the binary combination of consensus, values and attributes, and public participation. This paper specifically presents the results of selected publications combining the concepts of public participation and consensus, which covered around half of the total records gathered. These terms were complemented with other related concepts, such as community, public, citizen, local, actor, and stakeholder, in relation to the term public. The same was done for the concept participation, including related concepts as participation, engagement, and involvement. Conflict and consensus also were used to enrich the pool of papers focused on consensus.

The SCOPUS database was taken as the source, and the collection was limited to publications being classified as the fields: Social Sciences, Engineering, Environmental Science, and Arts and Humanities (total 405 records).

Records were excluded when they were not involving the public in the participation process (e.g., Caponio, 2018; Cho & Jung, 2018), nor when consensus building in public participation process would not be addressed (e.g., Blečić et al., 2007; Petrušonis, 2018). Moreover, full books have been excluded to keep the sample of publications comparable. Only accessible and English publications were chosen. Studies were assessed on the above inclusion and exclusion criteria by reading abstracts,

and if not clear from the abstract, the whole article was further reviewed. PRISMA was the mean to develop the systematic review and meta-analyses clearly and completely (Liberati et al., 2009). This study presents the search process in Fig. 1.

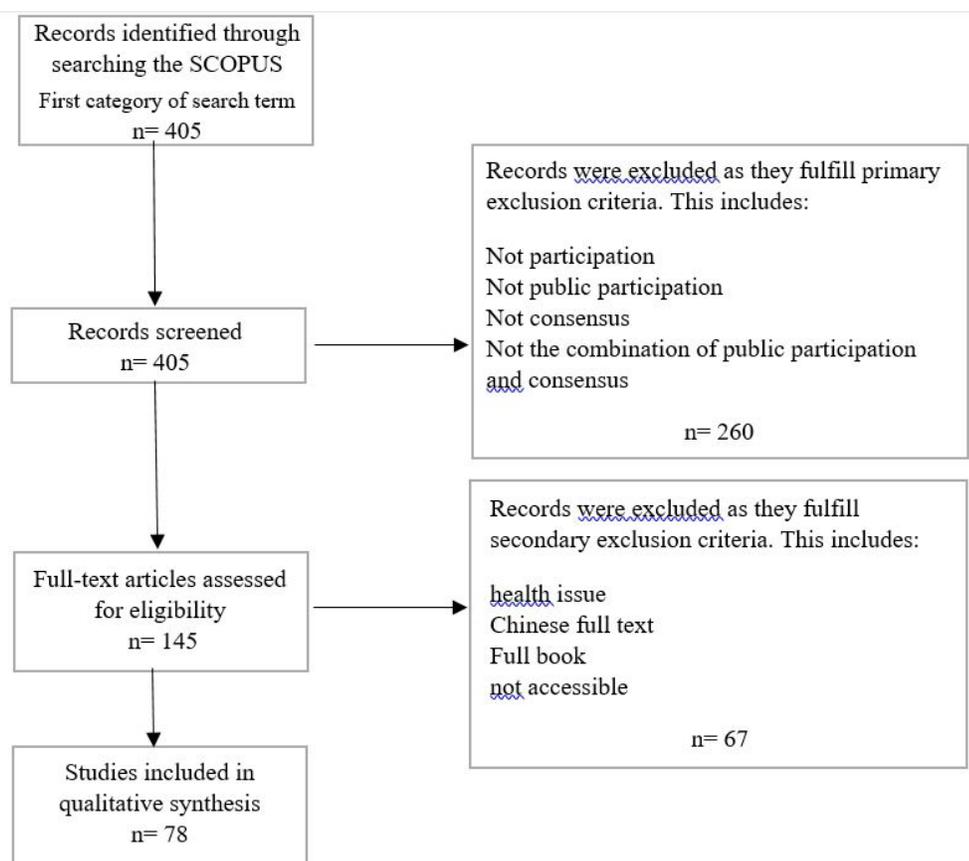


FIG. 1 PRISMA flow diagram; Overview of the number of eligible records in each step and exclusion criteria (consensus + public participation)

## 2.2 ASSESSMENT CRITERIA

After specifying the eligible studies (total 78 records), the literature was further reviewed on different subcategories within three domains: 1) Context and field of the project; 2) public participation process; 3) Consensus. First, the context and field of the project were sub-classified as (1) spatial planning, (2) infrastructure planning, and (3) political issues.

The geographical distribution of the projects was also specified. Second, public participation process was further detailed in relation to actors, methods, and levels of public participation. Each of these aspects has specific subcategories. The name and number of interest groups that participate in the project were specified. Methods are subcategorized to data collection and data analysis, distinguishing those which are Digital Technology (DT), Decision Making Support Model (DMSM), and Analog. The level of public participation (table 1) was classified according to the IAP2 (International Association for Public Participation) framework (IAP, 2007).

	<b>Increasing Level of Public Impact</b>				
	<b>Inform</b>	<b>Consult</b>	<b>Involve</b>	<b>Collaborate</b>	<b>Empower</b>
<b>Public participation goal</b>	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision-making in the hands of the public.
<b>Promise to the public</b>	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.
<b>Example techniques</b>	<ul style="list-style-type: none"> <li>▪ Fact sheets</li> <li>▪ Web sites</li> <li>▪ Open houses</li> </ul>	<ul style="list-style-type: none"> <li>▪ Public comment</li> <li>▪ Focus groups</li> <li>▪ Surveys</li> <li>▪ Public meetings</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workshops</li> <li>▪ Deliberative polling</li> </ul>	<ul style="list-style-type: none"> <li>▪ Citizen advisory committees</li> <li>▪ Consensus-building</li> <li>▪ Participatory decision-making</li> </ul>	<ul style="list-style-type: none"> <li>▪ Citizen juries</li> <li>▪ Ballots</li> <li>▪ Delegated decision</li> </ul>

TABLE 1 IAP2 public participation framework (2007)

The third criteria, consensus, was investigated concerning terminology and content. Accordingly, the word frequency and the terms used for the concept of consensus were identified and compared (see Table 2). Regarding the content, the records aim to reach a consensus or to guide to a consensus. The difference between these two approaches is further explored.

<b>Context and field</b>	<b>public participation</b>	<b>consensus</b>
Africa/ Europe/ America/ Oceania Asia/	actor: selection criteria, interest groups	terminology: word frequency: agreement, compromise, convergence
Spatial infrastructure political issues	planning/ planning/ tool: data collection, data analysis Level: based on IAP2 framework (1-5)	reach/guide to

TABLE 2 Assessment domains and their subcategories

### 3 RESULTS

Most publications (92%) report on one or more case studies on public participation. Seven papers (8%) instead, report on theoretical aspects of public participation (e.g., Cecchini & Trunfio, 2007; Laurini, 1998).

#### 3.1 CONTEXT AND FIELD OF THE PROJECT

The literature mostly does not provide enough information according to the context of the case studies and how it affects the process. Most research is conducted by the fields of spatial planning (67%), infrastructure planning (29%), and political management (4%). The case studies have different scales, ranging from neighborhood planning to urban development planning. These case studies are primarily located in Europe (39%), followed by America (32%) and Asia (20%), being Oceania (7%), and Africa (2%), the least researched continents.

#### 3.2 PUBLIC PARTICIPATION PROCESS

Since the 1960s, public participation process has been the topic of a lot of studies and there were different approaches to it. In the following items, this paper discusses and compares the common issues in public participation processes in the literature.

##### 3.2.1 Actors

The literature addresses four subjects according to the actor, including the number of the groups of actors participating in the project, public or private invitation, criteria of selection of the participants, and the role of different actors.

Most research details the groups of actors participating in their project (77%). Seldom is the research focused on only one group of actors (e.g., Balug & Vidart-Delgado, 2015). Most research includes two or more groups of actors. Beatley et al. (1994) involved the most actors, with nine interest groups. Sometimes, actors are limited to a specific social group, age, or gender (e.g., minority groups, young students, or women). Besides, in some case studies, each group of actors were involved in specific steps of the process and, as a result, had different levels of participation (Golobić & Marušić, 2007).

An open public invitation encouraging stakeholders to participate is the most common form of invitation (Manzi et al., 2018; Shen & Kawakami, 2007; Tudor et al., 2014). However, in a few cases, the potential participants are personally invited to take part in the process (e.g., Vlachokostas and et al., 2011; Shen & Kawakami, 2007).

Although the selection criteria of the participants are mentioned as a significant issue (Arciniegas & Janssen, 2012), there are just few research defining them (Finka et al., 2017; Gerasidi et al., 2009; Pérez-Soba et al., 2018; Starkl et al., 2013). For example, Gerasidi et al. (2009) defined three steps: (a) stakeholder mapping (identification of all potential stakeholders or stakeholder groups in the region, who affect or is affected by the project decisions); (b) assessment of stakeholder interests, positions and how these interests could be affected by project risk and viability; and (c) selection of different stakeholders to be involved in the study processes.

The role of different actors, including planners and policymakers, and their influence in the success of the public participation process are only addressed by few scholars (e.g., Cheng, 2013; Purbani, 2017; Fahmi and et al., 2016; Maginn, 2007).

### 3.2.2 Level of public participation

Most of the literature (79%) provides information about the level of public participation though they do not directly mention that. Overall, nearly half of the case studies are in level three of the IAP2 (International Association for Public Participation) framework, involvement (48%), such as Van Empel(2008) and Gray et al. (2017). The rest are in level two, consultation (34%) (Tudor et al., 2014; Mohammadi, Norazizan and Nikkhah, 2018), and a few in level four, collaboration (18%) (Halla, 2005; Jaasma et al., 2017).

There were no researches reviewed on levels one and five. In other words, all the records go further than informing and at least consult with the stakeholders. But, they do not work on empowering participants, which means that they do not place the final decision at the hands of the public. Mostly (82%), the project manager keeps the power and makes the last decision, though considering the opinions of the participants. Only in a few records participants collaborate in decision making and consensus building.

### 3.2.3 Method

Most researchers either reference (21%) or investigate further (70%) the methods and tools of public participation. Concerning data collection, most of the projects used Analog methods alone (54%) or with combination to other methods (24%). DT methods are also used in the rest of the literature (22%). Semi-structured interviews and public hearing meetings (Yu et al., 2019), focus group meeting (e.g., Le Pira et al., 2017), public meeting (e.g., Engberg, 2018), role play, workshop (e.g., Thomas et al., 2018), public dinner, site visiting (e.g., Balug and Vidart-Delgado, 2015) are examples of Analog methods that have been used in the literature. These methods are also used in combination with other methods. Finka and his colleagues (Finka et al., 2017) present a five steps public participation procedure including a variety of methods and tools including focus groups, Public Participation Geoinformation Systems (DT), and voting or referenda (DMSM).

Among the researchers who detailed their data analysis methods, many used DMSM in their case studies, alone (26%) or with combination to other methods (48%), and few used only DT (14%) or Analog methods (12%). Delphi (Aigwi et al., 2019; Diaz et al., 2018; Jayasooriya et al., 2019) and AHP (Regan, Colyvan and Markovchick-Nicholls, 2006; Nordström et al., 2009; Diaz et al., 2018;) are the most common DMSM methods that have been used in the literature.

## 3.3 CONSENSUS

Consensus is a complex concept that can be seen from different points of view. In the following, the terminology and interpretation of the concept of consensus is explored.

### 3.3.1 Terminology

The use of the term „consensus“ ranged from once to 106 times. Other terms are also used for the concept of consensus, namely compromise, agree, agreement, and convergence. However, as they

were repeated in the records only a few times, the records can not be compared according to these terms. Hence, the goal was to investigate the relation between the frequency of consensus and the methods of public participation.

### 3.3.2 Reach/guide to a consensus

Consensus is often assumed as the goal of public participation processes (e.g., Bertolinelli et al., 2018; Engberg, 2018; Lebeau et al., 2018; Jayasooriya et al., 2019). While most of the records aim to reach a consensus, two scholars specify their aim as to guide to a consensus (Fahmi et al., 2016; Kato et al., 2008). In these cases, the decision was made before the public participation process, aiming to inform and persuade the stakeholders to agree with the decision. It is also worth noting that among the cases seeking a consensus, only a few (20%) asked participants to choose among a limited number of predefined options (e.g., Shen, Kawakami and Kishimoto, 2012; Thomas et al., 2018). Therefore, this also pre-sets the range of decisions.

## 4 DISCUSSION

In this part, we discuss potential relations between the different criteria mentioned in the results. Charts 1 and 2 demonstrate the average frequency of consensus in studies using different methods of DMSM, DT, and Analog in data collection and data analysis. These diagrams only include methods that have been used at least in five records. It can be seen from both charts that studies using DMSM, DT, and Analog respectively have more frequency of consensus. In other words, studies using DMSM methods focus on reaching consensus as a final goal by quantifying the participants' opinions. However, as the figures show, the level of public participation is relatively low when the records use only a DMSM method. This is because mostly, there is no or very limited interaction between different participants. Among data collection and data analysis methods, respectively, Analog and the combination of all the methods have the highest level of public participation. The higher level of participation not only means giving more power to participants but also means providing more interaction among them to reach a consensus.

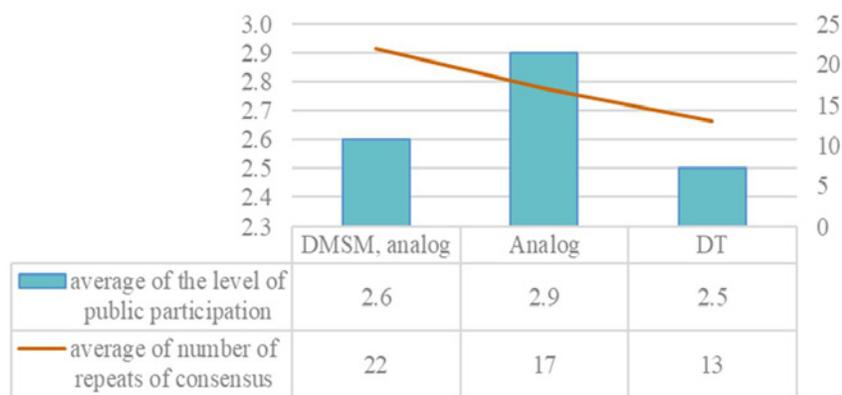


FIG. 2 The relation between data collection methods with the level of public participation, and frequency of consensus.

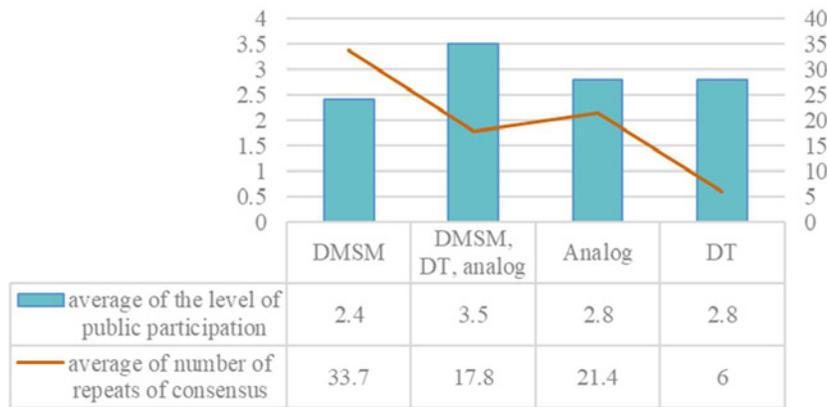


FIG. 3 The relation between data analysis methods, level of public participation, and frequency of consensus

## 5 CONCLUSION

The literature review presented revealed that research on consensus building in public participation processes is primarily focused on general planning, and seldom addressing heritage planning. None of them referenced to HUL approach. However, more than half of the scholars (57%) do reference values (e.g., Mouat et al., 2013; Aigwi et al., 2019), mostly seeking consensus on values.

This paper investigated the factors affecting consensus building in a public participation process. The first factor are the actors whom participate in the process, which is referenced by most of the literature. Although involving more interest groups makes reaching a maximum consensus more challenging, it leads to a more inclusive process.

The second factor is the level of participation, which is indirectly referenced in most of the records. The higher the level of public participation, more empowered the public is, more interaction they have and more inclusive the consensus is in the decision making process. In level one and two of the IAP2 framework (one-third of the records), the participants are only indirectly involved in the decision making process and consensus is reached without their presence. Nevertheless, respectively in levels three, four, and five, participants are more actively involved in the consensus building process.

Almost all of the literature references public participation methods, which is our third factor. Among different methods, DMSMs, using mathematical models and formulas, are more transparent and clear in reaching a point of consensus. However, there is no room for interaction in these methods and each participant is supposed to give his or her points of view individually. Analog and DT methods, in the other hand, are based on interaction contributing the actors to understand each other's points of view and reach a maximum consensus instead of an exact point of consensus. DT methods are the product of the recent decades which increase the efficiency of the Analog methods by fostering human interaction and visualizing actors' opinions. All the factors affect the degree of inclusive consensus and a maximum consensus. Then, each public participation project should find a balance between an inclusive consensus and a maximum consensus.

The last factor that influences all of the above factors is the context of the site. However, only a few information is provided regarding the context and how it affects other factors. The starting point

to improve a public participation framework for HUL are these factors and the acceptable range of them. None of the records provides an assessment of the project, and there is not yet a widely accepted framework for public participation assessment. Although, this paper cannot define the right limitation for each factor, it reveals the frequency of different options in each factor and potential relation between these options towards reaching a consensus.

The research gap was revealed related to the combination of site, method, level of participation, and diversity of actors for consensus building in planning processes. The open questions for the continuity of this research are: How can the consensus phase of the HUL approach be enriched by this paper's achievement on public participation methods? Which types of methods and tools could be combined? And how could they be used to satisfy consensus building requirements of heritage site particularities and citizen empowerment? This research will now investigate how digital technologies such as mining social media data could contribute to understand citizen's heritage values and attributes. This will be used to critically reflect on DT as a tool integrated to the HUL approach to achieve a greater conservation and sustainability in World Heritage Cities.

### Endnotes

This study comes up with the categorization of methods. Two main categories are those using mathematic models or statistics and those using participants' interaction and discussion to reach a consensus. This paper called the first category DMSM including Delphi and AHP. The second category includes Analog and DT methods, contributing to common understanding to reach a maximum consensus. As it is clear from their name, DT methods use DT tools namely including online survey, visualisation tool, online participation platforms, and public participation Geographic Information System, social media analysis, and intelligent agent models. Analog methods use analog tools in their main process including paper survey, public meetings, paper maps, site visiting, and exhibition.

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# SESSION 3

## Disciplines: Capacities and Limitations

### **Erik de Maaker**

Over time, the meaning of cultural heritage has broadened from single monuments and objects of art to cultural landscapes and historical cities. In addition, it has expanded beyond materiality to encompass intangible expressions of culture. As a result, different disciplines and expertise, ranging from archaeology through the social sciences to area studies have entered the domain of heritage management and conservation. The resulting multidisciplinary discourse can provide valuable new inputs on heritage's potential impact on sustainable development. Building bridges between academic discourse and a variety of heritage professionals can address new dimensions of sustainability and facilitate important transdisciplinary collaborations that break new ground.

Stakeholders with different backgrounds have different priorities, viewpoints, and approaches. What are the disciplines most influential in heritage research and management? What are their strengths and/or weaknesses? How can interdisciplinary teams facilitate inclusiveness and equality?

# How have Urban Heritage Management Policies been studied in the 21<sup>st</sup> Century? A scoping Review

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## Abstract

*This paper aims to give a broad look on the research design and the methodological choices made by researchers of urban heritage management policies in the 21<sup>st</sup> century, with the goal of identifying possible previous flaws and help to develop more innovative research. This is a theoretically oriented review, following an adapted form of the Joanna Briggs Institute guidance for scoping reviews. The question trying to be answered in this paper is: how have urban heritage management policies been studied empirically in the 21<sup>st</sup> century? The time frame for this study is between 2001 and 2018. Using SCOPUS, the most complete digital database of peer-reviewed literature for Social Sciences, as the digital database for this study, we develop a research strategy that aims to identify the following variables in each relevant article: author(s); year of publishing; scientific journal; country of researchers; country investigated; research subject; research design; methodology; public policy stage(s) investigated. These variables are expected to give a broad picture of the research made so far and some relevant insights about its strengths and weaknesses. After applying all the defined exclusion criteria, the sample for this study comprised 122 articles. The main findings of this study were: a clear preference for single case-studies as the research design; most articles only use qualitative analysis; most articles are concentrated in Europe and North America; and they are mainly interested in the initial and final phases of the policy cycle. Finally, we discuss the results and give some clues for future research.*

## Keywords

*Urban heritage management, public policy, scoping review*

## 1 INTRODUCTION

The subject of cultural heritage has been in the public agenda for some decades, namely through the action of international organizations such as UNESCO (United Nations Education, Science and Cultural Organization), and its World Heritage List. More recently, though, there is a greater interest in urban heritage, more specifically, which led to the creation of several international documents on this subject, such as the Recommendation on the Historic Urban Landscape, adopted by UNESCO in 2011 (Dormael, 2016; Rodwell, 2012; UNESCO, 2011).

Moreover, although there have been several reflections and recommendations about how to manage urban heritage with a much more broad and holistic vision than in the past (Bandarin, 2019; van Oers & Pereira Roders, 2012), there is still ample room for the development of research in this area.

In this regard, this paper aims at studying systematically the research developed, in the 21<sup>st</sup> century, for the study of urban heritage management policies in its research design and methodological

choices. To this end, a scoping review protocol was defined and used. This protocol was based in the Joanna Briggs Institute guidance for scoping reviews (Peters et al., 2015), although adapted to the social sciences and this particular research.

The development of this study was prompted by a need to identify and understand the research strategies and methodological options made by researchers in this field, to identify possible gaps and flaws in these research strategies, in order to develop more innovative and diverse research.

The decision of using a scoping review method can be justified by the goal of limiting selections bias, and trying to give an overview of existing evidence, regardless of quality, while having a broader scope than a traditional systematic literature review (Peters et al., 2015).

This paper will be divided into four more chapters: the methodology used, the presentation of results and a brief discussion about these results. Lastly, a small conclusion will give an overall evaluation and point to possible future lines of research.

## 2 METHODOLOGY

Scoping reviews, as systematic literature reviews, use a scoping review protocol defined a priori with the objective of limiting selection bias, and identifying all relevant evidence to answer the review's main question (Petticrew & Roberts, 2006).

This review wants to develop a comprehensive and precise view of the research strategies and methodological options used by researchers in their study of urban heritage management policies.

To this end, the question that steered the review was: how have urban heritage management policies been studied in the 21<sup>st</sup> century?

For this scoping review, a research of articles was made in the SCOPUS ([www.scopus.com](http://www.scopus.com)) database, the most complete scientific database for peer-reviewed literature for the social sciences, on the 12<sup>th</sup> and 13<sup>th</sup> of January 2018, for articles between 2001 and 2017, and on the 28<sup>th</sup> and 29<sup>th</sup> November 2019, for the year 2018. The search keywords used were: 'historic urban landscape', 'built heritage', 'historic center', 'historic centre', 'urban heritage', 'city heritage', 'historic urban centre', 'historic city centre', 'historic urban center', 'historic city center', 'historic city', which reflect the subject of interest for this review.

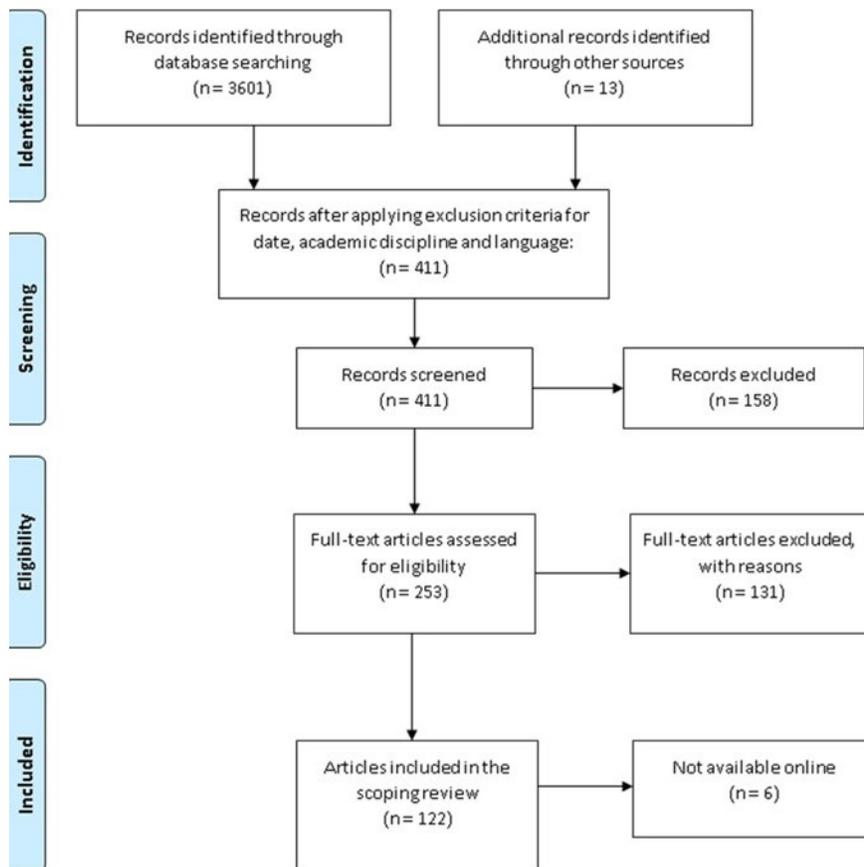


TABLE 1 PRISMA chart with the research process. Source: From author (Moher et al., 2009).

The literature search identified 3601 records. For these records we used the following inclusion/exclusion criteria, defined beforehand:

- Only articles in the social sciences and humanities were considered;
- Published between 2001 and 2018;
- Only scientific articles were chosen (we excluded books, book chapters, media articles, etc.);
- We used only articles written in English, Spanish, French and Portuguese.

To these records we also added 13 articles manually, that came from earlier research by the author and references found at an early stage of the search. After applying all the above-mentioned criteria, the sample comprised 411 articles (see table 1).

To these sample, a screening of title and abstract was made to identify those articles that fit the criteria of:

- Having original empirical research;
- Being about urban heritage management policies.

After this screening, the sample comprised 253 articles, which were subject to a full-text eligibility test using the same criteria. Finally, 6 more articles were excluded since we were unable to find them online. We ended with a sample of 122 articles that is the basis for the results presented in the next chapter (see table 1 and references for the sample of articles).

### 3 RESULTS

All the selected articles were analysed using the same protocol which had the following variables, considered to be relevant to answer the research question: author(s); year of publishing; language; scientific journal; country of researchers; country investigated; research subject; research design; methodology; public policy stage(s) investigated. The analysis presented here is mostly of a quantitative nature and gives some clues about possible paths for future research, but there is space to conduct a more qualitative analysis, with this sample.

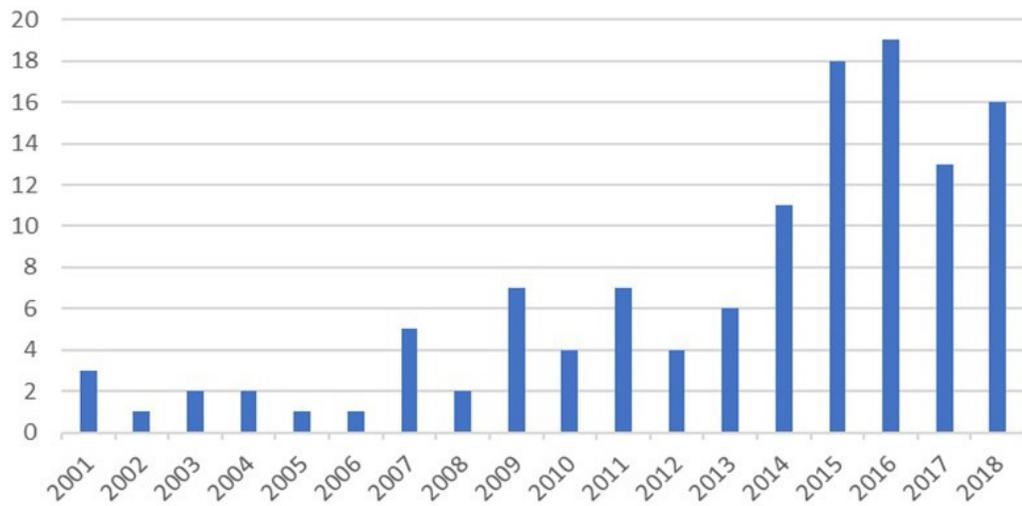


FIG. 1 Number of articles by year of publishing.

Considering the publishing year (Fig. 1), there is a clear increase in the number of articles published, which can reflect a growing interest with the future of cities and its heritage in a time with less State capacity. On the other hand, we cannot exclude that this is a virtual database, and this may reflect just an increase in the number of journals available online.

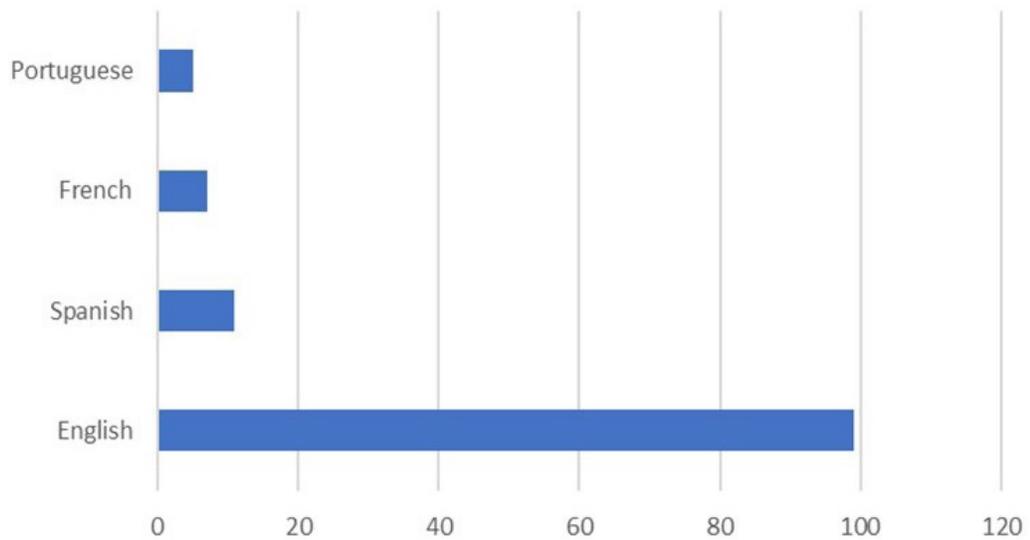


FIG. 2 Language of the articles.

As one can see in Fig. 2, English is clearly the main language used, but there are other relevant languages in this study, namely Spanish, which might hint to the importance of extending this kind of research to languages other than English.

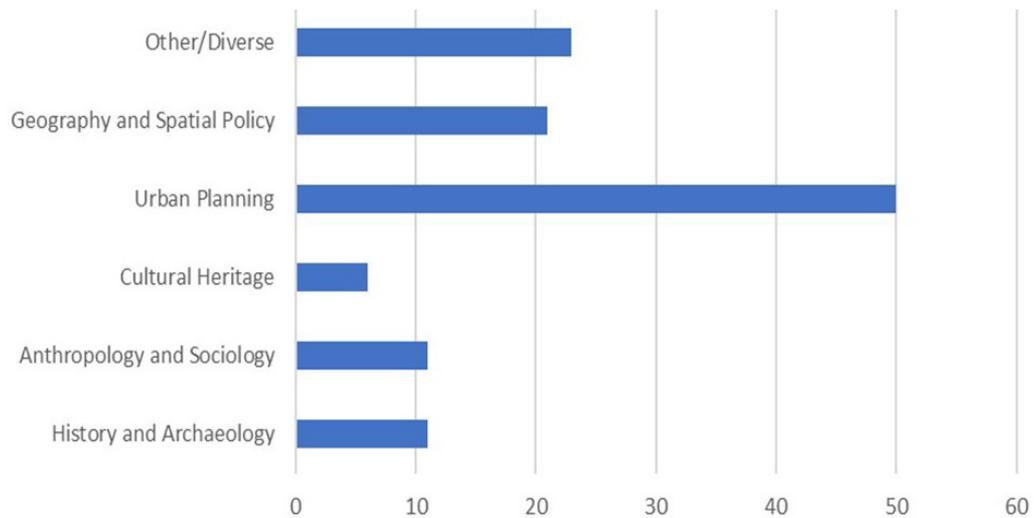


FIG. 3 Area of scientific journals.

In Fig. 3, there is evidence that most publications in this sample deal with issues concerned with urban planning and geography, and that the number of articles published in cultural heritage journals is very limited. This variable is important to understand which scientific areas are most relevant for the study of urban heritage management policies in order to encourage more interdisciplinary research. The journals represented in the sample can be seen in table 2.

<b>History and Archaeology</b>	Mediterranean Archaeology and Archaeometry; The Historic Environment: Policy & Practice; Conservation and Management of Archaeological Sites; Journal of Social Archaeology; Conservar Património
<b>Anthropology and Sociology</b>	Anthropological Notebooks; American Ethnologist; Revista Española de Antropología Americana; Sociological Research Online; Anthropological Quaterly; Sociedade e Cultura; Sociedade e Estado; Etnografica; Urbanities
<b>Cultural Heritage</b>	Journal of Cultural Heritage; International Journal of Cultural Property; International Journal of Heritage Studies; Conservation Science in Cultural Heritage
<b>Urban Planning</b>	International Journal of Urban and Regional Research; Urban Design International; Urban Research & Practice; Canadian Journal of Urban Research; Journal of Urban Regeneration and Renewal; Habitat International; Planning Malaysia; Journal of Urban Design; Journal of Housing and the Built Environment; Urban Forum; Theoretical and Empirical Researches in Urban Management; Planning Theory & Practice; International Journal for Housing Science; International Planning Studies; Journal of the American Planning Association; Planning Perspectives; Urban History Review; Journal of Urban Affairs Planning, Practice & Research; Town Planning Review; Articulo – Journal of Urban Research; Progress in Planning; International Journal of Urban Sciences; Urban Policy & Research; Urban Affairs Review
<b>Geography and Spatial Policy</b>	Urban Geography; Scripta Nova; Applied Spatial Analysis and Policy; Andamios; Cahiers de Géographie du Québec; European Spatial Research and Policy; Journal of Latin American Geography; GeoJournal; Journal of Settlements and Spatial Planning; Boletín de la Asociación de Geógrafos Españoles; Asian Geographer; European Planning Studies; Cybergeog; Area
<b>Others</b>	City; Andamios; Sustainability; ACE: Architecture, City and Environment; L'Homme et la Societé; Procedia – Social and Behavioral Sciences; The London Journal; South East Asia Research; Asian Studies Review; Cuadernos de Musica, Artes Visuales y Artes Escenicas; Hong Kong Law Journal; Droit et Societé; Revista Portuguesa de Estudos Regionais; Revue des Mondes Musulman et de la Méditerranée; Journal of Property Research; Middle East Journal; Journal of Contemporary China

TABLE 2 Scientific journals present in the sample, by scientific area. Source: From author.

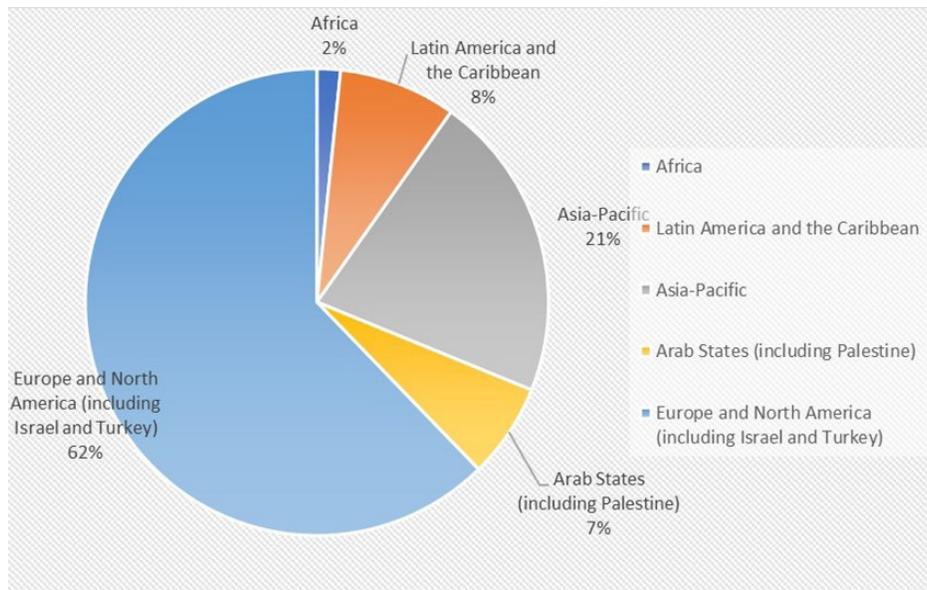


FIG. 4 Origin of research institutions (by UNESCO World region).

Regarding the geographical distribution of articles, there is a clear prevalence of Western institutions, with a growing influence of the Asia-Pacific region (Fig. 4). Interestingly, when we look at the places investigated there is more variety, with a greater interest in regions like Latin America and the Caribbean as well as Asia-Pacific. Nonetheless, Africa attracts very little attention (Fig 5).

The choice of presenting the results according to world regions and not countries can be justified by the heterogeneity of countries listed in the sample, which would make reading the results very difficult. With this presentation it is, in our opinion, much clearer where the research is being done and where it is lacking.

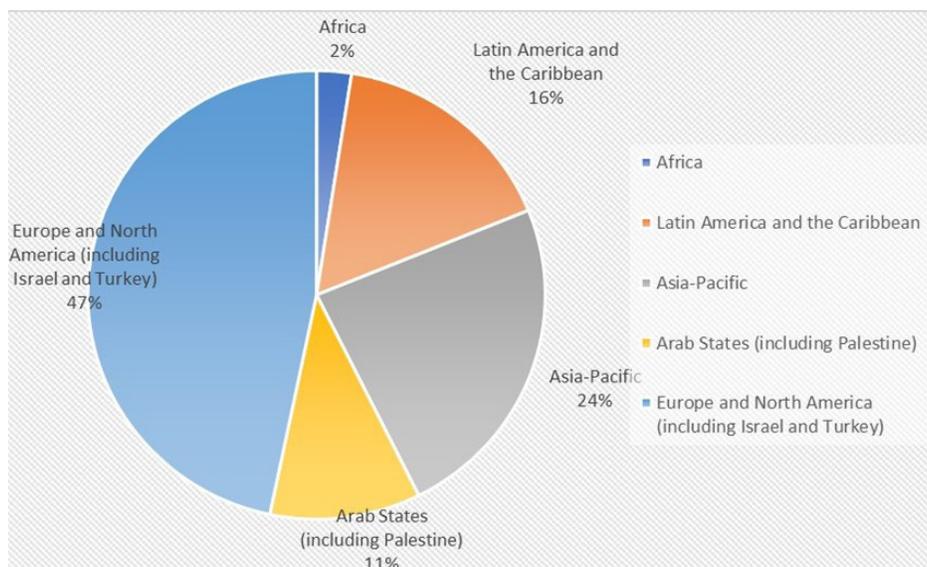


FIG. 5 Places investigated (by UNESCO World region).

The foremost research design used is the single case-study and there is an absolute trend towards the use of case studies (Fig. 6). Although, as Yin (2004) posits, case studies allow for the in-depth study of a given phenomena in its real context, there are also some disadvantages to the use of this method. Most relevant among those are the impossibility of producing generalizable knowledge and the very deep research that, in fact, can take a lot of time to realize and be very thick.

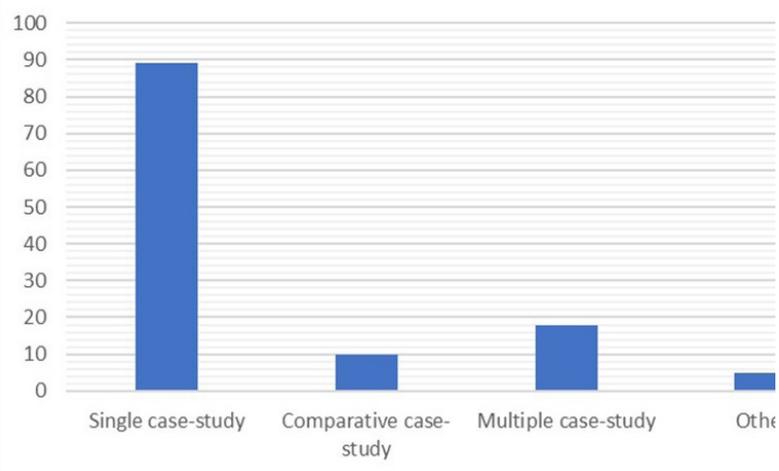


FIG. 6 Research design.

Allied to this is the predominance of qualitative analysis in the study of these phenomena (Fig. 7). This type of analysis, which is very common in the social sciences and humanities has many advantages, like the ability to have an in-depth knowledge of the subject under study, but it has also some disadvantages, namely the lack of generalizability of its results (Yin, 2003).

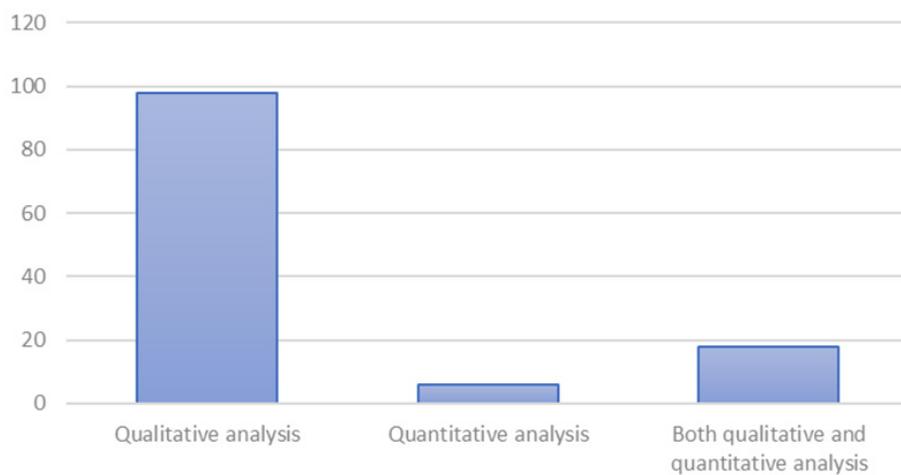


FIG. 7 Type of analysis used.

We have also taken as a variable the data sources used for the research. Most articles in the sample use documents, bibliography, interviews and observation as the main data sources for the analysis, which is coherent with the most common research designs used, as well as the scientific fields of the articles in the sample used (Fig. 8). Most articles use more than one data source.

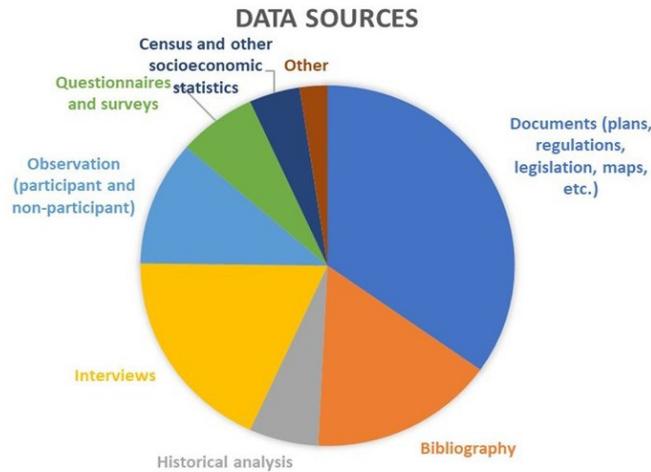


FIG. 8 Data sources.

Fig. 9 shows the stages in the policy cycle studied (Howlett, Ramesh, & Perl, 2009). In this regard, there is more attention given to the initial and the final stages, namely the agenda-setting and formulation of policies as well as the outcomes of these policies. The intermediate stages were less represented in the studied sample. The number is superior to the sample, since some articles refer to more than a policy cycle stage.

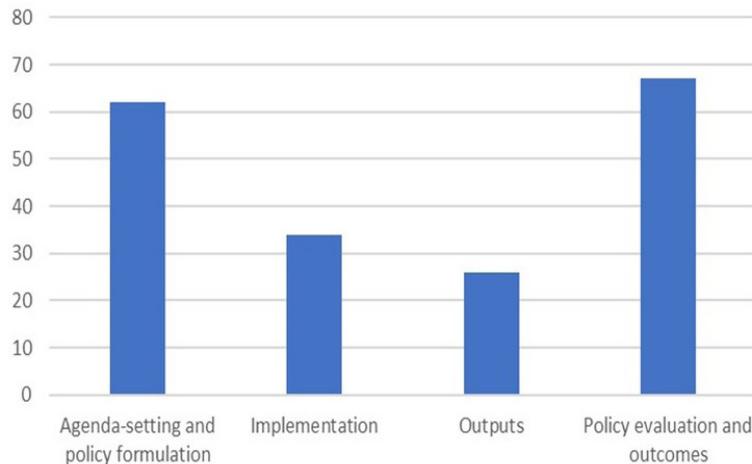


FIG. 9 Stages in the policy cycle studied.

## 4 DISCUSSION

As we could see in the previous chapter, there seems to be a trend towards an increase in the research of urban heritage management policies, through the 21<sup>st</sup> century.

The number of journals that have published about this issue is large (see table 2) and pertain to different scientific areas and disciplines.

Also, there is a clear tendency in the literature to use case studies as a preferred research design approach, which opens the door to the development of other approaches.

This scoping review reveals a lack of quantitative analysis in this field which, allied with the qualitative approach already well developed, can offer new research possibilities and the ability to answer more diverse questions.

The clear predominance of studies by North American and European institutions as well as the focus on these regions for the research developed, calls for a diversification of research focus to more under researched areas, namely Africa, in a moment where the pressures from urbanization, tourism development and climate change are global (UNESCO, 2011; van Oers & Pereira Roders, 2012; Veldpaus, 2015).

The main data sources used by researchers are the most common sources usually used in the social sciences and humanities, with a greater emphasis on documents, bibliography, interviews and observation.

It is also clear that there is a greater interest in the initial and final stages of the policy cycle than in the intermediate stages, which should lead to more studies about the latter.

## 5 CONCLUSION

The present paper aimed to provide a broad overview about the research strategies and methodological choices made by researchers, in this century, in the study of urban heritage management policies. This overview, using a scoping review as a methodological tool, is not a complete nor an in-depth exploration into this subject but has the ambition of providing an outline that can be relevant to future researchers when they devise their research strategies in this field.

In this context, the results obtained offer the possibility to researchers to think about new and innovative research designs and methodologies that can be employed in their own research to get new data and answer different questions, as well as answering old questions differently.

First, there is ample space to use different research designs that go beyond single case-studies, namely using more wide-ranging research designs, maybe sacrificing depth, but allowing for results more generally valid, in different contexts.

Second, the use of more quantitative analysis and data, connected with the qualitative analysis, has the potential of increasing the amount of relevant information that researchers can present and analyse.

Third, researchers must be aware of the lack of research about some world regions, namely Africa, and can devise strategies to include these regions in their research.

Finally, another clue that this research brings is the need to have more studies about the intermediate stages of the policy cycle, which can bring new data to light that can be relevant to both researchers and decision-makers in this area.

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# Discussing Heritage Values in Local Planning: The Porto Municipal Master Plan's "Heritage Map"

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## Abstract

*In a new Urban Agenda that is largely determined by the demand for sustainability (UNESCO, 2016), heritage emerges as a strategic resource for urban development, as stated in the Recommendation on the Historic Urban Landscape - HUL (UNESCO 2011). Within this framework, this paper aims to discuss on heritage values in local planning with a specific case-study in the city of Porto, in Portugal. The discussion will be based on the "Heritage Map" of Porto's Municipal Master Plan (PDM) which was currently revised with support on the report on "Heritage Values" (Barata Fernandes et al, 2018a; 2018b) undertaken by the "Architecture, City and Territory Heritage" Research Group" (2016-2018) of the Centre for Studies on Architecture and Urbanism (CEAU – Faculty of Architecture of the University of Porto). The paper will present the results of this work, designed to assess the inventory of heritage values in the city of Porto, while, at the same time, evaluating its vulnerabilities, and presenting proposals for its proactive management and safeguarding through Porto's PDM. Although the "Heritage Map" of Porto's PDM has high potential in bridging heritage protection and urban development, the results of this study indicate the existence of strengths and opportunities of this instrument that need to be further developed and improved. With this case-study discussion, this paper also intends to provide new insights on the implementation of the HUL Recommendation and wider perspectives for the sustainable management of urban heritage.*

## Keywords

*Heritage; Local Planning; Conservation; Urban Development; Historic Urban Landscape*

## 1 INTRODUCTION

The Municipality of Porto is the seat of the second largest Metropolitan Area in the country and covers an area of 4,166km<sup>2</sup>, with 238,000 inhabitants (INE, 2011). The River Douro marks the southern limit of the city, spreading along a winding valley with a rugged topography. The great variations in altitude along the banks have led to singular forms of appropriation of the territory that today forms the landscape of the Douro Valley and Porto. The metamorphosis of the city and the extensive urbanisation of the region have taken the territory beyond the limits of the old city, spreading into its peripheries. The exceptional diversity of values – built and natural, historic and contemporary, tangible and intangible – makes of Porto a relevant case-study to reflect on the implementation of the HUL Recommendation (Cunha Ferreira & Tarrafa Silva, 2019).

Also, the outstanding values of the oldest part of the urban settlement have led to the inscription of the Historic Centre of Porto in the UNESCO World Heritage List, in 1996 (WHC, 1996). This area is managed by the Municipal Council through the Management Plan implemented and monitored by the Society for Urban Rehabilitation – SRU (CMP, 2010).

Urban development in Porto is governed by the Municipal Master Plan (PDM), which establishes the strategic and land-use framework for the municipality's territorial development. The PDM, which was published in 2006 and is currently under review, defined a "municipal heritage structure" (embodied in the "Heritage Map") that was integrated into the Master Plan along with other urban systems (e.g. ecological, mobility, etc) (CMP, 2005).

Despite the fact that the first legal decrees relating to the Municipal Master Plans (PDMs) in Portugal already identified properties with heritage value, the first PDMs were limited almost exclusively to listing the city's protected buildings and were rarely concerned with their referencing in cartography. This situation has changed in the more recent revisions of the PDM, with Municipal "Heritage Maps" becoming ever more frequent (Tarrafa Silva, 2017). As instrumental documents that are simultaneously intended to form part of an ongoing and dynamic process, mapping the values of the inventory with georeferencing, among other aspects, the Heritage Maps could be also an operational tool for assessing risks and defining priorities and, thus, for guiding municipal urban planning and management (Tarrafa Silva & Cunha Ferreira, 2019).

In this way "Heritage Maps" can be a valuable instrument for the implementation of the HUL Recommendation (UNESCO, 2011) by bridging heritage protection and urban development and by addressing HUL steps such as mapping resources, reaching consensus (values and attributes), assessing vulnerabilities, integrating in the wider urban development framework, prioritizing actions and establishment of partnerships (Veldpaus & Roders, 2013).

## 1.1 CONTEXT AND OBJECTIVES

This paper will discuss on the "Heritage Map" of the Porto Municipal Master Plan (PDM), in the context of the "Study for the Characterisation and Diagnosis of Heritage Values" produced by the CEAU team under the scope of the revision of the PDM. This work consisted of three phases: (1) Methodological Report; (2) Characterisation and Diagnosis Report (Barata Fernandes et al., 2018a); and (3) Complementary Proposal Report (Barata Fernandes et al., 2018b).

Within this framework, the team was asked to make a critical assessment of the previous PDM's "Heritage Map" (2006), while, at the same time, establishing some proposals and guidelines for its revision and updating (prevision of publication in 2020). Due to the limited extension of this article, the characterisation, diagnosis and proposals presented here are neither complete nor exhaustive, mentioning only a selection of the main issues raised by the CEAU interdisciplinary team (two architects, an engineer and an archaeologist, with drawing support by a junior architect and a Geographical Information Systems - GIS engineer).

## 1.2 METHODOLOGY

Methodology is supported on holistic and interdisciplinary work, crossing qualitative and quantitative research methods (providing georeferenced structured database and indicators). After a brief contextualisation, qualitative analysis is made of the characterisation and diagnosis of the current PDM, in order to substantiate the proposals presented for the better management and safeguarding of heritage values in the city of Porto.

At the same time, an assessment was made of the following parameters: content and categories of heritage assets, listed heritage, inventory forms and management guidelines. This analysis was based on the various supports that comprise the PDM: 1:10 000 scale cartography, PDM Report, PDM Regulations and respective annexes (e.g. inventory/characterisation forms), in addition to other background documents such as the REOT (Spatial Planning Status Report) (CMP, 2015). The interpretation is further supported by tables and maps, which allow for a better analysis and subsequent discussion.

## 2 CHARACTERISATION OF HERITAGE VALUES

The Porto Municipal Council has an interdisciplinary team of qualified technicians from the areas of history, archaeology, architecture and urbanism, enabling for the development of an accurate (and permanently updated) inventory and the protection of the city’s architectural and archaeological heritage.

<b>1) Properties of Heritage Interest (IIP)</b>	Properties which, due their historical, architectural or environmental interest, should be subject to protection and enhancement measures.
<b>2) Areas of Urban and Architectural Interest (AIUA)</b>	This includes the notion of an architectural “ensemble” associated with a broad view of how the city has grown and developed over several centuries, translating into the “architectural quality of certain groups of buildings with more or less extensive urban fronts, and their importance in consolidating the urban image” (CMP, 2012).
<b>3) Nuclei and Places (NL)</b>	Historic areas corresponding to the city’s oldest consolidated urban fabrics and to the remains of the original rural nuclei that still preserve their structure and their initial morphological elements with significant urban and architectural representativeness, which it is of interest to preserve and enhance.
<b>4) Green Areas of Heritage Value (EVPV)</b>	Those green areas of heritage value include the following categories: historical estates and gardens, estates located in historic centres, agricultural land, parks and courtyards (public and private).
<b>5) Archaeological Areas (ZEP/ZAP; PEPA/ZOPA)</b>	Archaeological Protection (Special Protection Zone/Automatic Protection Zone – ZEP/ZAP; Special Perimeter of Archaeological Protection/Zone of Archaeological Potential – PEPA/ZOPA)
<b>6) ACRRU</b>	Critical Area of Urban Renovation and Rehabilitation

TABLE 1 Categories of Inventoried Properties (CMP 2005; 2012)

This “Heritage Map” is part of the Land-use Plan of the PDM (such as the Zoning Map and the Street Hierarchy Map) and its main purpose is to promote and encourage the enhancement and protection practices in properties/assets/areas with heritage values (statutory listed or not) (Vasconcelos & Rio, 2014). This information can be found on the official site of the City Council, at the MipWeb cartography gateway ([www.mipweb.cm-porto.pt](http://www.mipweb.cm-porto.pt)). In addition, the Municipal Heritage Council provides expert advice, guidance and training to support the management and preservation of Porto’s heritage values (Vasconcelos & Rio, 2014).

The current PDM “Heritage Map” (2006) incorporates different categories (Table 1; Fig. 1) which can be, in general terms, grouped in: i) Areas with Heritage Interest (AUAI, NL, EVPV, ZEP/ZAP, ZEPA/ ZOPA, ACCRRU) and ii) Properties of Heritage Interest (IIP). The last consist mostly of built heritage, ranging from single buildings to architectural ensembles, but also including isolated urban assets (e.g. sculptures, bridges, etc.). Each inventoried property holds an individual inventory file and is georeferenced on the PDM “Heritage Map” through its location, street, legal protection level (listing category, when listed) and a code locating it on the map.

Properties of Heritage Interest (IIP) are inventoried and displayed on the “Heritage Map” according to the following values: i) Architectural (and Urbanistic) Value; ii) Artistic Value; iii) Historic Value; iv) Landscape and Ecological Value; v) Symbolic, Cultural or Social Value; vi) Technical-Scientific Values (Table 2).

From the 1324 Properties with Heritage Interest (IIP), about 12% are statutory listed: i) National Monuments (25 properties), ii) Properties of Public Interest (105 properties or iii) Properties of Municipal Interest (29 properties).

<b>i) Architectural (and urbanistic) value</b>	- architecture of historical importance: property designed by an architect or builder whose work is of special significance to the city; architectural typology (e.g. palaces, mansions, manor houses, etc., or a typology representative of a particular architectural school/rational); building of high architectural quality (even when the architect is not known) that has its own distinct identity in terms of urban image;
<b>ii) Artistic value</b>	- properties with artistic interventions of special value, whether their author has been identified or not;
<b>iii) Historical value</b>	- architecture prior to the mid-18 <sup>th</sup> century. However, this is not an exclusive value, i.e., this criterion is applied systematically to architecture before the mid-17 <sup>th</sup> century, whereas the buildings dating after this period were subject to other evaluation criteria, namely their architectural value and their state of conservation; architecture that is representative of certain periods and historical phenomena that marked the city and the evolution of its urban development;
<b>iv) Landscape and ecological value</b>	- spaces which, due to the design, size or quality of their green structure contribute to the ecological, environmental and scenic quality of the surrounding area; architecture in the form of groups of buildings holding up the rural atmosphere;
<b>v) Symbolic, cultural or social value</b>	- spaces, properties or paths associated with practices, traditions or rituals of intangible interest; linked to outstanding personalities in the city’s history and culture or which served as a stage for events of special significance; a reference for understanding the identity and memory of an extended community.
<b>vi) Technical-scientific value</b>	- constructions/architecture that stand out because of the technological innovativeness of their building materials or construction systems, or the virtuosity of the structure; buildings and other constructions that were the scene of important technical-scientific activities for understanding the city’s infrastructure processes (water, gas and electricity supply), etc.

TABLE 2 Categories of Values (CMP, 2005)

Furthermore, there is a wide range of buildings enjoying legal protection even though they are not listed individually. Those include properties integrated within the Protection Zones (ZEP/ZAP) of listed properties or in the "Architectural Ensembles of Public Interest" (CIP), as well as the ones located within the area of the Historic Centre of Porto (UNESCO World Heritage) and thus, according to the Portuguese legislation (Law 107/2001) listed as a National Monument. Corresponding to 18% of the total area of Porto (Fig. 2), the management of these protected properties, are from the shared responsibility of National Government's Heritage Offices, such as the Northern Regional Directorate of Culture (DRCN) or the Directorate-General for Cultural Heritage (DGPC) (Fig. 2).

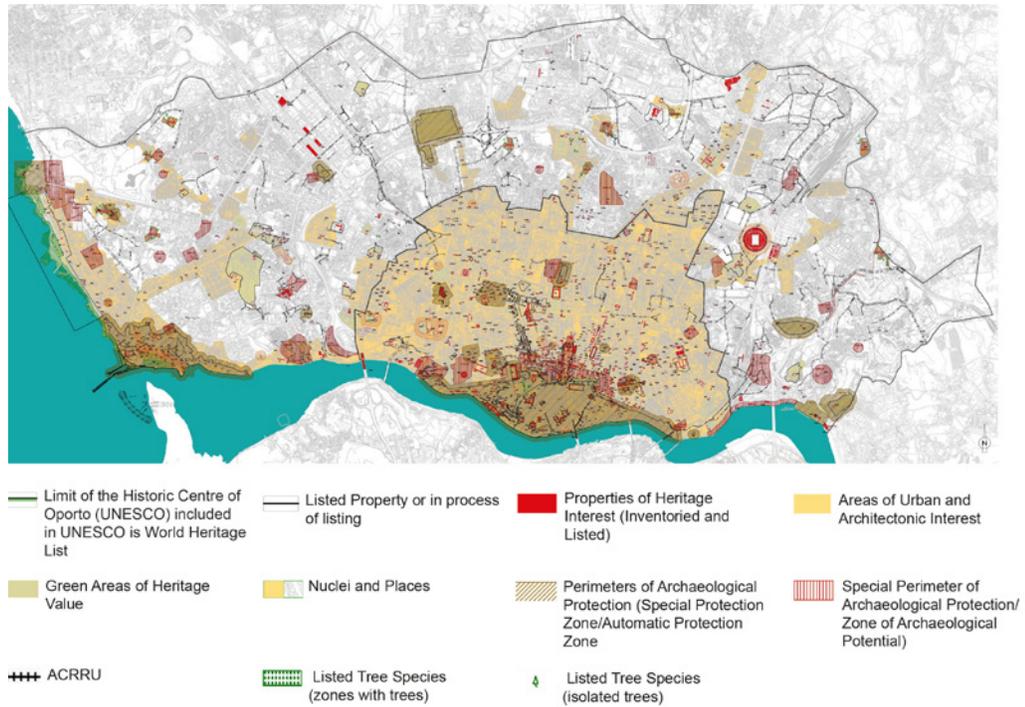


FIG. 1 Heritage Map, Porto, 2006 (Source: DGT, 2006)

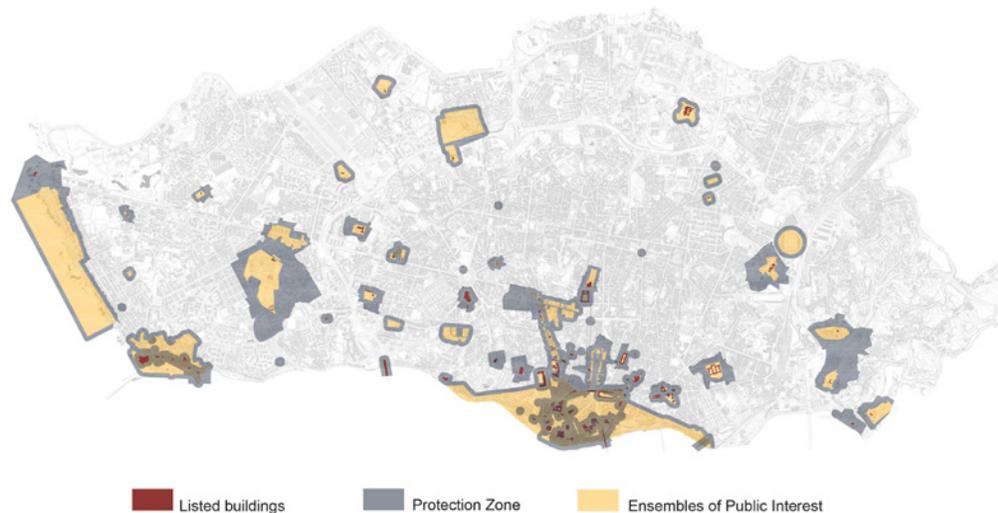


FIG. 2 Map Identifying the Listed Heritage and Protection Zones (Source: CEAU, 2018)

Although the LBPC2001 Law (National Cultural Heritage) states that inventorying is the first step towards protection, it is important to acknowledge that, in the practical day-to-day management of interventions in the city of Porto, only statutory listed buildings or buildings belonging to listed ensembles or protection zones have a more effective legal protection through the compulsory guidelines established by the DRCN or the DGPC.

### 3 DIAGNOSIS AND PROPOSALS

Based on the above mentioned characterization, CEAU team proceeded to the diagnosis of problems and to the proposal of management guidelines covering the following issues: i) Areas of Heritage Interest (AIUA, NL, EVVP, ACCRU); ii) Properties of Heritage Interest (IIP); iii) Inventory Forms, among others.

#### 3.1 AREAS OF HERITAGE INTEREST

Critical analysis revealed the need to review the delimitation of Areas of Heritage Interest (and of the respective inventory criteria) in order to establish greater coherence and maintain an interrelationship between protected areas, inventory criteria and urban management guidelines. For example, in some cases, the Areas of Urban and Architectural Interest (AIUA) correspond to areas that are too large (ACCRU), and thus difficult to manage. Within this scope, criteria were defined for the revision and delimitation of Areas of Urban and Architectural Interest (AIUA), as well as for Nuclei and Places (NL) and Green Areas with Heritage Value (EVVP). This process resulted in the reformulation of the limits of the areas of each of the categories and, in some cases, led to their elimination (ACRRU) or the addition of new areas (Fig. 3). Also, guidelines for heritage protection and urban management were defined for each category.

#### 3.2 PROPERTIES OF HERITAGE INTEREST (IIP)

Although the inventory of Properties of Heritage Interest (IIP) (1324 properties) showed their chronological, typological and geographical coverage, this extensive and undifferentiated listing (i.e. the absence of 'categories of properties') makes the inventory and urban management process difficult. With this objective, categories of heritage properties were defined by CEAU team according to their "matrix" – i.e. "the set of essential elements that make it possible to identify the work and respect the memory of its historical process" (Barata Fernandes, et al, 2018b). In his way, it was thus possible to identify their (identity-based) elements to be safeguarded, as a support for urban management.

The concept of the "matrix" underlies the definition of seven categories of heritage properties: i) Housing or Housing with Retail; ii) Equipment and Facilities; iii) Retail and Services; iv) Rural Buildings; v) Industrial Buildings; vi) Engineering Works; vii) Urban Furniture and Public Works of Art. The guidelines for heritage protection and urban management were defined in accordance with each category.

An analysis of the total sample of the inventoried heritage (1324 properties) by categories shows that the predominant group is "Housing or Housing with Retail Services" (933 properties, which account for about 70% of inventoried properties). The second most prominent group is "Equipment and Facilities" (196 properties, i.e. about 15%), which includes a considerable number of buildings with an exceptional character in the urban fabric and refers to buildings with different functions, such as churches, schools and universities, among others. In lower percentages (between roughly 1% and 7%), we have the categories of "Retail and Other Services" (92 properties), "Rural Buildings" (39 properties), "Industrial Buildings" (33 properties), "Urban Furniture and Public Works of Art" (29 properties) and "Engineering Works of Art" (13 properties).



FIG. 3 Proposed revision of the Heritage Map (source: CEAU)

CATEGORY	PROPERTIES LISTED BY THE STATE (MN, IIP / MIP) (%)	PROPERTIES INVENTORIED (%)	PROPERTIES INVENTORIED (TOTAL NUMBER)
i) Housing or Housing with Retail	47	70	933
ii) Equipment and Facilities	48	15	196
iii) Retail and Services	10	7	92
iv) Rural Buildings	4	3	39
v) Industrial Buildings	2	2	33
vi) Engineering Works	4	2	29
vii) Urban Furniture and Public Works of Art	13	1	13

TABLE 3 Listed Properties by Category (source: CEAU)

From the analysis of the inventory of Properties of Heritage Interest (IIP), we can observe that there is a deficit of works and buildings from the second half of the twentieth century, as well as of architectural works of industrial and rural origin (e.g. old industries; mills). This is a weakness because all the referred are highly representative of Porto's heritage values (historical, architectural and urbanistic, artistic and social, etc).

Also, there are other local inventories conducted by the Municipal Department for Cultural Heritage (e.g. Industrial Heritage, Public Art, *Azulejos* (Tiles) Database, etc.), but are not yet linked with the "Heritage Map". However, these are positive contributions to raising awareness about other types of heritage attributes, such as building elements or even intangible values which should be more enhanced in resources' mapping (Veldpaus, 2015). Moreover, although any citizen can recommend the introduction of new properties to the heritage inventory, the inclusion process remains largely supported by expert assessments, with little participation by local inhabitants and associations (Tarrafa Silva & Cunha Ferreira, 2019).

### 3.3 INVENTORY FORMS

Inventory forms are encoded with an acronym in the PDM "Heritage Map", allowing for its easier consultation. However, most of the Inventory files are very synthetic and information is missing namely regarding inventory criteria, as well as any information relating to the interior of the buildings and the elements to be preserved. With this in mind, CEAU team proposed a reformulation of Inventory Forms in order to incorporate the inventory criteria and the identified values. It also includes the proposal of specific fields related to the morphology-type, the construction systems and the state of conservation of the properties, as well as an elucidation of the elements to be preserved, among other issues.

The incorporation of this information materialises the operational potential of the "Heritage Map", introducing a balance between the values to be safeguarded, the potential risks and the management measures. In this way, it will be possible to prevent demolition operations inside the blocks or buildings, promoting the preservation of the urban cadastre, as well as the morphology matrix (access system, vertical circulation, internal organisation, etc.) of the materials and construction systems.

The current context of urban pressure in Porto, arising from the large volume of tourism and real estate speculation on the last half decade, increased the difficulties in conducting urban management in such a way as to prevent demolition works in inventoried or listed areas or buildings. The development of more detailed inventory forms, identifying the values and attributes to be preserved according to each category, could thus work as part of a solution into pursuing more sustainable development models.

## 4 DISCUSSION OF RESULTS

Porto has a long history of heritage safeguarding and protection, and its respective incorporation into urban development frameworks and strategies. However, some problems persist, and the scattered nature of the responsible bodies, areas and tools often makes management ineffective. Moreover, from the HUL perspective, while the step of resource mapping is partly accomplished by the PDM (including the comprehensive inventory of the whole of the Porto city area on the Heritage Map), the same cannot be said of further steps, which reflect the low levels of investment and knowledge applied to opening up the discussion about the values and attributes to be preserved, and the limited development of instruments that can be used to assess the impact of threats to properties of established cultural significance (Cunha Ferreira & Tarrafa Silva, 2019).

Hence, even though the study presented in this paper provides some contributions towards the management of heritage values in the city of Porto, there is still a great work to be done. More structural reforms should be undertaken, namely in creating assessment and monitoring instruments (with quantitative and qualitative data) which could better support decision-making and management. Moreover, it is important to develop complementary maps for assessing vulnerabilities, namely in regard to the state of conservation or the risks affecting the properties.

In this way, although the "Heritage Map" of Porto's PDM has a high potential in bridging heritage protection and urban development as stressed in the HUL Recommendation, the results of this study indicate the existence of opportunities that need to be further developed and implemented, namely by increasing participatory processes, as well as by linking more heavily these values with the threats to which they may be exposed and with the proposals for urban management and development.

## 5 FINAL REMARKS

In an Urban Agenda that is largely determined by sustainable development (UNESCO, 2016), heritage safeguarding has been evolving from a strictly static, regulatory or reactive form of protection to become a proactive vision in which heritage is seen as a vector and driver of development (Cunha Ferreira, 2018).

In this way, Heritage inventories and mapping (such as PDM "Heritage Maps") should not be limited to the static listing of properties (traditionally only related with tangible values) but work as effective integrating, dynamic and operative instruments for urban development (managing both tangible and intangible values). Also, these should be defined not only in a 'top down' perspective (policies and technicians) but also through 'bottom up' approach, with the participation of local communities in the identification of values and attributes to be preserved and enhanced.

In this framework, with the case-study discussion in Porto, this paper also provides insights on the implementation of the HUL Recommendation (UNESCO, 2011) and wider perspectives for the sustainable management of urban heritage.

## Acknowledgements

The author would like to thank F. Barata Fernandes, R. Fernandes Póvoas and L. Tavares Dias, as well as the Porto Municipal Council (CMP) for all the documentation and clarifications provided. The study was co-financed by the European Regional Development Fund (ERDF) through COMPETE 2020 – Operational Programme for Competitiveness and Internationalisation (OPCI) and by national funds through FCT, under the scope of the POCI-01-0145-FEDER-007744 project.

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# Role of Cultural Heritage Conservation and Management for Reaching the Sustainable Development Goals: an Interdisciplinary Approach

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## Abstract

*The relationship between cultural heritage and sustainable development has been on the agenda of many related stakeholders for many years. Thus, cultural heritage was introduced into the sustainable development agenda in September 2015, being emphasized within the Sustainable Development Goals (SDGs) adopted by the United Nations (UN). Believing in this relationship, this paper focuses on capacities and limitations of various disciplines in reaching SDGs through cultural heritage conservation and management (CHC&M). The paper argues that we need innovative and transformative strategies and policies for the conservation and management of cultural heritage to be able to reach UN Sustainable Development Goals (SDGs). This requires a strong collaboration among various disciplines, primarily architecture, urban design, urban and regional planning – kin disciplines - as well as economics, geography, demography, and urban sociology. The research presented in this paper is based on a thorough literature review on sustainable development, SDGs, cultural heritage, and conservation and management of cultural heritage with an aim to put forward an interdisciplinary approach for CHC&M which will then lead to reaching SDGs. With this aim in mind, the research identifies the actual one-to-one relationship between SDGs and CHC&M, while emphasizing the role of each kin discipline on CHC&M and sustainable development through a critical analysis.*

## Keywords

*SDGs, cultural heritage, conservation, management, kin disciplines*

## 1 INTRODUCTION

Cultural heritage (CH) is associated with settlements and communities retaining a diversity of values including historic and symbolic, artistic and aesthetic, ethnological and anthropological, scientific and social significance (UNESCO, 2009). The meaning of the term 'cultural heritage' (CH) has evolved considerably in recent decades, partly due to instruments developed by UNESCO and ICOMOS. It no longer comprises individual monumental structures as in the early days of the formation process of the concept of conservation. It encompasses: 'minor architecture' and vernacular structures, both considered individually or in group in urban areas (ICOMOS, 1964); cultural landscapes, the combined works of nature and humankind, expressing the long intimate relationship between people and the natural environment (UNESCO, 1992) and; historic urban landscapes in which the material heritage of the cities is associated to the intangible heritage of the urban communities (UNESCO, 2011). The conceptual framework of CH has developed to include its 'intangible' expressions such as, among others, oral traditions, performing arts, social practices, knowledge, rituals and festive

events, heritage formally protected by UNESCO's 2003 Convention. In addition, heritage can retain 'outstanding universal value' for mankind – and listed as UNESCO World Heritage – but it can also be national, regional or local (Pereira Roders, 2019). Therefore, urban and/or rural settlements with their unique 'cultural' significance and vital communities, are worth of preservation and safeguard for strengthening the four dimensions of sustainable development, being environmental sustainability, inclusive social development, inclusive economic development and cultural vitality. (Bandarin & Van Oers, 2012). As has been stated, "... in addition to its intrinsic value for present and future generations, World Heritage – and heritage in general – can make also an important instrumental contribution to sustainable development across its various dimensions" (UNESCO, 2015).

Thus, the relationship between CH and sustainable development has been on the agenda of United Nations and many other related stakeholders for some years, and this relationship has been further emphasized in 2012 at the 40<sup>th</sup> anniversary of the World Heritage Convention, with the selected theme of "World Heritage and Sustainable Development: The Role of Local Communities" and one year later, at the 2013 International Congress on "Culture: Key to Sustainable Development" organized by UNESCO in Hangzhou (China). In the latter, CH and its contribution to sustainable development were innovative key elements. CH was introduced into the Sustainable Development Agenda and its role was confirmed in September 2015, being included within the Sustainable Development Goals (SDGs) adopted by the United Nations (UN).

The United Nations Sustainable Development Goals (SDGs) are 17 objectives that all 193 UN Member States have agreed to achieve by the year 2030. All are the result of long-term negotiations and apply to all countries, recognizing different priorities and different levels of development. They are a call or action by all countries - poor, rich and middle-income - to promote prosperity while protecting the environment. Also known as Global Goals, they build on the Millennium Development Goals (MDGs), eight antipoverty targets that the world committed to achieving by 2015. The SDGs call for a New Urban Agenda and identify the challenges to be addressed to achieve a better world for all. Goals address the global problems 'we face together', including those related to poverty, inequality, climate, environmental degradation, prosperity, peace, and justice.

The New Urban Agenda argues for "*the positive integration of culture and cultural heritage into urban development plans and policies as a way to enhance sustainability of urban areas through heritage, in the context of Agenda 2030/ SDGs.*" (ICOMOS 2017). This indicates the direct relationship of cultural heritage to the SDGs.

Besides, when cultural heritage and sustainable development are addressed separately and/ or together, we may also argue that both are inseparable from disciplines relating to the built and natural environment. Thus, it can be stated that CH conservation and management, together with regional planning, urban planning, urban design and architecture constitutes the five main disciplines addressing planning, design and future of the natural and built environments. Together and/or individually they are all interdisciplinary in approach and impacts but differ broadly in their products. Professionals in these industries/disciplines have the option, if not the directive, to consider environmental, social, economic, and cultural issues in their efforts. As such, these industries/ disciplines can contribute to sustainable development, and particularly, assist in achieving the SDGs that were set out by the United Nations in 2015. The United Nation's 17 goals and 169 integrated targets are part of an agenda to "stimulate action... in areas of critical importance for humanity and the planet" (United Nations, 2015). Kin discipline professionals, i.e. architects, urban designers, urban and regional planners, and cultural heritage managers, can both align their work to achieve these goals and reshape their respective disciplines to meet these goals in one way or the other.

From this perspective, this paper argues that cultural heritage has a direct role to reach SDGs in an interdisciplinary way and this role can be emphasized through an effective integration with the other disciplines of architecture, urban design, urban and regional planning.

## 2 THE KIN DISCIPLINES AND SUSTAINABLE DEVELOPMENT

Of the kin disciplines of planning and design, regional and urban planning work at the greatest scales, cover the broadest range of issues while specifying the least detail. Regional and urban planning - at a first sight - have the potential to influence the fullest percentage of sustainable development goals, targets, and objectives. As a kin discipline, cultural heritage conservation and management has traditionally operated at the smallest scale, addressing the finest details, having, therefore, limited potential to effectively impact sustainable development goals, targets, and objectives. The conceptual developments of heritage philosophy, from the scale of individual artifacts – the monuments – to the scale of the historic city, first, and to the historic landscapes – cultural landscapes and historic urban landscapes, afterward – led to a broadening of the categories and nature of the resources that can be listed as heritage. Considering the new role of CH, heritage planning and urban conservation can no longer be handled in isolation, instead they are cross-sectoral to all fields related to urbanization, in which kin disciplines of architecture, urban design, urban and regional planning share tools, practices and goals toward SDGs.

At the discipline-wide level of comparison, the key differences relate to scale, detail, and scope of projects typically undertaken. Table 1 indicates that all the disciplines may be engaged in both the natural and built environments. Besides, all these disciplines have the potential to influence environmental, social, economic, and cultural conditions. The degree of engagement and influence depends on the specific project.

Kin Industries/Disciplines		Range of Applications												
		Scale			Detail		Type of Environment		Scale		Pillars of Sustainability			
		Micro	Meso	Macro	Fine	Broad	Natural	Built	Limited	Full	Environmental	Social	Economic	Cultural
CHC&M						•	•			•	•	•	•	
Architecture						•	•			•	•	•	•	
Urban Design						•	•			•	•	•	•	
Urban Planning						•	•			•	•	•	•	
Regional Planning						•	•			•	•	•	•	

TABLE 1 Ranges of application of kin disciplines (adapted from A. Hartsell's assignment)

This article explores how the theories and practices of cultural heritage conservation and management, currently support various sustainable development goals (SDGs) and their defined targets. The article highlights the cross-disciplinary contributions of urban and regional planning, urban design, and architecture to cultural heritage management for implementing the Sustainable Development Goals Agenda. The conclusion of the article suggests how the practices and strategies of these disciplines may be reformulated to increase – together – support of the SDGs in the future.



'culture' appeared in the written record in the mid-15<sup>th</sup> century, when the word simply meant the "act of preparing the earth for crops". The social connotations of culture is mentioned in a written source by 1867 with the idea of collective establishment and transmission of a people's customs (Harper, 2001). Culture is transferred from generation to generation, therefore protection and safeguarding of the cultures depends on this transfer. This transfer of culture from generations to generations is defined as heritage and that is what makes it important.

In CH conservation and management, by tradition, effort is applied at the microscale. CH conservation managers focus on culturally infused elements of the built or natural environment as well as tangible or intangible components of culture. These elements may include things as small as a piece of jewelry, as large as an ancient city, as temporary as a song, or as permanent as people's relationship to the sea. Cultural heritage conservation deals with the fine characteristics of individual elements or assemblages of components considered worthy of protection by and for a particular group or society. The 1964 Charter of Venice marks a major innovation, moving from "restoration" of individual architectural monuments to "urban conservation", also expressed in the 1987 Washington Charter. Here, heritage conservation broads its focus from a micro/meso scale to a broader scale, through the identification of 'elements worth of preservation such as urban patterns, public spaces, natural and man-made settings' (Bandarin 2012). Subsequently, in 1992, UNESCO introduces protection of cultural landscapes within the context of World Heritage convention. Cultural landscapes represent the "combined works of nature and of man", embracing a diversity of manifestations - also intangible - of the interaction between natural environment and humankind, actively engaging modern techniques of sustainable land-use. (Mitchel et al., 2009) Emanating from these innovative approaches was the 2005 Vienna Memorandum which introduces the Historic Urban Landscape (HUL) paradigm, stressing 'the link between physical forms and social evolution, defining cities as a system integrating natural and man-made elements, in an historical continuum, representing a layering of expressions throughout history'. The concepts of layering as well as urban cultural landscapes being lived-in places forge a clear link with the cultural landscapes. As CH advances and broadens the categories and natures of resources to be preserved, roles and approaches of CH managers must consequently change, to follow more dynamic workflows and holistic and integrated processes to achieving an appropriate and equitable balance between conservation, sustainability and development. (Pereira Roders, 2019)

In this context, HUL and cultural landscapes, as complex and living systems, require multidimensional assessment approaches where the social value of the landscape is taken in consideration both from monetary and non-monetary standpoints, utilizing indicators - both quantitative, and qualitative (Nocca, 2017).

Presently, heritage managers select, manage, and conserve the resources listed as heritage, and these activities are mostly led by public sector. Overtime, the level of participation - through co-production and participatory practices - is destined to evolve to inform and lead decision making processes. Heritage planning, including urban and cultural landscapes conservation, can no longer be handled autonomously. It is instead cross sectoral to all fields related to urbanization - in particular the kin disciplines above analyzed, target Sustainable Development Goals with long term expectations and impact, social, cultural, economic and environmental (Pereira Roders, 2019).

Therefore, the role of CH is becoming unquestioned and also integrated within the 17 Sustainable Development Goals (SDGs) adopted by the UN General Assembly in 2015, in particular by the sub goal 11.4 aimed to "strengthen efforts to protect and safeguard the world's cultural and natural heritage".

## 4 SUSTAINABLE DEVELOPMENT GOALS (SDGs) & CULTURAL HERITAGE CONSERVATION AND MANAGEMENT (CHC&M)

Through studying Sustainable Development Goals (SDGs) in detail, together with their objectives and targets, this study argues that 13 of the 17 SDGs are most closely related to cultural heritage. In Table 2, the numbers of goals, in the first row, and the total number of each goal's targets and objectives, in the second row, align with the objectives and targets that directly relate to cultural heritage conservation and management in the third row. The fourth row is the calculated percentage of influence that has cultural heritage conservation and management, calculated on the total number of targets and objectives of each goal.

SDGs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
#Objectives + #Targets of each SDG	(5+2) 7	(5+3) 8	(9+4) 11	(7+3) 10	(6+3) 9	(6+2) 8	(3+2) 5	(10+2) 12	(5+3) 8	(7+3) 10	(7+3) 10	(8+3) 11	(3+2) 5	(7+3) 10	(9+3) 12	(10+2) 12	(19+0) 19
Objectives & Targets related to Cultural Heritage Conservation and Management	X	2.1 2.3 2.4 2.5 2.a	X	4.7	X	6.2 6.3 6.4 6.6 6.b	7.2 7.3 7.b	8.3 8.8 8.9	9.2 9.3 9.5 9.a 9.b 9.c	X	11.4 11.e	12.b	13.1 13.2 13.3	14.7	15.b	16.3 16.4	17.7 17.8 17.17 17.18
Reference to Cultural Heritage Conservation and Management (%)		63%		10%		63%	60%	25%	75%		20%	9%	60%	10%	8%	17%	21%

TABLE 2 Relationship of cultural heritage conservation and management (CHC&M) to SDGs

Accordingly, SDGs 2, 4, and 6 relate to cultural heritage conservation's role in promoting the provision of basic services of food, water, and sanitation based on pre-population boom customs and traditions. For SDGs 7, 8, 9, and 12, CH managers likewise can source and employ existing local customs to support and enhance energy, economy, industry, and consumption patterns. Goals 11, 13, 14, and 15 consider resiliency of places in the environment and provide a direct involvement of CH conservation both regarding tangible and intangible heritage resources, also considering how many cultural groups and their traditions that have survived the test of time and have resiliency built in. For cultural heritage managers, goals 16 and 17 are about collaboration, justice, and policy development – integral aspects of the industry.

Comparing the total number of cultural heritage-related objectives and goals (37) to the total number of objectives and targets (169), we end up with 22% impact of cultural heritage conservation and management on the SDGs. However, this quantitative approach may be too artificial and arbitrary, if all objectives and targets as indicators are not investigated further, discussing their one-to-one relation to cultural heritage conservation and management. The following sections will present the role of cultural heritage conservation and management (CHC&M) on achieving SDGs:

- through promoting the provision of basic services,
- through promoting the enhancement of energy, economy, industry, and consumption patterns; and,
- to implement resiliency of places in the environment.

## 4.1 ROLE OF CHC&M ON ACHIEVING SDGS THROUGH PROMOTING THE PROVISION OF BASIC SERVICES

SDG 2 aims to end hunger and all forms of malnutrition, commits to universal access to sufficient, safe, and nutritious during the year (2.1). This will require sustainable food production methods and resilient agricultural practices (2.4) doubling productivity of small-scale food producers. The goal also calls to equal access to land, technologies, and markets (2.3), also through international cooperation for investments to boost agricultural productivity in developing countries (2.6). The conservation of cultural landscapes, including agricultural areas, especially in urban environments, represents effective strategies by which heritage managers can support sustainable food systems. Traditional knowledge and practices, related to the preservation of existing resources, play a pivotal role to maintain the sustainable use of agricultural resources. Practices based on local genetic diversity of seeds, crops and plants, as well as traditional knowledge of the local environment, help maintain ecosystems, and strengthen capacity for adaptation to climate change and disasters. The role of traditional farming techniques, traditional breeds and heirloom species is invaluable in creating sustainable agricultural systems to future generations. Urban and regional planning kin disciplines will work in close relationship with heritage managers to create planning guidelines to achieve this goal. Examples of potential industry actions may include: encouraging return to ecological practices – such as flood farming; encouraging knowledge transmission and farmable land inheritance; supporting return to traditional small-scale kitchen gardens, front yard gardens; recording, preserving, and propagating genetic diversity – heirloom varieties.

SDG 4 aims to ensure that all girls and boys have access to quality early childhood development and can complete free, equitable and quality primary and secondary education. It also aims to ensure that equal access for all women and men is available to tertiary education and that the number of youth and adults who have relevant skills for employment increases. Other aspects addressed include the elimination of gender disparities in education, the appreciation of cultural diversity and of culture's contribution to sustainable development (4.7). Heritage managers can be directly involved in education curricula, which may include the vital link to heritage places and intangible cultural heritage, as strategic components to a sustainable future as it provides living examples of education as well as being the most important vehicle for cultural diversity. Heritage managers can promote venues and opportunities for intra- and intercommunal sharing of customs, traditional techniques, and vernacular styles that support sustainable development.

SDG 6 aims to ensure universal and equitable access to safe and affordable drinking water, as well as access to adequate and equitable sanitation and hygiene to all (1.2), considering the needs of women and girls and those in vulnerable situations. The improvement of water quality (1.3), the increase in water-use efficiency (1.4), and the protection and restoration of water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes (6.6) also through the participation of local communities (6.b), are also addressed. Local communities, through traditional knowledge, have been able to shape sustainable water management practices. Elements of traditional knowledge can provide lessons towards fostering an appropriate, sustainable use of water-related ecosystems contributing to equitable access to clean water and sustainable water use, especially in the area of agriculture. It is imperative that heritage managers together with regional planners support local cultural policies and environmental sustainability and the incorporation of the sustainable use of water resources into governmental policies. Traditional practices of water management shape cultural landscapes and contribute to equitable access to sustainable water use. Advocating for the protection and continued use of these traditional systems of water management is crucial for the development of sustainable solutions to address many water-related challenges.

## 4.2 ROLE OF CHC&M ON ACHIEVING SDGS THROUGH PROMOTING THE ENHANCEMENT OF ENERGY, ECONOMY, INDUSTRY, AND CONSUMPTION PATTERNS

SDG 7 aims to ensure access to affordable, reliable, sustainable and modern energy services for all, substantially increase the share of renewable energy in the global energy mix (1.2) and double the global rate of improvement in energy efficiency (1.3). International cooperation and upgraded technology are identified for servicing this goal. The goal highlights the need of sustainable energy services available for all in developing countries, with special attention to least developed countries. Heritage managers can actively cooperate with architects and urban planners to advocate and disseminate vernacular practices and technologies that are energy producing and conserving. In particular, the retrofitting and adaptive reuse of heritage buildings can effectively contribute to meet this goal, minimizing carbon impacts and providing environmental benefits (supporting also SDG 13), combined with energy savings. "The greenest building is the one already built." (Elefante, 2011) Urban planners - in collaboration with heritage managers - can help in establishing policies to encourage the reuse and green older and historic buildings, adopting – inter alia - passive wind and solar energy use while still maintaining the structures' historical features. The efficient use of resources – energy savings, energy efficient technologies - and measures as well as the use of renewable energy sources are essential for sustainability. Heritage managers, in association with architects and urban planners – can help disseminating and adopting sustainable traditional practices, such as: Encouraging daylighting, through daylight working hours; adopting vernacular technologies as part of energy systems; in new constructions, adopting local materials to reduce energy costs related to transportations and; record and share vernacular technologies that may be adopted in other cultural contexts.

The persistence of multiple forms of poverty and growing inequalities and are identified as major obstacles to sustainable development, with social and economic exclusion and spatial segregation (New Urban Agenda, 2016, art. 3, NUA). SDG 8 focuses on the achievement of sustained per capita economic growth, with higher levels of economic productivity and development-oriented policies to support decent job creation, entrepreneurship, and innovation through micro-, small- and medium-sized enterprises. Since economic development is urban/city-led, cities can also be the place for inequality, with traditional economy showing limits from the environmental and social sustainability standpoint. Heritage places and cultural landscapes, in particular cities, can work as incubators to enhance an economic growth, based on alternative economic models, such as the circular economy, based on the 'circularization' of processes, and on synergetic businesses which stimulate solidarity economy and enhance local economic development (Fusco Girard et al., 2017). Heritage managers, urban and regional planners can implement policies to support circular economy in heritage places. In addition, policies promoting intergenerational transmission of traditional skills and crafts, especially to women and young people, could be valid tools to achieve SDG 8.

SDG 9 addresses the development of quality, reliable, sustainable and resilient infrastructure, ensuring affordable and equitable access for all; inclusive and sustainable industrialization with small scale enterprises; as well as the encouragement of innovation and the increase in the number of research and development workers.

Culture, in general, and cultural heritage, specifically can contribute through the creation of cultural infrastructures, involving both tangible and intangible heritage, through a multidisciplinary effort involving all the kin industries.

### 4.3 ROLE OF CHC&M ON ACHIEVING SDGS TO IMPLEMENT RESILIENCY OF PLACES IN THE ENVIRONMENT

SDG 11 marks the United Nations' strongest expression of the critical role that cities will play in the world's future. Of the 17 finalized SDGs, Goal 11 centers on a pledge to "make cities and human settlement inclusive, safe, resilient and sustainable" and includes a series of 11 targets ( and 15 related indicators), each with politically negotiated indicators. Urbanization is one of the megatrends of our times, therefore the world's cities, town and communities should enhance inclusive and sustainable urbanization policies, improve urban resilience in the context of disasters and reduce their environmental impact. The goal aims, inter alia, to strengthen efforts to support least developed countries (11.c), through financial and technical assistance and including sustainable and resilient buildings utilizing local materials.

Cultural globalization processes have resulted in increasing homogenization and standardization across the world, with some negative social, political, cultural and economic consequences. The privatization and commercialization of historic environment and public spaces produce the loss of the 'sense of place', transforming heritage places into shopping malls or entertainment districts and fostering the erosion of neighborhood and communities. Historic environment, therefore, assume an important role in urbanization processes as it can fulfill the need for identity, be enabler of social cohesion and inclusion and driver for equity and inclusive economic development in the urban economy (ICOMOS, 2017). The target 11.4 focuses explicitly on strengthening "efforts to protect and safeguard the world cultural and natural heritage". The target is backed up by an indicator concerned with developing a global picture of financial actions to protect/promote cultural and natural heritage made by organizations in the private sector and public authorities at local and national levels. "This means that cultural resources and assets are safeguarded to keep attracting people and financial investments, to ultimately enhance the total amount of expenditure". Only one indicator (based on the expenditure per capita) is an oversimplification, extremely limiting the assessment of the multidimensional benefits that heritage places produce. Cultural heritage is, in fact, characterized by a multidimensional "productivity", value-led, in which the economic value must be associated with other 'soft' values, all contributing to meet sustainable development goals agenda. Indicators related to cultural heritage, therefore, should evaluate authenticity, integrity and cultural values as well as the state of conservation of CH. (Nocca, 2017). They should also describe the effect of heritage on ecological balance, social equity and economic vitality of places. Definitively quantitative data are insufficient to capture the complex contribution to SDG, the assessment of heritage multidimensional benefits methods should also rely on qualitative data (ICOMOS, 2017)

By working with regional and urban planners as well as urban designers, heritage managers can help incorporate the cultural unique features of places into plans for urban prosperity and resilience, adopting HUL conceptual framework and approach (Pereira Roders, 2019). A cohesive joint effort between kin disciplines can positively impact on CH and older and new urban areas of cities can improve livability, resilience and sustainability through walkability and compactness and adaptive re-use of existing built fabric (ICOMOS, 2017). At the building scale, the embodiment of traditional knowledge of vernacular construction technique and materials can inform approaches both to the renovation of existing buildings and to the design of new ones.

SDG 12 aims to promote sustainable consumption and production patterns, the sustainable management and efficient use of natural resources, and the environmentally sound management of chemicals. Food and drink have the highest levels of ecological impact per dollar spent. Culture, in

particular intangible heritage related with gastronomy, is able to promote sustainable practices of locally produced food culture and generating socio ecological innovation. Target 12.b addresses the need of developing and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products. Global tourism to heritage sites and cities has exacerbated the conflicts between global cultures and local beliefs and practices around cultural heritage. The flow of capital, tourists' demands for modern amenities, and tourism's environmental impact threaten the authenticity and the values of heritage. Tourism related activities should respect the safeguarding of intangible and tangible cultural and natural heritage. Therefore, tourism should be managed collaboratively by heritage managers and organizations together with other kin disciplines to provide directions to urban and regional planning policies.

SDG 13 aims to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries (1.1), integrate climate change measures into national policies and planning (1.2) and improve education, raising awareness and increase human and institutional capacity for climate change mitigation (1.3). At first glance, this goal does not seem to relate to cultural heritage, however various are the aspects to be considered. Climate change represents a threat to built-heritage, to its integrity, authenticity, and, in some cases, outstanding universal value (OUV). However, heritage, including its embedded environmental knowledge, is a source of disaster risk reduction and increasing the resilience of local communities. As stated in the Hangzhou Declaration: "The appropriate conservation of the historic environment, including cultural landscapes, and the safeguarding of relevant traditional knowledge, values and practices, in synergy with other scientific knowledge, enhances the resilience of communities to disasters and climate change" (UNESCO, 2013). The World Bank recognized that the investments in CH help reducing CO2 emissions and climate change since activities related to CH represent an intrinsically more sustainable models of land use, consumption, and production, providing environmental benefits. Such models have been developed over the time through a continuous adaptation between communities and their environment. Environmental benefits also include land saving use due to building reuse - rather than demolished - and conservation of the huge embedded energy in the historic building stock thanks to buildings' conservation - rather than rebuilding. In this context, the identification of indicators measuring environmental benefits could be implemented, for example the ones related to 'mitigation' of pollution produced by cultural-led projects (Nocca, 2017). Climate change mitigation and disaster resilience must be conceived as an integrated multidisciplinary effort in which the kin disciplines hereby analyzed work jointly with experts from other ranges of disciplines such as environmental science, sociologists, geographers, etc.

SDG 14 aims to conserve and sustainably use the oceans, seas, and marine resources for sustainable development while similarly, SDG 15 intends to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss. Accordingly, SDG 14 intends to increase the economic benefits to small-island developing states and least developed countries from the sustainable use of marine resources, including sustainable management of fisheries, aquaculture, and tourism (14.7) whereas SDG 15 targets to mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation (15.b). In order to support both goals, heritage managers will work in close relationship with urban and regional planners, to incorporate into policies the links between traditional tools and methods and the sustainable management of fisheries and marine ecosystems as well as terrestrial ecosystems. Heritage managers, urban and regional planners can record and disseminate traditional, sustainable means of interacting with both marine environments and terrestrial environments, while encouraging activating sustainable

marine tourism and land-based tourism activities to preserve culture and build economies. They can also help shifting customs and attitudes toward self-preservation and cultural preservation via preservation of natural environment.

SDG 16 aims to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels. The goal also calls to promote the rule of law at the national and international levels and ensure equal access to justice for all (16.3) and significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime (16.4). In order to support Goal 16, heritage managers, together with all other kin disciplines, can engage in restoring and maintaining justice at national and international levels, for example by promoting the rule of law about stolen artifacts or by facilitating return of stolen artifacts and improve protection of them in situ. Heritage managers can also guide the preparation of international inventorying standards regarding classification and dating while promoting principles of transparency, objectivity, interdisciplinary work, competence and obligations. As has been stated in ICOMOS Concept Note for the United Nations Post-2015 Agenda and the Third United Nations Conference on Housing and Sustainable Urban Development (HABITAT III), prepared in September 1, 2015, cultural heritage can work as an enabler for social cohesion, inclusion and equity, as people are at the heart of heritage conservation policies and projects.

Finally, SDG 17 aims to strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development. The specific objectives and targets to reach Goal 17 involves, among other issues, the strengthening of national and international efforts to contribute to sustainable development objectives, including through official development assistance and other financial resources, improved technology development and transfer, capacity-building, and stronger international partnerships in all areas. References are also made to trade issues, including the significant increase in the exports of developing countries (17.7, 17.8, 17.18). Additionally, this goal intends to encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships at local and national levels (17.17). With these intentions, heritage managers can use their research to support sharing of vernacular technologies and their coordination of partnerships to support capacity building. They can surely work in an interdisciplinary approach to do research and record vernacular technologies while building local capacity to perform conservation and management at both local and national levels. In that sense it is one of the major responsibilities of cultural heritage managers to coordinate across disciplines to support efforts in cultural heritage conservation.

## 5 CONCLUSION AND DISCUSSIONS

This paper has implemented a review of the relationship of CH conservation and management to the United Nation's sustainable development goals. SDG 9 is most relevant to and dependent on the CH industry with the alignment of 75% (6 of 8) of targets and objectives.

The study of Sustainable Development Goals (SDGs) in detail, together with their objectives and targets, has involved 13 (out of 17) SDGs which are most closely related to cultural heritage; the research has also highlighted interconnections and synergies between cultural heritage conservation and management and the other four kin disciplines engaged with the built environment: architecture, urban design, urban planning and regional planning. Cultural heritage has recently

advanced and broadened the categories and natures of resources to be preserved, the analysis implemented in this article shows - for each goal – the ‘interlinkages’ between kin disciplines and cultural heritage conservation and management to help achieving effectively SDGs. Fig. 2 presents these interlinkages and synergies across kin disciplines and the SDGs.

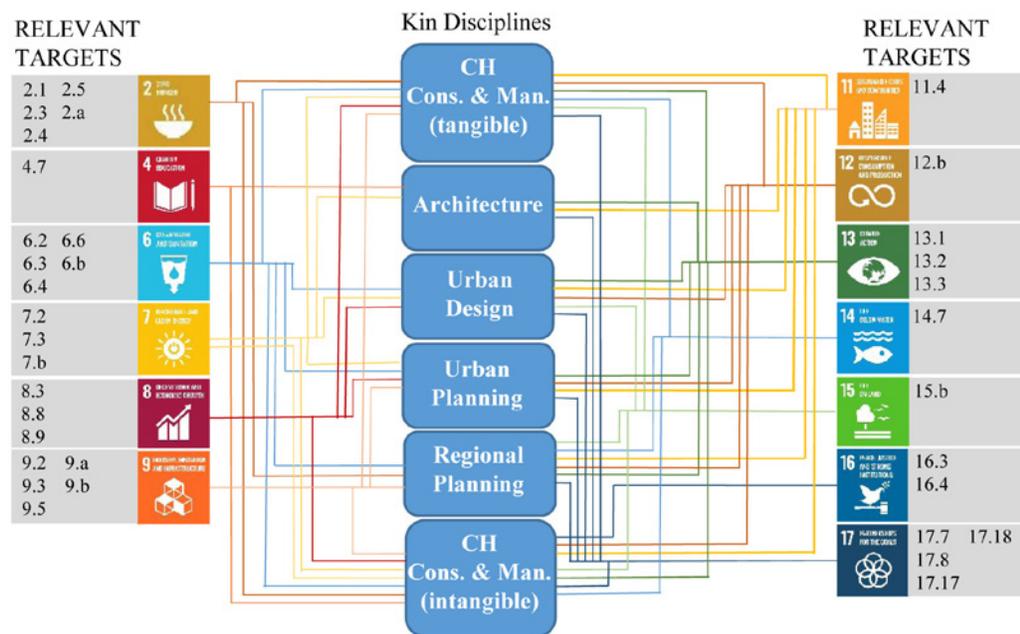


FIG. 2 Interlinkages and synergies of kin disciplines and SDGs

The recent shift of the focus of CH conservation and management, the inclusion of culture as one of the ‘pillars’ of sustainability, require therefore innovative and transformative strategies and policies for reaching the UN Sustainable Development SDGs. In this new scenario, CH conservation and management must not operate as a discipline in isolation, neither has to be considered ancillary to other sustainability pillars, such as economic, social or ecological. Innovative transformative strategies and policies require a holistic interconnection between – at least - the five kin disciplines analyzed, through methodologies and tools based not only on ‘quantitative’ approaches but also including ‘qualitative’ evaluations able to grasp the ‘multidimensional benefits’ of heritage –both tangible and intangible. The SDG 11.4 target’s indicator shows the inadequacy of the actual worldview, in which the value-led and multidimensional ‘productivity’ of cultural heritage is totally neglected, preferring instead a purely economic evaluation. For SDG 11.4 a more complex set of indicators shall be established to include cultural heritage key aspects such as authenticity, integrity, and the numerous associated cultural values, as well as the environmental value and state of conservation, impacts on tourism, etc.

This study focused only on the interconnections between roles of heritage managers and kin disciplines related to the built environment to achieve SDG. However, the analysis here presented is definitively incomplete. The range of disciplines involved with the future of cultural heritage and with its strategic role to achieve SDG has grown parallel to the heritage resources’ categories. Fig. 2 shows how essential is the role of the intangible aspects of cultural heritage, contributing to reach each of the SDGs here analyzed. This new scenario envisions new alliances among new and

old disciplines engaged with cultural heritage conservation and management, such as geography and landscape architecture, history and archaeology (which have traditionally actively contributed to the development of cultural heritage conservation and management as a discipline), economics, anthropology, demography and sociology, biology, environmental science and engineering, etc. as has been conceptualized in Fig. 3. It can clearly be argued that a wholistic and interconnected collaboration among CHC&M and all other kin disciplines with common targets will lead to more positive impacts on achieving SDGs. Further research will investigate how these new alliances are taking place and how to create new frameworks to effectively collaborate on a common ground.

The recent developments of cultural heritage conservation to include cultural landscapes and historic urban landscapes (HUL) provide not only intellectual developments but also methods and tools to operate in practice. In particular, HUL includes a 'six step' approach – a sort of theoretical framework in practice -, which considers a holistic consideration of cultural resources, their vulnerability assessment in relationship with the wider urban development, and prioritized actions both for conservation and development, to be included in the regulatory system (Pereira Roders, 2019). Further developments of this study will investigate how the HUL approach may offer solutions/opportunities to reach SDGs. both at the scale of the cities and at the scale of territory, where 'urban' becomes 'cultural', promoting cultural diversity and diversity of perception.

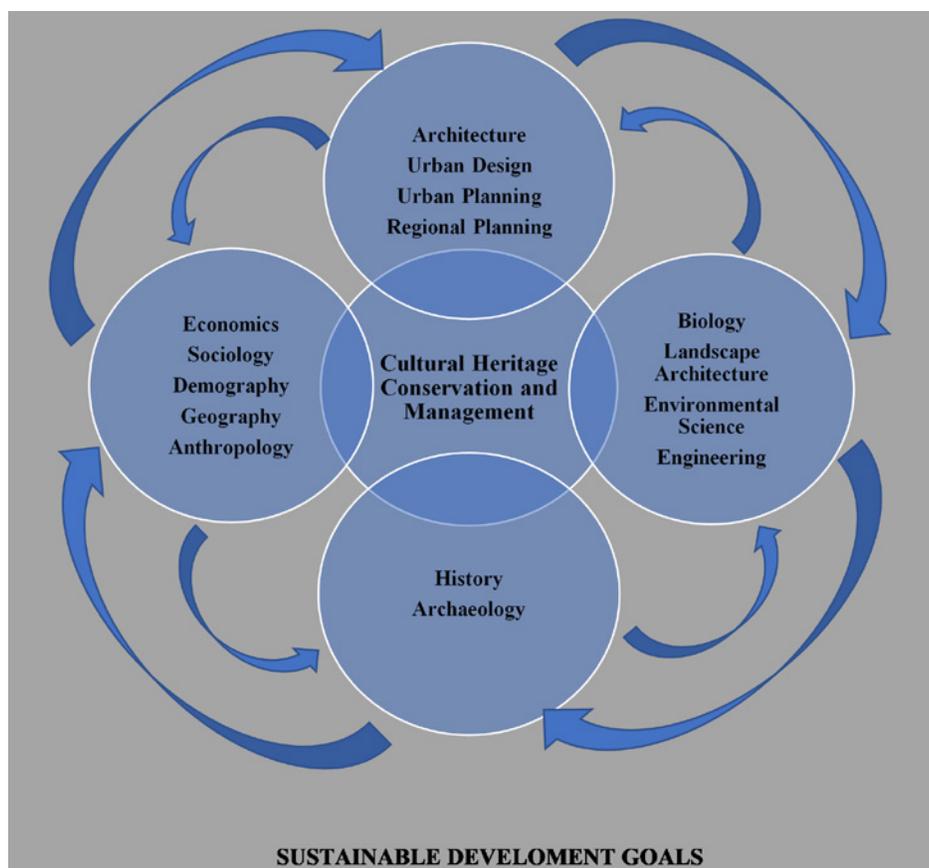


FIG. 3 Wholistic interconnection and collaboration of kin disciplines with CHMC to impact SDGs

## Acknowledgment

We would like to thank the graduate students of 2019-2020 Fall Semester, in particular Angela Hartsell and Chawan Osman M. Rasheed, enrolled in the elective course - UDES 512 Urban Design and Sustainability offered by Prof. Dr. Sebnem Hoskara - within the Master of Urban Design (MUD) and Master of Science in Urban Design (MS in UD) programs at the Department of Architecture, at the Eastern Mediterranean University (EMU). Their second assignment has inspired this work, and authors realized how complex and critical is the relationship of sustainable development goals and cultural heritage conservation and management, and how important is this topic in shaping future professionals' education.

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# SESSION 4

## Place: Local Reality vs Global Ambitions

### **Koosje Spitz**

International heritage organizations set ambitious targets to foster innovation in the heritage field by means of guidelines, declarations, and conventions, providing soft laws that individual countries can adopt and comply with. These are drafted by professionals and academics from different disciplines, expertise, and geographical areas, during international meetings aimed at finding common ground and directions. Implementation on a national and local level can present administrative, political, and regulatory challenges, which vary between regions, countries, provinces, cities, and occasionally even neighborhoods. On the other hand, without local consensus and efforts, global ambitions cannot be met. How do different local realities impact on global policy frameworks and guidelines? How can a better understanding of local realities contribute to learning at the international level? What are the challenges, and how can the gap between global ambitions and local realities be addressed?

# Implementing Global Sustainability Standards on the Local Scale: The Case of Tamirevi

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## Abstract

*The Sustainable Development Goals developed by the United Nations must be incorporated into historic urban landscapes just as into new architecture in order to create climate-responsive environments. Conservation of existing building stock allows massive energy recovery on its own; introducing energy-efficient systems into historical structures will boost this effect and help to ensure our long-term survival.*

*Tamirevi in Mardin is the first of its kind as an energy-efficient conservation practice in the country. Turkey lacks sufficient specialized research, data, and technology geared for this purpose, so global sustainability standards become the reference to pursue through local means.*

*Sustainable conservation is a nascent field compared to historical conservation and environmental sustainability; hence, know-how in this field is rare. The project team carried out the design and implementation process with a consulting sustainable architecture firm based in Scotland. The process continued with very little localized data, except the results of comprehensive surveys in the neighborhood.*

*The result was that the project team and consultants had to spend a significant amount of time adapting global standards to the local climate. This led to the realization that so-called "global" standards also belong to a locale, one that is colder and more humid than southeastern Turkey. Many issues sparked much debate between the Istanbul-based project team, consulting Scottish firm, and the subcontractors in Mardin. The conclusion was that rules of sustainable architecture must be modified based on climatic requirements while adhering to conservation principles.*

*Tamirevi is one of the four pillars of the KORU project, which is carried out by the Association for the Protection of Cultural Heritage (KMKD) in partnership with Edinburgh World Heritage (EWH) to build capacity in cultural heritage protection in Turkey. This article is going to focus on the methodology and interventions utilized in Tamirevi to generate a model for historic Mardin.*

## Keywords

*Energy efficiency, historic buildings, sustainable heritage, environmental conservation, glocalization*

## 1 INTRODUCTION

The Capacity Building in Cultural Heritage Protection (KORU) Project, funded by the British Council's Cultural Protection Fund, was undertaken over three years. The project's geographic foci were Antakya and Mardin, two cities in southeastern Turkey that both have historic urban landscapes. KORU (Turkish for "PROTECT") Project had four pillars: documentation and renovation, community engagement and training, sustainability of historic cities and safety.

The third pillar, "Sustainability of Historic Cities," led to an energy-efficient restoration in Mardin that would become a model for the sustainable heritage field. The structure, which came to be known as "Tamirevi" ('Repair House' in Turkish), is the first energy-efficient restoration application in Turkey.



FIG. 1 Tamirevi's southern façade. Source: KMKD Tamirevi Archive

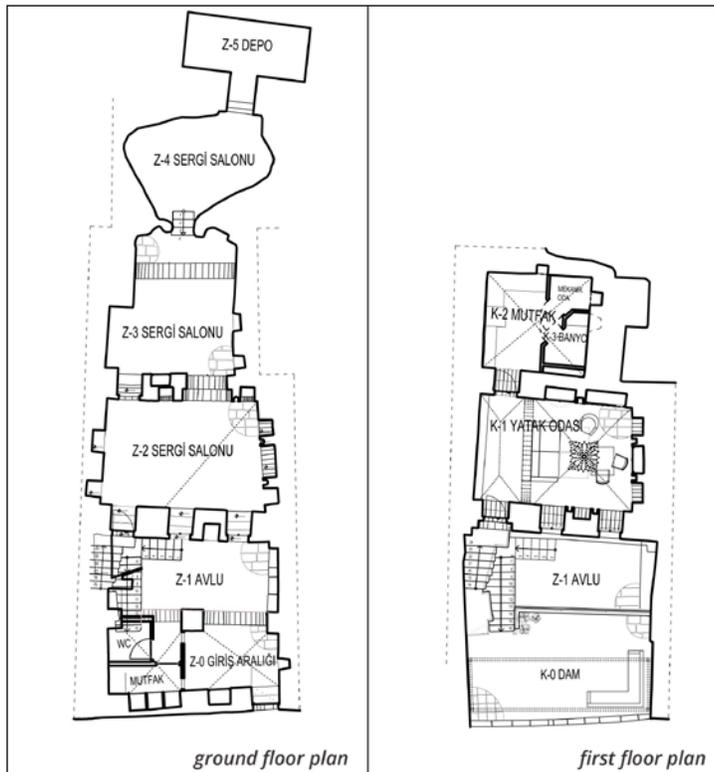


FIG. 2 Ground & first floor plans. Source: KMKD Tamirevi Archive

In the early stages, project partners at Edinburgh World Heritage (EWH) collaborated with energy-efficiency consultants in Scotland to obtain recommendations for the design process. The sustainable conservation sector is nascent in Turkey; there are few experts in this field, since many energy-efficiency experts choose to focus on new buildings. The recommendations for Tamirevi were based on global standards, but climate parameters vary in each part of the world. Although the framework for interventions remain the same, local executions require specific adaptations in terms of material and technique.

It took a significant amount of time to modify the energy-efficiency recommendations. As a result, many solutions were developed on-site. Eventually, Tamirevi was opened to the public to become a catalyst for change in its region. The renovated structure has the potential to inspire similar projects in the area as well as spark further research into energy consumption patterns and energy-efficient technologies applicable in southeastern Turkey.

This paper focuses on the conflicts between the recommended, global sustainability standards and the local conditions, as well as reviewing the adaptations that were necessary to overcome them. The first section describes sustainable heritage as the common ground between the fields of architectural conservation and environmental sustainability, and its role in the climate movement. The second section outlines the development of the project in Tamirevi and focuses on the interventions that converted the building into a replicable example.

## 2 THE CONNECTION BETWEEN HERITAGE CONSERVATION AND ENVIRONMENTAL SUSTAINABILITY

Energy efficiency and environmental sustainability have been garnering increasing attention as our planet exhibits tangible signs of the climate crisis on an epic scale. One of the most important sectors to get on board with sustainability measures is construction – our built environment is one of the largest consumers of energy. According to the 2018 Global Status Report by the Global Alliance of Buildings and Construction, “Building construction and operations accounted for 36% of global final energy use and nearly 40% of energy-related carbon dioxide (CO<sub>2</sub>) emissions in 2017.” (2018 Global Status Report, 2018) The efficiency of our structures affects almost every other aspect of our lives.

The knee-jerk reaction was to promote the construction of new structures that utilize the latest technologies – a highly visible solution to the problem. However, since most of our built environment is already “built,” essential questions arose: do we replace buildings that are not energy efficient? Can we retrofit? What will be the cost of demolition?

Preservationists’ answer was, and remains; “all pre-industrial buildings were, by definition, sustainable and made zero use of fossil carbon in both their construction and use.” (English Heritage, 2012) Many historical structures predate major sources of energy, such as electricity, so they had to be built in a way that conserved it. Many of the energy efficiency methods used in historic structures are “passive” solutions, which are now recognized for their superiority to the installation of new technologies because they require even less power.

More importantly, demolishing a structure and building a new one requires an exorbitant amount of energy. Adapting historic or existing structures conserves that energy, in addition to protecting the uniqueness, value, and memories embedded in the building.

### 2.1 WHAT IS EMBODIED ENERGY?

There are two types of energy in a structure: embodied and operational. Embodied energy is all that goes into the erection of the building, including the mining, manufacturing, attainment, and transport of construction materials, as well as the transportation of labor. Operational energy is used in the operations of the finished building, such as electricity for lighting appliances.

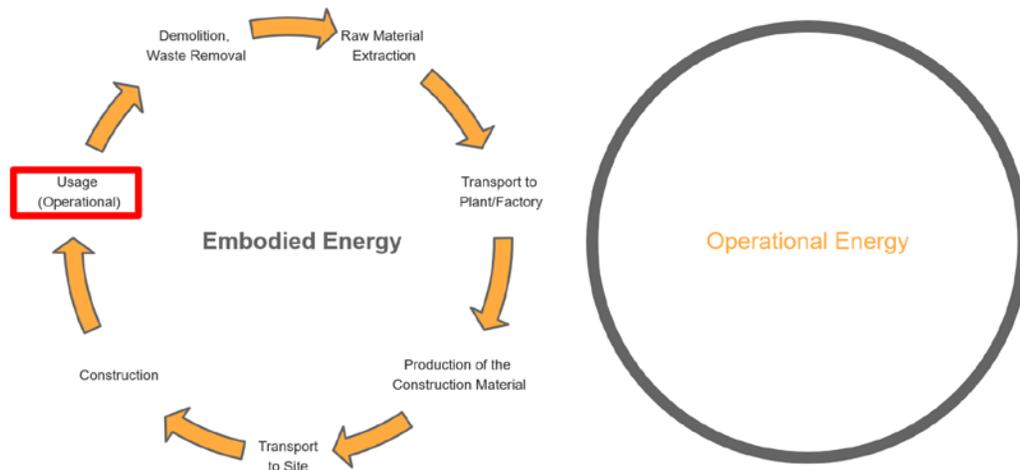


FIG. 3 The cycle of embodied energy. Source: *Diagram by Sena Kayasü*

Constructing a new, energy-efficient building wastes the embodied energy of the one it replaced. In addition, it will spend even more energy and resources for demolition, transportation of the rubble off-site, and the construction process: “demolishing... a [standard, two-story] home creates 200 tons of waste.” (Lubeck, 2010, p.10) It will have to lower operational costs much more drastically to compensate for it, and probably fail to do so. In this sense, reusing a historic building is the ultimate form of recycling (Lubeck, 2010, p.18). Carl Elefante captured this principle in the now-famous phrase, “the greenest building is the one already built.”

## 2.2 HOW DO SUSTAINABILITY AND ARCHITECTURAL FIT INTO THE SDGS?

The United Nations (UN) set Sustainable Development Goals in 2015. Goal 11 is to “make cities and human settlements inclusive, safe, resilient and sustainable.” It unifies two aims: Target 4, to “strengthen efforts to protect and safeguard the world’s cultural and natural heritage,” and target 6 is to “reduce the adverse per capita environmental impact of cities” by 2030 (Goal 11, 2017). In this sense, architectural conservation and environmental sustainability serve the same purpose.



FIG. 4 Sustainable Development Goal. Source: <https://sdgs.un.org/goals/goal11>

SDG 11 recognizes the eminence that architectural conservation has been gaining in ecological literature. Previously, there was a persistent perception in the sector that historic buildings are inefficient, which has been used as an excuse to demolish them and design new, energy-efficient

structures. However, considering that energy efficiency means using less resources to perform the same functions, it is perfectly achievable in an old building as well as a new one. Many historic buildings predate powered heating, cooling, and electrical lighting, so they contain numerous passive energy-efficient techniques that more modern buildings often lack. As a result, it is much more sustainable to renovate historic buildings to be energy-efficient than to build new structures in their stead, however environmentally conscious the latter may be.

### 3 LOCAL APPLICATION OF GLOBAL GUIDELINES: WHAT MAKES TAMIREVI ENERGY-EFFICIENT?

Mardin, like other cities in southeastern Turkey, is characterized by arid landscapes and large solar intake. It has become famous, however, for its topographic and architectural character. Geographically, the entire city of Mardin is situated on the side of a hill and overlooks the vast Mesopotamian Plateau. Due to its position, the settlement hosted various civilizations throughout its history. The main development of the city occurred under the Artuqid rule between the 11<sup>th</sup> and 15<sup>th</sup> centuries. Most buildings are stone masonry due to the propensity of limestone in the region. Today, Mardin is known for the distinctive silhouette that its terraced, limestone architecture forms on the hill (Alioğlu, 2003).

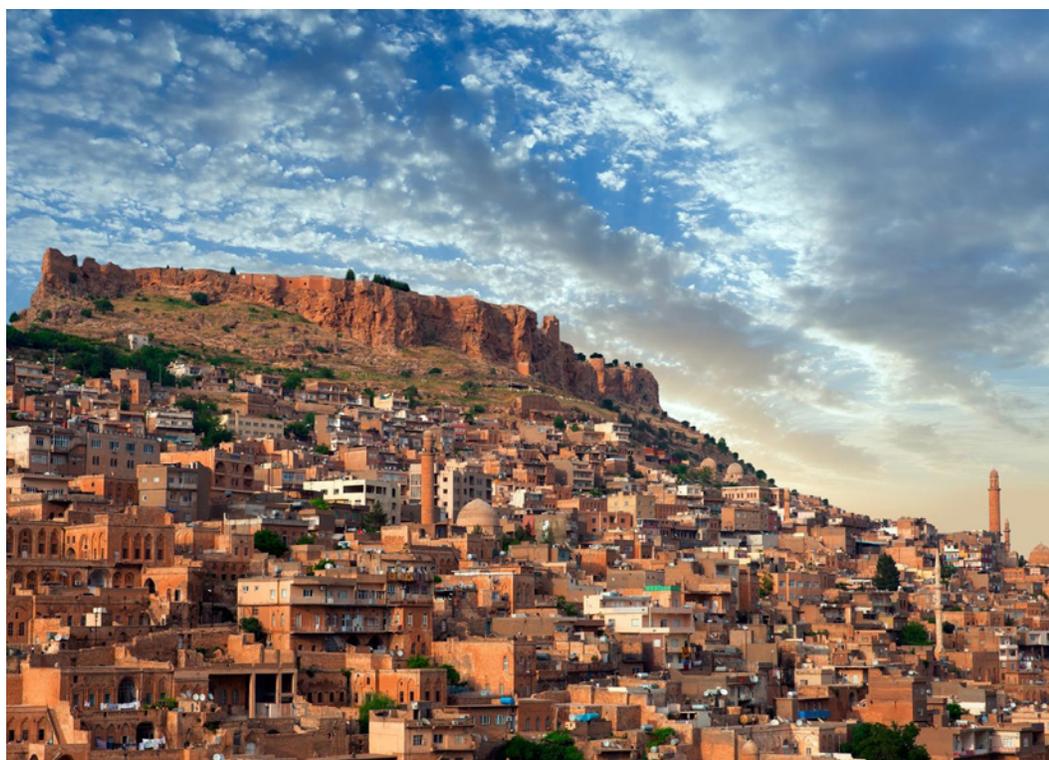


FIG. 5 The historic city of Mardin has a characteristic silhouette. Source: <https://www.ntv.com.tr/>

Mardin was chosen as the site for Tamirevi because of its unique urban silhouette, international prominence and abundance of sunlight. The city's characteristic historical urban landscape and potential for renewable energy created an ideal meeting point for a project that would unite historic conservation and environmental sustainability.

Tamirevi is one of the historic, stone structures that constitute the traditional urban fabric of Mardin. It is a rectangular building on a north-south axis. Tamirevi has two floors and a courtyard; the total area of the interior spaces is 130 squaremeters. Like most of historic Mardin, exposed limestone is the main construction material. The structure had been abandoned for some years prior to the restoration, so it had deteriorated to a poor condition.

### 3.1 ADAPTATION OF THE RESTORATION PROJECT BASED ON ENERGY EFFICIENCY APPROACH

The environmentally-conscious efforts of the restoration project required several steps. The first was to understand the daily habits of energy consumption in the traditional houses of Mardin. The team carried out a questionnaire in 20 households to determine common issues. The lack of heating infrastructure was discovered to be the main problem for nearly all of the households.

The historic city of Mardin does not have an extensive underground infrastructure because the bedrock is very close to the surface of the hill it is situated on, making it very expensive to drill. The difficulty of drilling is compounded by the historic designation of the urban site, since major construction projects would endanger the traditional fabric. Without an underground distribution system for natural gas or other energy sources, most houses either burn fuel such as coal and firewood or use electric heaters in the winter. The former method causes air pollution and poses a considerable health risk for residents, while the latter is usually insufficient and expensive.



FIG. 6 Mapping of the 20 historic households where the questionnaires were conducted.  
Source: KMKD Archive, mapping by Mesut Dinler

The next step was obtaining an energy performance certificate to diagnose the building's energy usage and opportunities for improvements. U-values of the structure were very high due to its deteriorated physical condition; however, the original layout provided clues of authentic energy-saving methods that could be revitalized. The priority of the conservation approach was to support these with passive solutions and minimize the installation of new machinery for mechanical and electrical performance. This was agreed upon both by the energy consultants collaborating with EWH and the local experts.

It was necessary to find an appropriate response to the lack of heating infrastructure. The sunny weather conditions of Mardin provided the perfect geographic conditions to utilize a solar energy-based system. The last step of the design process was defining contemporary heating, cooling, ventilation, and sanitary systems while adhering to conservation principles.

## 3.2 FINAL STEPS FOR AN ENERGY EFFICIENT HISTORICAL HOUSE: DECISIONS & IMPLEMENTATIONS

Energy-efficient technologies are often designed for new buildings; therefore, the first challenge while planning interventions on Tamirevi was to modify these for an existing structure. The second and more difficult challenge was to find local adaptations for the recommended interventions while following international conservation guidelines. The following section will describe the methods used to overcome these challenges in the context of passive, energy and HVAC solutions.

### 3.2.1 Passive Solutions

The first and foremost priority was to provide a protective building envelope for Tamirevi. The building's historical character is defined by its thick, stone walls, which meant that it was out of the question to alter these on either side. Hence, thermal insulation was only applied to the ground and roof. In other words, an overall building envelope was forgone in order to preserve the authenticity of the characteristic limestone walls. However, the stone walls were already providing thermal insulation. Compared to a concrete building, thick masonry can be considered as an intrinsic and passive energy-efficient solution. In addition, the space above the vaulted ceilings in the second floor are mostly filled with soil (roof thickness varies from 25 cm to 2 meters), which acts as natural insulation.

Another passive energy-saving solution recommended by the consultants was to improve the insulation of openings. The original windows of Tamirevi were already lost; hence, it was impossible to retrofit them. The consultants proposed using triple-glazed windows, which are very unfamiliar in this region in terms of installation and maintenance know-how. They would also have to be bought elsewhere in the country and transported to Mardin, which is not ideal in terms of cost and energy efficiency. Double-glazed windows were a more achievable solution as they could be locally obtained, installed, and maintained. Wood-framed and double-glazed windows were made based on the traditional design. Local joiners from the Mardin Museum, who attended cultural heritage trainings of the KORU Project, produced these new windows for Tamirevi. It was essential for Tamirevi to re-discover and elevate local resources such as craftsmanship and local materials in order to be a replicable model for its surroundings.

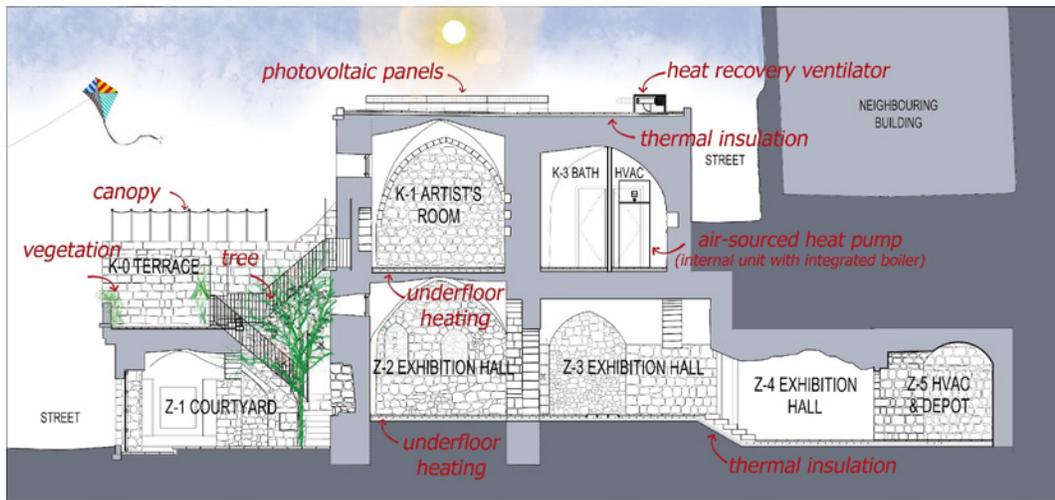


FIG. 7 Longitudinal section of Tamirevi, displaying energy-efficiency solutions.  
Source: KMKD Archive, diagram by Süreyya Topaloğlu

In addition to the other passive solutions, a simple textile canopy was designed and produced for seasonal use on the terrace to protect the main façade from overheating. In addition, the courtyard and terrace were filled with plants for cooling effect. In a few years, a planted ivy will replace the canopy as a natural solution.



FIG. 8 Vegetation on the terrace and the courtyard. Source: KMKD Archive, taken by Sena Kayasü

### 3.2.2 Energy Solutions

Mardin is one of the most suitable cities in Turkey for solar energy systems due to average solar radiation and sunshine duration throughout the year (Eskin, 76, 2006). In addition, many of the traditional structures have flat roofs that shape Mardin's characteristic silhouette. To utilize solar energy, KORU Project and consultants decided to place photovoltaic (PV) panels on the flat roof.

Installation of the PV panels was one of the critical decisions throughout the process. When determining the position of the panels, the first possible approach was to place them at a 45-degree angle facing south to achieve maximum performance. However, it was necessary to ensure minimum visibility of the panels from the street level in order to preserve the historic character of the building. If Tamirevi succeeds as a model for future projects in the area and PV panels are commonly installed at 45-degree angle, the unique silhouette of Mardin could be tarnished. Instead, a compromise was made to place the panels on an east-west axis at a 10-degree angle. It was ensured by the solar energy firm that implemented the panels that this angle and directionality will be as efficient as the conventional position. This was a critical example where the global standard had to be adapted on a local basis.



FIG. 9 Photovoltaic panels installed on the flat roof of Tamirevi.  
Source: KMKD Tamirevi Archives, taken by Süreyya Topaloğlu

### 3.2.3 HVAC Solutions

The energy consultants' recommendations included a pre-heating & pre-cooling system; however, the bedrock beneath Mardin prevents the type of deep excavation required to install such a system. Water-sourced or ground-sourced heat pumps were also out of question for the same reason; therefore, an air-sourced heat pump was determined to be the most fitting new heating system. The hot or cool water coming from the boiler of the heat pump circulates in the house through underfloor pipes. Electricity also runs through cable trays beneath the flooring. Installing most of the mechanical and electrical systems under the flooring, rather than on the walls or the ceiling where they would be visible, was a principal design decision to avoid damaging the original character of Tamirevi. The flooring had previously been subject to major interventions when the original stones were replaced with marble flooring; therefore, removing and renewing the flooring material was preferable to other interventions in terms of architectural conservation principles.

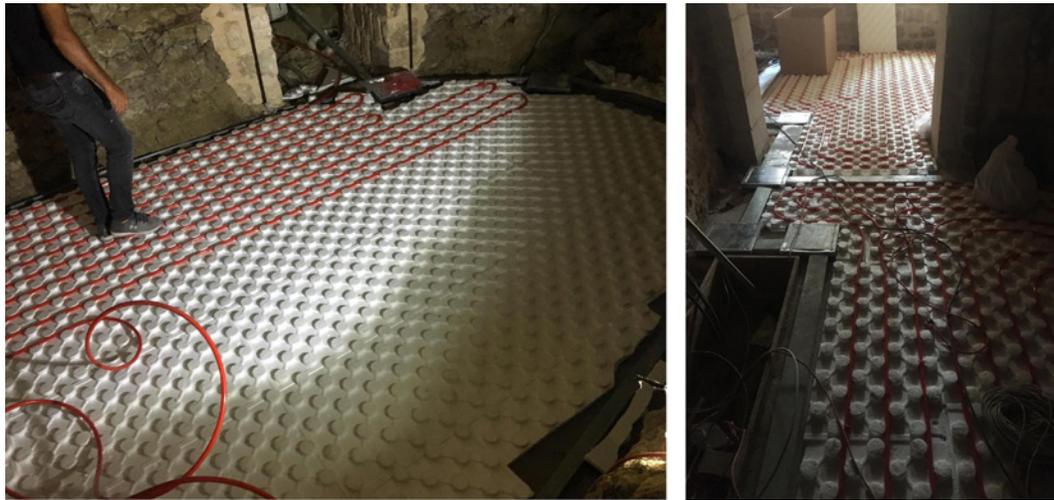


FIG. 10 The installment of underfloor heating. Source: KMKD Archive, taken by Murat Demirli

The building has small openings above the windows on the main façade and side facade to provide natural ventilation. These were originally designed to be open year-round. They were replaced with window frames that were made based on traditional designs; therefore, natural ventilation still can be used in a controlled manner during summers. However, a heat-recovery ventilation system was installed to aerate the space where natural ventilation was inadequate, especially during the winter when the weather may be too cold. The system recovers heat by exchanging clean air from the outside for the stale air inside.

The building has small openings above the windows on the main façade of each floor to provide natural ventilation. These were energy-inefficient because they were designed to be open year-round. Hence, they were sealed for thermal efficiency, and a heat-recovery ventilation system was installed to ventilate the space. The system recovers the heat by exchanging clean air from the outside for the stale air inside. It achieves this by utilizing pressurized air, which decreases its energy consumption.

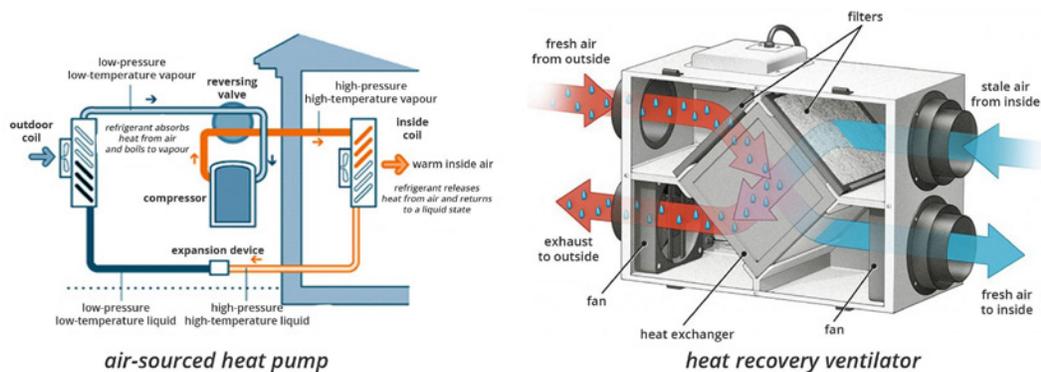


FIG. 11 Working principle diagrams of air-sourced heat pump and heat recovery ventilator. Source: en.wikipedia.org

The main objective of these implementations was to balance global standards with the local context. All the interventions recommended by global guidelines were reconsidered for the specific case of Tamirevi in order to find the best approach. However, the question remains whether this humble historic structure truly required such an amount of sophisticated machinery. The mechanical and electrical system are open to criticism for being too alien to the building and traditional fabric. A better scenario may have been to only use passive methods without the installation of heavy mechanical and electrical systems. Any piece of machinery added to the building takes it one step further from becoming a replicable model, since these systems are not applicable to every household in terms of logistics and finance. Nevertheless, the main purpose of Tamirevi was to be an example of all possible improvements for the energy-efficient conservation of historic buildings.

Nevertheless, Tamirevi has already become a model for its surroundings, even during the construction process. The site team had the chance to influence and advise many actors in Mardin, ranging from neighbours to experts from different disciplines. For example, a ground-sourced heat pump was installed in a historic mansion with the advisory support of the Tamirevi team. Solar energy systems have been introduced to residential buildings for the first time, previous examples in the city were for industrial use. Many people stated that they would research the installation processes of solar panels. Likewise, liquid roof waterproofing was a novelty in the town and some of the historic home residents applied it after seeing its application on Tamirevi.

Tamirevi was designed to be “a model restoration practice for historic houses in Mardin”; therefore, the building is an open book in terms of the various climate-responsive solutions that are applicable in a traditional, stone house in Mardin.

## 4 TAMIREVI, MOVING FORWARD

As a model for future practices, Tamirevi holds a permanent exhibition installed on the ground floor following the interventions described above. This transformed the project into a learning center where the halls are dedicated to the importance of conservation and energy efficiency in historical buildings. In order to blend the exhibition with the architectural features, the niches in the walls were repurposed to house display panels. Furthermore, a 1/25 scale section model of Tamirevi was installed with an integrated, sliding tablet, allowing visitors to learn about the energy-efficiency and conservation measures applied in the building by zooming in to various rooms.

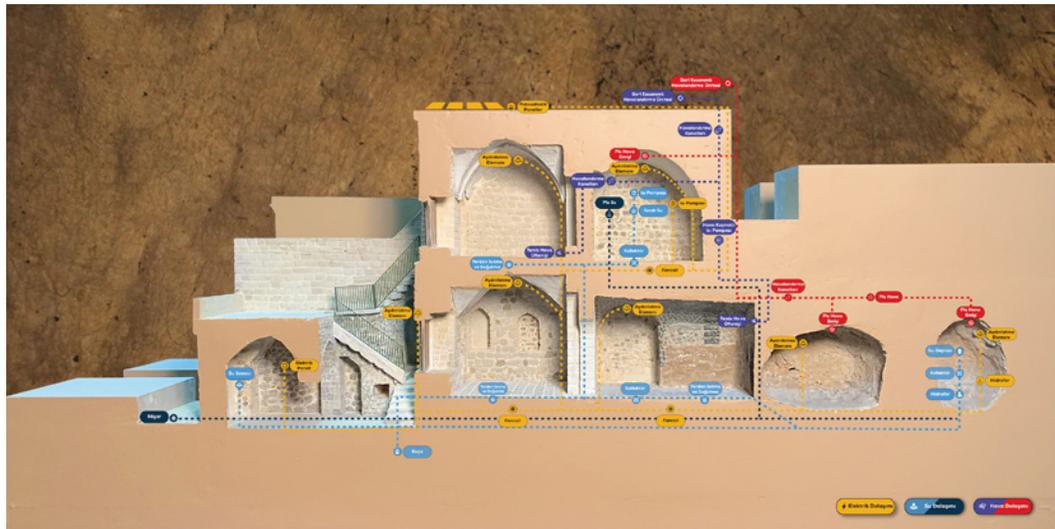


FIG. 12 Electricity, water and air circulation in Tamirevi. Source: Fikirbazzenger Exhibition Team Archive

Tamirevi is a standing demonstration that energy-efficient restoration projects are feasible. It will, hopefully, encourage more projects in the near future. The process was quite challenging as well as enriching. It revealed that a more multidisciplinary approach is needed in this field. With the replicable model of Tamirevi, historic buildings got one step closer to being the focus of climate-responsive building sector. All of the interventions described in this paper aim to update a historic building to a contemporary level of comfort, thus to prolong its lifespan.



FIG. 13 Energy efficiency hall in the exhibition, 3D model and final photo. Source: Tetraxon Exhibition Team Archive

Not only the implementation itself, but dissemination of the case is helping to influence wider cycles in national and international platforms. After the opening of Tamirevi, KMKD presented the KORU Project and the story of Tamirevi several times in conferences, workshops and universities, expanding its impact beyond Mardin and its surroundings. The documentary titled "Tamirevi" has been broadcast on national television channels and will be screened in relevant, upcoming festivals. Moreover, the team is preparing detailed publications on the process at the moment. As a highly detailed project, both KORU and Tamirevi will continue to be a guide in the developing field of sustainable heritage preservation.

Tamirevi is not just an example of sustainable conservation but also the result of close collaboration on local and international levels. This teamwork allowed it to become a pioneer model as the first energy-efficient restoration project in Turkey. Experts from Turkey and UK learned much while trying to solve the conflicts between global knowledge and local context. One of the common features of working in the fields of climate-responsiveness and heritage management is that both are site-specific; local conditions are key. As a result, there is no singular, replicable recipe. Problems require multidimensional and multidisciplinary solutions. Tamirevi, as an example of this approach, awaits its visitors.

### Acknowledgement

This paper is an output of the KORU Project, funded by the British Council Department for Digital, Culture, Media and Sport's Cultural Protection Fund and executed by Edinburgh World Heritage (EWH) and Association for the Protection of Cultural Heritage (KMKD).

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# Pursuing World Heritage Status and Achieving Sustainability: Challenges for Developing Countries using Kota Lama Semarang as an Example

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## Abstract

*In the past few years, UNESCO World Heritage status has become more popular in Indonesia. Many cities are trying to get their sites inscribed in this prestigious list. This ambition has made some city governments take major efforts in revitalizing their heritage sites. Semarang with its famous Old Town, formerly a trading hub during the Dutch colonial period in the late 19<sup>th</sup> to early 20<sup>th</sup> century(dates?), is jumping on the bandwagon. UNESCO World Heritage is based on the 1972 Convention accompanied by its operational guidelines. This convention set the principle on what could be a good heritage management practice. In a developing country like Indonesia, these requirements seem difficult to be fulfilled. The approach towards heritage preservation in a city like Semarang has shifted to become more economic and less cultural. The approach basically strives to preserve heritage sites and buildings while at the same time provides social and economic advantage for the community through tourism. However, this approach has turned heritage conservation into careless beautification projects that might have gone too far from UNESCO standards for World Heritage. This paper will answer why it seems difficult to pursue this title by examining what is missing from the current heritage management practice of the site and what could be improved.*

## Keywords

*Sustainability, world heritage, developing countries, community, Semarang*

## 1 INTRODUCTION

Despite the many attentions and interests towards the World Heritage among government officials and heritage aficionados in Indonesia these days, there is still lack of understanding of what the system strives for, how it changes and develops, and how to adopt it to foster a better heritage management practice. The idea of heritage or culture in general as enabler and driver for sustainable development (UNESCO, 2012) is still unfamiliar. Heritage discourse in Indonesia is somewhat still rudimentary. Discussions on the topic that happen between experts, academia, and policy makers are mostly about conserving physical fabric of buildings and sites. The question of how heritage could contribute to the community only finds answer in a more pragmatic strategy rather than visionary ones: generating revenue out of heritage assets through tourism.

Undeniably, in this era of massive international travel, many countries are promoting their own cultural heritage as destinations. Indonesia with its rich tradition, history, and natural resources is no exception. The city of Semarang in the north coast of Java has been trying to revitalize its urban heritage site—the *Kota Lama* (Old Town)—and started to receive the much-anticipated attention at least these past five years. However, many of the strategies, which mostly favors tourism, have made

the goal of the management plan lost between pursuing World Heritage status and increasing the number of visitors, which is clearly far from what the Convention Concerning the Protection of the World Cultural and Natural Heritage (hereinafter will be called *the convention*) aspires for.

## 2 HISTORY OF KOTA LAMA SEMARANG

The historical value of Kota Lama is mainly based on its former function as a main trading hub on the north coast of Java for the Dutch at least since 1677, where the port of Semarang was presented as a war tribute from Sunan Amangkurat II of Mataram Islam Kingdom to the *Vereenigde Oostindische Compagnie* (VOC) - a Dutch trading company operating in the East Indies. Soon after that, VOC built a defence fortress near the main canal that connects the city to the port in 1678 (Direktorat Jendral Kebudayaan, 2017). VOC ruled the area until its termination in 1799. The influence of the Dutch East Indies government continued and reached its peak during the sugar boom period from the late 19<sup>th</sup> century up to the year 1930 when the world suffered from global economic crisis (dates?). The existence of this historic city is believed to have played a major role in international trade and migration which later affected the social and political situation in the city. Kota Lama Semarang consists of colonial style buildings that served as the administrative center for trading during Dutch colonial period in the 19<sup>th</sup> and 20<sup>th</sup> century. The Dutch built this industrial town close enough to the port in order to secure and control their business in the middle part of Java (Nagtegaal, 1996). In this town, some of the buildings included churches, warehouses, offices, and a train station. This town-planning concept was very much influenced by the industrial revolution happening in Europe at that time.

Semarang is famously known as the city where the history of railway system in Indonesia began. In the early 20<sup>th</sup> century, when the explosion of sugar trade happened, the Dutch began to build railways that connected Semarang as a port city to the hinterlands where the sugar cane plantations were located (Direktorat Jendral Kebudayaan, 2017). A main train station was built north of Kota Lama in 1914???? and is still used until today. The glorious era of Kota Lama lasted until the Japanese overruled the Dutch colonial government and took over many strategic assets all over Indonesia. Many warehouses in this site were turned into military stations and Dutch companies abandoned their offices. After independence in 1945 until early 1980s, Kota Lama remained dormant and some of the buildings were uninhabited causing squatters, criminals, and prostitutes to move in. Documentations on what was happening to Kota Lama throughout those times are rarely found.

The campaign to set forth Kota Lama as a World Heritage Site actually started around 2012. This movement was led by heritage activists and professionals in order to raise the awareness of heritage conservation among younger generations. The government welcomed this initiative and arranged the strategy to put Semarang in the list for the year 2020 and as of early 2015, it is already on the tentative list. Since these past couple of years, development and revitalization projects in Kota Lama are intensified. New businesses are emerging and annual festival is initiated by a group of heritage activists. The projects have been going in parallel with the process of drafting the nomination dossier, which nowadays requires a thorough examination not only to find the *Outstanding Universal Value (OUV)* of the site, but also to fully understand the new approaches and trends favored by the committee.

### 3 THE NEW WORLD HERITAGE SYSTEM: ADDRESSING THE GLOBAL CHANGE

The convention, of which the list is a byproduct, has received many criticism and evaluation since its establishment in 1972. Many accompanying documents and additional declarations and recommendations have been adopted in order to adjust to the ever-changing discourse of culture, nature, and the world itself. Heritage conservation practices should accommodate new challenges caused by global socio-economy changes which affects the welfare of the society. This challenge, as mentioned in the Hangzhou Declaration are: 'population growth, urbanization, environmental degradation, disasters, climate change, increasing inequalities and persisting poverty'; (UNESCO, 2013). In order to be relevant, heritage should be 'integrated to the life of communities within a development framework' (Bandarin, 2014). Uses of heritage should be prioritized for the community's welfare as stated in the first endeavor of the convention which is '... to give [all] the cultural and natural heritage a function in the life of the community and to integrate the protection of that heritage into comprehensive planning programmes' (UNESCO, 1972). The Indonesian Law Number 10/2011 on Cultural Heritage also corresponds to that as mentioned in article 3d: '(the aim of cultural heritage preservation is to) improve the welfare of society.'

The concept of sustainability has been recognized by the convention in 1992, when the idea of cultural landscape was first introduced (Brumann, 2014). Then in 1994, a paragraph on cultural landscape was added to the Operational Guidelines. The concept of sustainable development was included in the overview of the 2005 version and the idea of sustainable use of heritage was clearly addressed in paragraph 119 which then was upgraded in 2011 by adding the importance of community's quality of life. In 2007, during its session in New Zealand, the committee added the additional fifth 'C' for *community* to the Budapest Declaration and completed the 5C's Strategic Objectives of the convention. It seems that, nearly 50 years after the convention was founded and 10 years to reach the *Sustainable Development Goals (SDGs)*, putting community's interest in the center of heritage agenda is more crucial than ever.

In the light of rapid urban development and the spirit of embracing diversity in the cityscapes, UNESCO adopted the recommendation of *Historic Urban Landscape (HUL)* in 2011, which could be acknowledged as one of the newest milestones for finding the right approach to deal with urban heritage. HUL helps us the navigate the changing environment of historic cities and integrate conservation with sustainable development framework (UNESCO, 2016). This is also a proof that 'heritage management is going through a process of change both in theory and practice, from focusing on isolated built heritage assets, towards a landscape-based approach, adopting notions such as the intangible, setting and context, and urban and sustainable development,' (Veldpaus et al., 2013) Questions about authenticity within Asian context is also addressed through Nara Document, which could help developing countries build arguments on their own site. Nevertheless, one must carefully approach these tools and adopt them based on the local context instead of following the ill-defined standards of *international best practice* which is questionable for its applicability (Winter, 2014).

#### 3.1 UPDATING THE APPROACH

However, sustainability and sustainable development are paradigms based on the developed world, therefore these concepts are not easily adopted in the developing countries (Albert et al., 2017), just like the World Heritage system itself. For example, in the context of post-colonial city like Kota

Lama, the problem could be more complicated since the community in question are more diverse and neither necessarily local nor traditional. There is also the threat of over-commercialization in the name of *increasing society's welfare* and the classic problem of inadequate management system that somehow still haunts many countries in this category even when World Heritage is such a popular 'trade mark'.

There are three fundamental reasons why Kota Lama is still far from fulfilling the rising standard of World Heritage List. The first reason is the unfamiliarity of the current development with the convention itself among government officials and policy makers. The management plan, which was drafted in the document called Building and Environment Spatial Planning (RTBL) has not yet included real plans on how to establish a more sustainable efforts for the site. It is also not clear how the plans will be adequate to ensure a proper conservation practices while at the same time benefit the community. There are, indeed, some plans and strategies written in the document, but how and *who* will actually be responsible to do them remains unclear.

The government should be aware of the HUL recommendation, which is very much relevant and applicable for Kota Lama if only the government had tried to find a way to adopt the approach and adjust it for local context. HUL offers principles and practical guidelines that could help policy makers to map stakeholders, secure funding, and list action plans. They could also draft the goal of the planning document based on the 5C's Strategic Objectives and make a cross reference with Goal 11 of the SDGs which is Sustainable Cities and Communities (also see Turner, 2017). The policy makers need not only to adopt the aforementioned declaration, document, and recommendation, but also to use what I call as the current *UNESCO language*, which is the terminology and phrases that represent the novelty and improvement of the World Heritage system. The use of those terms in official press release, publications, and management plans would show awareness and compatibility between the site's own strategy and the framework of the convention. It will arguably be favorable by the committee and advisory bodies since it will make it easier for them to analyze the efforts and how much they match with the World Heritage principle.

## 3.2 REINTERPRETING COMMUNITY

The second reason is the failure in delivering the function of heritage for the interest of the on-site community. Kota Lama is a remnant of colonial past that has been by-passed by development for at least three decades before it underwent its first conservation project in the 1980. The residents of Kota Lama came to live in the area long after the end of Dutch colonial era. Except for one family who is the descendants of Tasripin, one of the richest tradesmen of Semarang in the early 20<sup>th</sup> century. This family has been living in their house since 1930. Some senior inhabitants, however, only resided in the neighborhood during the 1970s. They move from the other parts of the city to the area because the price that was relatively cheap and its close proximity to the city center, market, and train station. Most of them live in the one- or two-storey houses at the inner part of Kota Lama, on the smaller alleys and narrow streets while the bigger and more monumental buildings on the main street are occupied by banks, offices, shops, and restaurants. Some of them are major state-owned enterprises that were nationalized from the Dutch after independence. According to the secretary of *Community Association for the Development of Oudestadt (AMBO)*, there are approximately 25 households who stay in Kota Lama as permanent residents. In addition to that, there are police and military dormitories that house their members and families too.

Looking at this demographic, it is safe to say that these residents do not possess direct connection with Kota Lama historical past. It is very hard to imagine for these people to acknowledge and fully embrace the significance of their house as heritage because first and foremost, they consider it as their home, a place to live, others may use it for small or medium business purpose, but definitely not attributes of some proposed OUVs. Nevertheless, it doesn't mean that they are anti-heritage or despise the idea of it. Some of the younger generations are even actively engaged in community meetings organized by AMBO. They discuss various issues such as community's right, conservation, and also review future management plans and project. Unfortunately, their activism is often accused as being counter-productive to the government's own initiative. It is probably because the government perceives them as threats rather than potential partners. Brumann (2014) pointed this issue by saying, 'present-day local populations often come in only as a disturbing factor, ...It is then protection "from," rather than "for," the communities that moves to the forefront.'

The government seems to take the community for granted. They assume that the people living in Kota Lama are content and grateful for the ongoing development and heritage revitalization projects. There are at least two underlying problems why the government came up with such assumption. First is they seem to forget that there are actually people who have been living in Kota Lama since long before this heritage hysteria happened. There are even some restaurants and other business that have been operating for decades there. These are the people who—in spite of their limited knowledge on heritage conservation—have also contributed to the integrity of the site. They are now being marginalized and not taken into consideration. An interview with a resident of Kota Lama showed that there is minimum communication between the government and community members. For example, events such as *Car Free Night* and *Car Free Day* are held without first consulting with the residents thus causing them a hard time just to reach their houses. The situation that is going on now in Kota Lama seems to only favor new investors and entrepreneurs (A. Resident of Kota Lama, personal communication, October 21, 2019).

The second problem is in the attempt to increase the number of community participation, the government sometimes loosely defined the English word *community* as equivalent to organization or association, which in Bahasa Indonesia is called *komunitas*. In her dissertation about urban heritage advocacy in Indonesia, Yapp (2018) accurately framed the Indonesian word *komunitas* as 'a typically small- or medium-sized association that coalesces around a shared passion, hobby, or cause' which clearly differs *komunitas* from *community* in the sense of a social unit that lives in a given geographical area. This misconception has led policy makers to think that as long as there are some heritage related *komunitas*—such as photographer club, architects association, historians—being invited to meetings or events, then the community has been involved. No matter how significant the role of *komunitas* in raising awareness for heritage is, they should not be the one whose interest is prioritized.

### 3.3 NEW VALUES AND MEANING

The third reason why it seems so hard, but not impossible, for Kota Lama to become a World Heritage is because the absence of intangible values from the site. The committee has been avoiding to inscribe another monumental site or historic city unless they really still embody the spirit of the community within. As mentioned earlier, the community who lives there does not have a direct association with the history of the site. It is no comparison to the city center of Yogyakarta, a neighboring city also pursuing for a World Heritage status, where Javanese living tradition and cultural practice are still part of everyday live. It is also not as vibrant as Melaka and George Town in Malaysia which, regardless of the gentrification issue, still hold some authenticity in some of their districts. Kota Lama

is even not comparable to Puducherry in India where, according to Jørgensen (2019), visitors can encounter a glimpse of French culture through cuisine and language. In short, intangible values are missing thus making the site's current festival and event less cultural and more artificial.

To answer this challenge, Kota Lama could take the advantage of HUL approach which does not discriminate community from the degree of their cultural or historical connection to the city but rather encourages for 'a new use and enjoyment of the urban space that defines the city as a living heritage' and acknowledges 'the multiplicity of communities of urban users, not necessarily of a permanent type, which contribute to a reinterpretation of the values of the historic city' (Bandarin and van Oers, 2012). This could be done by giving new function for the site while at the same time respecting the already existing function: a residence for the community living there. In doing so, first thing they have to do is *listen*. According to B. Hostel owner (personal communication, January 15, 2020) the government can solve this issue by listening to what the community has to say, what they aspire for, and what role they wish to take in the revitalization of their neighborhood. Unfortunately, the government prefersto apply the Smart City concept, with cameras monitoring garbage bins, streets, and buildings to maintain cleanliness, safety, and prevent vandalism (Dani, 2019, para. 5). However good the intentions are, this concept has made the management of Kota Lama even more distant from the community.

Giving values to the site also does not necessarily mean reviving past memories by portraying Dutch culture or colonial way of life. As Jones (2016) argues with the emphasize on social values of heritage, these values must be conceived 'as a process of valuing rather than a fixed value category that can be defined and measured.' Values and meaning should be extracted from the community to reveal the current significance and needs. For example, the government could set up a community-based waste management system, design eco-housing project, support and fund community's initiative or events, form a joint committee that involves community member for monitoring and evaluation, and also provide trainings and workshops to increase awareness and knowledge on heritage related subjects. By doing so, the people who live in Kota Lama could feel a sense of belonging to the site. They could also see the advantage of the revitalization projects, which for them is not necessarily economical, but more related to security and resiliency.

## 4 CONCLUSION

To be inscribed as a World Heritage, a site requires not only a good argument to defend its OUV, but also a management plan that responds to present days challenges. Developing countries like Indonesia struggle not only to protect their heritage site from over-commodification, but also how to convince the community of the value of heritage in their surroundings and how to coexist with it. In order to do this, the government could use the cutting-edge tools and approaches such as the HUL recommendation, guidance on heritage impact assessment published by ICOMOS, and the Budapest Declaration.... that has been acknowledged and adopted by UNESCO and World Heritage Committee while at the same time also be critical towards the so called 'international best practice' that is biased and not always universally applicable. However, these tools are important to understand for securing a more sustainable approach especially when dealing with the community. By putting the people's interest at the center of conservation agenda, urban heritage will remain relevant and maintain its function not only as a remembrance of the past, but also a gift for the future. In the end, a successful urban heritage management practice could be an example of an idealistic endeavour for a sustainable urban community.

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# Water Ways as the Backbones for Country-Houses-and-Suburban-Villas Landscapes: Method to read Heritage Landscapes

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## Abstract

*This paper is on the understanding of the cultural (historic) coherence in the urban landscape systems in the Netherlands and the use of this knowledge for sustainable landscape transformations. When culture (use, meaning) is hermeneutically read in (historic) landscape features, we can fully understand how the historic landscape functioned as a system in the past. If we understand the historic landscape system, we can find future solutions to spatial problems nowadays maintaining its heritage value. This paper presents a hermeneutic approach to heritage preservation describing the coherence of our culturally formed landscapes or heritage landscapes in a threefold approach based on the parameters form, meaning and use on different scales and in various timeframes. The explanation of this approach is given by presenting an example from, the chosen a study of Dutch country houses and suburban villas erected as part of Dutch landscape in the seventeenth century. Nowadays, these individual green monuments are seen as country-houses-and-suburban-villas landscapes. These landscapes can be defined as large scale landscape structures or even systems. Research learned that water (rivers, brooks, canals et cetera) was the backbone of all Dutch country-houses-and-suburban-villas landscapes and by defining these water systems, we can create country-houses-and-suburban landscapes for spatial, ecological, climatological, cultural and organisational reasons; an example of this application is the story of the Baakse Beek.*

## Keywords

*Country houses, suburban villas, country houses and suburban villas landscapes, heritage landscapes, cultural landscape.*

## 1 INTRODUCTION

### 1.1 HERITAGE LANDSCAPES WITH CONTEMPORARY VALUES

The urge to base the cultural understanding of landscapes on the reading of historic use and meaning is embedded in a changing perspective on heritage. Since the 1990s, the common approach in heritage changed from an expert-driven preservation of single objects into an area-driven preservation based on narratives and the description of landscape structures and its (physical) characteristics (Ministerie van OCW, 1999) and its values. So, both scale and scope changed recently in the approach of heritage. The historic landscape structure is now seen as an important aspect of spatial planning and the need to include it is growing (Janssen et al, 2017); this requires a proactive role in spatial planning of our built past (Denhez, 1997). The change in scale reflects the landscape-based approach in heritage theory that developed over the last decades. The origin of this approach is already found in several nineteenth-century publications (Veldpaus, Pereira Roders, Colenbrander, 2013). The change in scope is caused by the growing attention to include both tangible and intangible aspects necessary for a participative community-based approach (Vecco, 2010). The cultural shift of heritage changed at

the turn of the twenty-first century with the incorporation of intangible heritage aspects like stories and traditions; it increased the role of culture in the domain of heritage (Vecco, 2010). Participation by heritage-inclusive communities and their growing commitment will lead to use of historic systems in a new way that can ensure sustainable use of landscape systems. Landscape architecture focuses more on landscape characteristics nowadays than it did in the past. To understand the importance of these characteristics in landscape planning, we have to go beyond identifying the physical landscape characteristics by studying its historic use and meaning in close connection to the surroundings.

The main goal of this paper is to describe a holistic, hermeneutic approach based on defining and valuing the physical form, historic use and meaning of the landscape. This approach is applied to all known country houses and suburban villas built in the province Holland in the seventeenth century (Verschuure-Stuip, 2019). Next an example of the application of this theory in heritage management is given for a different area, the Baakse Beek. It shows how the description of historic use of a landscape by country houses can help to develop a better process of remodelling the landscape in sustainability questions.

## 1.2 COUNTRY HOUSES AND SUBURBAN VILLAS LANDSCAPES OF HOLLAND

A large number of country houses and suburban villas were built close to each other in the province of Holland in the 17<sup>th</sup> century what resulted in landscapes of green ensembles (Bijhouwer, 1946; Maas, 1967). Van der Wyck (1982) used the term country-house landscape (singular) for the first time in 1982. He focussed on the influence of one country house or suburban villa on its surrounding. Because of the unique Dutch situation that many houses and villas were built close to each other, the term *country-houses-and-suburban-villas landscapes* (multiple) was introduced (Verschuure-Stuip, Renes, 2015, 42-65) (map 1). The *country-houses-and-suburban-villas landscapes* were inseparably connected to the high dynamics of change in the landscape due to e.g. land reclamation, urbanisation and warfare at the time (Steenbergen, Reh, Aten, 2005; Stol 2002; Verschuure-Stuip, Renes, 2015). Reh, Steenbergen and Aten wrote that country houses and suburban villas functioned at different scales (2005). The scales are referred to as the micro scale, the meso scale and the macro scale.

Groups of estates and villas are be identified as *country-houses-and-suburban-villas landscapes* nowadays. This name reflects the landscape-based approach in heritage theory of the last several decades. This started to attracting attention since the 1990s, but has its origin in the nineteenth century (Veldpaus, Pereira Roders, Colenbrander, 2013). The first question is do these landscapes are foremost a physical structure based on the combination of houses, villas and their gardens? Renes defined these landscapes based on the presence of country houses and suburban villas and other physical landscape features (Renes, 2018). But what is missing is the balance between physical appearance and human interventions, like the European Landscape Convention declared in the first article 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors' (ELC 2002). Following that line of thought, the first question is: how can you read heritage landscapes as a combination of a mental and social landscape and a physical appearance And the second question is: how can you use this knowledge in reading and organising cooperation to preserve its historic and current values?



FIG. 1 Map of a country houses and suburban villas landscape along the river Vecht. Source: 'Nieuwe kaart van Loenen, uitgegeven door Covens en Mortier in Amsterdam' (1737) Archives of province Utrecht.

## 2 BODY OF THE PAPER: CULTURAL IDENTITY OF THE LANDSCAPE

### 2.1 AUTHORSHIP OF THE LANDSCAPE

Heritage landscapes (or in general cultural-driven landscapes) can be considered as dynamic landscape systems, altered since its creation and changed over times in different periods. One of the basic challenges in the field of landscape architecture is to manage the dynamic interrelationships between the environmental and cultural *systems* (Senge, 1990). The changes depends very much on the power, freedom, and prosperity of owners (and policy advisors) (Antrop, 2007). To understand the identity of these dynamic landscapes, three sets of parameters are crucial important: the relationship between form, meaning and use interpreted as the human authorship, the influence of time and the importance of scale; such an analysis was described in detail in the thesis "Well-situated"(Verschuure-Stuip, 2019).

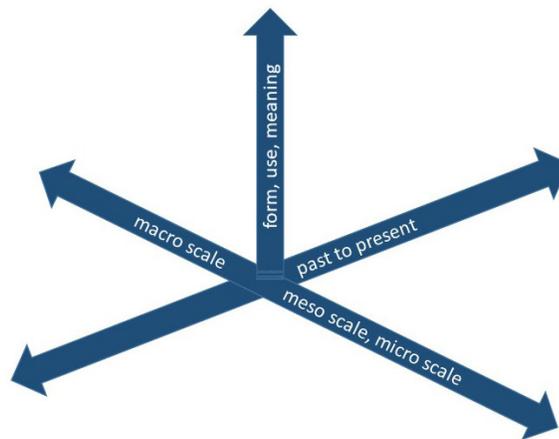


FIG. 2 Table to define the relation between the parameters of a heritage landscape. Source: author

An important aspect of the authorship is the reciprocity of men and landscape. In the last twenty years the approach of human influence on the landscape has changed from simple data collection to reading and understanding the (individually driven) influences of men; it is referred to as the *landscape biographical approach* (Hidding, Kolen, Spek, 2001; Kolen, 2005). Renes and Kolen expressed this with the words '...as an essential part of human life work, landscapes have the potential to absorb something of people's life, works and thoughts. Landscapes shape their own life stories in different time scales, imprinted by human existence, affecting personal lives and transcendent individual life cycles' (Kolen, Renes, 2015, 25-26). This underlines the reciprocity of men and landscape and the dynamic relationship this represents. This human influence is not only based what is seen and sensed, but what is experienced emotionally or imagined (Fairclough, 2006). Samuels and Kolen referred to this as the *authorship of these landscapes* (Samuels, 1979; Kolen 2005; Kolen, 2015). The authorship can be seen as the way to describe how human used the landscape, reflecting the values and priorities of the designer, client, user, community or even the larger environment. The author can vary from an individual person to larger societal groups; the relevant persons may differ in time. In this paper the authors are the landowners-designers and how they relate to their local communities and the location. The reading of these landscapes can contribute to understanding the ideas of the urban elite through time if studied in a well-defined group. The theoretical approach is clear, but it needs to be made more specific for practical applications.

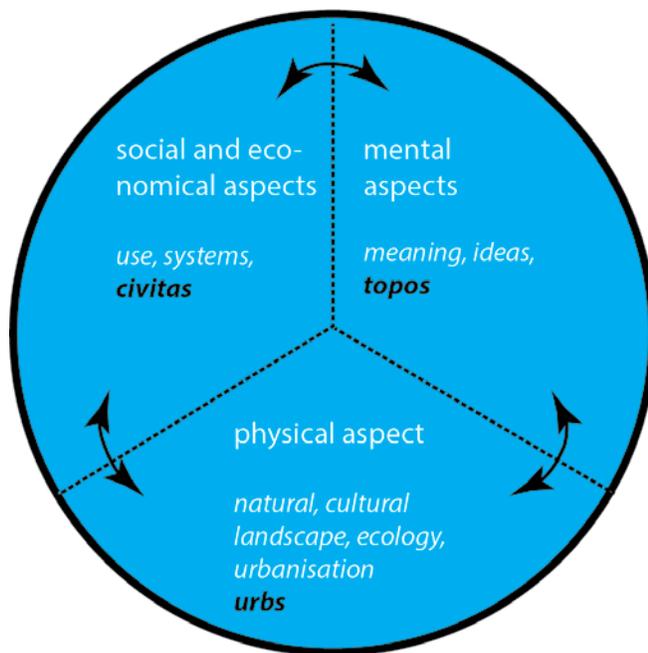


FIG. 3 Three parameters defining place in the threefold analysis. Source: author, 2019, 73.

The first parameter is the authorship. It can be studied by reading historic maps, drawings, pictures and literature, based on the triad of space (Relph, 1976), the physical features and appearances, the activities, and the meanings. Montgomery (1998) described these elements more explicitly for the urban realm. Fig. 3 explains how the three aspects form the triad of space. Lefebvre (1974) and Soja (1998) used words like the physical appearance, the social and the mental issues. The Dutch researchers Taverne et al used for the physical plan, the societal issues and the meaning the Latin words *urbs*, *civitas*, and *topos* (Taverne, Ramakers, Demski, 2012, 9-20). The second parameter is time. The landscapes changed over time, altering the appearance of places regularly due to natural, cultural or financial forces like fashion, new owners and so on. The third parameter is scale. Burns and Kahn distinguished the dynamical mutual relationship between objects and its surroundings on three 'scales', the area of control, the area of influence and the area of effect (2005). Use and meaning may be different on these scales which we describe as the macro scale, the meso scale or the micro scale.

Understanding form, use and meaning can be based on a spatial analysis like used in (urban) typomorphological studies, on space syntax and on mental mapping such as was done by Lynch (1960). Historic drawings can be used to explain use and meaning by analysing the apparent emphasis given to specific elements in these drawings. Sightlines can as an example help to understand the meaning of specific elements (Verschuure-Stuip, 2019). Every site should be analysed on the mentioned different scales (micro, meso, macro) and on three different aspects (spatial, social-economic and mental-meaning), separately for well-defined time frames. The scales vary and should be identified in the beginning of the research. To study the dynamics of the site or place, this table should be completely filled in and for a number of timeframes, because the meaning and use of a site may have changed because of new technics or different incentives.

## 2.2 RESEARCH METHOD

The threefold analysis is embedded in a four step method. The first step is an inventory of data on the main topic, which was for this research country houses and suburban villas. Due to the spatial character of this analysis, data are presented in distribution maps with geo-information programmes (GIS). Next to this an inventory of the suspected most influential contextual aspects is made based on historic research of (historic) maps, drawings, descriptions (Verschuure-Stuip, 2016) and others. In this paper the main contextual topic is *water and landscape*. This information was made visual in the same software and analysed in the threefold approach (form, use, meaning). Within the second step the topic layer and the contextual layer were combined and analysed in three scales. The third step is to classifying all information and combining it in a coherent story (Verschuure-Stuip, 2019).

## 2.3 COUNTRY HOUSES AND SUBURBAN VILLAS LANDSCAPES

The method was used to describe the essence of the large scale *country-houses-and-suburban-villas landscapes*. The origin of outside living by the urban elite in the Netherlands. was in the beginning of the seventeenth century when the Republic of the Seven United Provinces was formed. From that moment on, hundreds of these houses were built in the most influential province of the young Republic (f.e. Stöver 2000, Bertram 2005). From that moment on, hundreds of these houses were built in the important provinces of the young Republic (f.e. Stöver 2000, Bertram 2005). The luxurious houses with their meticulous designed gardens and agricultural grounds were grouped close to each other, just like the wealthy civilians lived in the city in specific quarters (Verschuure-Stuip, 2019). This was seen from outside the republic as quite an extraordinary situation. It had to do with the socio-political situation in the Republic. The Republic was led by civilians and not by nobility in a highly dynamic landscape in one of the most urbanised areas in Europe at the time (Frijthoff, 2002). This situation was different from neighbouring countries and was only comparable to the Venice situation a century earlier where the hinterland Veneto was reclaimed and used for building a villa urbana or a villa rustica<sup>1</sup> (Cosgrove, 1988).

In this paper the combining of the topic map (country houses and suburban villas as dots) with the context map (barge canals, landscape) on the macroscale (Fig. 4) is explained by presenting a few drawings. The blue lines represent the barge-canal connections for public transportation between cities. Analysing and combining the topic data (houses and villas) and the contextual information (barge canals) on different scales, a number of conclusions could be drawn. A detailed analysis of the map shows that only in a few regions country houses and suburban villas were purposely built near the barge canals and this is only valid for the barge canals opened in two periods, the first period being between 1630 and 1647, the second period being between 1655 and 1702. Most country houses and suburban villas were built close to the barge canals opened for use in the first period when the barge connections were a novelty.

1

In the Netherlands, a division is made between country houses and suburban villas. Country houses have a noble or an agriculture origin, being used the entire year and the suburban villas, which were made for pleasure during the summer and with a urban signature. Van der Wyck, 1974.





FIG. 5 The house of Van den Broeck and Masuer called Vegtvliet near Breukelen. Source: D. Stoopendael 1719, provincial archives of Utrecht.

The use of different scales and of different time periods can give more validity to the conclusions reached in the research. A more profound understanding of the relationship between house, garden and context requires the addition to the analysis of the tangible and intangible relationships between these groups of country houses and suburban villas. It needs a similar analysis of a number of contextual topic layers, like land roads or other water ways, rivers, drainage-canal systems and brook systems, before it builds up to a systematic landscape approach.

### 3 SUSTAINABILITY GOALS AND THE THREEFOLD APPROACH

#### 3.1 CLIMATE CHANGE AND COUNTRY HOUSES

The use of country houses and suburban villas as *large scale landscape systems* can give insight in various landscape values which are important in the STG's (Sustainability Goals). To do so we need to fully understand a given heritage landscape. The landscapes have a cultural meaning and a unique narrative binding people to a certain place and to each other (place attachment). Large scale landscape structures also have natural, ecological and climatological values; there are sometimes unique species of plants and animals present and they may play a role in reducing the negative human impact (CO<sub>2</sub>, fine dust, warm cities) on climate. Especially when we consider country houses as a large group covering an extensive area, they can be profitable for climate control and ecology (STG 11). Research has shown the importance of trees and a green environment for our health, for liveability and for the physical experience of landscapes (STG11). Country-houses-and-suburban-villas landscapes can help to achieve sustainability goals by the creation of meaningful, inclusive and healthy living conditions through the preservation of the natural values of their historic systems. In the next section it is explained by example how this landscape approach can work if we create groups of country houses and suburban villas and organise them spatially and organisationally as a base for new planning strategies.

## 3.2 CLIMATE CHANGE AND COUNTRY HOUSES

In 2018 and 2019 the Stichting Kastelen, Buitenplaatsen, Landgoederen (SKBL), a national organisation for castles, historic country houses and suburban villas, presented a programme raising the public awareness of the effects of the severe drought on historic gardens (NOS, 2018). In the eastern part of the Netherlands climate change is affecting the distribution of rainfall. About a century ago water management systems were developed to drain water from the higher grounds and historic retention systems were shut off. Nowadays rainfall is diminishing in certain periods of the year creating a shortage of water to fill the moats, water streams, the ponds, fountains and even to supply the woods used for rabat forestry, a form of industrial forestry on country houses. In turn it results in a change in landscape experience and a loss or change in biodiversity. The lack of water causes specific species to be replaced by others, thus creating 'new' landscapes. The question is which landscapes should be considered? Which phase is leading in this transformation? (Malinath, 2017).

An analysis as described in chapter 2 of this paper is needed of the relationship between the country-houses-and-suburban-villas landscapes, the present waterways and the historic retention system. A design atelier Heritage landscapes, Delft University of Technology (DUT) was organised in 2018 to make plans to control the drought problem and to include the preservation of the historic situation in this solution. The water systems inside and outside the gardens needed to be made more robust to preserve the unique species of plants and animals in the gardens and so preserve the experience of the gardens. As a first step, the students made an inventory of the topic layer, the country houses and suburban villas, and combined the layer with a contextual layer consisting of the brook system and the most relevant landscape features. The Baakse Beek is a prominent brook in the eastern part of the province of Gelderland and it used to supply water to country and castles like De Wiersse, t' Medler, Brandenburg, Hackfort and others. The brook system is the base of this country-houses-and-suburban-villas landscape. After this large-scale analysis, the analysis was also done on the meso- and micro scale with De Wiersse and 't Medler as typical examples of country houses and gardens in this area (Fig. 6).

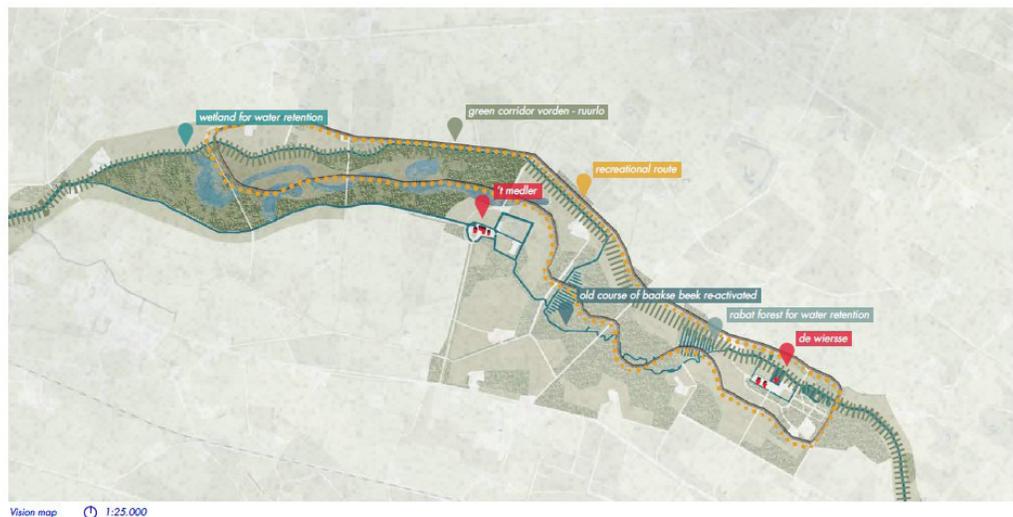


FIG. 6 Student plans for the integration of the improved and remodelled retention system in the drainage system in the Baakse Beek area, De Wiersse and 't Medler.

Source: new plans M. Zinsmeister for elective Heritage landscapes.

The current water system is primarily designed to drain the water from the higher grounds, because of the surplus of water in the past and still in some periods of the year. Students showed how the new system including water retention systems present in the *country-houses-and-suburban-villas landscape* could prevent droughts from occurring in the future. The choice of such a combined drainage and retention system could be important for the transition process and for the required cooperation as well. Issues of water management cannot be solved by individual stakeholders or owners alone. By the inclusion of the concepts from the *country-houses-and-suburban-villas landscapes* in the drainage system the most important stakeholders can work together and discuss the maintenance of these landscapes with governmental bodies.

The design atelier showed that using the described analysis method, the inclusion of the historic retention system in the drainage system may help solve the drought problem. The transition to such a landscape is only possible with cooperation between owners and governmental bodies like the Water board.

## 4 CONCLUSION

In order to create solutions for the future of heritage landscapes we need to use a method to read the dynamic culture-driven landscapes with specific attention given to its historic use. We need to understand historic elements in the context of former use and meaning on different scales and in different time periods to maintain the identity of landscapes in new solutions. In preservation we tend to focus on the landscape itself but a focus on use and meaning is even more important because it is closer to the hearts of people living in the area. Based on a threefold method of analysing the triad of space, the spatial form of a landscape biographical description showed the possibility of creating sustainable spatial solutions that were in line with how people lived in these areas for long periods of time. The approach is not needed for identity reasons alone, but more importantly for finding solutions to modern problems close to local people's hearts so that it can become an inclusive approach for both people and 'nature' (STG 11 and 15). Therefore, it can be used for cooperation in (preservation) management. These integrated approaches have been worked in detail out for cities, but in landscape architecture there is a need for further development. In layer analysis this should result in adding various narrative (or cultural) layers next to the green-blue and grey layers we tend to describe. Even in zoning plans various narrative maps, explaining historic use and meaning) should be added.

For the preservation of country houses or suburban villas, we have to take the surrounding landscapes of green monuments formally into account. Although we generally recognize that country houses and suburban villas are part of large-scale landscape structures or even systems, we tend to focus in descriptions of the preservation of green monuments on regarding them as ensembles of house and garden. This paper shows that an additional description of these green monuments on a larger scale is as important as the preservation of the ensemble of house and garden itself. In times of climate change we should preserve green monuments by restoring or adapting them taking its surroundings into account; this was explored and shown in the example of the Baakse Beek.

## Acknowledgment

The method in this article is developed in the PhD thesis "Well-situated" (Verschuure-Stuip, 2019). It was applied in graduation projects for the History and Heritage Vector in the master track Urbanism (f.e. Ruan, 2017; Dijkstra, 2017; Alewijn 2018; Bluemink 2019). The case of the Baakse Beek was described by Malinath (2017) and students of the atelier Heritage Landscapes 2018 for the project KADER, a project on sustainable Heritage between DUT and province of Gelderland.

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# Historic Urban Landscapes and Sustainable Development in Context: Challenges and Prospects of the Implementation of HUL in Alexandria, Egypt

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## Abstract

*The implementation of 'universal' policy documents of cultural heritage in most non-western developing countries have often failed to address their complex local realities; this may well be the case for the 2011 UNESCO Recommendation on the Historic Urban Landscape (HUL). Yet, as a holistic, context-conscious and integrated instrument, it holds the potential to address the urgent need for innovative methods towards sustainable management of urban heritage in Egypt while respecting the values, traditions and environments of its local urban contexts. This paper investigates potential challenges and prospects of implementing the HUL Recommendation in Alexandria: a prominent historic city that has been suffering from increasing urbanization pressures profoundly threatening its unique heritage values and urban qualities. Approached with the lens of HUL conceptualization and the UN 2030 Agenda, the paper overviews the existing local realities and frameworks of urban heritage, seeking to identify their inadequacies and deficiencies in relation to the HUL. The aim is to provide insights on the 'localization' of this global tool to foster sustainable management of Alexandria's historic urban landscapes. This exploratory overview, conducted by means of qualitative inquiry such as desktop review, observation, literature review and semi-structured interviews, serves as a first step to investigate implementing the HUL in Alexandria. The paper infers that through a critical adaptive implementation, the HUL could be a useful tool towards strengthening the link between cultural heritage and sustainable development in the Egyptian context.*

## Keywords

*Historic Urban Landscape (HUL Recommendation), urban heritage conservation, sustainable development, localization, Alexandria (Egypt)*

## 1 INTRODUCTION: GLOBAL AMBITION... A NEW HOLISTIC PARADIGM

International focus regarding the conservation of urban heritage has been increasingly consolidating around the paradigms of sustainability (Sims & Winter, 2016). This can be seen in the growing clear acknowledgment of the link between culture and sustainable development in many recent cultural heritage policy documents drafted by international bodies.<sup>1</sup> It means adapting urban conservation according to the requirements of sustainability and advancing towards a holistic and integrated consideration of different values. In this sense, the 2011 UNESCO Recommendation on Historic Urban Landscape (HUL) represents a major shift in cultural policies that is reshaping the field of urban conservation—moving from an orthodoxy of global instruments dating from

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For example, the Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas (2011).

the third quarter of the 20<sup>th</sup> century into the significantly changed present-time perceptions and priorities, captured in the Sustainable Development Goals (SDGs)<sup>2</sup> (Rodwell, 2018). As a long-awaited step to renew the conceptual instruments of international heritage regulations and update the modern paradigm of urban conservation, the Recommendation aimed to promote a holistic understanding to heritage and an integrated approach that combines the apparently contradictory dynamics of permanence and change (Santander et al., 2018). By making heritage a resource for urban development (Bandarin, 2019; Francesco Bandarin & Oers, 2015), this HUL approach aims to integrate conservation into the overall development frameworks, while respecting the values, traditions and environments of different urban contexts (Nation, 2011). Accordingly, the 2011 UNESCO Recommendation defines the HUL as:

*"... the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of 'historic center' or 'ensemble' to include the broader urban context and its geographical setting". (UNESCO 2011)*

As an integrated urban management approach that embraces both development and culture, the HUL is increasingly seen as a strong tool for adapting the New Urban Agenda<sup>3</sup> to national urban policies that are compatible with the 2030 Agenda for Sustainable Development (Bandarin, 2019; Erkan, 2018). Both of these future agendas, set by the SDGs, highlight the need for an integrated territorial development, but without stipulating a specific methodology (Erkan, 2018). Therefore, Member States of UNESCO were encouraged to apply the HUL Recommendation in the context of the 2030 Agenda<sup>4</sup> after its adoption in 2015. Additionally, the HUL is now seen by many as a *"decisive tool in reshaping of urban conservation policies in the spirit defined by Agenda 2030 and the New Urban Agenda"* (Bandarin, 2019, p. 5), and as a means for the local implementation of the SDGs in historic cities (Erkan, 2018, p.84). It is believed that the global urban challenges identified by the international community can be addressed in such cities through this approach because its principles are fully compatible with both agendas as well as former UNESCO conventions (Erkan, 2018, p.84). Yet, this should be carefully approached; history shows that the implementation of international policy documents in most non-western developing countries<sup>5</sup> tends to be difficult, challenging, and sometimes impossible (Auwera & Schramme, 2014; Birabi, 2007). This is due, in some cases, to the policies themselves, such as lacking a historical and anthropological perspective of the context (Lewis, 2009) or downplaying the local dynamics (Nardella & Cidre, 2016), and in other cases to the particularities of the local context. Regardless, *it has become factual that International urban conservation charters are not imposing significant influence on urban conservation practices in developing countries* (Birabi, 2007).

This may well be the case for the HUL Recommendation. Despite being context-conscious—by asserting the need for a context adaptation beforehand—there are substantial doubts regarding its clarity (Buckley et al., 2016; Santander et al., 2018), conceptual and practical implications (Azkarate, 2016), and its suitability for developing countries (Hill & Tanaka, 2016).

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2 In 25 September 2015, and agreed by 193 Member States at the General Assembly of the United Nations, countries of the world signed up to the 2030 Agenda for Sustainable Development (2030 Agenda) and its 17 Sustainable Development Goals (SDGs).

3 An action-oriented outcome document, brought up by UN-Habitat and enshrined in the 2016 'Quito Declaration on Sustainable Cities and Human Settlements for All,' that is seen as an extension of the UN 2030 Agenda.

4 In the General Conference of UNESCO (Actas de la Conferencia General. Reunión 38a. París, 3–18 de November 2015; UNESCO: Paris, France, 2016)

5 According to the UN, a developing country is a country with a relatively low standard of living, undeveloped industrial base, and moderate to low Human Development Index (HDI). This paper adopts the classification used by UNCTAD.

Nevertheless, as an integrated approach that defines heritage as a social tool for development (Bandarin, 2019), the HUL seems to hold the potential to address the urgent need for innovative methods towards the sustainable management of urban heritage in Egypt, while reflecting the needs, values and particularities of the local context. This is something that formerly imported universal—predominantly western-based—approaches have often failed to.<sup>6</sup> Therefore, while this potential should be harnessed to the greatest possible extent, it should nonetheless be approached critically with a focus on sensible localization that recognizes the local dynamics rather than simply following a set of technical managerial processes. Otherwise, we will be simply part of another international normative system, which might be seen reasonable, but actually not sufficient.

This paper attempts to put this discussion in context by addressing the challenging case of the city of Alexandria in Egypt. At first, it gives an account on the current situation of urban heritage in the city and the associated conservation frameworks, seeking to identify their inadequacies and deficiencies. Then it uses the findings of this analysis to highlight the potential challenges and prospects of the HUL implementation in the city. The aim is to provide insights on the 'localization' of the Recommendation by critically exploring the existing local realities together with the ambitious global agenda. This exploratory overview, conducted by means of qualitative inquiry such as desktop review, literature review, observations and semi-structured interviews with key local experts, should serve as a first step to investigate an adaptive HUL implementation in Alexandria.

## 2 LOCAL REALITY ... A COMPLEX MULTIDIMENSIONAL CRISIS

### 2.1 ALEXANDRIA

Alexandria is Egypt's second largest city and its former Hellenistic capital. Founded in 331 B.C. (Dessouki, 2012), it is known for its extensive history manifested in the diverse layers of heritage values attributed to its urban landscapes (Sirry, 2018). The historic core features the archetype of the medieval Arab city and the colonial European one, along with modernist and contemporary additions, all coexisting on top of the ancient city, parts of which are underwater (AbdelNaby, 2017). In addition to other significant natural and intangible elements, all these layers have their imprints on the city's urban landscape, giving it its unique character and remarkable sense of place.

However, this richness is increasingly endangered by multidimensional processes of change that have been taking place since the mid-20<sup>th</sup> century (Said, 2016). Initiated by socio-economic and political transformations, rapid uncontrolled urbanization, in the absence of efficient policies and plans to manage urban expansion, put increasing pressures on the inner city and its surroundings and has rendered this change destructive, with massive waves of demolition, encroachments and illegal construction plaguing the city. Despite some regulatory protective efforts (via law<sup>7</sup>, listing and regulations), the absence of political will to effectively enforce protection measures to conserve the city's heritage, and the lack of comprehensive policies to incorporate built heritage into effective

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<sup>6</sup> For example, the shortcomings of western notions of authenticity which were later addressed in the Nara Document. Also, the increasing deterioration of Historic Cairo (a WH site) is an apparent local example of the failure of many efforts of conservation, development and revitalization for more than four decades (Gharib, 2011), which were based on overly optimistic assumptions (El Rashidi, 2012).

<sup>7</sup> Law 144/2006 concerning the regulation of building demolitions and the preservation of Architectural Heritage

economic and social structures provided the environment for these processes to continue and to accelerate since the 2011 uprising (Said & Borg, 2017).

The situation is furthermore escalated by recent and ongoing State-led oblivious and grandiose controversial interventions, that have an enormously destructive and mostly irreversible impact on the city's urban resources.<sup>8</sup> An example of this is the ongoing project "Artery of Hope" or '*Shuriyan Al Amal*' which entails the filling and covering of the Mahmoudeya Canal<sup>9</sup> and transforming it into a 21 km long major traffic axis with small artificial lakes and shopping malls; the stated aims are easing traffic congestion and curbing the spread of slums (Mounir, 2019). This megaproject completely dismisses the historic value of the Canal, which has been always an important marker of the city's identity throughout history. It was the first project undertaken in the modern history of the city to revive it by reviving the ancient Canal of Alexandria (Forster et al., 2004) to be used for trade and to bring fresh water from the River Nile. It also undermines its social value by significantly diminishing the gathering space once used by residents of the surrounding areas and making it harder to access. Furthermore, it also disregards government official recommendations regarding the Canal and its surroundings which was included in the city's heritage list as a protected area.<sup>10</sup>

These destructive processes are profoundly altering the city in a way that threatens its heritage values, identity and livability. In fact, by losing a vast richness of its natural and cultural heritage, the city is in a worse state now than when conservation regulations set out to protect it (Moustafa, 2016). On top of this, the city is facing some of the most severe impacts of climate change, i.e. rising sea levels (Agrawala et al., 2004) that could inundate most of the city, a challenge which is rarely referred to in official statements.

## 2.2 EXISTING MANAGERIAL AND REGULATORY FRAMEWORKS

The managerial and regulatory frameworks governing the management of urban heritage in Alexandria are heavily influenced by the national political system and government structure.<sup>11</sup> The central government in Egypt has always been, and still is, maximizing its power at the expense of local governments (Nada, 2014; Tobbala, 2019), which are then left with very limited authority and resources<sup>12</sup> (Nations, 2013). Hence, the policies, plans, legislations, regulations, guidelines and norms regarding urban development or the management of heritage and built environment are all formulated and articulated at the national level without any form of public

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8 The State itself has contributed to the damage to Alexandria's urban heritage. It usually does not respect the same laws it declares and fails to provide the appropriate means to enforce them.

9 Named it after the Ottoman Sultan Mahmoud II.

10 These recommendations were officially reported as an amendment to the list in 2007.

11 Egypt is a unitary state governed by a centralized system with some features of 'de-concentration'. Within such a system, the Governorate of Alexandria is merely an administrative unit following instructions from the center to implement imposed policies ("Municipal Finances: A Handbook for Local Governments," 2014), without policy-making power or fiscal autonomy (Nations, 2013), and without any formal channels of public participation or accountability in which Alexandrians can articulate their interests and needs and exercise their rights and obligations towards their city.

12 The allocated local administrative budget is very limited and all important high-revenue taxes are controlled by the center (Tobbala, 2019). A recent study shows that the central government is dominating the execution of the public budget and that the percentage of expenditure by local governments is almost constant at 14% in developing countries compared to 30-40% in developed countries and to 20-30% in transition economies (Nations, 2013).

consultation or accountability<sup>13</sup>, which render them insensitive to the needs, interests and values of local communities. The result is very limited capacity to sustainably manage urban heritage resources at the local level.

This extreme centralization is combined with a fragmented institutional and inadequate legislative frameworks<sup>14</sup> characterized by: a very weak coordination among the various national and local administrations involved in the management of urban heritage (Tobbala, 2019); the lack of clarity of roles and responsibilities which makes numerous gaps and overlaps between these institutions; and a form of '*institutional territorialism*' where the responsibilities for physical and social development are divided among governorates and national ministries (Tadamun, 2014).

Like most developing countries in the region, explicit links between culture and broader sustainable development remain rare in Egypt (UNESCO, 2019). In such context, heritage is preserved primarily for the income it can generate from tourism and other commercial activities,<sup>15</sup> and is sometimes seen as an obstacle to development and modernization (Timothy & Nyaupane, 2009). Furthermore, in most cases, revenue generated from cultural heritage tourism in Egypt goes back to the central government to be spent according to its financial plan and not on heritage conservation (Elgamal, 2014).

Briefly, this model of governance, characterized by the domination of central authorities over local ones, its inefficiency and its complete disregard of public participation, is completely inadequate and fails to address the needs of the city and its heritage (Nada, 2014; Ibrahim, 2019). Taking this into consideration, the next section aims to use the findings of this preliminary analysis to highlight the prospects and challenges that could affect potential HUL implementation in the city.

### 3 CHALLENGES AND PROSPECTS... A ROADMAP FOR 'GLOCALIZATION'?

The interrelated challenges and prospects of local HUL implementation in Alexandria can be clustered under three interrelated thematic areas which we consider crucial to this debate and which represent a starting point on the road to implementation:

- Governance & institutional set-up
- Conservation approach
- Policy & Political support

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13 Public participation or participation of stakeholders is not a legal requirement in Egypt. The only elected public representatives at the local level, i.e. the 'Local Popular Councils', don't have any legislative or decision-making authority or policy influence. Yet, they have been all dissolved since 2011, and even before that date, they were widely criticized on grounds of integrity, effectiveness and true representation.

14 For example, the issuing of Law 144/2006, which is considered one of the main built heritage conservation legislation, was met with problems such as the absence of accountability, legitimacy and participation in its drafting and implementation. Thus, an obvious conflict between heritage ownership and legislation still persists, reflecting the negative impact of the top-down approach used in Egypt (Elsorady, 2011). As a result, heritage buildings are still being delisted and demolished to make room for new illegal construction (Moustafa, 2016).

15 Perhaps merging the Ministry of Antiquities into the Ministry of Tourism, which took place recently in 2019, was one of the revealing actions to this tendency.

### 3.1 GOVERNANCE & INSTITUTIONAL SET-UP

*"local institutions and governance are critical to advancing new concepts and approaches to urban heritage conservation. Without the direct engagement and 'take-up' by local government, it is doubtful that this particular product of international heritage doctrine (the HUL) can meet the kinds of 'paradigm-shifting' aspirations that UNESCO has set for it."* (Buckley et al., 2016, p. 96)

As demonstrated, centralized decision-making, which occurs in a fragmented institutional set-up characterized by weak administrative and technical capacity, is one of the major challenges facing, not only the management of urban heritage in Alexandria, but overall sustainable urban development in Egypt. Meanwhile, the HUL approach, by reconceptualizing urban conservation as a 'moving target' characterized by an increasingly complex environment of change management, complicates the challenges already facing the 'urban heritage managers'; it expands *"the territory under their surveillance, the number of stakeholders involved, and the type of attributes that carry meaning and value"* (Bandarin & Oers, 2012, p. 143). This increase in complexity should be balanced by the forging of new partnerships, better institutional coordination, and more available resources, both technical and financial; all are absent elements in our case.

Managing this increasing complexity by the existing governance model—with very limited institutional capacities of management and coordination, and allocated resources—and the current undemocratic pathway of development adopted by the state is unlikely to succeed. This makes it very hard for actors to collaborate and network effectively. The only foreseeable way seems to be initiating a legal and institutional reform that would guarantee a serious move towards decentralized governance, participatory decision-making, and the integration of conservation and development at the local level. Ideally, such decentralization should seek to redistribute authority, responsibility and resources for the management of urban heritage by transferring more powers and duties to local elected authorities. Preferably incremental, this should be parallel with capacity-building for local government institutions and communities with the aim of improving the efficiency and equity in the management and use of local heritage resources. This means empowering local governments to function as responsive and accountable institutions to the needs of their citizens, as well as local communities and their organizations (e.g. CBOs and NGOs) to participate as equal partners in decision-making.

However, there can be no true decentralization in the absence of democracy. Within the present political context, it is implausible that the current central authority would embark on reforms that give local institutions authority or relative autonomy, or initiate implementation of an approach that depends on participation at the local level. Since decades<sup>16</sup>, *the move towards a decentralized government in Egypt has been [...] largely rhetoric, and what happens on the ground is either a stagnant form of a centralized institutional set-up or even at shift towards more centralization* (Nada, 2014). With this situation, *no city has the freedom to challenge the status quo* (Tadamun, 2014); Alexandria is no exception. Nevertheless, finding ways on how to leverage the existing institutional structure to accomplish that is challenging.

## 3.2 CONSERVATION APPROACH

The current approach to the conservation and management of urban heritage in Egypt, with its mainstream founding conceptualizations and its disconnection from urban development, poses another critical challenge. The current national laws and policies focus primarily on the protection of tangible islands of historic monuments as artefacts, completely isolated from their surroundings, while heritage benefits, intangible dimensions and relation to sustainability are not recognized. The result is poor imitations of outdated western-based preservation practices of the last century, promoting the museumification of living heritage. In fact, officials proudly state that the aim of preserving historic centers is to turn them into an open museum for tourists.<sup>17</sup>

This antiquarian/monumental static top-down approach, supported by the often orientalist-like representations of historic city inhabitants by officials and some practitioners, fails to capture the potentials of community engagement and local knowledge systems such as the traditional Waqf system<sup>18</sup>. This mismatch between the knowledge and values system of experts and those of wider society was revealed in light of the Arab uprisings (Nardella, 2013). Stimulating dialogue about changing discourses and practices within academic and professional circles, away from the widespread discourses reproducing narratives of cosmopolitan colonial nostalgia<sup>19</sup>, would most likely be a first step towards addressing that mismatch.

Some scattered interventions from NGOs and few practitioners<sup>20</sup> have proven their effectiveness prior to and since the uprising despite restrictions on their work, providing a model, which could help disseminate tools and best practices, and help deepen and nuance cultural policies and enhance partnerships with the public, the government and the private sector.<sup>21</sup> This could gradually help empower people in the decision-making processes, to ensure that multiple layers of heritage values are negotiated and agreed at all levels of implementation.

However, mainstreaming the concept of HUL would not be an easy task given its problematic nature, terminology and generic formulations. Not only is it beyond the comfort zone of established, specialized disciplines, but it also raises several serious issues of interpretation and application. Thus, applying the concept in practice has been dubbed by some as 'undoubtedly well-intentioned' but excessively ambiguous (Pino, 2018). The term remains vague; and when translated into Arabic,

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17 See the response of Egypt's representative on the recent survey on HUL implementation in the „Second Consultation on the 2011 Recommendation on Historic Urban landscape Implementation by Member States, 2019“

18 *Waqf* is detaining the corpus from the ownership of any person and the gift of its revenue or usufruct both presently and in the future to charitable purposes. It refers to any endowed property -*Mawqoof* of which the revenue is devoted to a special purpose -*Mawqoof Aleih* while ownership is immobilized forever. Some scholars and experts suggest that building upon this traditional system could present an opportunity for the establishment of an integrated approach that is locally rooted (and the localization of HUL).

19 Representing a category of post-colonial cities, Alexandria is usually remembered and narrated as an 'epitome' of cosmopolitanism, where fragmented 'memorative signs' within its now transformed urban landscape produce nostalgia for a 'mythicized past' in the minds of its 'pilgrims' (Dora, 2006). The cultural archaeology of Alexandria has therefore entered Western imagination through a selective process of 'mythicization' that focuses only on its two supposedly cosmopolitan periods: the 'ancient' and the 'royal' (Dora, 2006). This is reflected in the interventions of companies such as *Sigma* in Alexandria and *Ismailia* in Cairo, as well as the state interventions in Downtown Cairo.

20 Such as *Athar Lina* initiative, Megawra-BEC and *Takween* ICD.

21 *Athar lana* is a good example of: partnership between national and local governmental institutions, civil society organizations and the private sector for participatory local development.

it becomes more imprecise, difficult to apply, and easy to distort and manipulate.<sup>22</sup> Nevertheless, as it is still a relatively new concept, this can be considered as an opportunity to localize it and adapt its meanings to this particular context.<sup>23</sup>

### 3.3 POLICY & POLITICAL SUPPORT

*"Due to the intergovernmental nature of the Recommendation, it requires a strong commitment of decision-makers to make use of this approach in their national contexts"* (Erkan, 2018).

The first experiences of HUL implementation show that the process is highly dependent on continuing political support (Buckley et al., 2016), which can easily change, especially within the current context. The absence of political will to ensure the protection of the city's heritage, is perhaps the most crucial challenge that the pursuit of HUL implementation will face in Alexandria. The city has been overshadowed for decades by Cairo, which would suggest that any implementation of HUL is likely to happen in the capital first/only. Without policymaking powers, the local government would not be authorized to initiate such process. The highly centralized power structure in Egypt makes it almost impossible to affect any type of policy change without a high-level of support at the national level (sometimes the PM or the President). In other words, the 'easiest and fastest' way to initiate HUL implementation would be to start gathering support at the top. Even then, creating and maintaining the needed formal support to change the current well-established frameworks and practices will face considerable resistance, unless it can be proven that it somehow aligns with current political agendas. Doing that without compromising the essence of the approach or diminishing it into mere cosmetic changes serving the regime political agenda is a major challenge.

However, theoretically speaking, we are in a better position today, if not the best to date, to attempt to implement an integrated approach such as HUL. The new 2014 Constitution marks a significant step forward by introducing a broader definition of cultural heritage (Article 50) and by including commitments towards strengthening governance and achieving sustainable development (Article 27, 41 and 46). Article 179 have also left open the possibility of electing the currently appointed governors and district heads—a potential inlet for democratization at the local level when the political will is there. Additionally, some efforts are being done to by the state, which has committed itself to the SDGs and 2030 Agenda, to identify the level of alignment between the Constitution, the SDGs and Egypt Vision 2030, on the level of goals, targets and key performance indicators (Ministry of International Cooperation, 2016). Perhaps the second biggest challenge would be to make sure that mindful efforts are made to make sure that this translates well on the ground (as historically it has not).

Under a regime that puts so much emphasis on new developments, HUL's pro development approach could potentially make convincing officials of its benefits a lot easier than previous more conservation-centred approaches. Being developed as a way of rethinking the relationship between heritage and development and managing change in sustainable ways (Buckley et al., 2016), the HUL approach could frame conservation as innovative rather than constraining practice to achieve sustainability, which then *should serve as a fundamental principle for negotiating an acceptable balance between development and conservation* (Labadi & Logan, 2016).

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22 Translating *Historic Urban Landscape* to Arabic is highly problematic, mostly because there is no agreement on an Arabic term for *Landscape*, not to mention its connotation. Even some officials understand it as a new category or a replacement of the concept of "historic center".

23 In Ballarat for example, it was unclear what practical application and localization of HUL meant because of its broad statements and aspirational orientation. Accordingly, specific knowledge about its application in a local government setting needed to be charted by the City of Ballarat through the implementation process itself (Buckley et al., 2016).

## 4 CONCLUSION

To summarize, we strongly infer that the HUL Recommendation holds substantial potentials that should be investigated thoroughly in a context like Alexandria. Yet, this exploration should come from a critical position that recognizes the particularities of the local context and considers the reasons behind former failures of implementing global policy documents. Therefore, any attempt to initiate an adapted implementation process should follow an exploratory approach based on a deep understanding of the existing local realities and their historical roots as well as the current post-uprising context. On top of that, it should be informed by critical accounts and lessons learned from cases in similar contexts of the developing world. This is because an abstract understanding of the Recommendation might justify the support of its principles, but without considering the local dynamics at play we are bound to repeat former failed attempts to implement international guidance documents.

As demonstrated, Alexandria exemplifies the case of an Arab-Mediterranean historic city exhibiting unique forms of multi-layered heritage values threatened by multifaceted increasing pressures of urbanization, climate change and oblivious developments in the absence of adequate frameworks and tools to maintain these values and manage change sustainably. Analyzing the existing frameworks highlighted some important areas of deficiencies in relation to HUL, which offer insights on the challenges and prospects of its implementation as well as potential of reform.

Most if not all previous research on the Egyptian context has called for similar reforms to these frameworks. Yet, obviously, this would take significant time. In a city like Alexandria, cultural heritage is always pushed down to the list of priorities to make room for what is perceived as more pressing issues. We believe further research should look into navigating such complex contexts as they exist today and find ways to put cultural heritage on the current political agenda under the present circumstance. The emerging new holistic lens of HUL, by addressing the interrelation between cultural heritage and sustainable development, offers a useful tool towards this quest while strengthening their link.

### Acknowledgment

This paper is part of an ongoing extensive research inquiry related to the doctoral dissertation carried out by Ahmed Moustafa at the Bauhaus-University Weimar in Germany and funded by the DAAD. The work critically investigates the adaptation of the 'Historic Urban Landscape' approach for implementation in the local context of Egypt (Alexandria as a case).

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# SESSION 5

## Heritage and Well-being

**Azadeh Arjomand Kermani**

Sustainability is increasingly being understood to entail social, economic, environmental, and cultural dimensions. In the context of the SDGs, the well-being cluster (SDGs 1, 3, 4, 5 and 10) connects people-centered goals that reflect the social foundation of sustainability. People-centered goals have to do with how communities relate to heritage and how heritage contributes to their well-being and quality of life. These goals are being highlighted as an essential part of the sustainable development agenda, which aims to end poverty and ensure equitable access to health and education. How is heritage today contributing to the empowerment of communities, to inclusive societies, and to quality of life? How has it changed over time? How do we move forward?

# The Land Use of Late 19<sup>th</sup> Century Leeds: A Lesson in Density and Sustainability

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## Abstract

*The historic settlement is a sustainable settlement. Despite the traditional perception of such places as being 'unhealthy' or 'slum ridden', to dismiss the historic city as a bygone is not an acceptable approach. Instead we should be learning from the lessons it can teach us, and evolving our new urban environments accordingly. Through this discussion paper the lessons that our historic settlements can teach us about density, use and movement are compared to current urban design principles that aim to achieve the sustainable development goals in future urban environments. The city of Leeds had a planned medieval core from the early 13<sup>th</sup> century with its own mill, market, local industry and agricultural hinterland. As time went on the city evolved and buildings and structures developed with everything a citizen needed, culminating in 'the great victorian city' of the late 19<sup>th</sup> century. Through assessing Leeds through the late 19<sup>th</sup> century goad maps the vibrant uses of the time come to light and we can envisage how this early medieval city evolved into a rich, vibrant tapestry of use and activity that appears to meet modern urban design principles in many ways.*

## Keywords

*Density, Urban Design, Heritage, Sustainable Cities, GOAD, Sustainable development, Healthy Towns, Placemaking*

## 1 INTRODUCTION

The UN Sustainable Development Goals highlight the need for sustainable cities as a key element in adapting to, and mitigating against Climate Change.<sup>2</sup> Through this, the design, functionality and resource consumption of our settlements come under significant scrutiny.

However, the birth of the modern town planning and urban design movement has been inspired significantly by historic settlements. From Camillo Sitte<sup>3</sup> to Ebenezer Howard<sup>4</sup> to more obvious New Urbanists such as Andres Duany<sup>5</sup>, the historic city has been a template to emulate. Even theorists such as Cullen<sup>6</sup> and Tibbald's<sup>7</sup> used the lessons from our historic townscape to distil a means of understanding what made 'People Friendly Places' when they pioneered Urban Design Analysis and

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1 Webster. A (2011), "Building a Great Victorian City: Leeds Architects and Architecture 1790-1914." The Victorian Society.

2 United Nations Sustainable Development Goals (2015) <https://sustainabledevelopment.un.org/?menu=1300>

3 Sitte. C. (1898) "City Planning According to Artistic Principles". Republished Phaidon 1965.

4 Howard. E. (1902) "Garden Cities of To-Morrow". Republished Dodo Press 2009.

5 Duany, Zyberg, Alexander. (2003) "New Civic Art; Elements of Town Planning." Rizolli International Publications.

6 Cullen.G. (1961) "The Concise Townscape." Routledge.

7 Tibbalds. F. (1992) "Making People Friendly Towns." Taylor and Francis 2000.

the understanding of place. Jane Jacobs<sup>8</sup> too understood (perhaps more than anyone else) the legacy of history upon what created the many and varied layers of her beloved neighbourhood that she fought so hard to protect from the bulldozers of the highway engineer.



FIG. 1 Photo of Lower Briggate in Leeds showing the remnants of the Medieval town.  
By Kind Permission of The Thoresby Society

Nowadays Urban Designers often talk of 'Urban Design Principles' as guiding frameworks to tailor and encourage what is considered 'good placemaking'. Such principles are not intended to impose ideals upon city building, but rather to help address the social, economic and environmental concerns that we face. One primary concern of such principles is to encourage density, mix of uses, reduce the need to travel (or to travel by active means) and encourage social cohesion. However, although the urban theorists of the past were influenced by the historic city, it is unclear whether the principles we see today actually recognise that what they are striving for is not to create something new, but to build upon something that has been evolving for millennia.

As we will discuss, the historic city had a rich mix of uses, an ancient, planned hierarchy of plots and spaces, and was compact, walkable with a strong sense of community. When we compare the historic city to the guidelines in some of our Urban Design principles, we find that there are in fact significant synergies between the historic city and our re-imagined future sustainable city.

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Jacobs, J. (1961) *The Death and Life of the Great American City*. Randon House 2011 see also Jacobs, J. (1968) *The Economy of Cities*. Vintage.

## 2 URBAN DESIGN PRINCIPLES – A SUMMARY

In 2019 the UK's National Health Service produced guidelines for 'Healthy New Towns' in an endeavour to promote good urbanism in reaction to the emerging concerns that our cities are major contributors to ill health, social isolation and mental health issues.<sup>9</sup> This initiative drew comparisons to the actions of the Local Authority Health Boards of 100 years previously<sup>10</sup> and refocused the study onto new housing developments occurring in the UK in recent times. The hypothesis being that the developments gaining planning consent today could become the slums of tomorrow! This is somewhat ironic as the focus of these reports a century ago was firmly focussed upon the very topic of this paper – the historic town and how unsatisfactory it was!



FIG. 2 Urban Design Aspirations from "Neighbourhoods for Living." Permission pending Leeds City Council Neighbourhoods for Living

The Healthy New Towns guidance was produced in order to help influence a new generation of places that could perhaps be termed 'healthy'. The definition of a healthy place is identified as being the same as that of the sustainable place and is largely defined through a series of guiding principles. These principles were first announced in 2015 and form the core focus of assessment in order to ensure new developments are healthy for future generations. The guiding principles most relevant to urban design are summarised below:

- Principle 3: Connect, evolve and empower people and communities. This is related to enabling community institutions to thrive and to help stewardship of the local community to occur.

9 NHS England (2015) "Healthy New Towns - Putting Health into Place." <https://www.england.nhs.uk/ourwork/innovation/healthy-new-towns/> London.

10 Cameron, I Dr. (2014) "Planning a Healthy City – Housing Growth in Leeds -The Final Report of the Director of Public Health" Leeds City Council 2015. Director of Public Health for the city of Leeds for instance took it upon himself to write a report on "Planning a Healthy City – Housing Growth in Leeds" as part of his annual report in 2014-15. This document is now relatively hard to find and is not now promoted by the Local Authority who helped produce it.

- Principle 4: Create Compact Neighbourhoods. This is directly related to the requirement to create compact communities where mixes of uses and facilities are maximised.
- Principle 5: Maximise Active Travel. This is a core policy to embed active travel into the earliest connotations of a place. Where streets will be walkable, safe and where active travel will be the easy and most desirable option.

These principles are of course also directly related to generally accepted urban design principles, that for a large part have evolved individually from the urban design theorists of the later 20<sup>th</sup> century. Following the publication of the UK Government's guidance on urban design "By Design" in 2000<sup>11</sup> there are now similar principles for almost every major development and every city in the UK and the city of Leeds is no different in this respect. In light of this it would be pertinent to examine this city's own principles in the form of guidance for residential design from their document 'Neighbourhoods for Living'<sup>12</sup>. This document was intended specifically to improve design quality in new residential neighbourhoods. It went to great lengths to explain that good urban design is not simply about how a place looks but also about how a place functions and how connectivity, mix of uses and architecture combine to influence our townscape. The general themes within Neighbourhoods for Living were covered under the terms, '*Use, Movement, Space and Form*'. Supplementary to these the guidance outlined the following aspirations to achieve and suggested that new places should be:

- Walkable,
- Have a Strong Sense of Community,
- Are safe and attractive for cycling,
- Close to good transport links,
- Opportunities to Work nearby,
- Natural Surveillance against crime,
- Local shops nearby,
- Public spaces and Communal spaces and;
- Attractive buildings.

The synergies between both the Leeds and NHS principles are apparent and they both intend to create better places. However none of them acknowledge the fact that many of these principles are already represented within our historic towns. Indeed health reformers have provided the best excuse over the years to demolish our ancient urban fabric. As a result, although the urban theorists of the past alluded to the historic city as being infinitely sustainable, and, despite the fact that these principles must have been inspired by the successful places that we already know, the principles that we are meant to abide more often than not give the impression that creating successful and sustainable places is something new, and not something that has a very, very long history.

As we will attempt to demonstrate therefore, the historic city, and more specifically the medieval city, once contained many of the elements that are now considered important for healthy, sustainable and liveable places.

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11 'By Design' 2000. UK Government guidance on urban design in the planning system. CABE/UK Government.

12 'Neighbourhoods for Living' was produced by the Urban Design Team in Leeds City Council, lead by Mark Burgess RIBA and reviewed and re- released in 2015.

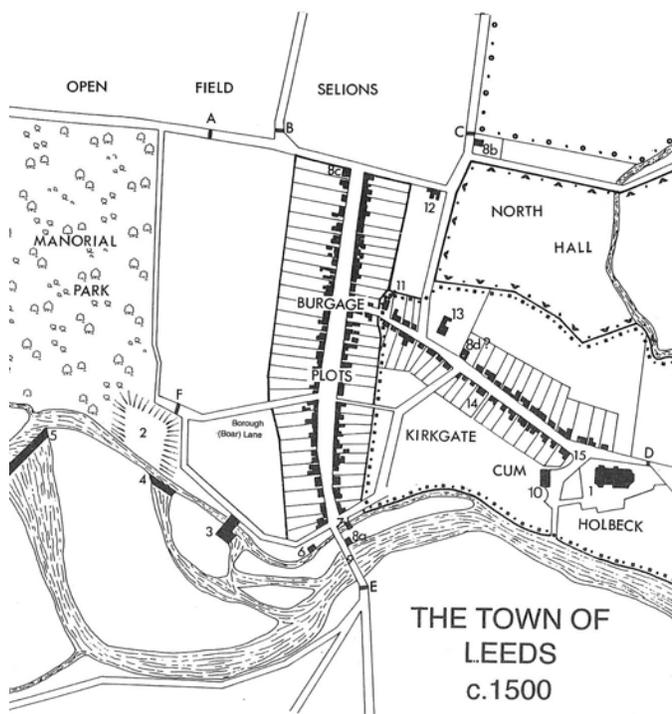


FIG. 3 Image of the Medieval Town. Reproduced by Kind Permission of Stephen Burt and Kevin Grady

### 3 METHODOLOGY

The city of Leeds was a largely Medieval planned town. It was planned following the charter from the local Norman lord, Maurice Paynell in 1207, and represents a typically planned layout of linear plots alongside a central axis and market street. Although it is not possible to see the uses of this original layout, it is possible to obtain a glimpse of the city prior to the reinvention of our towns and cities as the mono zoned 'Central Business Districts!' of post modern planning theory. In order to make this process simple a period in time was chosen when the city was perhaps at its 'pinnacle' of historic fulfilment. This means that the city was past its rapid industrial growth but was prior to the mass demolitions of the urban reformers and before the city began selling itself as 'Motorway City of the 70's'<sup>13</sup>.

The easiest way to see the results of this are to look at the fabulous GOAD<sup>14</sup> Fire Insurance Plans of the late 19<sup>th</sup> and early 20<sup>th</sup> century. These plans recorded, in meticulous detail, not only the fabric of the city at this time (including the materials used in construction, floor heights and window openings) but also the mix of uses. The analysis of these plans provide us not only with fascinating

13 Leeds sold itself as 'Motorway City of the 70's' see article: Nickson.C (2019) Article on "Leeds, Motorway City of the 70's". <http://www.bigbookend.co.uk/leeds-motorway-city-of-the-seventies-by-chris-nickson/>

14 The Charles E Goad Ltd Fire Insurance Plans date from 1885 and many are now published on the British Library Online. The maps discussed and shown here are from the Leeds archive. GOAD. C.E. (1902) -Chaz E. Goad Ltd Fire Insurance Plans: Leeds. British Library online. [http://www.bl.uk/onlinegallery/onlineex/firemaps/england/yorkshire/mapsu145ubu14u1uf024r.html?\\_ga=2.191098026.1843924763.1580389898-1125972600.1448980544](http://www.bl.uk/onlinegallery/onlineex/firemaps/england/yorkshire/mapsu145ubu14u1uf024r.html?_ga=2.191098026.1843924763.1580389898-1125972600.1448980544)

information about the social and commercial structure of towns at this time, but also about the rich mix of uses that they contained, often within extremely close proximity to each other. It is this mix of uses that this paper is primarily concerned about - as alongside the classic back to back and yard type forms of housing, the maps also show us Joinery workshops, schools, religious houses (of a variety of denominations) warehouses, factories, clockmakers and other, smaller (and likely much older) uses such as wood turners, blacksmiths and of course public houses, some of which we know to have existed in the 17<sup>th</sup> century if not before.<sup>15</sup>

As mentioned above, even the most cursory glimpse through the historic maps highlight the general mix of uses that occupied the historic town. The task was therefore to explore these uses in a more obvious manner and it was felt that a visual mapping exercise would be most appropriate. This would be similar to a modern Urban Design Analysis map that would seek to plot and explain the mix of the modern day city for instance.

Therefore the mapping began to plot the mix of uses upon a larger base plan from 1894 in a colour coded form using Adobe Photoshop to highlight the relevant plot and fill each building in a relevant colour. Where the GOAD plan showed a shop for instance, this building was located on the working map and plotted upon it in red. This process was continued for other uses and they are categorised below.

It is also important for the reader to understand the definitions of where the various phases of development in Leeds occurred. In this respect, the earliest extant phase was focussed around that of 'Briggate' to 'Head Row'. This marked the traditional end of the Medieval town and was historically marked by 'Bar Stones' with fossilised burgage plots (linear plots running to the rear of medieval houses) clearly visible even in modern property boundaries. As Professor Beresford illustrated so well, the Georgian town was built upon the former Manorial Estate to the West of the medieval town around 'Park Row' (named after the manorial park). This was originally higher status speculative development of housing, but by 1860 the area had become polluted due to new industry and the well to do residents moved away. The result in 1894 was an area of Georgian and Victorian former houses now re-purposed as offices - thus giving birth to the original Central Business District<sup>16</sup>. Further to this the Victorian expansion is shown in part extending to the North along 'North Street'. This was categorised by more rows of terrace houses and mills that are so typical of the Victorian industrial expansion but still contained a large mix of uses and, again referring to Beresford, these areas two were largely speculative.

The mapping is not exhaustive and in places some of the buildings do not accurately correspond with the GOAD map as there were sometimes differences between the 1894 Ordnance Survey base that was used as an underlying template. It must also be noted that the 1894 map was only used as this gave a much wider scale view, whereas the GOAD plans only cover a few streets at a time. As such there are areas which the study was unable to relate.

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15 There are numerous histories of Leeds that focus on public houses and Inns but the best recent history of the town is by Stephen Burt and Kevin Grady. Burt,S, Grady,K. *"The Illustrated History of Leeds"* Breedon Books 1993.

16 Beresford, M & Unsworth, R *"Locating the Early Service Sector of Leeds: The Origins of an Office District"*, Northern History March 2007.

The key to the map is explained below:

- Residential Dwellings – GREEN. NB: Many dwellings were listed as being located over shops. Where this occurs the shop is indicated only.
- Shops – RED. As above, many of the shops contained dwellings above.
- Commercial – BLUE. This use contained premises such as Inns, Public Houses, Restaurants and Hotels.
- Offices – FAWN GREEN. Offices were relatively rare within the Medieval core but they become increasingly apparent in the Georgian area that contained more polite buildings that were often former 18<sup>th</sup> century houses of distinction.
- Civic – TURQUOISE. Town halls, libraries, hospitals. This also included the fascinating 'Horse Hospital' in the Albion Street area.
- 'Practical Uses' – YELLOW. These were interesting uses that were likely much older. They contained such things as Blacksmiths, Brewhouses, Wood Turners and Joiners and are often found in the tight knit parts of the Medieval city.
- Factory's, Warehouses, Stables etc. – LIGHT BROWN. Factories and warehouses often went hand in hand and were seemingly a common feature within the city. This use perhaps needs revising in further studies but gives an impression of the amount of manufacturing that was available. It also includes such uses as 'paint shops', 'carriage works', 'drapers', etc. Stabling was included and everywhere from factories, Inns to grand houses had their own stables. Also notable are the Tram carriage warehouse which contained lots of stabling prior to the electrification of the tram system.
- Heavy Industry – BLACK. The heavy industry definition contained large scale manufacturing such as Tanneries and Foundries.

## 4 RESULTS

The result exposed more clearly the fossilised Medieval townscape core that contained both likely very historic land uses (woodturners, engravers, blacksmiths etc) and more modern and industrial uses nearby (banks, offices and steam printers for example). The exercise highlighted how the historic town could actually have met many of the aspirations contained within the urban design principles above especially through its mix of uses and density.

The most stark revelation are the colour coded maps that show clearly the vibrant mix of uses and their proximity to each other, with the greatest concentration within the older, medieval core. The Georgian area is confirmed to have been re-purposed from residential to office and commercial, and indeed, this is where most of the civic buildings were later to appear. The area north of the town was also later Victorian and, although it too contained a vibrant mix of uses, it was in no way comparable to the long, linear plots that remained from the medieval planted town. These results not only illustrate, in stark visual terms, the research of Beresford, but they also reveal that the Medieval town provided the density and vibrant mix of uses and activities that we would like to associate with our ideal 'sustainable' city.

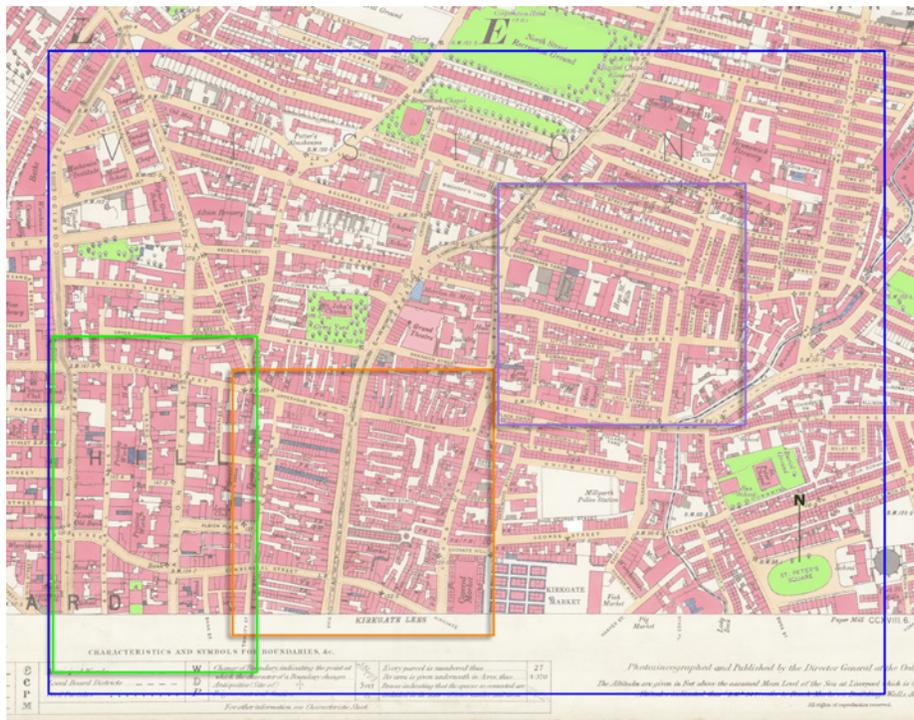


FIG. 4 The 1894 Ordnance Survey Plan illustrating the areas of expansion. The Orange square is focussed around the Medieval city dating from 1207. The Green square is over the 17<sup>th</sup> century Georgian expansion of the town and the Purple square is over part of the northerly Victorian expansion.

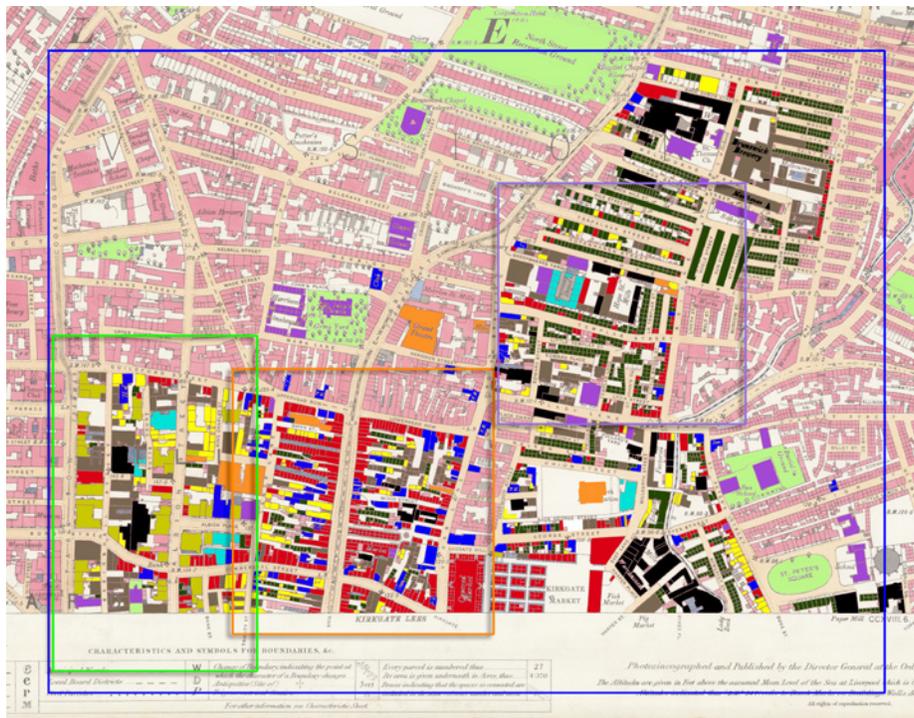


FIG. 5 The 1894 Ordnance Survey Plan overlaid with the coloured uses

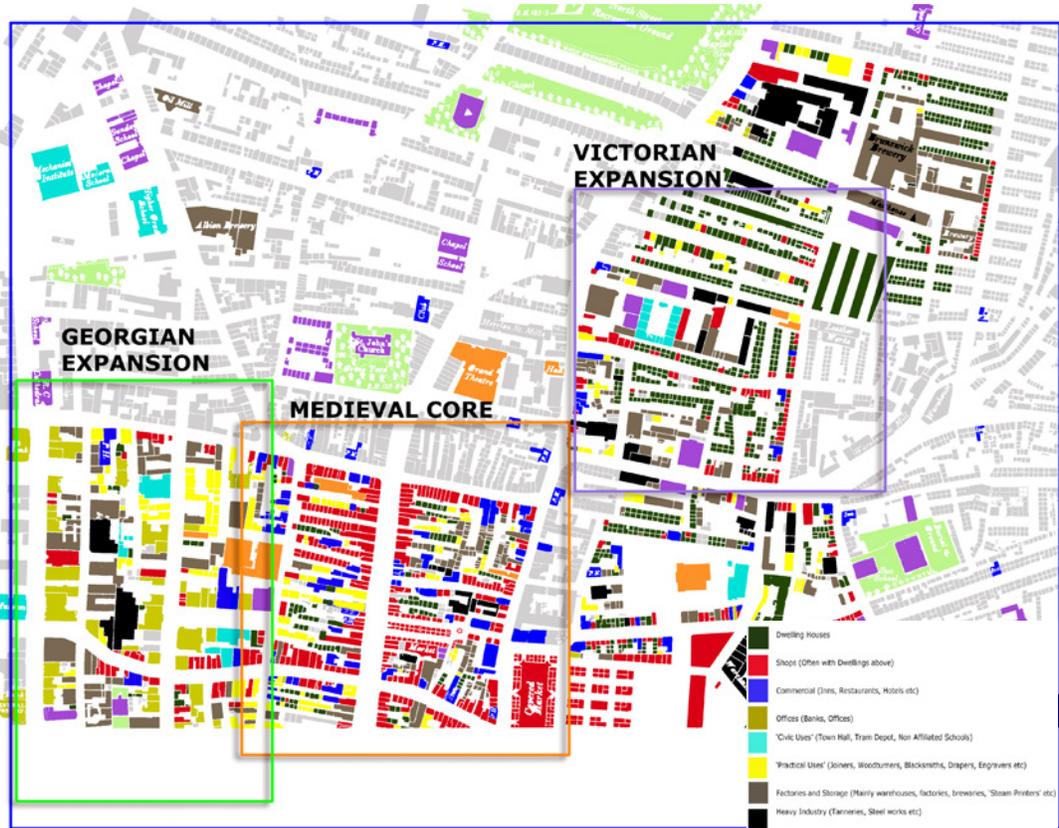


FIG. 6 The resultant map showing the vibrant mixes of uses throughout the surveyed city of Leeds. Note the Medieval town where the colours - although largely dominated by shops (with dwellings above for the most part) - show a vibrant mix of uses and a finer grain of development. Contrast this to the Georgian city where there are more 'polite' uses such as offices and banks and less vibrancy perhaps in the urban environment. The Victorian City (top) shows the characteristic rows of back to back houses that came to be so hated along with the religious and heavy industry that as so common post 1850.

## 5 DISCUSSION

When considered that the map covers only a small area of the city today, it is pertinent to consider how so much was located so close. This was a time before the motorcar and as such things were obviously closer together. What is fascinating however is to examine the older medieval areas against the later Georgian and Victorian planned layouts where the medieval town exhibits a much greater concentration of uses. It is of course easy to see the historic city through 'rose tinted spectacles' and we must raise caution that the lack of building regulations and adequate services made these areas subject to pressure for demolition in later years. Indeed, the health reformers and developers took great pains to actively rid the city of these antiquated premises!

Despite this however, after examining the historic mapping and comparing it with the qualities of place outlined above, there would seem to be synergies with modern day urban design guidance and the density, mix of uses and walkability of the historic town.

Let us for instance consider the general direction of the guidance in Neighbourhoods for Living in relation to the mapping we have shown:

- Walkable: The historic maps show almost everything within a few minutes walk of each other. The compact city form was not planned around the car and as such everything was, by definition almost, 'walkable'. As James Kunstler points out when discussing sustainable cities of the future; *"They will be urban in the traditional sense of the word: compact, dense, mixed-use, and composed of neighborhoods (sic) based on the quarter-mile walk from center to edge — the so-called five-minute walk, which is a transcultural norm found everywhere in pre-automobile urban communities. The pattern is scalable: one neighborhood is the equivalent of a village; several neighborhoods and a commercial district make a town; and many neighborhoods comprise an average-sized city."*
- With a Strong Sense of Community. Evidence for this comes from the mix of uses both commercial and social that can be found on these maps. Everything from schools and Sunday Schools to Synagogues and Churches and even swimming pools can be found within a few streets' walk of each other. The community therefore appears to have been active and buoyant. Further evidence of the documentary social connections could form a separate study.
- Close to good transport links. The core historic town was synonymous with serving the travelling people, even prior to the evolution of the railways (of which Leeds was actually one of the first passenger railway hubs in the world). The plethora of public houses shown on the map often functioned as Inns for travellers and as such they often had their own stabling and services for horses. Following the introduction of the railways and tram systems, the town was connected by regular services to the outskirts of the borough and farther afield with the stations being only a short distance from the historic core.
- Opportunities to Work nearby. The mix of uses, working premises, shops, factories, warehouses, as well as older, more established trades such as joiners shops and blacksmiths were all nearby. It was a common folklore for young people to aspire no farther than the mill at the end of the road and within the Victorian area's this was most certainly the case where rows of houses were often directly related to the mill that sat beside them.
- Natural Surveillance against crime. What is clear from the GOAD maps as well as from historic photographs and remaining buildings is that windows and doors faced the street. Even Courtyard housing saw houses fronting onto communal spaces. The street seems to have been the thoroughfare to be responded to and although we have dwellings often hidden in courts behind the main frontages, the evidence suggests that the street was actively responded to.

- Local shops nearby. As above, the mapping illustrates the many shops within the local area. It must be said once again that the majority of shops within the town contained dwellings above. As such, we had shop owners living above or behind the shop and as we know from Jacobs, the shop owner on the corner of the street can be a valuable community asset.<sup>17</sup>
- Public spaces and Communal spaces. Public spaces were present in this historic town. We see recreation grounds, drill grounds, burial grounds, private gardens and the edges of some of the grand municipal parks that were being laid out over former common land.<sup>18</sup> Even the remnants of this common land provided a mental, physical and natural outlet for the city's densely populated inhabitants.
- Attractive buildings. Buildings at this time were locally distinctive, made of the place, for the place. Not only is this sustainable in terms of resource management, but it also enhances a strong sense of place. Not only this, but the city at this time invested substantially into its buildings and its architecture as can be seen in the surrounding buildings and streets. Churches, town halls and even the new shopping arcades were wonderfully designed to inspire.

## 6 CONCLUSION

Although the historic city, undoubtedly had its issues of overcrowding, mass urbanisation and poor building control and sanitation, the actual fabric, mix of uses and sense of community would appear, at least from the mapping above, to illustrate many of the ingredients of what today we would consider a 'sustainable' place. Not only therefore does the mapping give us a fascinating social insight into a point in time and what uses and facilities there were in the city, but it also enables us to learn the lessons that our historic fabric is infinitely sustainable and can, and did, provide all the ingredients for a vibrant mix of uses.

Whether this means that we should preserve more of it, or whether it means that we should be inspired by it, is a debate for another day. One thing is certain however, the city of Leeds at the turn of the 20<sup>th</sup> century was the culmination of at least a millennia of urban evolution. Throughout this time our land uses, social connections and architectural form had been constantly refined and honed. What is also particularly notable is the fact that the Medieval planned layout of the town eventually contained a much more vibrant and diverse mix of uses (many of them creative and potentially entrepreneurial) than any other area. Would this suggest that the preserved Medieval city is the point of call to understand when we talk of density or to examine in order to find future economic models of grass roots entrepreneurship?<sup>19</sup> After all, these streets were planned over 1000 years ago and are still thriving today. Although the mix of uses has declined, the form, layout and adaptability of these linear plots appears to have sustained people for a considerable amount of time and it continues to do so. Although the urban reformers focussed upon the demolition of such areas, the historic town appears far more sustainable than that of the Modernist city, for example. Indeed the only unsustainable thing about the historic city of Leeds was that it was so badly damaged through wasteful clearances from the 1920's onwards.

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17 See once again Jane Jacobs "The Death and Life of the Great American City" (1961) and her references to 'sidewalk life'.

18 The main areas of Common Land in Leeds were to the north and south in the form of Woodhouse Moor and Holbeck Moor. The latter had a Motorway built through it in the 1980's. See Burt and Grady above.

19 For an interesting perspective on this Historic England recently debated the historic city and its impact upon new economic models. See article by Hannah Shimko. <https://historicengland.org.uk/whats-new/debate/creative-uses-for-old-buildings/>

Surely therefore there are lessons for us all through planning future change in our urban environments to writing our urban design principles for the future. For instance, we rarely need to look farther than our historic townscape in order to understand that new, sustainable places for the future that are walkable, distinctive and connected and that have the vibrancy that can encourage new economic models to thrive, have been present for a very, very long time already.

### Acknowledgment

This paper is an output of an independent research study carried out by Andrew Graham of TheUrbanGlow Design & Heritage Ltd using urban design analysis and historic research methods.

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# Heritage for Building Sustainable Inclusive Cities

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## Abstract

*This paper proposes to analyse the role that heritage can play in achieving gender equality and empowering all women and girls (Goal 5). According to Agenda 2030, its implementation constitutes a transversal tool for the development of the rest of Sustainable Development Goals. The social model that emerges in the Modern State is based on the segregation between the public and private spheres, a dogma already discussed by Lefebvre's 'right to the city' or Arendt's transversal reading of the urban sphere. It prioritises justice and duty over care and responsibility, functions that have been carried out separately by men and women since then. This fact has profited from particular relevance in urban planning, seeking to favour economically productive systems, instead of enabling tasks linked to daily life, reproduction function or care of dependent people. Urban development, exclusively understood from an economic perspective, can also lead to a significant decrease in cultural diversity and, consequently, to gender inequalities. From a heritage perspective, this fact has resulted in undervaluing the women's role both in heritage discourses and in their construction. Though it has also caused most of the activities are linked to the private sphere, as well as the architectures that support it, they have also been excluded from the legal preservation processes, lacking social recognition. Following the guide 'Women in the intangible heritage of Andalusia', the study deals with three fundamental cultural expressions: gastronomy (Pujerra, Malaga), music (Ubrique, Cadiz) and handicrafts (Puebla de Guzman and Hinojos, Huelva).*

## Keywords

*Emerging Heritage; Gender Equality; Heritage and Gender; Inclusive Communities; Women Empowerment*

## 1 INTRODUCTION

### 1.1 AIM

The main objective of this study is to analyse the role that heritage should play in achieving gender equality and the empowerment of all women and girls, based on existing international guidelines. In a global context where Western institutions and public administrations seem to have aligned themselves in favour of gender equality, there are still significant gaps in society. This lack of awareness is increasing in territories with less purchasing power, a circumstance that can still be differentiated between countries or regions further south in Europe. According to Agenda 2030, the application of objective 5 (the basis of this paper) constitutes a transversal tool for the development of the rest of the Sustainable Development Objectives (United Nations, 2015).

The shift towards the intangible dimension in recent decades is overcoming the androcentric bias that has prevailed in heritage discourses. The assessment of cultural values can be seen as a tool with great potential to promote policies for gender equality (UNESCO, 2014). In this sense, this study is born with the conviction that advancing together as a society in recognition of this emerging heritage will transcend the cultural dimension to promote the necessary ideological change. This fact will lead to the full and effective participation of women in all spheres of society (Navas-Carrillo

et al., 2019). This process will have to meet the requirements that the different urban agendas have included in this regard: International (United Nations, 2017; European Commission, 2017), National (Gobierno de España, 2018) and Regional (Junta de Andalucía, 2018).

## 1.2 APPROACH

The case studies, following the guide 'Women in the intangible heritage of Andalusia', address three fundamental cultural expressions in southern European territory, Andalusia, where despite the regional policies implemented since the institution of democracy in 1978, still shows significant inequalities in employment, dependence or illiteracy. These cases form a substantial part of the intangible heritage of these municipalities, including activities that revolve around women: gastronomy, through the case of the production of *mistela* in Pujerra (Malaga); music, through swing songs in Ubrique (Cadiz) and handicrafts, with the cases of embroidery on nets in Puebla de Guzman and embroidery on tulle in Hinojos (Huelva). The methodology followed is based on the identification and characterisation of these cultural activities, incorporating gender-specific indicators such as the presence and colonisation of women on the urban scene or the relations between age ranges and the use of public space.

## 1.3 ISSUE

Andalusian rural women, probably in more unfavourable conditions than those in the rest of the national territory, are subjected to a series of factors that may be contributing to their emigration from these territories, endangering the sustainability and balance of the population. These pressures are due to the lack of employment opportunities, but also to the gender roles perpetuated in societies which put a considerable strain on their professional and personal development since they are burdened with almost all unpaid domestic work (Muñoz & López, 2012). These factors mean that activities considered as intangible heritage in which women play a leading role are at significant risk of disappearing, also due to the lack of opportunities for younger generations, which ends up preventing the necessary transfer of tasks, knowledge and processes.

Aware of the values and risks of intangible cultural heritage in Andalusia related to women, the Andalusian Historical Heritage Institute (IAPH) proposed in 2013 the creation of the annexe 'Women in the Atlas of Intangible Heritage in Andalusia'. This new publication completed the original document of 2008, which analysed intangible heritage without taking into consideration a gender perspective (Díaz, 2009). Due to the scope of the document and the need to coordinate efforts, the IAPH had the collaboration of other institutions interested in the knowledge and safeguarding of intangible heritage. There was inter-institutional collaboration: the Andalusian Flamenco Institute, the Andalusian Studies Centre, the Spanish Cultural Heritage Institute, the Directorate General of Cultural Assets, the Andalusian Rural Development Groups, Andalusian Universities and, fundamentally, the informants and protagonists of the intangible heritage identified. The general and primary objective of the project was to determine the best formulas for safeguarding Andalusian intangible cultural heritage, in the broad sense of the Convention for the Safeguarding of Intangible Heritage (Sicard, 2008). This goal was done through measures aimed at the identification, documentation, research, valorisation, transmission and revitalisation of Andalusian intangible cultural heritage, in its different aspects, a process that is considered adequate and effective for this type of values in threat of disappearance. The procedures for implementing these measures were carried out using an anthropological methodology, with participatory working techniques that made it possible to generate a network of local collaborators, with women being the central focus of the experience.

## 2 SUBJECT MATTER

Study cases are based on medium-sized cities in Andalusia (South Spain), where public space and urban life are deeply connected within social communities. More specifically, the research focusses on municipalities where the relations between cultural activities and the urban form that have a double heritage value as intangible cultural heritage. These cases, following the guide mentioned above 'Women in the Atlas of Intangible Heritage in Andalusia' (IAPH, 2013), deal with three fundamental cultural expressions: gastronomy, music and craftworks.

### 2.1 ELABORATION OF MISTELA IN PUJERRA (MÁLAGA)

The Serranía de Ronda is the most western of the Mediterranean mountain ranges of Andalusia, especially if we consider its extension in the province of Cadiz. Among its festivities, an essential part of the region's intangible landscape, the celebration of the Huerto del Niño on Easter Sunday stands out; the Moors and Christians festivities in Benadalid and Benalauría or 'Las Mañanitas' in Algatocín. Also relevant are the traditional trades of esparto grass, palm, olive branches, bobbin lace or ironwork, many of which are on the verge of disappearing (Díaz, 2012). The unique gastronomy of the area is elaborated with local products, coming from cattle raising, harvesting in the field or from the cultivation of vegetable gardens, and it is strongly influenced by the centuries of the permanence of the Arab culture in the mountain range.

Among these recipes, the elaboration of *mistela* in the town of Pujerra, one of the historical enclaves of the mountain range, stands out. *Mistela* is a liqueur made with aguardiente, a sweet drink typical of many villages in the Serranía de Ronda. However, each village has a way of doing it; even each agent in charge of its preparation gives a different point. In Pujerra it is made with aguardiente, almonds, cinnamon, lemon and orange peel and toasted sugar and on the occasion of the patron saint fiestas, some women prepare it in their homes and then it is offered in the chestnut *tostón* for the diners of the attendees. As far as the production process is concerned, first of all, it is necessary to pour the brandy into a container together with the almonds, cinnamon, coffee and lemon and orange peel and let everything macerate for three days, covered with a cloth.

When this time has passed, the previous container must be changed for a greater-size one, where incorporate the same amount of water as the brandy used at the beginning. Then the sugar is toasted and slowly added to the mixture according to the taste of who prepares the liqueur. Finally, only a sieve is left to strain the solid ingredients from the liquid.

The *mistela* has been made historically for the celebration of weddings, baptisms and all type of events. A tradition that has been managed to maintain in the time until today. Moreover, in most of the houses in Pujerra it is common to find *mistela* made by the members of the families.

### 2.2 SWING SONGS IN UBRIQUE (CÁDIZ)

The rocking songs or swings are universal traditional songs, which, within the folkloric tradition of the Hispanic peoples, are today a type of heritage in danger of extinction, concentrated in Andalusia. Recent research has documented the collection of ethnotes collected in the villages of Adra, Roquetas de Mar and Sufli (Almería), Priego de Córdoba (Córdoba), or Cadiz and Malaga (Gómez, 2017), showing how poetry and tradition meet in the public space of these populations. Despite the public display

component that they represent, there is a certain amount of collusion from the population as a whole since these hanging structures are supported by facades and private houses. The best-known case is that of the town of Ubrique, listed in the Atlas as one of the most up to date. The differential case of Ubrique lies in its social evaluation as a singular activity, having been verified the participation of young women and adolescents in the ritual.

It present, although the ritual of courtship has disappeared, some women are the ones who continue with this tradition, while they are on the swing, singing the *bambera* or singing to a friend as she swings. The *cantes de columpio* (Swing Songs) in Ubrique are flamenco *coplas* that were sung to the rhythm of the swing wobble. Hence, they are known as *bamberas*, *bambas* or *mecederos* (Ruiz et al., 2008). Traditionally, it has been a mode of courtship expression transmitted during the Day of the Crosses, in which swings were installed along the streets for the girls to swing, driven by the boys who wanted them, while other women sang the *bamberas*.

The lyrics of the couplets are also an indispensable documentary testimony. Dealing with very diverse themes, they start with references to the town of Ubrique, those that focus on the swing itself, and others more diverse as love, lack of love, gratitude, ironies, all with a rich linguistic symbolism with references to friendship, sex, eroticism or the renewal of nature. From a linguistic point of view, these constructions have been studied for their lyrical richness, with a developed use (despite their popular character) of symbolic language (Sánchez Vera, 1998).

Within the collaboration between public administrations in favour of the valorisation and diffusion of the intangible heritage, it is remarkable how the Provincial Government of Cádiz has recently organised a series of activities to promote the festival of the swinging songs. This public agency, that is in charge of the resources of the smallest municipalities of the province, has edited a monographic book and has organised informative sessions to the local population and round tables of experts. These cultural initiatives were part of the Provincial Agenda for Culture 'Planea 2017' (drafted by the Provincial Government of Cádiz), that is one of its pillars of argument the dissemination of ethnological activities of the municipalities.

## 2.3 EMBROIDERY ON MESH IN LA PUEBLA DE GUZMAN AND EMBROIDERY IN TULLE IN HINOJOS (HUELVA)

The work of treatment and decoration of spun fibres have been traditionally extensive in the province of Huelva and on the coast. Most of them in the Andévalo region. Traditionally has been transmitted between women of different generations. After a time in that many women stopped performing these tasks, today they are regaining a relative vitality and diffusion. In La Puebla de Guzmán the embroidery on mesh has maintained a certain rootedness between the female population. Workshops have now been held in other nearby villages, which means a more significant extension of the activity along this region. However, this work maintains a specific value as an element of the intangible heritage, especially in La Puebla de Guzmán. The embroidery on tulle (Hinojos) is a technique that imitates the work of lace made with bobbins. It is made on mechanically manufactured tulle. The decorative motifs are embroidered on the openwork background, and these are usually inspired by plants, flowers, waves, gratings, etc.

Both cases share a close relationship with the private sphere; unlike other cases such as the one cited in Ubrique, in which public space was the sphere of activity, embroidery is limited to the interior of the houses. The singularity of the relationship between space and immaterial activity

arises with the emergence of collective sewing workshops, in which older women act as teachers for younger women. These spaces are segregated from the public sphere and the access of men. They are similar cases to that of Pujerra and the production of *mistela*. In these examples, it seems necessary to increase the heritage awareness of the local population. As they are 'insider' activities, the public agencies and groups that are aware of them must make a double effort: firstly, to make the work of women visible and secondly, to dissociate the image of traditional activities from an allegedly lower heritage value. The participation of local governments in dissemination tasks, nevertheless, has been scarce, finding hardly any information in their websites and not having been able to register activities linked to the promotion of these traditional expressions.

### 3 CONCLUSIONS

The assessment of cultural values can be seen as a tool with great potential for promoting policies for equality between men and women. In this sense, we believe that advancing together as a society in recognition of this emerging heritage will transcend the cultural dimension to promote the ideological change necessary to ensure full and effective gender equality in the rural populations of Andalusia. The study of the selected case studies, in addition to summarizing the activities developed, showing their value as intangible heritage, demonstrate how the work of public administration is indispensable for heritage awareness. The case of the Ubrique swing songs is an example of success within the regional panorama. The efforts of the Provincial and Local Governments, supported by the Andalusian Regional Government and the Andalusian Institute of Historical Heritage (and its associated institutions), have allowed the activity to continue having high rates of participation and dynamism.

It seems possible to conclude that there is a relationship between the logic of the spaces and their dissemination. While activities associated with private spaces or prepared exclusively to carry out these traditional expressions have very low visibility, the traditions that are developed in public spaces inherently have an open and participatory character that ensures their visibility.

Despite these activities being still undervalued by the local population, they have invaluable potential in terms of their ability to serve as a lever for changing traditional canons and gender-segregated urban and domestic spaces. Being activities promoted and tutored by women, the improvement of their visibility, dissemination, knowledge and conservation as intangible heritage is an opportunity to allow their survival while offering employability and production possibilities to the female population, with higher labour vulnerability indexes.

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# Local Engagement in Cultural Heritage Tourism for Sustainable Development

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## Abstract

*A World Heritage designation is a catalyst for socio-economic change, with increased visitation and tourist spending. Tourism can be a powerful tool for sustainable community development, reducing inequalities if it engages local populations. Cultural heritage tourism can contribute to urban renewal and reduce regional imbalances while bringing many benefits to a local economy. However, it can also irreversibly modify both the historic built environment and the social fabric of the neighborhoods. This paper posits that, if associated with deliberate and careful planning, cultural sustainability correlates to a robust heritage tourism economy and provides a legacy of positive sustainable economic growth within the San Antonio Missions Historic District. Due to unique identity of the San Antonio Missions as World Heritage Site designated in 2015, the intangible heritage embodied in the existing population is an integral component of the "outstanding universal value" of the place. There is a need for creative thinking on use of existing tools, incentives and programs, as well as new ideas that could extend opportunities for prosperity to residents and businesses, thereby mitigating potential for population displacement, and foster increased pride of place in the heritage zone. This research assesses potential legacy businesses, identifies business opportunities for locals to be engaged as well as target areas for investment of future efforts. This paper also stresses the potential benefits for small business owners to connect to the growing heritage tourism economy of the San Antonio Missions Historic District while providing a model of sustainable development for urban heritage sites, which can then lead to achieving a sustainable city and community and reducing inequalities being part of the Sustainable Development Goals adopted by United Nations.*

## Keywords

*San Antonio Missions, cultural heritage tourism, sustainable development, heritage sites, local engagement*

## 1 INTRODUCTION

The travel & tourism industry is one of the world's fastest-growing industries with total contribution (direct, indirect, induced) to 10.4% of global GDP and 10.0% of total employment (WTTC, 2019). In 2018, according to UNWTO Global Tourism Dashboard, international tourist arrivals grew by over 5% to reach 1,407 million, while United States grew by 4% to 79.7 million. At the same time, tourism expenditures have grown to 1,462 USD billion with +5% increase in the world, while United States' tourism expenditures reached 214.5 USD billion with a +2% increase (UNWTO, 2019). As the second highest GDP-contributing industry in relative terms, travel & tourism industry surely supports economic development, but also creates challenges for the community such as gentrification, equitable wealth distribution, social inclusion and participation, overtourism, environmental pollution, and ecosystem protection (UNWTO, 2020).

On the other hand, cultural heritage tourism is “traveling to experience the places and activities that authentically represent the stories and people of the past and present” (National Trust for Historic Preservation, 2020). It is an economic development tool designed to attract visitors to an area based on the unique aspects of the locality’s history, landscape and culture. This not only boosts regional and local pride but is also a good source of revenue for a community and creates jobs. Historic preservation is a tool for preserving a historic place, incubating small businesses, revitalizing downtowns, generating local jobs, and creating improvements in a community.

In 2015, all five of the San Antonio Missions were inscribed as a UNESCO World Heritage Site (WHS). Following this inscription, UNESCO also named San Antonio a Creative City of Gastronomy in 2017. With the advent of these designations and comprehensive branding campaign that encompasses San Antonio’s history, arts and culture, and world class cuisine, numerous investment projects and policy initiatives have been implemented to support and enhance cultural heritage tourism in San Antonio, and specifically in the San Antonio Missions WHS. In order to enhance the attractiveness of the destination, expand tourism activities for visitors and residents, and create significant economic benefits for the residents and other stakeholders, the unique cultural and historical characteristics of the San Antonio Missions District should be protected and intensified. Tunstall, Doganer et.al. (2017) recommends “It is vital to the success of the missions as a WHS to simultaneously maximize the potential of the missions as a collective destination for cultural heritage tourism and maintain the existing structures and appropriate uses of buildings within the Buffer Zone for residential and commercial purposes.”

This paper focuses on sustainable development goals and local engagement through cultural heritage tourism in the San Antonio Missions WHS, and is an extension of funded research project by World Heritage Office of San Antonio (see acknowledgement). After the analysis of demographic, and socioeconomic context of the missions and assessment of existing businesses, this study investigates current and potential cultural heritage businesses as well as target areas for investment around the two middle missions: Mission San Jose and Mission San Juan. This paper also promotes sustainable local economic development, and stresses the potential benefits for small business owners to connect to the growing heritage tourism economy of the San Antonio Missions WHS. Proposed local engagement and sustainable development model can then lead to help meeting the targets of United Nations’ Sustainable Development Goals (SDGs) 11, 10 and 8.

## 2 CULTURAL HERITAGE TOURISM FOR SUSTAINABLE DEVELOPMENT

Cultural Heritage is widely emphasized in the United Nations Sustainable Development Goals (SDGs) (2015) 8 and 11, and following ICOMOS action plan “Cultural heritage and localizing the SDG’s” (Yildirim, 2017). One of the targets of SDG 11, “Make cities inclusive, safe, resilient and sustainable”, is to “strengthen efforts to protect and safeguard the world’s cultural and natural heritage” (SDG 11.4). Under SDG 8, “Promote sustained, inclusive and sustainable growth, full and productive employment of decent work for all”, while SDG 8.9 refers directly to sustainable tourism: “By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products”. Xiao et al. (2018) define the concept of Sustainable Cultural Heritage as “the protection, safeguarding and promotion of the tangible (e.g. historic places, monuments, artifacts) and intangible (e.g. customs, practices, crafts, artistic expressions and values, traditions or living expressions) in a manner that does not diminish the socioeconomic and environmental processes necessary to maintain human equity, diversity, and prosperity”. Thus, sustainable cultural heritage

is considered as an important element of sustainable development combining the protection and safeguarding of the tangible and intangible along with the advancement of tourism that promotes local products and increases employment opportunities, Fig. 1 shows the threats for cultural heritage and how SDG 8.9 and 11.4 refers to these challenges (Xiao et al. 2018).

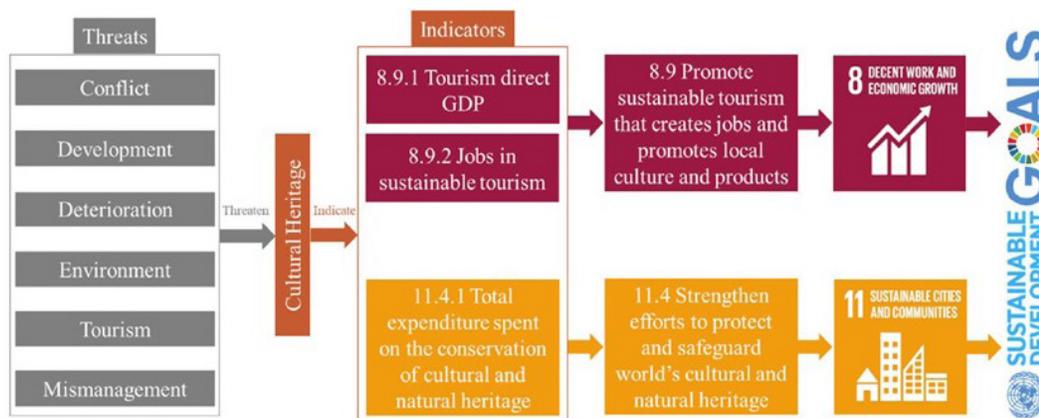


FIG. 1 The role of Cultural Heritage in contributing to the UN's SDGs. Source: Xiao et al. 2018, p.391

Cultural heritage tourism offers an opportunity for visitors to experience local culture in depth by visiting historic or cultural sites or by taking part in cultural activities. As defined by the National Trust for Historic Preservation (2020), cultural heritage tourism is “a travel to experience the places, artifacts, and activities that authentically represent the stories and people of the past and present, including cultural, historic and natural resources”. Lyon and Wells (2012) states “As an alternative to mass tourism, cultural and heritage tourism offer opportunities for place-based engagement that frames contexts for interaction with the “lived space” and “everyday life” (Lefebvre, 1974) of other people as well as sites and objects of global historical significance.”

Tourism can be a double-edged sword though. While global tourism supports economic development, if not planned well, it might cause to inequitable wealth distribution or access to resources, or environmental problems (UNWTO, 2020). In 2016, Hosagrahar et al., addressed many contemporary issues in urban heritage conservation, including tourism: “Global tourism to heritage sites and cities, at times excessive and insensitive, has exacerbated the conflicts between global cultures and local beliefs and practices around cultural heritage. The flow of capital, the demands of tourists for familiar modern amenities, and the environmental externalities of tourism have distorted the value of heritage and destroyed the fragile systems that nurtured it. Tourism can introduce or accelerate social change and revive folk arts but also exacerbate commodification. In some historic cities, the pressure to preserve heritage of a particular period for the benefit of tourists has stymied inclusive and sustainable development for local communities and marginalized their needs. Large-scale development, real estate interests and tourism have often led to a superficial and view of culture that threatens to erode the fragile and intangible heritage of local communities.” As Hosagrars et al. (2016) also recommend in their paper, this paper studies and claims if cultural heritage tourism is well managed and regulated by local communities, and if residents are engaged with the sustainable development, then it can provide jobs and employment to local communities and imposes minimally on local culture.

### 3 LOCAL ENGAGEMENT THROUGH CULTURAL HERITAGE TOURISM

Cultural heritage tourism is a proven economic stimulus that creates jobs and direct economic benefits to locals. It is also defined as “visits by persons from outside the host community motivated wholly or in part by interest in historical, artistic, scientific, lifestyle, or cultural offerings of a community, region, group, or institution” (Silberberg, 1995), which specifically emphasizes the importance of host community and its engagement (Li & Hunter, 2015). The involvement and co-operation of local community representatives, small business owners, conservationists, tourism operators, property owners, policy makers, and site managers is necessary to achieve a sustainable tourism development and enhance the protection of tangible and intangible heritage resources for future generations (ICOMOS, 1999).

Local engagement and development of local small businesses is critical in order to make tourism sustainable, thus communities can improve their living conditions and quality of life (Ruiz-Ballesteros, 2011). Improving tangible resources, creating new jobs through the development of a tourism infrastructure, and developing new tourism products can have a big impact on the community’s economy and improve residents’ quality of life in numerous forms. Sharing intangible cultural heritage, which includes oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe, and the knowledge and skills to produce traditional crafts (Leballo, 2000; UNESCO, 2003), is also equally important on enhancing sustainable development.

#### 3.1 IMPORTANCE OF THE COMMUNITY

The expectation of a holistic and integrated approach to achieving “... an appropriate and equitable balance between conservation, sustainability and development”, and ensuring “... the active involvement of ... local communities” is further accentuated in the Budapest Declaration on World Heritage (World Heritage Committee, 2002; Landorf, 2009). Successful cultural heritage destinations work together with their communities, people are empowered by tourism economy and the distribution of costs and benefits among all participants are fair and equitable. Businesses around these destinations enter the tourism industry aspiring profits by providing goods and services for the travelers (McKercher & Cros, 2002). The local economy is invigorated by the residents-visitor interaction.

### 4 METHODOLOGY

This study focused on two missions: Mission San José y San Miguel de Aguayo (shortened to “Mission San José”) and Mission San Juan Capistrano (shortened to “Mission San Juan”). The cultural heritage market analysis investigated current and potential cultural heritage activities around these two missions. This business inventory dataset along with the results of the analysis helped understand the socioeconomic situation of residents and inform potential opportunities. The study closely examined the demographic, socioeconomic, and business context of the neighborhoods as well as analyzed existing urban fabric, and current cultural heritage related businesses, and proposed design solutions for potential heritage tourism activities. (Tunstall, Doganer et.al. 2017)

Data collection entailed a survey conducted with mission visitors, field surveys conducted within a one-mile radius and inventories of businesses around the missions. The purpose of the field survey was to be able to collect visual data about existing businesses and properties. Field observations, and the analyses of maps using GIS provided the information regarding existing conditions, unique features, historic significance, authentic features, infrastructure and tourism potential. The survey conducted with visitors was carried out both online and on site in order to determine the nature of current visitors and the growth potential in the cultural heritage tourism sector. After acquiring the data it was used to assess the potential for the businesses to engage with increases expected in cultural heritage tourism (Tunstall, Doganer et.al. 2017).

## 5 CASE STUDY: MARKET ASSESSMENT AND SMALL BUSINESS DEVELOPMENT AT SAN ANTONIO MISSIONS

San Antonio is one of the State's top tourist cities, and a major tourism destination nationally. The city has a rich and unique historic urban landscape characterized by its river with its famous 'Riverwalk', historic neighborhoods and major landmarks such as The Alamo. Following the inscription of San Antonio's five Spanish colonial Missions as World Heritage Sites in 2015, San Antonio was designated a Creative City of Gastronomy by UNESCO in 2017.

According to the Economic Impact of San Antonio's Hospitality Industry report (2018), the economic impact of the hospitality industry increased by nearly 50% from 2007 to 2017. In 2017, 37 million people visited San Antonio Metropolitan area and 23.1 million of these were overnight visitors. In San Antonio alone, hospitality industry employs more than 140,000 workers who annually generate \$15.2 billion dollars back into the local economy; making tourism one of San Antonio's largest industries (Butler & Stefl, 2018).

### 5.1 SAN ANTONIO MISSIONS

The Catholic Church and the Spanish government established five mission compounds and a small military base in the 18<sup>th</sup> century that established today's San Antonio, Texas. These missions blended native traditions with newly adopted Spanish ways, and created a very unique culture. The communities still remain in the area is a very important part of San Antonio's rich cultural heritage (The Harbinger Consulting Group, 2013). The area was originally attracted both prehistoric Indian and historic Spanish and Anglo populations because of the prevalence of unique natural resources. The area was utilized for agricultural purposes as well as local industries after the establishment of the Spanish Missions (City of San Antonio, n.d.).

In 2013, Local government completed a multi-year project -San Antonio River Improvements Project (SARIP)- to restore and enhance 13 miles of the San Antonio River both north and south of downtown. This project has improved the river by restoring the river's natural features, re-creating and preserving the natural ecosystem for the enjoyment of the area's residents and visitors. The "Mission Reach" segment of this project includes mission "Portals" that connect the river to the four historic mission properties in the southern zone - Mission Concepcion, Mission San Jose, Mission San Juan and Mission Espada, and encourage visitors to circulate along the river beyond the downtown area (UTSA and The Harbinger Consulting Group, 2011). Following SARIP, several other significant investments completed or are planned including: San Antonio International Airport

Expansion, Witte South Texas Heritage Center, DoSeum, HemisFair Park Redevelopment, Pearl Brewery Redevelopment, San Antonio Bike Programs, New Expansion to Convention Center, Tobin Center for the Performing Arts, Confluence Park Alamo Plaza master plan, Big Tex project and San Pedro Creek Culture Park. All of these projects as well as WH designation of the San Antonio Missions and Creative City of Gastronomy designation did bring international attention to the city. The Harbinger Consulting Group expected this attention in 2013, and stated, "Cultural travelers, whether domestic or international, look for experiences that are unique to a place. The World Heritage Site (WHS) can be used to capture the attention of these potential visitors, but they will be looking for other high-quality, engaging, authentic cultural experiences to augment their WHS visit. Use WHS designation as a catalyst for developing and connecting other heritage tourism opportunities and local businesses."

### 5.1.1 Social landscape around Mission San José and Mission San Juan

Missions neighborhoods in the River South have declining population, higher poverty, lower educational levels and median income when compared to City data (San Antonio River Authority, 2010). Lack of development and struggling schools pose challenges for growth.

Demographic data gathered across five decades, from 1970 to 2010, reveals that there are more Hispanics and fewer Whites and African-Americans in the Mission neighborhoods than in the County. The percentage of young children and youth has declined while over time in both areas but the percentage of both in the Missions neighborhoods are higher than the County. The percentage of the aging population has increased over the period of time in the county, while for the Missions neighborhoods the percentage was higher and remained steady until 1990 and subsequently decreased (Tunstall, Doganer et.al. 2017).

According to the data, there is a greater percentage of the population that have not graduated from high-school in the Missions neighborhoods compared to the County, although this rate has decreased over the forty-year period while high school graduation and those obtaining a bachelor's degree has increased. Over time, both unemployment and poverty have been higher in the Missions neighborhoods compared to the County averages. These neighborhoods have also elevated incidences of robbery, vehicle burglary, prostitution and murder, compared to the City as a whole (Tunstall, Doganer et.al. 2017).

## 5.2 ANALYSIS OF THE EXISTING URBAN FABRIC AROUND MISSION SAN JOSÉ AND MISSION SAN JUAN

The areas around Mission San José and Mission San Juan provide great opportunity for CoSA and its residents to integrate development with the community and their heritage to preserve the missions' identity. Thus, the local communities can improve their quality of life without being displaced, losing their authenticity, and without irreversibly damaging the environment (Ruiz-Ballesteros, 2011). Studying the area, encouraging small business growth in the cultural heritage tourism sector, and supporting currently successful heritage activities will promote sustainable local economic development, with access to prosperity for the residents.

## 5.2.1 Future Land Use

A one-mile radius around both Missions were analyzed and some commercial corridors were observed. Around Mission San José, Flores Street has a local and pedestrian character; Roosevelt Avenue is a car oriented street that has a larger commercial scale; Military Highway is a commercial-oriented thoroughfare, with large franchises and big parking lots facing the road; and Presa Street tends to be a more industrial-oriented route, though it has some significant sections related to the heritage of automobile tourism in America. The Future Land Use from CoSA shows that these main corridors mentioned have a new mixed-use designation. Mixed-use is a type of development that integrates more than two uses, normally residential with commercial, but cultural and institutional sectors may form part of the project (Tunstall, Doganer et.al. 2017).

## 5.2.2 Existing Cultural Heritage Related Businesses

The Missions' cultural heritage is an asset for CoSA that could be leveraged to bring real economic benefits to the surrounding community. Mission San José is closer to the urban core of San Antonio and Mission San Juan has a distinctly rural ambiance. Existing selected businesses have been identified as having the potential to support cultural heritage tourism for both Missions. The identified businesses are related to accommodation, arts, entertainment and recreation, food services and drinking places, hair salons and laundry services, and retail and trade. These identified businesses were then ranked as having high, moderate, or low potential for engaging in cultural heritage tourism (Fig. 2). Most of the arts, entertainment and recreation places, as well as food services and drinking places, were ranked as having high potential. Some authentic retail stores are ranked as having high potential. Existing motels are mostly ranked as moderate because they hold a high potential for heritage tourism, but most need major investments for repairs and upgrades to infrastructure. Hair salons and laundry services mostly ranked as low potential since tourist would rarely use them (Tunstall, Doganer et.al. 2017).

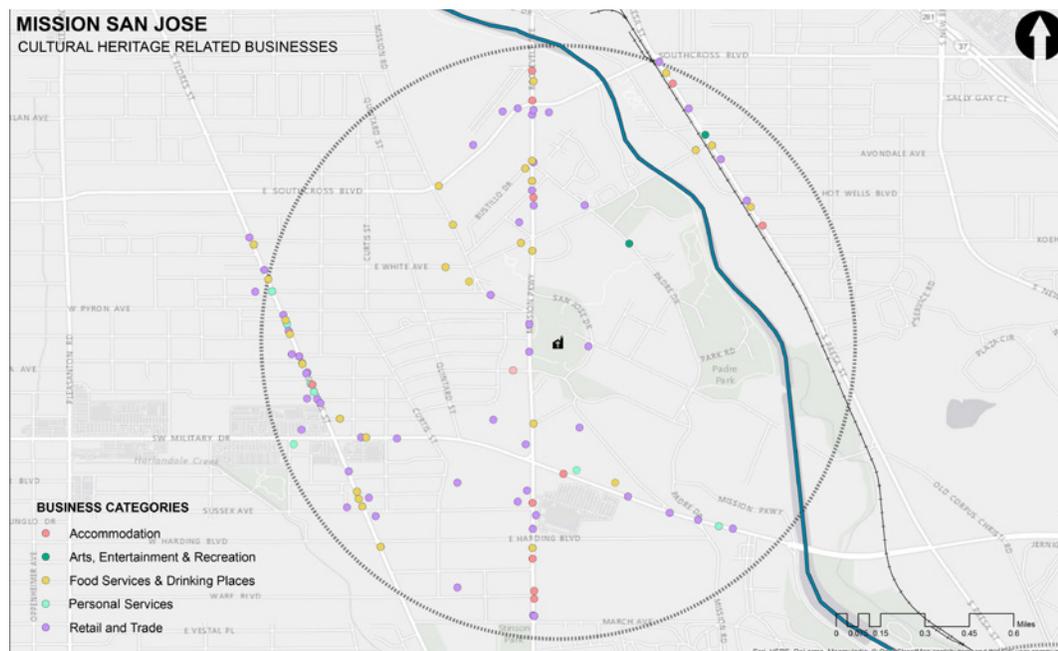


FIG. 2 Existing Cultural Heritage Related Businesses – Mission San Jose.

Source: Tunstall, Doganer et.al. 2017

## 5.3 DESIGN PROPOSALS FOR THE ONE-MILE RADIUS AROUND MISSION SAN JOSE AND MISSION SAN JUAN

Achieving San Antonio's 2040 goals, the guiding principles of the Comprehensive Plan sets criteria and provides strategic direction for decision-making (CoSA, 2016). Recommendations in the section below are made in the context of the City's Comprehensive Plan.

Domestic travelers stay an average of two nights in hotels (The Harbinger Consulting Group, 2013). However, those who included at least one cultural activity lengthened their trip because of a cultural, arts, heritage or historical event. On average, cultural travelers stay 8.5 nights and look for experiences that are authentic to the sites. Activities should be created that are dedicated to outreach, promotion, enhancement and support of the missions' heritage in a coordinated way, especially focused on high-quality engaging cultural experiences developed by the communities surrounding the missions.

Festivals during the weekends that offer attractions to visitors (2-3 days), and programs (seminars, workshops, classes, etc.) during the weekdays, provide reasons for longer stays. This would require a comprehensive self-reported schedule of all festivals, workshops and cultural activities. Tours connecting the colonial history of the WHS to areas surrounding San Antonio could integrate historical experiences and maintain interests (Tunstall, Doganer et.al. 2017).

### 5.3.1 Mission San José

Mission San José is a sub-urban context with an authentic environment. The parish is still active and maintains a local congregation. It attracts visitors with kids, and every weekend families enjoy the Mission County and Padre Park while the children play in the playgrounds. More activities for children and after school enrichment programs are needed due to the family-oriented demographics of the area. Based on the area's strong ties to its heritage, it is recommended that more collaboration and integrated efforts with all heritage-related associations is needed. Expanding the heritage related activities offered around Charro Association would be ideal as this area could be considered as a heritage tourist hub due to its proximity to both Mission San José and the San Antonio River.

The most common business category in this area is retail trade (convenience stores, automotive dealers, and pharmacies) and the second largest category is food services and drinking places. People in this area consume handmade leather products and authentic furniture, and such businesses could provide the authentic experience that cultural heritage visitors seek. Unique cafes, ice houses, gift and souvenir shops and short term rentals are also needed in proximity to Mission San José. Large historic buildings and houses in the area could also be considered as unique lodging opportunities.

The area surrounding Mission San José has local and authentic food and beverages places that gather community members and have high potential to attract tourists, develop food festivals, offer cooking classes or participate with other centers to enhance the cultural heritage around the district (Tunstall, Doganer et.al. 2017). Fig. 3 shows potential zones for small business development within the one-mile radius of Mission San José (Tunstall, Doganer et.al. 2017).

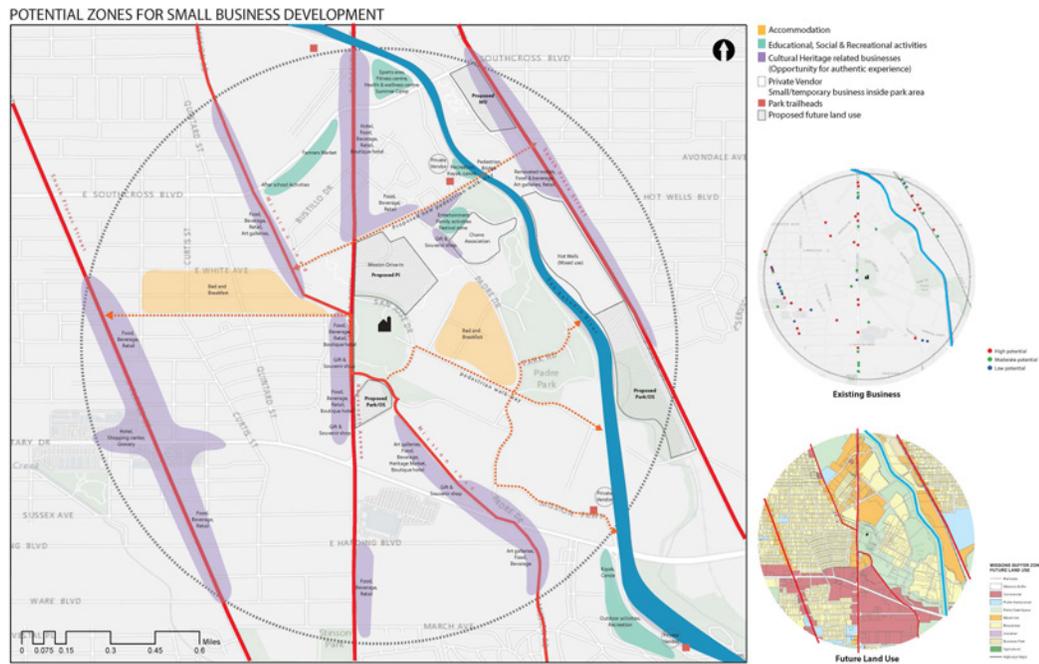


FIG. 3 Design Proposals for the One-Mile Radius around Mission San Jose.  
Source: Tunstall, Doganer et.al. 2017

**Roosevelt Avenue:** Given the urban aspects of this street—its strong connection with downtown and the current bus routes along this street—this corridor is likely best for mixed-use developments to take advantage of the existing infrastructure. The intersection of Roosevelt with E. Southcross is an important node in need of thoughtful urban design, and possibly a future ‘portal’ to introduce the visitor to areas further south. Opportunities for summer camps, health and wellness activities by the river and farmers market on E. Southcross would be appropriate to explore. Bike lanes along Roosevelt Avenue to facilitate transportation and commerce should be integrated to boost the economic activity of the area without depending on a vehicle. Stores located along bike lanes and good sidewalks have a higher likelihood of success.

**Flores Street:** South Flores could be designed as a pedestrian-oriented corridor in the future that could boost the walkability of the area. The street has older brick buildings that still maintain storefronts with potential to be repurposed. Rehabilitation projects would maintain the area’s character while providing business opportunities to residents. Situated between South Flores and Roosevelt, on Southwest Military, Pica Pica is a good example of a successful market area with local products, services and events offered to the community. Pica Pica hosts many boutiques, local businesses which may attract cultural heritage travelers.

**South Presa Street:** Future development on Flores Street could benefit from a clear physical connection with Mission San José. During the field survey, East Pyron and East White streets were identified with potential for this purpose. These streets have a strong, authentic look that may enhance the cultural value of the neighborhood. This neighborhood has its own identity and high potential for short term rentals such as Airbnb, VRBO and Bed and Breakfast, because of its proximity to the Mission. The motels located along South Presa are a major part of the cultural landscape and authentic heritage, and special attention should be given to renovate these facilities. With a reduction in crime and with renovated motels, there is a lot of potential on Presa Street for authentic restaurants, ice houses, art galleries, and retail stores.

*Mission Road:* Future planning for Mission Road should strive to conserve its authenticity and enhance its potential to connect Mission San José to Mission San Juan. Limited, small-scale development could be appropriate. Based on the rural aspects of the road, especially between Missions San José and San Juan, a few small businesses may be possible, along with additional recreational areas to the west. Lupita's Café and Nora's Mexican Restaurant on Mission Road are already very popular businesses. Small-scale, mixed-used developments would may offer boutique accommodation facilities, gift shops, cafeterias, art galleries and small heritage market destinations (Tunstall, Doganer et.al. 2017).

### 5.3.2 Mission San Juan

Mission San Juan is located in a rural context. Tourists in this area seek history, culture and natural environment. This area has the potential to attract people from industrial parks, airport, and Brooks City Base Hospital. Local people within this area have a higher level of education and income compared to the Mission San José area, who could help support the authentic destinations offered for cultural heritage tourism. Because of the extended undeveloped land, the agricultural context and the history, short term rentals, bed & breakfasts and campgrounds were identified as potential accommodations. Additionally, unique lodging possibilities (such as trailer parks, eco-hotels, cabins) should be considered in this area.

The San Juan demonstration farm could help to gather the community and enhance visitor experiences. Besides the demonstration farm, outside National Park area, private wineries, and "pick your own" farms could also be implemented. In the U.S., an increasing number of vacationers are basing their travel around food and wine. Culinary tourism is drawn by the opportunity to consume, such as dining restaurants, sampling local beverages, attending cooking schools or participating in formal wine tastings (Smith and Xiao, 2008).

Based on the survey results, demographics of the area, and the rural context, Mission San Juan has a high potential for cultural heritage tourism development, especially rural and eco-tourism. The node formed by South Presa Street and Graf Road could serve for a small, rural development, including cafés, restaurants, cheese stores, wine tasting places, orchard shops, organic markets, etc. This would attract mission visitors as well as Brooks City Base users. Fig. 4 shows potential zones for small business development within the one-mile radius of Mission San Juan (Tunstall, Doganer et.al. 2017).

### 5.3.3 Connect Brooks City Base to Berg's Mill. Mission San Juan and Stinson Airport

Analyzing the data and maps, a potential connection between the Stinson Airport, Mission San Juan and the Brooks City Base was identified. Boyle Road could be completed through to Corpus Christi Highway. Then, Corpus Christi Highway could connect to Presa Street through Old Corpus Christi Road and Graf Road. This area could support restaurants, grocery stores, bakeries, bed & breakfasts and rural accommodation. Graf Road also connects this area with Mission Road (to the airport). This connection could have sidewalks, bike-lanes and trees to foster an inviting setting for pedestrians. This new connection would allow people living and working at Brooks City Base to visit more frequently or perhaps live in the area around Mission San Juan. The Brooks Development Authority has recently revealed plans to improve interconnectivity between these areas via a park.

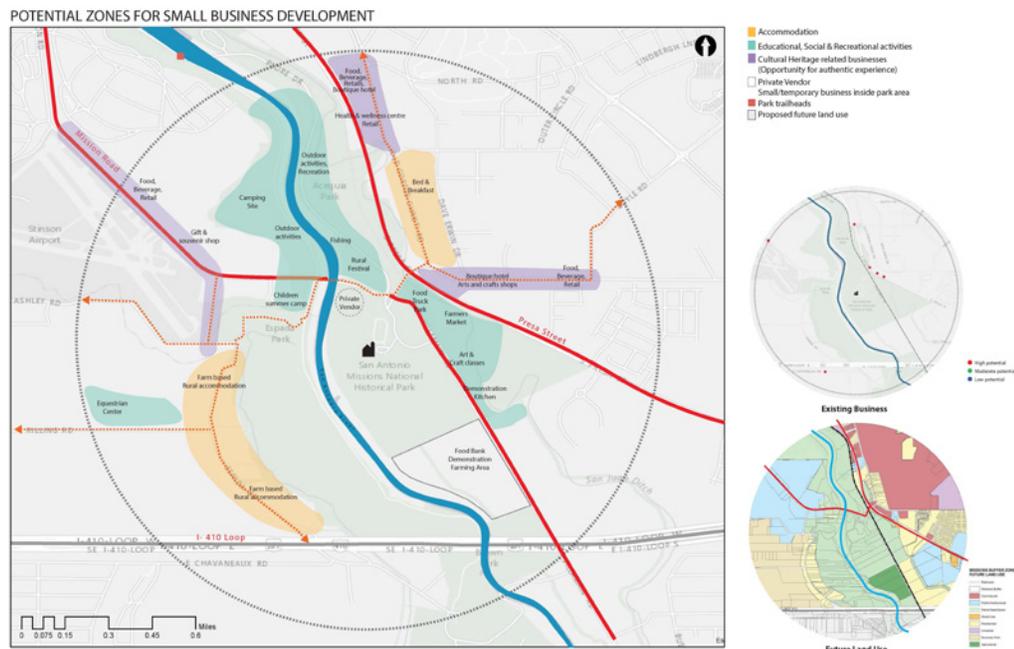


FIG. 4 Design Proposals for the One-Mile Radius around Mission San Juan.  
Source: Tunstall, Doganer et.al. 2017

Mission Road by Stinson Airport already has the potential for tourism with a café, flight school and helicopter tours. The updated Stinson Airport Master Plan recommends non-aeronautical development on the triangle site between Mission Road and the San Antonio River. The plan suggests hike and bike trails and a hotel development that will be appropriate for expected cultural heritage travelers. Little cafés, icehouses, unique gift and souvenir shops could also be developed along this part of Mission Road.

South of Stinson Airport could be developed for farm-based activities, such as an equestrian center and farm-based rural accommodations. Properties at Espada Road have large farmlands, and these lands have great potential for additional activities. If residents are interested in engaging with the tourism potential of the area, they should be encouraged to develop small businesses based on the agricultural nature of the cultural landscape.

Camping sites, fishing, rowing, canoeing and other recreational activities could be developed north of Mission Road and Mission San Juan on the banks of the river. Villamain Road is suited for educational and social activities, such as temporary art and craft classes, demonstration kitchens and farmer’s markets. Food trucks could be placed at the corner of Villamain and Graf Road and festival areas nearby (Tunstall, Doganer et.al. 2017).

## 6 CONCLUSION

Upon designation, the City of San Antonio (CoSA), National Park Service (NPS) and many other agencies have focused on how to improve infrastructure in the buffer zone, manage expected increased visitation, promote sustainable local economic development, and connect small business owners to the growing heritage tourism economy of the San Antonio Missions WHS in order to share prosperity. A great amount of work has been accomplished in San Antonio through community meetings that has allowed for locals to fully understand their own heritage and engage with the planning process. These series of meetings also provided residents tools and trainings on small business development, cultural heritage activities and upcoming tourism opportunities.

It is critical to keep close communication and share collaboration efforts between local government agencies and community partners to the success of sustainable tourism development and preservation of the missions' identity. Through collaborative engagement, CoSA has refined existing programs, researched alternative methods and developed new tools to promote growth in the area, while also endeavoring to preserve the overall landscape and culture of the missions. They have developed incentives, policies, and programs designed to spur economic development. These include the Inner City Reinvestment and Infill Policy (ICRIP), Center City Housing Incentive Program (CCHIP), vacant building registration program, local tax exemptions in historic districts, regulations to comply with retaining WHS status, world heritage tourism ambassadors program, world heritage festival, rehabarama, living heritage symposium and other planning initiatives.

In the last six years, UTSA has closely collaborated with CoSA in the preservation of cultural heritage of San Antonio. After the completion of "State of Heritage Resources" report by Doganer and Dupont in 2015, and following San Francisco, CoSA adopted legacy businesses program, in 2018. Legacy Business program is a part of the Office of Historic Preservation's Living Heritage Initiative, promotes businesses that have been around for 20 years or more and contribute to the history, culture, local traditions and authentic identity of San Antonio such as boot makers and hat shops, piñata-makers and sellers, restaurants, ice-houses, saloons and cantinas, butchers and bakers (CoSA, n.d.). Additionally, World Heritage Legacy Business grant pilot program provides matching grants for improvements to the façade, landscaping, signage, and/or parking lots.

CoSA's World Heritage Office has also been diligently working on promoting "... the San Antonio Missions by maximizing the economic impact of the World Heritage status designation and enhancing the experience for visitors and residents..." (CoSA, n.d.), and developing programs, initiatives, and collaborations. In 2016, World Heritage Office funded "Cultural Heritage Tourism Market Assessment of Mission San Jose and Mission San Juan" research, which this paper is a part of. The goal of this project was to assess potential heritage businesses in order to connect them to the existing or upcoming sustainable tourism economy, and identify potential zones for new small business development within the one-mile radius of Mission San Jose and Mission San Juan as a pilot project. If these initiatives are managed well, there is great potential for building shared inclusive prosperity for the residents, even most vulnerable communities, while sustaining the community's cultural heritage. Such sustainable, community-based approach could be developed without destruction, and mitigate traditional gentrification problem. This paper proposes local engagement in cultural heritage tourism, with appropriate policy development, initiatives and business support, could easily lead to sustainable development that creates jobs and promotes local culture and products. Empowering underserved communities and stimulating local growth with new and existing businesses would help avoid displacement and preserve tangible and intangible heritage. While the city is expanding its sustainable development goals, this pilot project perfectly meets not only the targets of United Nations' Sustainable Development Goals (SDGs) 11.4 and 8.9, but also achieve SDG 10: Reduced Inequalities.

## Acknowledgment

This paper is an extension of "Cultural Heritage Tourism Market Assessment of Mission San Jose and Mission San Juan" research project funded by World Heritage Office of City of San Antonio, and unpublished report by Thomas Tunstall (PI for Section I: Local Economy of Two San Antonio Missions), Sedef Doganer (PI for Section II: Cultural Heritage Tourism Market Analysis), William Dupont (Co-PI), Rebecca Walter (Co-PI) and their team.

The study was performed by The University of Texas at San Antonio through a collaborative effort between the Institute for Economic Development's Center for Community and Business Research (CCBR) and Center for Cultural Sustainability (CCS).

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# An Inclusive Approach for Sustainable Development of the Communities living in World Heritage Sites: The Case of Longweiba Village in Wulignyuan World Natural Heritage

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## Abstract

*With the paradigm shift from strict protection to multiple sustainable use of heritage, the value of the local communities is widely recognized, and attention has been paid increasingly on local people's wellbeing. This paper explores how to achieve inclusiveness in the development of the local communities living in world heritage sites. A framework with seven key indicators related to inclusive development was selected to collect data through semi-structured interviews with different stakeholders including local residents, companies and an administrative body. The results show that five indexes apply to the case of Wulingyuan, namely agricultural activities, cultural heritage and traditional knowledge, community participation, restriction of resource utilization, and employment opportunity. Both positive and negative impacts on the local residents caused by practical conservation policies and tourism development were found. The results show that limiting community access to natural resources is necessary for natural heritage conservation, but that community development lacks sustainability. Also, the government and the community have held a positive attitude towards community development and heritage conservation, and some successful local practices have enhanced the inclusiveness of heritage management. Based on those problems as well as the principle of inclusive and sustainable development three approaches: (1) establishing a communication platform, (2) transferring land tenure, and (3) providing job opportunities for inclusive development are proposed.*

## Keywords

*Community, world heritage, sustainable development, China*

## 1 INTRODUCTION

The role of local communities in heritage conservation and sustainable development has been widely recognized by the international community. Heritage conservation, biodiversity and areas such as anthropology and sociology have highlighted the importance of the community sustainable development to heritage sites. Since the inclusive development concept was launched as a way to put stronger emphasis on the poorest and most marginalized (Sachs 2004), the inclusive approach is a feasible method to achieve sustainable community development and heritage site sustainability. However, the research is still in the theoretical stage, focusing on the possibility of inclusiveness from the macro level, without proposing specific policies or measures to achieve inclusiveness.

Especially in China, there are many traditional rural communities in natural heritage sites, and an inclusive approach is urgently needed to promote the sustainability of the communities.

Thus, the current study tries to fill this gap through a case study of Wulingyuan World Natural Heritage Site in China. This paper aims to propose specific measures to achieve inclusive development. The research seeks to find the way of inclusive development by answering (1) whether the protection actions of Wulingyuan World Natural Heritage Site are inclusive to local communities? (2) What are the impacts of the community development on heritage conservation? and (3) What caused these impacts?

The organization of the paper is as follows. It first presents the theoretical foundations background with the sustainable development of communities living in world heritage sites. Second, the paper describes the methods used to collect and analyze the data. Guided by its theoretical framework, the third section includes findings that are divided into three major sections: (1) data collection (2) problems caused by the conservation policy and tourism, and (3) the current solutions in promoting sustainable practices in Longweiba. The paper then discusses the findings followed by a concluding section, putting forward the specific methods to achieve inclusiveness in Longweiba.

## 2 LITERATURE REVIEW

With a deeper understanding of theories of sustainability, biocultural diversity (Buergin, 2015; Hill, 2013; Maffi & Dilts, 2014; Parkins, Stedman, & Varghese, 2001), more and more attention has been paid on the social inclusiveness of world heritage sites (Russell, 1997; Waterton, Smith, & Campbell, 2006). Sustainable development of the community requires equal sharing of resources and the sustainable use of resources (UNESCO, ICCROM, ICOMOS, & IUCN, 2012), and the use of resources must have no negative impact on the outstanding universal value of the heritage, and it must have both ecological and cultural sustainable development (Committee, 2013). The 2019 Operational Guidelines (Committee, 2019) highlight the important role that communities play in the sustainable development of heritage sites. Social inclusiveness and the livelihood of local communities living in world heritage is considered a key point of the sustainable development of world heritage (Eric, 2003). Research suggests that the cultural, natural and spiritual attributes of local people can contribute to the sustainable development of ecosystems (Agrawal & Gibson, 1999; Bratton, 1989), and local residents can become guardians of biodiversity conservation and their needs and concerns should be taken into account (Kim et al., 1999). However, many local communities living in world heritage sites have been driven off their land in the name of nature conservation (Han, 2003). The voices of local residents have not been fully considered in the process of planning and implementation of management policies (Nepal, S. K., 1997). In this way, a sustainable conservation model concerning the sustainable use of natural resources, indigenous peoples' participation in management, and the ways to enhance their livelihoods (Adrian Phillips, 2002) needs to be established.

Tourism is the most important way for community livelihoods (Choi & Murray, 2010; Murphy, 1985). In many heritage sites, tourism has contributed to the local livelihoods in providing communities with job opportunities so that local people benefit. Sustainable tourism involves "informed participation by local people in their future" (Wight, P., 1996). But the overrun of tourism business by local communities has threatened the sustainability of the heritage (Gu et al., 2013). Although the

scientific community has paid some attention to local communities living in protected areas and their livelihoods(Choi & Murray, 2010; Lu, Luo, & Zhang, 2019), there is a lack of understanding of how local communities can be involved in the sustainable tourism development of heritage sites.

Thus, mechanisms for local involvement should exist in all park systems (Eagles, P. F.J. et al., 2001, so inclusive approach. Chinese scholars Liu (Liu et al., 2008) proposed nine key characteristics for evaluating the harmony between local communities and nature conservation that are suitable for China through comprehensive analysis, including employment opportunity, restriction of resource utilization, destruction and compensation of wildlife, tourism development, community participation, livestock raising and grazing, collection of non-wood forest products, hunting, agricultural activities, and traditional protection. The characteristics are suitable for natural heritage sites with traditional rural communities. Framed around the evaluation system (Liu et al., 2008) and the theoretical notion of sustainable development, the research assessed inclusiveness and sustainability of the communities with seven indicators including agricultural activities, cultural heritage and traditional knowledge, tourism development, community participation, restriction of natural resources utilization, the destruction of wildlife and compensation, employment opportunity, which helps find an inclusive approach to achieve sustainable development.

### 3 METHODOLOGY

Qualitative methods were applied to this research, namely interviews, observations, document review and case study (Ying, 2009). Key person interviews are the main data collection methods, field observation and government documents are secondary methods. The document review method was applied to collect demographic and economic data. Policy documents from different levels of institutions are collected from the database of the master plan project of Wulingyuan Scenic and Historical Interest Area as well as the report of UNESCO World Heritage and Sustainable Tourism Programme - Chinese Pilot Studies.

#### 3.1 CASE SELECTION

The case of Longweiba was selected because of its representative conflicts and well-known community- engagement practices. Unlike some non-populated natural heritage sites, people have already resided in Wulingyuan heritage sites long before the area was designated for conservation. Displacement of local residents occurs as a result of the establishment of protected areas, similar to many other countries (Su, M.M. et al., 2015). Since the 1990s, three rounds of resettlement of local people have taken place in Wulingyuan, leading to many conflicts between local residents and the government because the benefits and costs of heritage conservation and tourism development were not equally shared with all stakeholders.

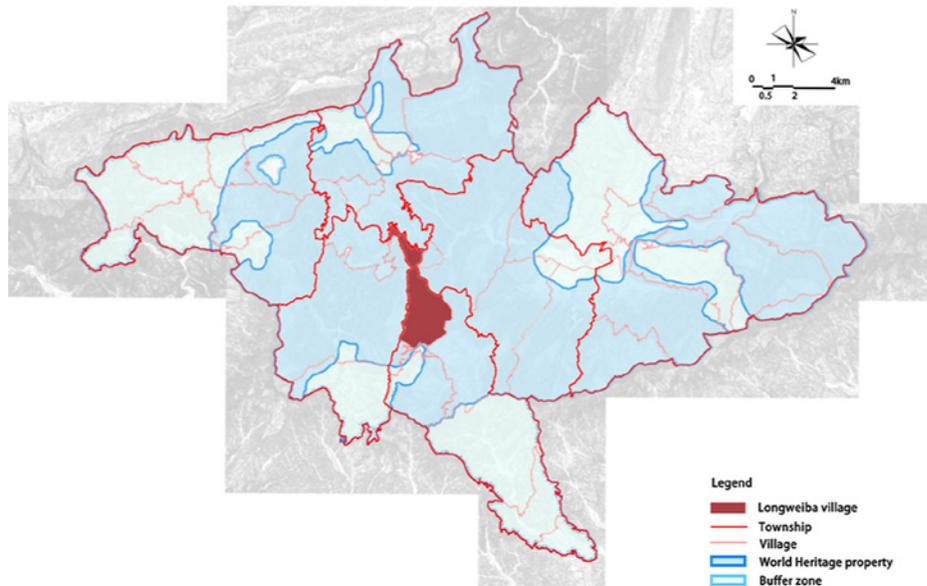


FIG. 1 The location of Longweiba village in Wulingyuan. Source: (author)

### 3.2 DATA COLLECTION

Based on the seven indicators, we developed a semi-structured interview framework for government personnel, communities, and other stakeholders. The main data was obtained through interviews administered to stakeholders including local residents, companies and an administrative body. The interviews were designed to evaluate the inclusiveness and sustainability of the heritage.

<b>Agricultural activities</b>	What are the restrictions on community farming? Are areas of restricted agriculture resettled or other modes of livelihood introduced?
<b>Cultural heritage and traditional knowledge</b>	How do you protect traditional knowledge? Do you promote the sustainable use of traditional knowledge?
<b>Tourism development</b>	How will the residents benefit from the development of tourism? To what extent are residents involved in tourism development? Do you have preferential policies for local people to engage in tourism-related work?
<b>Community participation</b>	How and to what extent is the community involved in heritage conservation? What problems does community participation have?
<b>Restriction of natural resources utilization</b>	How about the utilization of land resources, animal and plant resources? Are there alternative resources to find and use?
<b>The destruction of wildlife and compensation</b>	What measures are being taken to reduce the damage to vegetation and ecology? Is there compensation for wildlife destruction to the community?
<b>Employment opportunity</b>	What are the main sources of income for households? In terms of employment, does the government or developers have any policies to promote the residents?

FIG. 2 Interview Framework. Source: (author)

## 4 RESULTS

Through the review of policy documents. We know that the protection and management actions of Wulingyuan has experienced four phases (Fig. 1) since 1978. In the early times, there were no serious conflicts between community residents. But in the second phase, the government started the resettlement policies in an effort to restore the natural environment of the heritage, which severely conflicted with the economic interests of the community residents, and the conflicts between community residents and heritage protection management gradually increased. Longweiba was resettled from the core zone<sup>1</sup> due to the "overrun tourism facilities", and all the constructions were demolished. Due to the relocation, local residents had to leave their homeland and lose the prime location to develop tourism. But the compensation from the government was limited, which is not resulting in serious dissatisfaction with the government. In the third phase, the local government managed Wulingyuan with a strict top-down protection and management policy, which intensified the conflicts between local residents and the government. In 2005, the ticket station was relocated to Longweiba, which has brought about changes in the boundary of the core zone. Part of Longweiba village, two groups, entered the core zone and implemented strict protection and management actions. The other three groups outside the ticket station were not restricted by strict protection management policies and could develop agriculture and tourism. In recent, Wulingyuan saw the continuous reform towards a sustainable development of the heritage site, shifting the perspective to local communities, organizing rural planning and beautiful rural assessments, and trying to ease the relationship between the government and the community.

PHASE	TIME	PROTECTION AND MANAGEMENT ACTIONS
1 <sup>st</sup> phase	1978-1992	The natural heritage development and protection management system was initially formed, and tourism and comprehensive utilization of natural resources began to develop.
2 <sup>nd</sup> phase	1992-1999	Comprehensive development of heritage sites, and the protection management system have been gradually developed. At this stage, the resettlement project, the sloping land conversion program and strict environment protection policies were implemented.
3 <sup>rd</sup> phase	2000-2011	The comprehensive implementation of comprehensive governance and strict protection of Wulingyuan Natural Heritage.
4 <sup>th</sup> phase	2011 till now	Deepen the reform of the protection and management system and explore the period of sustainable development of natural heritage sites.

FIG. 3 Four phases of management and protection of Wulingyuan. Source: (author)

Through interviews, we found that Local people were involved in tourism development as a part of community participation, and the destruction of wildlife and compensation doesn't apply to the case. So we analysed the data from the following five aspects instead of the seven indicators above.

<sup>1</sup> Core zone: The core area here refers to the core protected area within the Scenic and Historic Interest Area System, which is the main destination of tourism and has higher protection standards.

## 4.1 AGRICULTURAL ACTIVITIES

In terms of agricultural activities, Longweiba Village has an area of more than 500 acres of arable land, which are all located outside the ticket station. However, due to the impact of geological landslides and the barren situation, fruits or rice are underproduce. So, more than 300 acres of fields can only be used to grow tea. Residents inside the ticket station are in the core zone, they are prohibited from agricultural activities. Therefore, agriculture has not developed.

## 4.2 CULTURAL HERITAGE AND TRADITIONAL KNOWLEDGE

Many residents have not realized the importance of traditional villages, unique folk culture, and traditional knowledge, nor do they think that Wulingyuan's long history and culture are worthy of their pride. Through observation, we also found that the traditional production and lifestyle of the villagers have been seriously modernized. Most of traditional buildings were replaced by modern buildings. Most of traditional knowledges, such as Xilankapu's weaving skill, traditional medical knowledge, folk music and folk musical instruments, are on the verge of disappearing, with no successor. In addition, traditional knowledge about natural resources use, like traditional apiculture, hunting and hunting are restricted in the name of conservation.

## 4.3 COMMUNITY PARTICIPATION

Community participation includes participated in tourism, conservation and the decision making process. Through the interview, we found that most villagers are willing to participate in tourism and management, although the rate of community participation in tourism is low. The data shows that only about 50% of the communities have participated in tourism cooperation projects, mainly working for others. In terms of community participation in heritage protection management, villagers mainly work as forest guards and cleaners. The interview also found that more than 50% of the residents have hardly made any gains in tourism development, and more than 85% of the residents believe that the government has not adopted their opinions when formulating protection policy decisions, which has increased their conflicts with the government.

## 4.4 RESTRICTION OF RESOURCE UTILIZATION

Over the years, most of the village's farmland has been replanted with trees to improve the environment. So far, the forest in Longweiba Village is more than 600 hectares. As compensation, residents can get 200 yuan per month. However, reclamation, felling, hunting, quarrying and other activities are prohibited according to protection policies. Especially for residents living in core zones, they cannot even farming, which completely broke the villagers' traditional livelihoods.

## 4.5 EMPLOYMENT OPPORTUNITY

According to the interview, we know that most of the residents are farmers with lower education levels, and the labor loss is relatively serious. In addition to farming, the employment of villagers is also in administrative institutions, work outside and entrepreneurship and other aspects, only 25% of

local residents work in local tourism companies. In addition, residents participate in tourism mainly work as tour guides, drivers, waiters, and stalls. In addition to working on the leased land, currently, there are 50 local people working at the Research, Communication and Training Center.

## 5 DISCUSSION

This study focused on the benefits and costs of the local residents of Longweiba, Wulingyuan. We examined the experiences of local residents through in-depth interviews, participant observation, and informal communication, while their livelihood and well-being changed under different development approaches.

The objective of the study was to improve the development approaches to enhance inclusiveness. It was found that the management policies and tourism had both positive and negative effects on inclusiveness. The positive side is that the restriction of the use of natural resources helps improve ecological inclusiveness. And the tourism industry provides a new livelihood for the locals so that helps improve social inclusiveness in terms of income. Whereas the negative impacts are (1) unfair management policies, (2) excessive restrictions on the use of natural resources, (3) lack of local voices for decision-making, and (4) the loss of traditional knowledge.

First, Different levels of protected zones have different management policies. Such an unfair policy situation is not conducive to the construction of social equity and violates the goal of sustainable development. Second, sustainable development requires respect for the rights of local communities to access natural resources, completely prohibiting residents in core zone from using natural resources to violate their basic rights. These locals are farmers, they do not master any other skills to maintain their living. Since the government did not provide them with corresponding assistance, their livelihoods were cut off. Third, the lack of local voices in the protection and management of heritage sites has made local residents passive, and it is difficult to get feedback on their claims. In addition, Loss of traditional knowledge means the loss of biocultural diversity, which is not conducive to the sustainability of heritage sites.

To find out the problems that hinder the sustainable development and inclusiveness of the heritage, we endeavored to analyse what caused the negative impacts. Three Reasons for the negative impacts were found.

### 5.1 UNEQUAL DISTRIBUTION OF COST

After Wulingyuan was designated a World Heritage Site, tourism rapidly increased in the area. The tourism development and conservation policies significantly changed the lives of the locals, and have caused many problems. Many local people took advantage of the location of Lonweiba village to build hotels and tourism facilities, with the village essentially becoming a construction site. The new tourism facilities (and the tourists they accommodated) threatened the area with pollution. As a result, strict planning regulations were implemented in an updated master plan in 2005, and the new facilities were demolished. However, such restrictions were not equally shared among all community groups in the village. A ticket station divided the village into two parts, with tourists needing to pay an entrance fee to the conserved zone. The communities inside conserved zone must comply with the strict new planning regulations, and are prohibited from farming and constructing new buildings

in the zone. Meanwhile the communities outside the conserved zone are allowed to farmland and construct more freely, and run their own touristic service businesses. This inequity has caused a conflict between the communities.

## 5.2 LACK OF COMMUNICATION

The data shows that only 15% of the local residents believe that they were well-informed and asked before policy implementation. Obviously, the voices of local residents had not been fully considered in the process of planning and in the implementation of management policies. The conservation practice is top down instead of bottom up when the communities are not involved. Also, the lack of a platform enabling different stakeholders (including local people, tourists, travel agents and government, etc.), to keep in touch and share ideas and experiences, was a hindrance. Natural heritage conservation is more than nature conservation. Practitioners should collect thoughts and garner support from different stakeholders groups otherwise the conservation actions can easily lead to social conflicts due to the unbalanced development.

## 5.3 LACK OF CAPACITY

Both the local residents and administrative bodies showed limited capacity. Second, the shortage of skills limited the development of local communities. First, the educational level of the local residents is relatively low. Few residents own a college or higher degree. Second, there is no professional staff in the administrative bodies at the local level. Moreover, the land policy was a hindrance. Every family owns limited arable land and they cannot afford modern agricultural facilities. Accordingly, they cannot raise productivity through large scale, intensive farming.

# 6 CONCLUSION

This study provided a detailed description of the development path and the impacts of tourism and conservation policies of communities in Wulingyuan world natural heritage. It proves that local residents are a vulnerable group among all stakeholder groups in many cases, it is hard to achieve sustainable development of the local communities through top-down policymaking and implementation process. The practice of the Research, Communication and Training center in Longweiba village solved most of the problems in the discussion. We concluded the following three development approaches from the successful practice, namely establishing a platform for communication, transforming land tenure and providing job opportunities.

## 6.1 ESTABLISHING A PLATFORM FOR COMMUNICATION

As discussed, lack of communication would cause conflicts between community development and conservation process. The center serves as a communication platform for all stakeholders. It enables the local stakeholders to express their demands and also enables the practitioners to learn traditional knowledge from local people.

## 6.2 TRANSFORMING LAND TENURE

The establishment of the center could not be accomplished without the innovation of land circulation policy. As is known, Chinese law prohibits transferring ownership of state-owned land, however, the right to use state-owned land can now be leased. After a thorough negotiation, more than 30 families signed a land-grant contract with a local enterprise, ensuring that the center was built on land leased from local landowners. By leasing the land use right, people gained not only rental income, but also were employed to work on their leased land.

## 6.3 PROVIDING JOB OPPORTUNITIES

According to the responsible tourism as outlined by Spenceley (2008), local communities should be involved in the tourism industry. With the cooperation of the center, some villagers managed to run an agritourism business. The income is shared according to the labor and capital contribution ratio. The center has also attempted to address the skills shortage. Training workshops were conducted to help the community learn new skills, and to help the villagers play an active part in the conservation process, for instance, the OUV interpretation. Thus, the center contributed to local livelihoods by providing the communities with job opportunities.

All in all, the local residents must have a say in the decision-making process, and efforts should be made to find more inclusive development approaches to benefit local communities as well as build their capacity. Moreover, However, community engagement is not static but dynamic, we still need to keep paying attention to the effects of the on-going development approach to see if it is inclusive enough.

### Acknowledgment

This paper is an output of the science project UNESCO World Heritage and Sustainable Tourism Programme - Chinese Pilot Studies.

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# Sustainable Development of High-Rise Residential Architecture from 1970-2014: Dubai Case Study on Modern Heritage

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## Abstract

*The Government of Dubai implemented Green Building Regulations & Specifications & Specifications (GBRS). In March 2014, Dubai has more than 1000 high-rise buildings in which more than 2 million residents are accommodated. However, 62% of the existing residential high-rise buildings dating from 1970-2014 do not meet the requirements of the new GBRS. The paper suggests a sustainability plan framework for the modern heritage buildings in Dubai that satisfies the new building regulations. This will require the development of a new set of tools to adequately protect and keep the identity and heritage of the existing buildings instead of replacing them with new ones. In this context, several case studies are presented, analyzed and discussed to present the potential and the challenges of keeping these buildings. Many of the existing buildings built in the City of Dubai from 1970-2014 are part of the memory of the place and contribute to the story of Dubai's development in the recent past. This research aims at protecting and documenting an important phase of the history of the urban development in the City of Dubai, highlighting the time period in which the initial principles that govern and guide the development of the city were developed. As part of Dubai modern heritage, the buildings under study have had a major impact on shaping the urban environment and crystallizing the architectural character of Dubai's development in the 1970s and 1980s. Besides that, the headlong modernization of Dubai will eliminate all evidence of the city's evolution. As a result, retrofitting of existing buildings should not only improve energy efficiency and performance but also keep the identity and heritage of the City of Dubai instead of replacing buildings with new ones.*

## Keywords

*Modern Heritage, Sustainability, High-rise Buildings, Dubai, Green Building*

## 1 INTRODUCTION

The United Arab Emirates (UAE) is situated in the Middle East, bordering the Gulf of Oman and the Arabian Gulf, between Oman and Saudi Arabia as shown in Fig. 1 (National Media Council, 2016). UAE is a federation of seven emirates. The UAE country covers an area of 83,600 km<sup>2</sup> and has a population of 9.543 million with a GDP of 348.7 billion USD.

The climate of the UAE is subtropical-arid with extremely hot and humid summers and warm winters according to the Köppen Climate Classification System (Koeppen, 2020), (Ministry of Energy, 2006). The hottest months are July and August when average maximum temperatures reach above 45 °C.

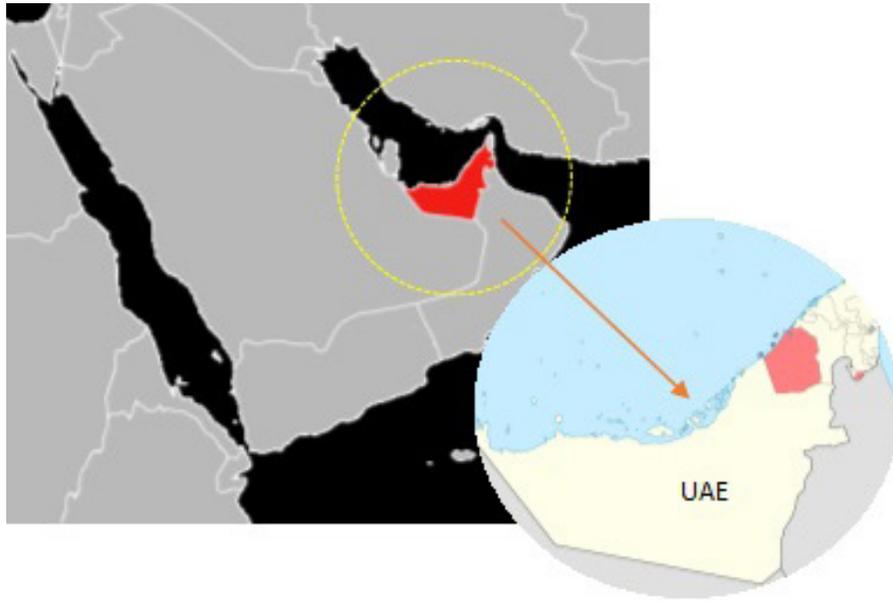


FIG. 1 UAE map and location. Source: (World Bank)

The UAE witnessed a sharp increase in population starting from 2005. The population increased from 2.449 million in 1995 to 9.154 million in 2015 as shown in Fig. 2. As an inevitable result of population growth in Dubai, high-rise residential buildings have become a prevalent solution. The high-rise building is considered an economic phenomenon in which business was the engine that drove the innovation of modern building technology. in the UAE and worldwide. Starting again from 2013 a sharp increase in the number of high-rise buildings was observed.

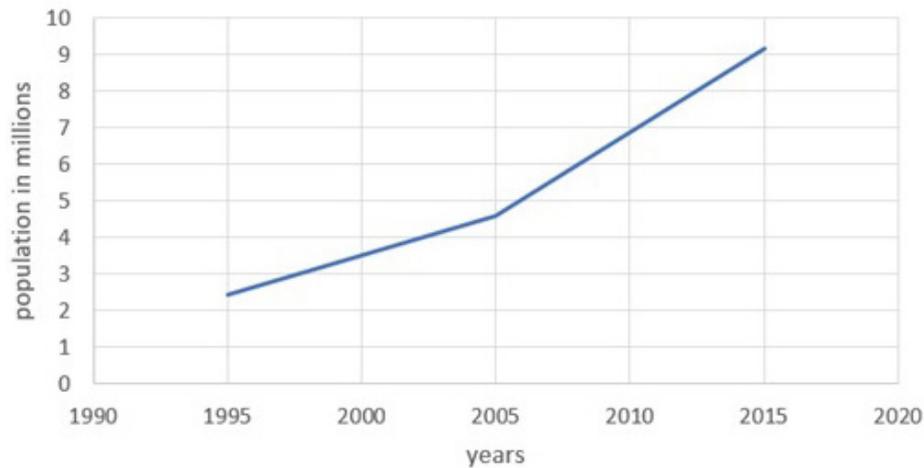


FIG. 2 UAE population, 1995-2015. Source: (Author, Based on World Bank)

This affected directly the construction sector in the UAE and resulted in additional strain on existing infrastructure and housing. New projects in these sectors were initiated to accommodate this growth and alleviate the associated pressure. Consequently, high-density residential structures experienced strong demand. Fig. 3 shows the number of high-rise residential buildings in Dubai from 1979 till 2018. It shows that starting from 2004, Dubai witnessed an increase in the residential high-rise buildings till 2007 where the number starts to decrease. This is attributed to the economic situation

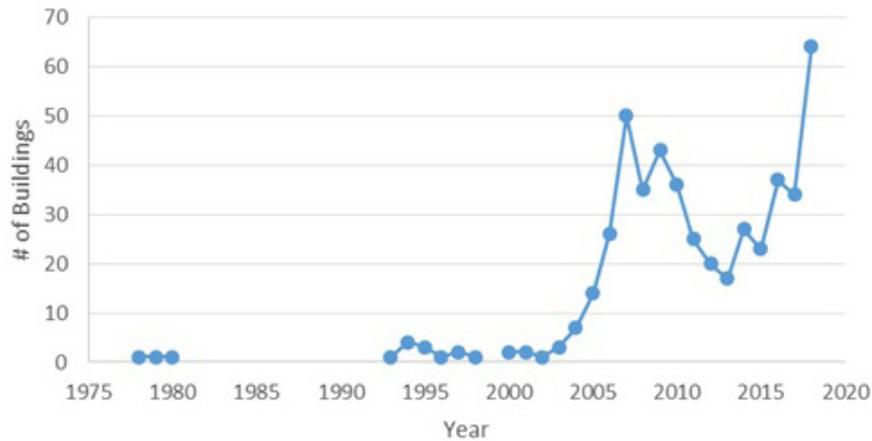


FIG. 3 Number of residential high-rise buildings in Dubai, 1979-2018. Source: (Author)

A clearer picture of the increase of residential high-rise buildings in Dubai is shown in Fig. 4 which represents the cumulative percentage of residential high-rise buildings in Dubai.

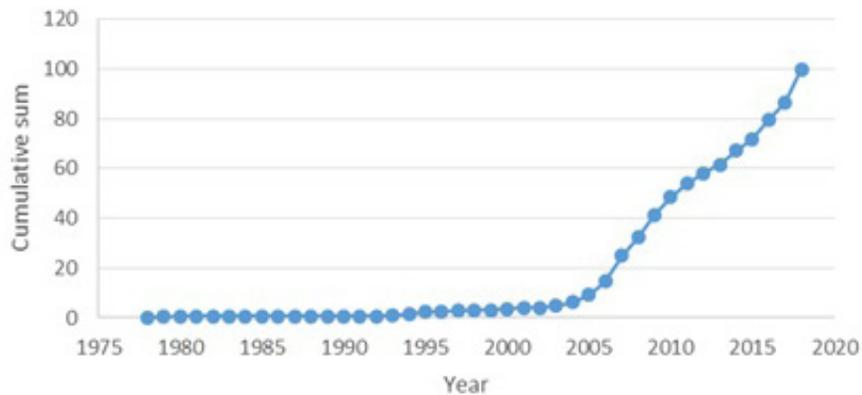


FIG. 4 Cumulative percentage of high-rise buildings in Dubai. Source: (Author)

On this basis, this work seeks to study the impact of high-rise buildings on the built heritage environment in Dubai which is the second largest but most densely populated of the seven emirates. For decades, modern architecture in the Gulf has been equated to the demolition of the traditional medina, with top-down plans and the gradual westernization of the country. Only recently, the Dubai government agenda has put the word 'heritage' in direct association with the architectural production of the modernization era after 1970 and the movement towards the preservation of the recent physical past (Al Qassemi & Fabbri, 2019).

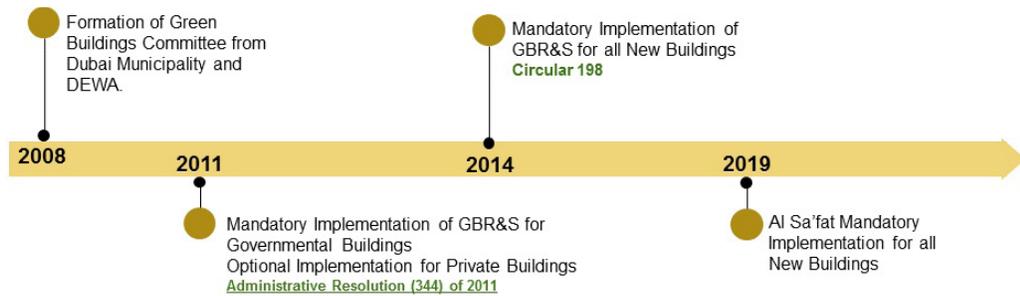


FIG. 5 Dubai green building roadmap. Source: (Dubai Municipality)

The focus of this research will be on high-rise buildings in Dubai from the 1970s until 2014, the year of the implementation of the GBRS in Dubai to document these buildings and protect them from blurring their identity. Dubai's modern heritage is of great importance as it contributes to the identity of the city, the collective memory and is part of the history.

Starting from 2008, Dubai government initiated a roadmap for green buildings as shown in Fig. 5. The implementation of GBRS and standards are mandatory starting from 2011 for governmental buildings. For private buildings, GBRS and standards are mandatory starting from 2014. In 2019, more restrict regulations called Al Sa'fat will replace the GBRS and standards.

Applying energy improvement measures adopted by Dubai government may destroy the historical and architectural values of existing buildings. This work contributes to enhancing the sustainability of the high-rise buildings, considering different aspects as formulated in the Sustainable Developments Goals (SDGs). Retrofitting existing buildings to improve sustainability and building performance helps in keeping the city's identity and heritage instead of removing existing buildings and replacing them with new ones. Several case studies will be presented and discussed in this work.

## 2 DUBAI MASTER PLAN

In 1960, John Harris developed Dubai's first master plan for Shiekh Rashid bin Saeed Al Maktoum (the father of modern Dubai) as shown in Fig. 6. He updated the master plan in 1971 as shown in Fig. 7. In his work, Harris understood the context and responded to the cultural and climatic conditions in Dubai (Al Rustamani, 2014).



FIG. 6 John Harris's First Dubai Master Plan 1960. Source: (Chapman, 2014)



FIG. 7 John Harris's Dubai Master Plan 1971. Source: (Dubai Municipality)

Modern Dubai is shown in Fig. 8 with hotspots on three areas: World Trade Centre, Sheikh Zayed Road, and Dubai Marina. While the first two spots host some of the oldest high-rise buildings in WDubai, Dubai Marina has the largest number of high-rise residential buildings in Dubai. The World Trade Centre was the tallest building in the region when erected in 1979. Dubai's World Trade Centre which is originally called Sheikh Rashid Tower is the work of John Harris. It is picturesque among the newer high-rises of glass.

Along Sheikh Zayed Road some of the oldest residential high-rise building in Dubai can be found, among them the Toyota Building, considered as a landmark representative for the first generation of high-rise buildings. From east to west, existing buildings along the Sheikh Zayed Road are demolished to be replaced by a new generation of super-tall skyscrapers.

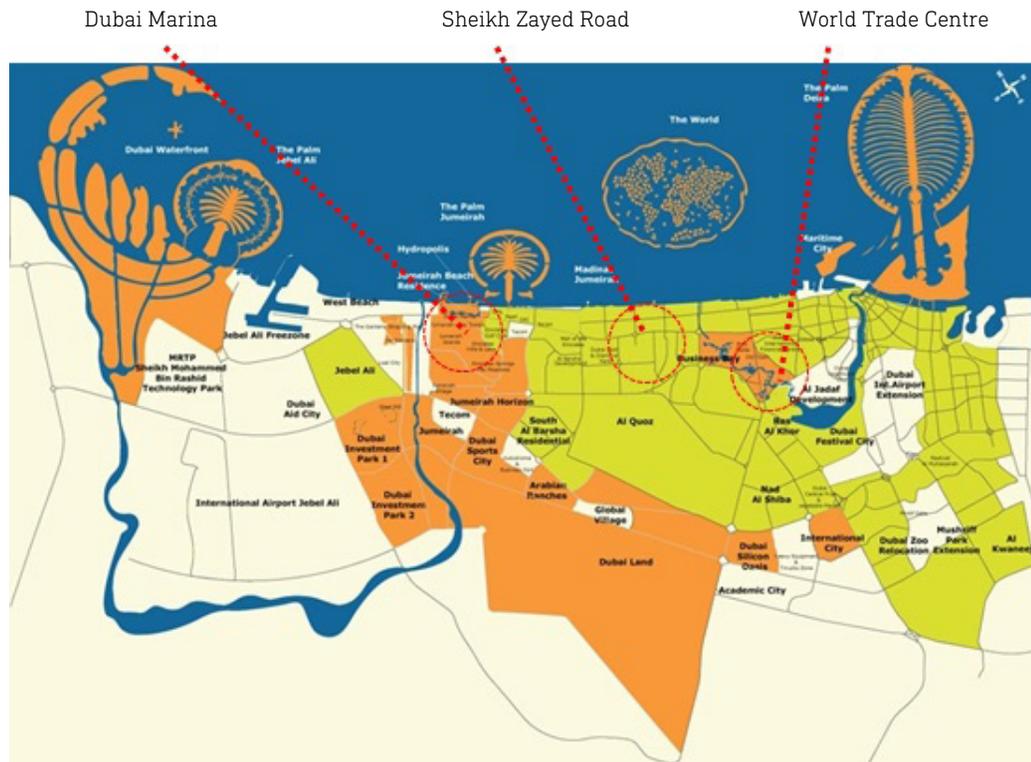


FIG. 8 Dubai Spot Light Areas, Source: ReDubai

### 3 DUBAI MODERN HERITAGE

Many of the buildings that were built in the 1960s and 1970s continue to occupy major places and perform important functions. These buildings influenced the urban environment and crystallized the architectural character of Dubai's growth in that time period. They are part of the memory of the place and contribute to the development story of Dubai. The 1960s and 1970s buildings are characterized by having concrete facades, small windows, external AC units and many of them balconies.

Fig. 9 shows a few modern heritage buildings that should be protected because they represent typical architectural and technical features of their time and because the majority of what was built in the 1960s-1970s and before has been demolished. Next to residential buildings many hotels and hospitals were built during that period.



FIG. 9 Examples of modern buildings in Dubai from the period (1960s-1970s).

Source: (Several Internet Sites)

#### 3.1 NASSER RASHID LOOTAH BUILDING - 1974 / TOYOTA BUILDING

The Nasser Rashid Lootah Building on Sheikh Zayed Road (known as Toyota Building) is Dubai's oldest high-rise residential building and is considered a landmark symbol of high rise buildings of the first generation. In the 1970s, the building was surrounded by sand and scattered dwellings. Slowly, hundreds of skyscrapers sprang up around it as shown in Fig. 10. The building is reflective of its time, built with small windows and concrete facades to conquer the heat. The building is characterized by the number of external air conditioning units on many of the balconies. The building is a massive concrete block, often made of prefabricated elements with the typical architectural design of that period. It forms part of Dubai's visual heritage and its history and development because it is known by many peoples and has created some public awareness.

Despite that if this building is demolished it would be a big loss, strong indications that this building will be removed are beginning to appear. After more than forty years, the Toyota sign (it is so famous that even the building is named after it) on top of Nasser Rashid Lootah Building on Sheikh Zayed Road has come down.



FIG. 10 Toyota Building in Shaikh Zayed Road – 1974 and 2018 (top), and facade details (bottom).  
Source: (8, Author)

### 3.2 DUBAI WORLD TRADE CENTRE (DWTC) - 1979 / SHEIKH RASHID TOWER

DWTC (originally called Sheikh Rashid Tower) shown in Fig. 11 was the highest building in the UAE when it opened in 1979. Currently, it is not among the top 100 tallest completed towers in the UAE. It is a 39-storey office tower and included exhibition spaces, restaurants, and a Hilton hotel when it was built. The Hilton was demolished in 2005. Over the years, more conference halls have been added and now the site is an important exhibition center.

Similar to the Toyota Building the tower is surrounded by newer glass skyscrapers. The tower is built from concrete with dominant horizontal structure while the windows are set back to avoid exposure to the harsh sunlight. The architecture integrates some typical local motifs including the use of arches on the exterior of the building. The tower appears on the back of the Dh100 banknote because of its value.

In 2018, Dubai Municipality has announced that the World Trade Centre tower will be preserved as part of the city's cultural heritage (Ahad, 2018).



FIG. 11 DWTC in Shaikh Zayed Road – 1979-2016. Source: (The Storypedia, 2018)

### 3.3 DEMOLISHING MODERN HERITAGE

Several modern heritage buildings were demolished or damaged recently for different reasons. For example, Sheikh Rashid Building which was constructed in 1970 was damaged partially due to fire in 2019. The historic Ramada Hotel in Bur Dubai, one of the city's oldest hotels, was closed to clear the area for a new mixed-use project in August 2016. The hotel is considered another link to early Dubai Modern Heritage. The hotel which was built in 1983 is located in a rapidly growing area where a new block of apartments or hotels or skyscrapers is added every day. Unfortunately, the hotel was demolished in 2017 as shown in Fig. 12.



FIG. 12 1983 - Ramada Hotel / Bur Dubai, Demolished in 2017. Source: (The National, 2016)

## 4 METHODOLOGY AND ANALYSIS

Based on the previous analysis and realizing that some of Dubai's modern heritage architecture has been lost, a preservation strategy that complies with the green building legislation and the current sustainability frameworks and that protects the old buildings from being demolished must be implemented. Fig. 13 presents a suggested Sustainability Development Framework to retrofit the existing high-rise buildings in Dubai:

- 1 Conducting comprehensive benchmarking of residential high-rise buildings according to chronological evolution.
- 2 Collecting and analyzing all the required data related to building envelopes.
- 3 Setting up scenarios to solve any existing problems.
- 4 Implementing and testing the suggested scenarios.



FIG. 13 Suggested Sustainability Development Framework. Source: (Author)

The implementation of the sustainability Development Framework applies the following methodology in which the existing buildings are analyzed, documented, categorized and evaluated as presented in Fig. 14.

- The stylistic elements, structural-material and geometry parameters of selected residential high-rise buildings will be investigated to find the common characteristics.
- The present energetic state will be investigated to connect energy demand, footprint area, and architectural characteristics.
- The limiting factors narrowing down the possibilities will be defined.
- After combining the retrofit intervention possibilities and limiting factors, retrofit scenarios will be created.
- Data to support this will be produced through anonymous surveys, observation, the occupation of different settings around the buildings, and meetings (informal and formal) in real-time.

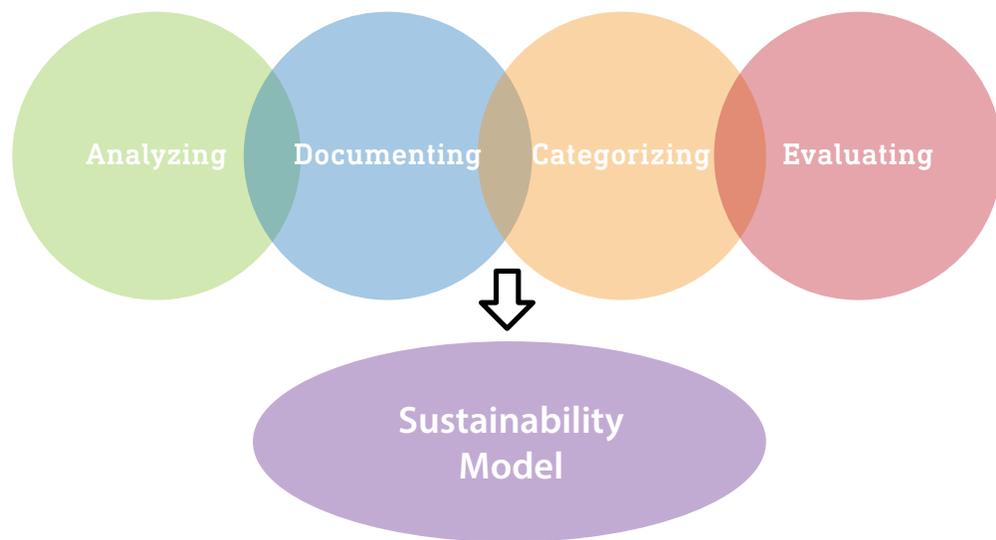


FIG. 14 Sustainability plan implementation methodology. Source: (Author)

The research aims to link the typology of residential (high-rise ) heritage over time with a comparison of those different typologies with regard to sustainability (environmental, social, cultural and economic) and to improve the buildings' overall performance.

This results of this research work will contribute and benefit from different Dubai initiatives; Strategies and Smart City initiated by Dubai Government / DEWA, Green Buildings codes & regulations and Architectural Modern Heritage Protection Initiative launched by Dubai Municipality, Urban Heritage and Archeology Department work on Urban Heritage Studies and Sustainable Energy & Energy Efficiency of the Supreme Energy Council.

## 5 CONCLUSION

This paper traces the evolution of high-rise buildings in City of Dubai. It aims to clarify why high-rise residential buildings, in particular, are a valuable strip of Dubai modern heritage and explore realistic strategies to save this legacy. This includes raising the awareness about the importance of the value of modern heritage, the establishment of a database containing buildings classified from the 1960s, 1970s, and 1980s, which will be updated to document and protect the architectural heritage of this period. It also aims to inform and engage stakeholders about the potential of retrofit decisions for modern heritage buildings in Dubai and using a sustainable solution that utilizes green and clean energy.

The high-rise buildings presented in this work had a huge effect on shaping the urban landscape and crystallizing the architectural character of the City of Dubai during the 1970s and 1980s. The results of this research will help the government authorities throughout the UAE to develop more detailed and applicable regulations that enhance sustainability in the residential sector and protect the heritage.

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# SESSION 6

## Heritage, Production and Consumption

**Uta Pottgiesser**

The Production and Consumption cluster (SDGs 2, 6, 7, 8, 9, 11 and 12) considers the intersections between people's needs and biophysical systems. It also reflects on the production and consumption of goods and services—such as food, energy, or water—and on the resulting environmental pressures and impacts. This theme encompasses contributions that discuss the role of natural and cultural heritage for sustainable consumption and production patterns, resilient cities and infrastructures, the circular economy, and affordable energy. What is the contribution of conservation to sustainable development? What resources are conserved the most? What values matter the most? What can trigger prioritizing conservation over resource depletion? How can heritage contribute to conservation and resource efficiency?

# Revisiting Heritage Conservation in its Social and Economic Background

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## **Abstract**

*The paper aims to put heritage conservation in perspective of its social and economic background. Although conservation is today clearly integrated in a framework and agenda of sustainable development, there are implications of that on the operational side for conservation specialists and related stakeholders. The paper focuses on the complexity of the current long transition phase of the global economy that is accompanied by innovations and changes in production and consumption behaviours. This framework contributes to revisit the role of heritage conservation facing the current challenges of urbanisation, climate change, social transformations, and sustainable economy. After a brief description of 75 years of successful conservation and economic structural changes, the paper tentatively identifies some trends which could improve integrated sustainable conservation, tools of heritage economics, and new governance models.*

## **Keywords**

*Heritage economics, economic long waves, sustainable conservation*

## **1 INTRODUCTION**

The conservation of cultural heritage has a very ancient history, inherited from the real nature of the discipline which consists of taking care of a historical monument, but inherited also from the timespan that contextualized the discipline itself. The cultural item, artifact, or tradition that conservationists choose to protect and take care of has been valued in such a way that it aims to be remained actual over a very long timeline, in different contexts and surroundings conditions. Ultimately it is very hard to decide whether conservation values are implicit to tangible heritage or the result of a continuous process of (re)valuation, conservation and adaptive (re)use.

The purpose of this article is not to tell the story of heritage conservation or to revisit valuation principles, but rather to take a different look at the story of modern conservation from a socio-economic perspective. The purpose is also to reconsider the current status of the heritage conservation field with respect to new and challenging socio-economic issues that may threaten or provide opportunities to the cultural heritage.

The paper is divided in two parts. In the first part, the evolution of the discipline of modern conservation since the World War II is placed in a context of economic changes, to decipher relevant links and demonstrate how heritage conservation cannot be disconnected from its context. In a second part, the analysis is thematic and sets out to define major trends that could reshape conservation and explain the necessity for a paradigm shift.

## 2 ECONOMIC CHANGES AND THE BIRTH OF MODERN CONSERVATION

### 2.1 THE POST WORLD WAR II ERA

From a Western perspective, the period that starts right after World War II until now reveals a lot of knowledge useful to understand impact of socio-economic changes in the cultural domain. Although the definition for this period of time may seem arbitrary, it allows an inspiring reflection on how heritage conservation has been and remains contextualized to its socio-economic context. Methodological justification for this is based on the fact that the selected timeline (about 75 years) covers not only the modern history of heritage conservation but also a period of unique economic and social significance at the global level.

It is acknowledged that the general background for economic growth and technological progress has never been a linear path, but one made of ups and downs, of timely-regulated crisis, of so-called cyclical phases of expansion and recession, and of long historic waves of economic transformations (Delbeke, 1984). Since the beginning of the 20<sup>th</sup> century, economic scholars have investigated long wave phenomenon and tried to understand connections between technological progress, demographics, creativity, innovations, social structural changes, geopolitical issues, and economic growth (Schumpeter, 1939; Freeman, 1977).

From a long wave perspective, the end of World War II gave rise to a period of unprecedented growth around the world, triggered in Europe by the Marshall aid plan and postwar reconstruction. This successful Keynesian-type expansion which was to achieve a peak during the Golden Sixties in the western world, was characterized by strong public expenditures, private consumption, real investment in manufacturing and services, financial stability, and international trade. Eventually, 30 years of growth generated output, income and welfare on a scale as never before (Rostow, 1978; Mc Cracken, 1977).

This long wave of growth impacted all manufacturing sectors, but also services and non-profit activities. The cultural domain was no exception. Explanations for this are manifold but refer mainly to three categories: the active implication of the public authorities in the economic growth allowed to achieve sovereign objectives in particular in the cultural domain as considered as a public (or merit) good. Secondly, extensive growth with its outcome of full employment raised households' private income and consumption that benefits the cultural domain (through better access to the culture). Finally, the international trade and the new means of transportation allowed the surge of tourism and access by a broader population to the world natural and cultural resources (Duxbury et al., 2017)

Although the conservation of cultural heritage was initiated in Europe well before WWII, the extent of destruction of buildings and monuments during the war acted as a catalyst for a global awareness of the fragility of the heritage. But the growing awareness for the protection of architectural heritage was also explained by the favorable social and economic background that culminated in the Seventies in the Western world (Mandel, 1978). The simultaneous international expansion of growth, first step of the current globalization, was an appropriate timing for the dissemination of principles of modern conservation across the world, and eventually the adoption of an international charter on the conservation of architectural heritage (Duxbury et al., 2017). In other words, the internationalization of conservation principles was both driven by a supply-side factor (public awareness and initiatives to protect and finance the cultural heritage) and a demand-driven factor (increase of users and visitors).

Endorsed by UNESCO on a global level, the Convention on the world heritage was adopted the 16<sup>th</sup> November 1972, a few weeks after the publication of the Meadows report 'The Limits to Growth' sponsored by the Club of Rome, being referred to as the first warning of the danger of excessive growth for the planet (Meadows et al, 1972). The 1972 landmark for cultural conservation coincided with the awareness of excessive growth, which is itself nurtured by an environmental concern towards the protection of natural resources around the globe. It is recognized that the public debate on the protection of tangible cultural heritage draws its foundations from the debate launched by environmentalists with regard to the protection of the planet and the non-excessive use of scarce resources (Throsby, 1997). So the threat towards natural resources came first, and it came as the result of excessive economic growth and unsustainable development.

## 2.2 THE TURNING POINT OF THE SEVENTIES AND THE START OF GLOBALIZATION

Almost 50 years after the adoption World Heritage Convention, we can identify how structural changes and globalization have impacted the cultural agenda. Thousands of monuments and sites have been inscribed on the World Heritage List. Many public institutions or private initiatives around the world enabled to start an ever-growing process of preservation. The turning point was characterized by geopolitical conflicts, two major oil crises (1973 and 1979), structural inflation that went together with lesser growth (stagflation), the end of the *dollar-as-good-as-gold* Bretton-Woods international monetary system (1971), and debate about the end of consumerism. Despite the global impact of such changes, the western world was in the middle of such turmoil, which also explains that it was also the turning point for the global economic growth to slowly shift its center of gravity away from the western world.

The inner link between the end of consumerism, emerging environmental concern, and re-localization of industries throughout the world have brought along shifts in production, consumption, and investment behavior. The role of public governance also changed profoundly during the same period, because of the need to compensate crisis-induced economic and social costs (Lorenzi et al, 1980). Rising public debts started to bring concern –an issue still accurate today. It took a while before these structural changes impacted the cultural domain and in particular the heritage conservation: growing public deficits challenged the role of the public authorities in dealing with cultural goods as merit goods; private financing, "third-sphere" initiatives, new financial vehicles like crowdfunding gather momentum; mass-tourism started to threaten the cultural heritage; and of course, advocacy for sustainable development became mainstream (Mason, 2002).

The most visible of these factors was the impact of globalization and international trade on the very principles of conservation. In its report 'Our Creative Diversity' (1996), the World Commission on Culture and Development put emphasis on the central role played by culture in the new word: a world of diversity, or international exchanges and cooperation, and of innovation and creativity. The report also adhered to the basic principles of sustainable development, and to the economic, social and environmental pillars. Later on, the Hangzhou declaration enlarged this sustainable vision in bringing focus on the 4-pillar sustainability principle, with the cultural pillar at its very core (Sen, 1999).

More focus on the continents of Latin America, Africa and Asia revealed the need for an extension (revisitation) of the definition of cultural heritage, from tangible to intangible heritage. Since long, the principles of conservation had shifted from the single monument to advanced definition of 'urban ensemble', 'historic centers' and 'natural landscape' – among others. Taking into consideration of

intangible heritage in its various types appears now as a logical step in the process of dealing with a multi-cultural, multi-actor, multi-discipline, human-centered approach. Such an evolution in modern conservation history cannot overlook the importance of the economic and social factors responsible for the paradigm shift that has been developed over the past twenty years in the world of heritage conservation. The best example for the contextualization of conservation is the adoption of the recommendation on Historic Urban Landscape (Bandarin & Van Oers, 2012), a tentative to integrate conservation not only in a physical setting, but also in a broader context of cultural, economic, social, and environmental significance.

## 2.3 THE NEED FOR A PARADIGM SHIFT

As explained earlier, the long wave theory for social and economic changes addresses the issue of parallel trends in conservation and economics, and sets the fundamentals for sustainable development, poverty alleviation, and social equity. Values that belong to these changes in the nature of growth have to be clarified; otherwise, there is a risk of losing the intergenerational equity which is required to prevent the collapse of the needed consensus among the population (especially, by increasing the generational gap). Values are related to sustainability, social responsibility, collective commitment, environmental concern, ethics, and solidarity.

The 'UNESCO Recommendation on Historic Urban Landscape' addresses this shift in paradigm, by understanding and managing any historic urban environment on the basis that the urban landscape is not a « static monument or group of buildings, but subject to dynamic forces in the economic, social and cultural spheres that shaped it and keep shaping it ». In economic terms, the cultural heritage is considered as cultural capital as it refers to wealth capable of generating more wealth over a period of time. Among different types of capital, there is physical capital, financial capital, human capital, social capital, and cultural capital. It should not be difficult to accept that tangible cultural heritage can be considered a form of capital. Investment is the process that maintains and develops any form of capital in the economy.

Hence conservation is an investment process of allocating resources over time. The investment decision is not only to keep the cultural heritage (and cultural capital) providing cultural, economic and social values, but also providing an adequate answer to the challenges raised in the context of the heritage. Thus the need for a paradigm shift arises from the fact that economic and social changes are not just additional outcomes from heritage conservation (additional to cultural values), but that the economic and social values are the main objectives that may explain the adequacy and relevance of heritage conservation.

## 3 TRENDS FOR HERITAGE CONSERVATION IN THE CURRENT ECONOMIC CONTEXT

The current socio-economic context explains the challenges of heritage conservation. After the turnaround in the 1970s, the world economy has embarked on a so-called economic transition phase (lesser growth, structural debt and unemployment, decaying or delocalizing industries), mixing the structural adaptations of consumption and production functions, the financial and monetary parameters that surround them, the factors of exchange and global trade, social and environmental issues, and systems of governance and market regulation. Implications were manifold and they impacted the framework of cultural heritage in multiple ways..

### 3.1 GROWING URBANIZATION AND ENVIRONMENTAL CHALLENGES

The consumption and production lifestyles of the transition phase are oriented towards urban spaces that monopolize decision-making centers and trading areas - including virtual ones. The rural exodus and increasing urbanization respond to unavoidable demographic and migratory movements. The pressure on the use of land is a result of this urbanization and results for the old heritage and historic cities in a major challenge of maintaining the characteristics of the old building. The opportunity cost of maintaining old housing structures is increasing, and urban conservation is becoming a major element of the transition phase.

One way to safeguard old districts is to combine the demographic challenge with the environmental challenge. Cities will indeed become decisive places for the impacts on the quality of water and air, and on the effects of climate change. Using ancient heritage with its resilience and efficiency of materials can help reduce the opportunity cost of conservation and join qualitative factors like the living-togetherness and the enjoyment of a rare aesthetic and friendly environment. Taking environmental issues into account also involves implementing sustainable urban development and circularity processes that allow urban spaces to reduce the negative effects of excessive growth.

### 3.2 LIVING COMMUNITIES AND INNOVATIVE GOVERNANCE

There is much talk about participation in new modes of governance, in private organizations as well as in public decision-making process (Council of Europe, 2005). The new vision consists in substitute a bottom-up approach to top-down orientations and decisions. As this question is essential for conservation, in particular by bringing local communities in the management of tangible and intangible heritage, there is no coincidence that such concern rises in a context of cultural diversity and enhancement of intangible heritage which has a strong local resonance). The debate about including cultural goods and services in the realm of the World Trade Organization, and the subsequent adoption by UNESCO of the Convention on the Protection and Promotion of Diversity of Cultural Expressions in 2005 highlights this question.. The transition phase that the world is experiencing today includes dissemination of information through the social media and open discussions about what and how to conserve. Obviously this does not mean that heritage values should be undermined. But the conditions to preserve these monuments with their cultural values would be jeopardized if there is no shared consensus on that between experts and the local community.

Recent examples of conflictual and military nature have shown how much heritage carries a strong social and cultural identity which ultimately could be utilized as threat towards that heritage. In such examples, the acceptance of the heritage values through consensus between experts and the local community could clearly help the process.. Hence, new governance tools must contribute to adapting principle of conservation in times of social and economic transition. New participation approaches in conservation refer to the basic character of tangible and intangible heritage as public or common good.

### 3.3 TECHNOLOGICAL INNOVATIONS AND CREATIVITY IN MAJOR FASHION

The transition phase of economic processes which began in the 1980s has been mainly supported by new technologies which impacted society at a pace never experienced before. Internet and social media greatly contribute to the changes in the behaviour of economic actors along the production

and consumption lines. The principle of destructive creation described by Schumpeter in the last century provides a perfect explanation of how transition phases make the needed changes between two waves of sustained economic growth.

Although the destruction (or relocation) of units of production across the world is now well understood, the creation of new and innovative technologies still lacks conditions of stable and reliable financial resources, labour skills, and managerial entrepreneurship (Schumpeter, 1939). Heritage conservation is not separated from this destructive creation challenge, for the obvious reason that nature of the cultural heritage is to allow the transition between periods of time. Today, the reuse of the built heritage is a modern form of making the Schumpeterian principle of destructive creation a soft transition towards lesser growth and sustainable development. In other words, sustainable conservation (based on the 4-pillar paradigm) is an example of sound transition: stimulation of creativity for keeping the old built fabric and making new urban and rural uses which are better integrated in the environment (Hangzhou, 2013). Heritage conservation is the perfect laboratory for implementing creative solutions that relies both on the past and on the future: virtual techniques to compensate for the pressure of mass tourism, better conservation with advanced non-invasive techniques, etc.

### 3.4 COPING WITH GROWING UNCERTAINTIES

The nature of long economic waves is about recurring uniqueness. Some phenomena appear on a recurrent basis, but always in an innovative way. It has been acknowledged from the pioneers of long-waves theory (Kondratiev, Van Gelderen, Simiand, Léon-H. Dupriez) that the turning points reveal situations of uncertainty, crisis, and opportunities. Such transformations embedded in a trend of continuing values is also what we have learnt from the narrative of cultural heritage. Always the same, and always different.

Since the 18<sup>th</sup> century, technological revolutions have created disruptions to economic growth, social and political stability (the industrial heritage is indeed the legacy of such turbulent technological moves which have impacted things far beyond the field of economics). Each of these revolutions has changed the people's lives, everywhere in the world, in all areas of life. These transitions create the nest for uncertainty and eventually may generate deep economic and financial crises, social unrest, political turmoil, but also global conflicts as analyzed by Wagemann and Bernstein (Dupriez, 1986). The fact that Kondratiev "breaks" coincided with wars on global scale (1850, 1873, 1914, 1940) has been established through the movements of production and prices. The last time was in 1940-45, which ultimately paved the way to a rebirth of heritage conservation in Europe. More recently, world tensions and environmental problems "posed the threat of future civil and international conflicts, linked in particular to shortages and induced migration" (Coulomb, 2006). Today, the war against the Covid-19 virus could to be this war (Ost, 2020).

As a starting point of critical thinking, the current situation of digital revolution and environmental awareness will permanently change the world we live in, and the sanitary crisis is about to change our social and cultural behaviors too. No doubt that the urban and rural cultural heritage, so connected to livability and well-being, is about to play a major role in such context.

## 4 CONCLUSION

Heritage conservation deals with keeping values for further generations. Given the definition of the heritage as cultural capital, and of conservation as an investment process, the aim of conservation is to keep a unique capital that can provide many cultural, social and economic values in the future and in a sustainable way. Such allocating process of unique resources becomes today a strategic opportunity to address the sustainability challenges.

In a context of globalization and economic structural transitions (whose timeframe extends the current short-term vision by large), the cultural heritage in particular in urban context are in the front line of this evolution. Global region cities become the focus of cultural industries, tourism destinations and related institutional innovations. Cultural, social and economic dimensions interconnect to create complex networks of growth opportunities. Large global region cities such as New York, London, Paris, Tokyo or Shanghai are becoming major "cultural hubs", with strong implications in terms of cultural leadership, demographic issues, mobility and regional development.

Historic cities are blessed to possess heritage capital of both cultural and economic values, with potential for growth. Urban historians do not exclude the fact that cities have been shaped by long-wave framework, with ups and downs, threats and opportunities. Although the conservation of historic cities is a relatively modern concept, it is assumed that a balanced development between heritage conservation and modern development remains a key-factor in the success or the failure of world major cities. Thus, the challenge faced by historic cities is not separated from the global economic and sustainable challenge.

Key factors in modern industries do not rely anymore on geographical conditions. The immovable cultural heritage is attractive for new residents, new businesses, new investors, and new visitors. Compared with the industrial revolution, the current transition phase is a global one. While in the past only fortunate cities or regions were benefiting from and monopolizing most of the opportunities and resources, today any place is able to build strategies for attracting high-tech companies and new technologies based on their local cultural and immovable resources, because of potential liveability, quality of live, and social cohesion, which is typically needed in the current transition phase of economic and social changes.

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# Dutch Hybrid Neighbourhoods of the Late 19<sup>th</sup> Century in Heat Transition

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## **Abstract**

*This paper explores the typo-morphologic characteristics of late 19<sup>th</sup> century hybrid neighbourhoods in urban region of The Netherlands and possibilities of a feasible climate neutral energy system in the future. Sustainable Development Goals are involved such as ensure access to affordable and clean energy (SDG 7) and make cities inclusive, safe, resilient and sustainable (SDG 11). With the Dutch-Climate-Agreement 2019 The Netherlands decided on a neighbourhood approach to the transition from natural gas to a climate neutral energy supply in buildings. Implicit homogeneity in most buildings of neighbourhoods is presupposed, in contrast to older neighbourhoods that were laid out before WWI. These are nowadays heterogenic, attractive, mixed and often protected neighbourhoods because of the quality of the architecture. Establishing a generic energy plan here is a challenge. The foremost important conclusion is the recognition of the architectural and urban quality and features of these kinds of neighbourhoods and to develop specific legislation and rules about insulation, service and energy systems. Conclusion about the strategy is that one should not rely on a single generic solution but apply multiple forms of heat supply over a longer period of time. There is lack of heat and construction capacity. And in inhabited state and combine it with a box-in-box-renovating, for example when people are moving. Organise the tenants of neighbourhood, not buildings owners, and implement legislation and framework for rental apartments; insulate to mandatory EPC label (B/C), sound and energy production of heat pumps and district heating.*

## **Keywords**

*Hybrid neighbourhood, energy transition, heritage.*

## **1 INTRODUCTION, RELEVANCE AND AIM OF THIS PAPER**

With the Dutch-Climate-Agreement 2019, The Netherlands chose for a neighbourhood approach for the transition from natural gas to a climate neutral energy supply of buildings (<https://www.klimaataakkoord.nl/>). Dutch municipalities should have a vision on the heat transition and an energy plan for every neighbourhood by 2021. Implicit homogeneity of neighbourhoods is presupposed. However, the older neighbourhoods are different, especially the ones which were laid out before WWI. These are nowadays heterogenic, attractive and often protected because of the quality of the architecture. Neighbourhoods with a mix of users, building ages, property owners and habitation forms. Developing a generic energy plan for neighbourhoods laid out and constructed between 1860 and 1910, is a challenge. There is a missing link in the knowledge. The link between the bigger scale of region and municipality on one side and the smaller scale of different types of buildings on the other side is missing. From the perspective of heat strategy it is necessary to map the typo-morphologist characteristics of these neighbourhoods and researching the use and inhabitation form of the buildings.

The aim and the main question of this study is to research a framework or strategy for a feasible climate neutral energy supply of the housing stock of late 19<sup>th</sup> century hybrid neighbourhoods in urban region of The Netherlands based on the typo-morphologic characteristics. Sub-questions are:

What are the typo-morphologic characteristics of urban spaces and building stock? What is the use and ownership of these buildings? Which climate neutral heating or energy systems are possible in hybrid neighbourhoods?



FIG. 1 Zeeheldenkwartier 1970, photographer: Jaap Rijkenberg.  
Source: Mediabank: Haags Gemeente Archief HGA identification number 0.87668



FIG. 2 Zeeheldenkwartier. Top left: a map with the situation in 1867. Top right: the map from 1884. Bottom left: the map from 1891. Bottom right: the map of 1908. Source: Mediabank: Haags Gemeente Archief HGA identification numbers z.gr.0024, z.gr.0031, z.gr.0048, gr.0535

The method applied was a living lab in the neighbourhood initiated and subsidized by the municipality and minor with students of The Hague University of Applied Sciences in autumn 2018. Mapping the typo-morphologic characteristics of the neighbourhood and buildings in 2019 of one case: Zeeheldenkwartier in Den Haag. Reviewing literature and reports on this subject from the Municipality of Den Haag, the province Zuid-Holland, the Dutch government and institutes such as CBS (Statistics of The Netherlands CBS; statistics of Municipality of Den Haag; Warmte Transitie Atlas of Zuid-Holland; Nationale Energie Atlas; Warmte Atlas of RVO; and references renovation of the existing housing stock RVO). Finally debate and reflection with expert meetings in the neighbourhood in 2018 and LDE Conference Heritage and the Sustainable Development Goals at TU Delft in 2019.

## 2 FRAMEWORK OF A TYPO-MORPHOLOGIC ASSESSMENT

Changes in society and precipitation in typo-morphologic characteristics of neighbourhoods from a specific period is postulated. The hypothesis is that cities and neighbourhoods have an ontology that refer to their own built structure in each period. Additionally, the pattern of inhibition is usually related to the specific characteristics of a neighbourhood. Changes in the built environment happen in a broader perspective in relation to changing legislation, subsidy, central policy or lack of governance. This is why each generation neighbourhoods in modern Dutch cities since 1850 has its own specific characteristics. In the last part of the 20<sup>th</sup> century the ontology of cities developed as a valuable tool and method to provide knowledge about existing cities, neighbourhoods and their buildings (Rowe, 1960; Vidler, 1976; Moudon, 1994). Typo-morphology gives attention to how the physical form of a city changes over time and to how different cities or neighbourhoods compare to each other. According to Rowe (1960), people form mental maps of their surroundings consisting of five elements: 'paths', 'edges', 'districts', 'nodes', and 'landmarks'. These elements are also useful to characterise neighbourhoods. At Delft University of Technology, the method of typo-morphology was introduced in the eighties of the last millennium. The research was based on reducing maps and drawings on aspects or layers. Urbanists of Delft University of Technology distinguishes five layers: territory, street pattern, public space, use and buildings (Meyer et al., 2008). But which typo-morphologic characteristics of a neighbourhood are relevant in relation to the energy question? As mentioned, a premise is that every neighbourhood in a certain period has a recognisable and regular structure. The structure is determined by the urban morphology, the characteristics of the buildings, urban spaces, and the types of households that inhabit the dwellings (Oorschot, 2014). The energy question is, among others, related to the typo-morphology of the neighbourhood. Because of the space that is needed by the heat network the seize of the urban spaces of the neighbourhoods is relevant. Because the use of solar panels the shape of the roof is relevant. Because of the energy demand the quality of the built structures is relevant. Some characteristics are determined by the original lay out of neighbourhoods and buildings such as street pattern, size and orientation of urban spaces, size and orientation of the plot, division private property and public domain, position of building types and functions in the neighbourhood, as well as the quality and status of buildings (ownership, architecture, bearing structure, energy performance, shape of the roof). Other characteristics depend on the structure and morphology of the landscape, inhabitation or the architectural value. Furthermore, characteristic for neighbourhoods is the position of certain functions and types of buildings in the neighbourhood. According to the energy question the position of types and functions of buildings are mapped and researched in this assessment. The layers related to the energy question in late 19<sup>th</sup> century neighbourhoods are mapped: Morphology; Buildings types; Use of the building; Ownership of the buildings.

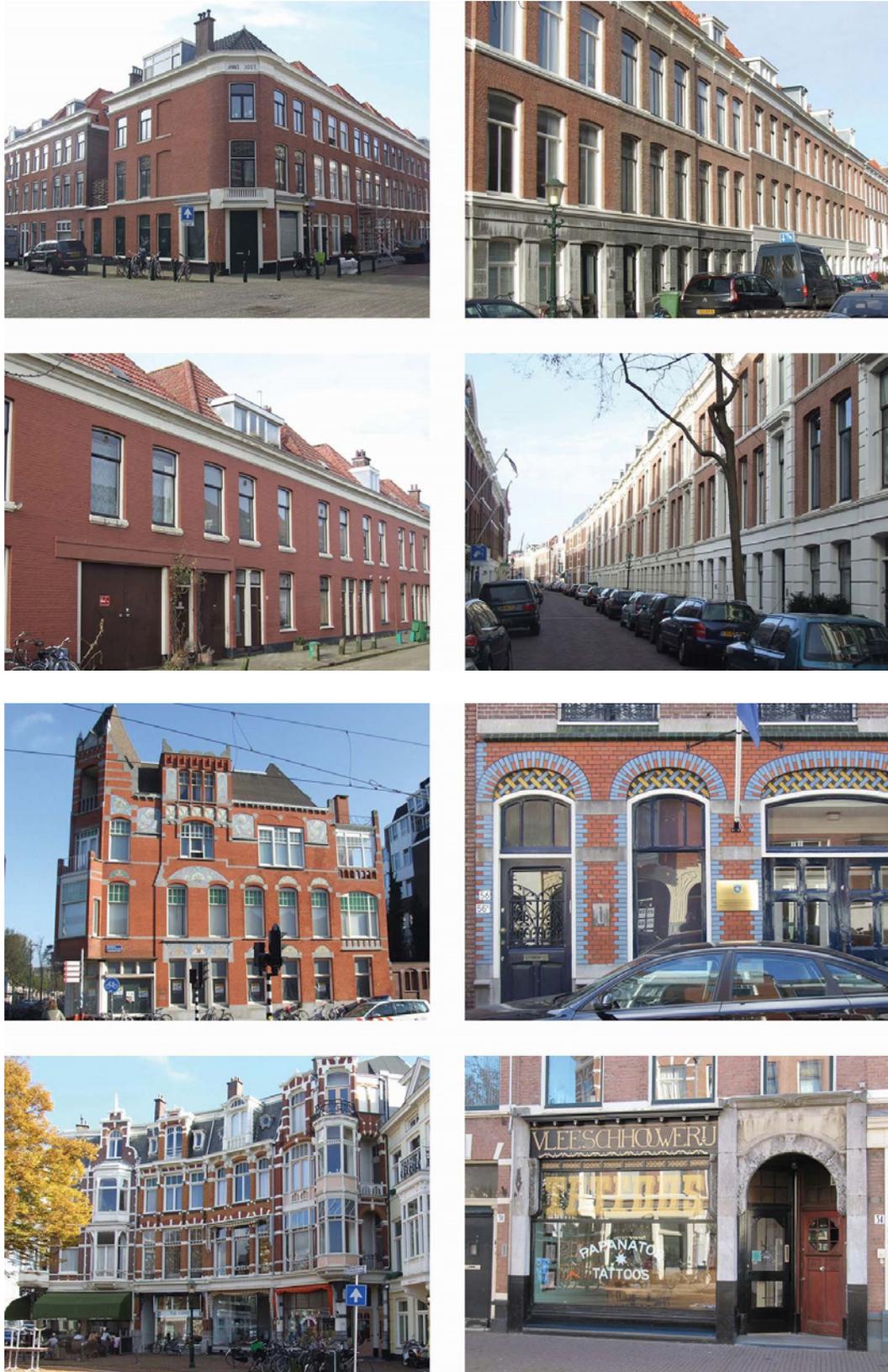


FIG. 3 Hybrid neighbourhoods have a great variety of brickwork residential architecture. Residential buildings are usually in eclecticism style, public buildings in Dutch neo renaissance, and the shops in beautifully designed fin de siècle architecture. Photographer: Leo Oorschot.

### 3 ENERGY SUPPLY IN LATE 19<sup>TH</sup> CENTURY NEIGHBOURHOODS

This section describes the possibilities of a climate neutral energy supply in general and more specific in 19<sup>th</sup> century neighbourhoods in Dutch city regions. What is the Regional Energy Strategy (RES) of the biggest region of The Netherlands: *Energiestrategie Regio Rotterdam-Den Haag*? In the Green Deal Warmte Zuid-Holland in 2011 is decided by the government and province Zuid-Holland to lay out an open district heating with industrial waste (WfE) from Rotterdam and geothermal heat as source. Also housing association in Den Haag have a deal with the municipality about the district heating of 70-degrees Celsius. With the Aedes Woonagenda 2017-2021 housing associations promised to have climate neutral housing stock by 2050 and have an average of EPC label B of their housing stock by 2021. According to the Dutch climate agreement of 2019, in areas laid out before 1995 with a high density of buildings, a heat network is favoured in densely built areas, while all-electric for new homes in new spacious districts is better.

The Expertise Centrum Warmte (ECW) was organised by several Dutch institutes and organisations to support municipalities on producing a vision and implementing the heat transition (<https://www.expertisecentrumwarmte.nl/>). Offering a guideline, tools and helpdesk they advise municipalities. They describe five strategies how to provide heat in the future: All electric with a heat pump (EPC label B, LT-heating is assumed); Heat network MT (70-degrees Celsius, EPC label C is assumed); Heat network LT (50-degrees Celsius, EPC label B, LT-heating is assumed); Renewable gas (bio, synthetic, hydrogen) with a hybrid heat pump; Renewable gas with a boiler.

According to the Dutch province of South Holland in the *Energiestrategie Regio Rotterdam-Den Haag* in 2018 there will be a shortage of electricity and surplus of industrial waste and geothermal heat in the future. Data centres, electric cars, and greenhouses of the Westland will demand exponentially more energy in the future.

In July 2019 the province of South Holland published the *Energieperspectief 2050 - Energiestrategie regio Rotterdam-Den Haag*. This document defines the preferences of reduction of fossil heat of the region Rotterdam-Den Haag. Firstly, insulation of dwellings (EPC label C or B), secondly use of industrial waste heat (WfE) from Rotterdam, thirdly use of geothermal energy (GSHP), fourthly individual heat pumps, fifthly bio gas and bio mass. The regional and open heat network of 70-degrees Celsius is considered the best solution to provide heat in Rotterdam-Den Haag, even though the question of ownership and the cost for the consumer are still problematic. The minister Eric Wiebes of economic affairs and climate recently announced that the Gasunie is going to develop, lay out and manage a public and open district heating transport network in the region of Rotterdam-Den Haag in the future.

The Municipality of Den Haag already developed several strategies and agreements with stakeholders for a 70-degree Celsius heat network in 2017 and 2018 (<https://denhaag.raadsinformatie.nl/dossiers/27532>). A report by the municipality in March 2019 on a conference explained that the heat network will have three main heat sources: industrial waste energy (WfE) from Rotterdam, local geothermal energy (GSHP) and local aquathermal energy (WSHP). The municipality also appointed a number of pilot neighbourhoods to work with stakeholders on a heat plan. Two of these are hybrid neighbourhoods. The municipality categorised these hybrid neighbourhoods as 'innovation' instead of 'heat network' or 'all electric'. However, the municipality categorised them also as 70 degrees Celsius neighbourhoods because of the poor thermal quality of their old buildings. The municipality presupposes in their publications more and different solutions to provide heat in the future because of a capacity problem. There is not enough capacity to heat all the dwellings. Hybrid neighbourhoods are still an anomaly.

Some assessments are already made in late 19<sup>th</sup> century neighbourhoods. All cost is taken into account with a Total Cost of Ownership TCO assessment. In a more or less similar neighbourhood Statenkwartier from the period 1890-1910 in Den Haag the consultancy DWA did a TCO assessment about the possibilities of climate neutral heat supply in relation to existing building stock, they did energy and renovation calculations on three reference houses which were similar as the houses in the Zeeheldenkwartier (DWA, 2020). The method that is applied is based on the Vesta-MAIS-spatial-energy-model by the Planbureau voor de Leefomgeving PBL. To levels of renovation/energy are assumed: measures A with EPC label C and the more expensive measures B with EPC label B. The current situation is a central heating of 90-degrees Celsius and no energy measures at all. They conclude that there are just five possibilities: (a) Heat network MT (70-degrees Celsius) (EPC label C is assumed); (b) Heat network LT (50-degrees Celsius) (EPC label B and LT-heating is assumed); (c) Renewable gas (hydrogen) with a boiler; (d) Mix option a and c; (e) All electric with a heat pump and air as source (EPC label B and LT-heating is assumed). Their conclusion was that option a is the most affordable and option b, c and e the most expensive. But option a (like option b and d) needs collectively and urban space to lay out the heat network.

Another assessment is about the neighbourhood Theresia in Tilburg from the period 1850 to 1930 by consultancy CE-Delft. They applied another method to calculate the TCO: the CEGOIA-model (CE Delft, 2019). They conclude that there just four option: (a) All electric with a heat pump and air as source (EPC label B and LT-heating is assumed); (b) Renewable gas with a hybrid heat pump; (c) Heat network MT (70-degrees Celsius) (EPC label C is assumed); (d) Heat network LT (50-degrees Celsius) (EPC label B and LT-heating is assumed). More or less the same options as ECW and DWA. The best business case is option b and c. The problem with renewable gas is the availability. The problem with the heat network is the lack of collectively and the cost and complexity of a secondary network in a dense built neighbourhood with narrow streets.

On a conference about the energy transition on 2019 June 29 the municipality Den Haag mentioned some poor options for all neighbourhoods like energy from the sewer system, biogas, synthetic gas or hydrogen. These are not very likely options according the municipality. For example, 5,000 connections to the sewer system would be needed to heat 100 houses in wintertime. For biogas, synthetic gas or hydrogen there will be capacity and logistic problems if the existing natural gas pipes are used. Two other ineffective options in the hybrid neighbourhoods of Den Haag are either the heat pump with soil or water as energy sources. The problem is the lack of open terrain and water because of the dense proximity of the buildings, facades on the building line, and all of the courtyards being private property.

The two most likely options for providing climate neutral energy to a hybrid neighbourhood is a mix of a collective open secondary heat network MT (EPC label C is assumed) and the more expensive individual all electric with a heat pump and air as source (EPC label B and LT-heating is assumed). The perspective for all neighbourhoods in the future as described for the province Zuid-Holland in: *Energieperspectief 2050 - Energiestrategie regio Rotterdam-Den Haag*. The energy question is now narrowed to what could be the framework within the two energy supply systems could be implemented in late 19<sup>th</sup> century neighbourhoods. For that reason the typo-morphologic characteristics of these neighbourhoods are relevant.

## 4 MAPPING THE TYPO-MORPHOLOGY: CASE STUDY ZEEHELDENKWARTIER

This section describes the general typo-morphologic characteristics of hybrid neighbourhood from the late 19<sup>th</sup> century. These neighbourhoods are found everywhere in the urban regions and are nowadays densely populated areas with primarily small units and households. Originally built as middle class neighbourhoods such as in Amsterdam with: De Pijp; Dapperbuurt; Oud-West (Helmertsbuurt, Da Costabuurt); Staatsliedenbuurt-Noordoost and Oosterpark. Rotterdam: Delfshaven; Nieuwe Westen; Middelland; Oude Westen and Agniesebuurt or in Den Haag Archipelbuurt, Stationsbuurt, Bezuidenhout, Regentessekwartier and Valkenboskwartier. As point out, related to the energy question in late 19<sup>th</sup> century neighbourhoods are the next layers mapped: Morphology; Buildings types; Use of the building; Ownership of the buildings. As case study the Zeeheldenkwartier Den Haag is assessed on these four layers.

### 4.1 MORPHOLOGY OF A LATE 19<sup>TH</sup> CENTURY NEIGHBOURHOOD

As Figs. 1 and 2 shows traditionally the public domain and private property are clearly separated by the building line. Facades are built on this building line. The buildings and court yards are private property and the streets belongs to the municipality. The first roads in these neighbourhoods generally followed ownership of strip fields and waterways and morphology of the landscape. The width of building plots is the traditional size of 6 to 8 meters and the depth of the plot is related to the distance between the ditches, depth of the building is usually between 11 and 12 meter with often an extension at the back side. Entrepreneurs (Bouwgrondmaatschappij) usually owns one or more fields, lay out the street in the middle of a strip field and parceling the ground. Small contractors bought two up to ten plots to construct townhouses and sold them to the middle class. Inside the perimeter urban blocks were often small units for poor people who could not afford a townhouse with a front door to the street. The orientation of the streets is the direction of the old strip fields and pattern of canals and ditches.

There was some legislation on the size of the streets in relation to the height of the facade in the local Politieverordening but entrepreneurs had the possibility to change this by negotiating with the municipality. Usually townhouses are three storeys with a pitched roof and the street are about 10 meters. Sometimes streets are wider because of a streetcar, 14 or even 20 meters. Municipalities tightened legislation after 1887 on street plans and after the fin de siècle they began designing their own street patterns. Around 1890 roofs in Den Haag and Rotterdam changed to flat roofs. Later main roads were laid out along these neighbourhoods.

Occasionally an ideal street pattern was designed following examples of neighbourhoods in great European metropolises of the 19<sup>th</sup> century, street grids with a *ronde-point* in its centre and a monument. However, this was an exception in The Netherlands. The most abstract street pattern in these neighbourhoods is the deformed grid with perimeter blocks and neighbourhood enclosure streets between the main roads. Neighbourhood enclosure street are sometimes linear with a streetcar or a forming a cross and has a *ronde-point* in the center with monumental building, statue, fountain or small park. Public buildings are often found along main roads and shops are traditionally located along the crossing neighbourhood enclosure streets. Public buildings are often found along main roads on the edge of the neighbourhood and shops are traditionally located along the neighbourhood enclosure streets. Often these two types of streets were connected to the older streets and roads that connect the neighbourhood to the city. Later, streets patterns became enhanced with the introduction of automobiles and urban renewal projects.

In the case of the Zeeheldenkwartier the edges of the neighbourhood along the canals and main roads were already constructed before the grid was laid out. Furthermore, streets patterns became enhanced with the introduction of automobiles. In the interbellum there was a monumental reconstruction of the Vondelstraat by the architect Berlage. Fig. 2 shows the irregularities of this abstract scheme.

There is a strong cohesion between the brickwork townhouses with pitched roofs and narrow streets, this is an important characteristic of late 19<sup>th</sup> century neighbourhoods. They give expression to the image of a neighbourhood (Oorschot, 2014).

Problems with a heat network are: Lack of urban space in the narrow streets for the secondary network, plants and storage capacity such as ecovat. It is possible but not easy and expensive; Risk of damage of the brickwork structure of townhouses when the network is laid out the narrow streets. A heat network is possible but not easy and expensive. Problems with all electric and heat pump are noise and vibrations in these dense neighbourhoods and the cost of the expensive renovation to EPC label B.



FIG. 4 Urban space. Source Leo Oorschot.

## 4.2 HOUSING TYPES OF A LATE 19<sup>TH</sup> CENTURY NEIGHBOURHOOD

By determining age and type of the housing stock (in relation to energy efficiency) the Agentschap NL & Ministerie van Binnenlandse Zaken en Koninkrijksrelaties (2011) developed a classification system of reference houses which is based on major changes in legislation. This periodisation is used by architectural historians and municipalities for various publications and is linked to important changes in society, which lead to change of legislation on buildings and urban planning. Important milestones in legislation on buildings are the local *Politieverordening* of the 19<sup>th</sup> century, local *Bouwverordening* 1905-45, *Bouwverordening* 1946-1991, *Bouwbesluit* 1992-2020 and *Besluit Bouwerken Leefomgeving* 2021.

Types of houses are related to de kind of neighbourhood, size of the plot, construction period and legislation at that time, the used materials, shape of the roof and way of inhabit the house. Original construction period of different buildings. Periodisation is often linked to great changes in society such as world wars and change in the electoral system. These events lead usually to a change of legislation and building culture. The hybrid neighbourhoods of the late 19<sup>th</sup> century usually comprise buildings from the period 1870 to 1910, the period that the process of suburbanisation and city forming started in The Netherlands, although there was some urban renewal in the period 1965 to 1984. The townhouses have brickwork load bearing masonry construction and facades, and a pitched roof. The urban renewals have concrete load bearing construction, wooden floors and flat roofs. Morphology of the neighbourhood and its buildings is important to determine whether there is room for a heat network or flat roofs for PV(T) panels or whether the inner areas are public or private with space for a heat pump. Buildings from the period 1860-90 usually have pitched roofs and buildings after 1890 also have flat roofs. The urban renewals and new public buildings also usually have flat roofs. Older public buildings such as churches and schools commonly have impressive roofs. There are possibilities for PV(T) panels on the flat roofs.

Energy performance of the buildings in original state is EPC label F or G. After the discovery of a natural gas field in Slochteren in 1959, it was decided to lay out a national gas network. Between 1960 and 1965 central heating with natural gas boilers was introduced in residential buildings and became a standard for all houses by 1967. For the first time in 1975 heat resistance ( $R_c$ ) for facades and roofs of  $\Rightarrow 1,29 \text{ m}^2\text{K/W}$  was demanded. Most old townhouses in hybrid neighbourhoods were constructed in the period of the local *Politieverordening*. The most townhouses and urban renewals in the Zeeheldenkwartier are heated with natural gas boilers and an hydronic heat distribution system of 90-degrees Celsius to all parts of the dwelling with radiators in each room, some still have gas heaters.

Architectural value of buildings and urban ensemble is usually well protected by the municipality. The neighbourhood zoning plan of most hybrid neighbourhoods is based on maintaining existing buildings. Furthermore, these neighbourhoods are often designated areas by the municipality because of their architectural and urban value. This means that only a box-in-box-renovation is allowed to have a more energy efficient building, and no heat pumps on the facade on the street side. Furthermore, residents are proud of their neighbourhood with its architectural quality. Next to the zoning plan and the periodisation is the architectural valuation of the buildings in the area. Townhouses are usually not listed by the municipality because of their architectural quality. Only public buildings in the neighbourhood are municipality-listed and some are nationally-listed as a building with an architectural value (Oorschot, 2014).

Because the quality and variation of facade architecture and ownership a box-in-box-renovation of the individual houses is recommended. As point out, with heat supply are two options the collective heat network MT (renovation to label C) and the individual all electric with heat pump (renovation to label B). On the flats roofs PV(T)-panels could be applied. In the gardens and on the flat roofs heat pumps are possible (Oorschot et al., 2018; Oorschot et al., 2019).



FIG. 5 Periodisation of the buildings. Source Leo Oorschot.



## 4.4 THE OWNERSHIP OF THE HOUSES

The old townhouses are usually privately owned and urban renewals are usually rentals from housing associations. The traditional Dutch down-up-townhouse with a ground and an upper floor apartment (beneden-boven-woning) and a front door directly on the street was designed in the 19<sup>th</sup> century as a divided townhouse and it is usually private owned. However, data provided by CBS shows that many private owned townhouses were divided into three or four small apartments for rentals (so called 'buy-to-let') (<https://cbs.nl/>; <https://allecijfers.nl/>). According to the CBS about 80% of the landlords own just one house. A hybrid neighbourhood such as the Zeeheldenkwartier is 62% private rental and 90% of the dwellings are apartments. Just 10% are real townhouses and 16% is uninhabited. Usually young inhabitants and small households are living in small apartments of the divided townhouses.



FIG. 7 Map Ownership of the Buildings. Source Leo Oorschot.

## 5 DEBATE AND REFLECTIONS

A Living Lab Zeehelden was organised five expert meetings for the Zeeheldenkwartier in the autumn of 2018 and LDE Conference Heritage and the Sustainable Developments Goals at TU Delft was attended in 2019. The expert meetings comprised a number of lectures and debates about providing climate neutral heat in the Zeeheldenkwartier. Scientists from the TU Delft, civil servants from the municipality, specialists from consultancies, corporations, energy companies, housing associations, frontrunners of other neighbourhood organisations dealing with the energy transition, and residents of the Zeeheldenkwartier were all present. The first lecture was given by emeritus professor Kees Duivesteijn and the last one by alderman Liesbeth van Tongeren. Several issues were addressed at the living lab and conference, results of the debates are:

- Narrow the problem and insulate the dwelling with a box-in-box-renovation, EPC label B (heat pump) or C (heat network);
- Narrow the problem to the base load heat/cool of demand and not the peak load, provide the peak heat load by a centrally regulated electricity network or renewable gas;
- Narrow the problem and leave usage of household energy outside the neighbourhood energy plan. Behaviour of people and size of households are of great importance for the heat demand. However, this has no relation to the type of neighbourhood;
- Due to a lack of heat capacity mix different climate-neutral heat systems; do not choose one heat supply for the entire neighbourhood. Make use neighbourhood characteristics such as building types and positions. Combine central, local heat networks and all-electric solutions;
- Due to a lack of construction capacity (of service systems), spread the energy transition over a longer period of time and apply an integrated box-in-box-renovation. Quality improvement, energy reduction, and a new heat supply for the dwelling could be combined. When a house changes ownership, it could first be renovated in uninhabited state. In addition, continual technical and material innovations make the energy transition of buildings even more efficient in the future;
- Because of the impact on the living environment and quality of the buildings in the different neighbourhoods the municipality should coordinate and facilitate the energy transition in each neighbourhood and develop a clear framework and legislation on heat networks, heat pumps, PV(T)-panels in relation to the typo-morphology of the neighbourhoods.

## 6 CONCLUSION

The aim of this study is to research a framework for a feasible climate neutral energy plan for hybrid neighbourhoods of the late 19<sup>th</sup> century in the urban regions of The Netherlands. The two best options of heat supply in are a heat network MT (with industrial waste energy from Rotterdam, local geothermal energy as energy source in the province Zuid-Holland) and all electric with heat pumps (with air as heat source). The typo-morphologic characteristics of these neighbourhoods are a deformed grid based on old strip fields between main roads. Along the mains streets the public buildings. The neighbourhood had enclosure streets (often with streetcars) with shops and narrow residential streets with townhouses with the façade on the building line. Public spaces are rond-points in the centre or squares with public buildings. The perimeter urban blocks are closed and have private courtyards. The townhouses are varied from 120 to 240 m<sup>2</sup>. There are three variations: a townhouse as one dwelling, a townhouses with a unit on the ground floor and a unit the first and second floor. A townhouse that is split in three or four units. The urban renewals are usually apartments. The households are small and the most residents of the neighbourhood live in rental units in split townhouses. The best strategy is that individual townhouses need an integral box-in-

box renovation aiming at EPC label B (heat pump) or C (heat network) in uninhabited state and over a longer period. The urban renewals of housing association could apply the heat network. Also public buildings such as schools and institutes, and buildings dealing with healthcare along the main roads. Air-water-heat pumps could be applied in the better insulated houses that already have a central heating system. Air-air-heat pumps could be applied to small apartments in the split houses. Some general recommendations to municipalities are therefore:

- Develop rules for the aesthetic fitting of all elements such as PV(T)-panels, energy roofs, heat pumps, heat stations, and on insulation that could damage the architecture of the neighbourhood.
- Take initiative in organising energy cooperatives of users and not building owners. Unburden tenants and residents who do not know what to do.
- Plan and implement legislation and a framework for:
  - Insulate to mandatory EPC label B or C of rental unit;
  - Sound and vibration of 40dB (A) of heat pumps;
  - Heat production in summertime by heat networks and heat pumps because of heat stress.
  - Damage to the old brickwork buildings with the layout of heat networks.
  - Due to a lack of heat capacity, mix different climate-neutral heat systems.
  - Due to a lack of construction capacity (renovation and service systems), spread the energy transition over a longer period of time and apply an integrated box-in-box-renovation.

### Acknowledgment

This paper is an output of the science project Living lab Zeeheldenkwartier and was financed and supported by the Municipality of Den Haag. Thanks to Johan Noordhoek of the sustainability department of the Municipality of Den Haag and the members of the Living Lab and the LDE Conference TU Delft for comments on the draft of this paper.

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# Adaptive Reuse of Cultural Heritage in Amsterdam: Identifying Challenges and Solutions through the Historic Urban Landscape Approach

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## Abstract

*The conservation of cultural heritage through its adaptive reuse contributes to the transition towards circular cities enhancing urban liveability and tackles challenges such as resource scarcity (UN SDG target 11.4) and waste prevention (UN SDG target 12.5). By regenerating heritage resources and maintaining their values over time, adaptive reuse comes out as a circular practice that can boost wellbeing and create new values, e.g. spill over effects. Currently, the knowledge on challenges affecting cultural heritage adaptive reuse is limited in scope, geographical area, and stakeholders' contribution. This study thus seeks to address such limitations by identifying what challenges cultural heritage adaptive reuse entails and how to overcome them. This identification uses the steps of the holistic and integrated approach set forward by the 2011 UNESCO Recommendation on the Historic Urban Landscape. This study is based on a case study analysis entailing a workshop in the City of Amsterdam. A wide range of [46] stakeholders from the public, private, and civic sectors participated. The qualitative dataset was analysed through content analysis revealing that the identified challenges mainly concern the domains of knowledge, interest, and civic engagement. In sum, this study provides insights in cultural heritage adaptive reuse practices by enabling a better understanding of their challenges from multi-stakeholders' perspectives. This research also raises awareness on challenges and sets out the basis for further developing solutions and tools to overcome them facilitating the transition from a reactive towards a proactive attitude in adaptive reuse practices.*

## Keywords

*Adaptive reuse, Amsterdam, Challenge and Solution Analysis, Cultural heritage, Historic Urban Landscape approach.*

## 1 INTRODUCTION

The conservation of cultural heritage contributes to urban liveability while tackling global challenges such as resource scarcity and waste prevention (United Nations General Assembly, 2015). The conservation and management of heritage resources is a challenging task, entailing a wide range of methods and approaches to support it (Pereira Roders, 2019), including adaptive reuse (Machado, 1976 and Jessen & Schneider, 2003 in Plevoets & Van Cleempoel, 2012).

Cultural heritage adaptive reuse is "a strategy that extends the building's physical and social functions by giving the building a new purpose while conserving its historic and cultural significance" (Conejos, Langston, Chan, & Chew, 2016, p. 508). This practice aligns with circular economy goals by managing, transforming, and reusing heritage resources and related values to generate well-being (Ellen MacArthur Foundation, 2016; Homrich, Galvão, Abadia, &

Carvalho, 2018; Kirchherr, Reike, & Hekkert, 2017). Thus, cultural heritage adaptive reuse can bring positive impacts to both heritage conservation and sustainable urban development while preventing waste production.

Despite these potential positive impacts, the current knowledge on challenges affecting cultural heritage adaptive reuse is limited in scope, geographical setting, and stakeholders' contributing to their identification (Conejos et al., 2016). Therefore, the present study seeks to provide a baseline identifying those challenges and solutions to address them considering the City of Amsterdam, The Netherlands, as a case study. The data collection was carried out during the Historic Urban Landscape (HUL) workshop devoted to this investigation within the CLIC project ("Circular models leveraging investments in Cultural Heritage Adaptive Reuse"). A broader base of stakeholders was involved in this HUL workshop acknowledging the demands for participatory approaches in heritage management as suggested in policy documents such as the Faro Convention and the 2011 UNESCO Recommendation on the Historic Urban Landscape (Council of Europe, 2005; UNESCO, 2011b). Furthermore, the adoption of the HUL approach (UNESCO, 2011b) as a framework for the identification of challenges and solutions meant a holistic and integrated assessment of cultural heritage adaptive reuse.

## 2 METHODOLOGY

The identification of those challenges and their possible solutions is drawn from content analysis. The qualitative dataset analysed was collected during the HUL workshop held in the City of Amsterdam in 2018.

Participants to the HUL workshop identified challenges and solutions using an investigation framework based on the six steps of the HUL approach (HUL steps; Table 1) (UNESCO, 2011a).

HUL STEP SHORT NAME	HUL STEP DESCRIPTION	HUL STEP CODE
<b>Mapping</b>	Mapping natural, cultural, and human resource	HUL1
<b>Consensus</b>	Reaching consensus on what values and related attributes to protect	HUL2
<b>Vulnerability</b>	Assessing the vulnerability of the identified values and related attributes to change and development	HUL3
<b>Integrate</b>	Integrating values, related attributes, and their vulnerability in urban development framework	HUL4
<b>Prioritize or Prioritization</b>	Prioritizing actions for conservation and development	HUL5
<b>Partnership</b>	Establishing local partnerships and management frameworks for each of the actions	HUL6

TABLE 1 HUL steps used by the participants as a framework to identify challenges in cultural heritage adaptive reuse and possible solutions to them. Source: HUL step description adapted from (Gravagnuolo & Girard, 2017; WHITRAP; City of Ballarat, 2016)

Besides, the identification was performed as a multi-scale investigation focusing on Pakhuis de Zwijger for the site scale; the City of Amsterdam for the urban scale; and "elsewhere" to let participants contribute specifying other scales or contexts. Particularly, Pakhuis de Zwijger, a former warehouse run by a foundation member of the CLIC project, was chosen because it exemplifies a cultural heritage adaptive reuse implementing sustainable strategies.

A variety of backgrounds in terms of professions, disciplines, and provenance were represented in the HUL workshop allowing for a cross-disciplinary identification of challenges and solutions. Particularly, this workshop involved 40 participants coming from the public, private, and civic sectors, and 6 facilitators. Most of these participants were representatives of the Municipality of Amsterdam, NGOs, developers active within the City of Amsterdam, and national and international researchers, whereas some of them were practitioners. Facilitators were academics moderating roundtable discussion.

To gain a broad overview of the challenges and solutions, the HUL workshop was structured adapting the World Café method, i.e. group dialogues answering questions by harvesting the collective knowledge (Brown, Isaacs, & The World Café Community, 2005). This workshop started with a session aiming at circulating knowledge among participants about the City of Amsterdam and Pakhuis de Zwijger. Afterwards, the participants worked in teams to identify challenges and solutions, by focusing on one HUL step in each of the six rounds of roundtable discussion. During this discussions, 353 participants' contributions-validated by consensus among participants- were noted down by the facilitators constituting the data (hereinafter, contributions) analysed in the present study.

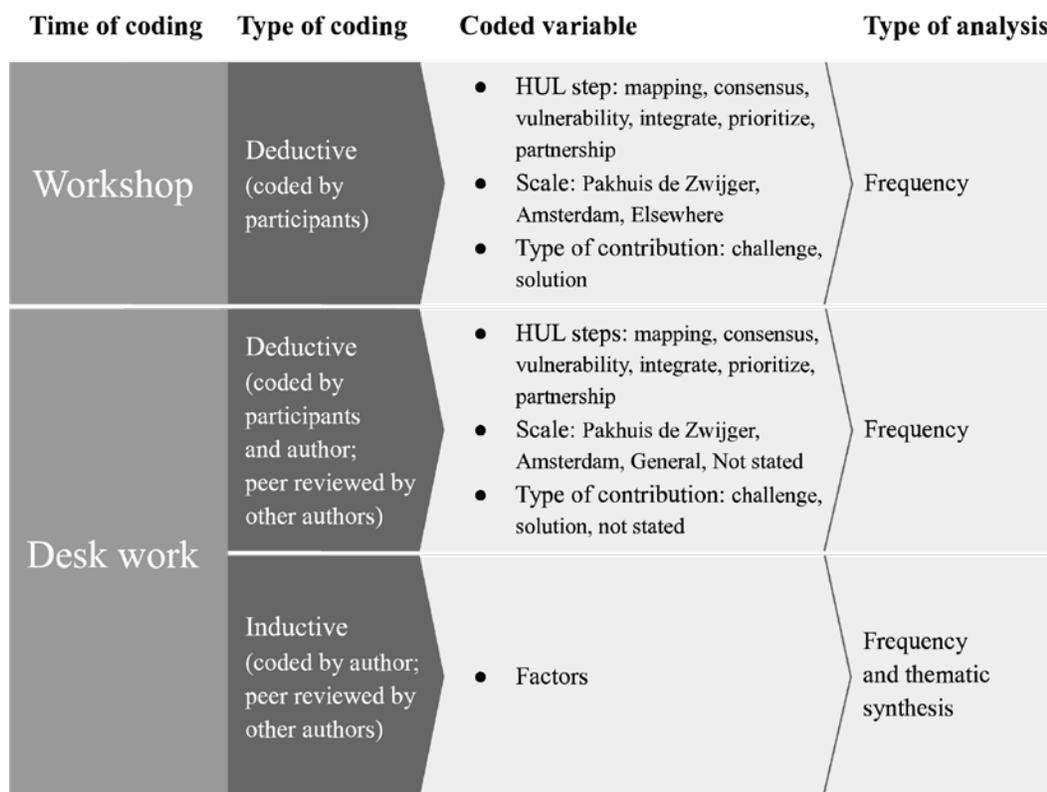


FIG. 1 Content analysis (Krippendorff, 1980): coding process and analysis techniques.

This qualitative sample was cleaned and prepared for content analysis excluding the contributions that miss to explicitly referring to a challenge or a solution. For example, "the fabric of the old City of Amsterdam vulnerable. challenges are: overcrowding by tourism (...)" was retained, whereas "tourism" was excluded lacking a characterization as either a challenge or a solution. In the end, a reduced sample of 249 contributions (hereinafter, dataset) was analysed. This dataset constituted the corpus of a manifest analysis with inductive and deductive coding as well as a frequency and thematic synthesis (Fig. 1) (Bengtsson, 2016; Krippendorff, 1980; Thomas & Harden, 2008). Particularly, the coding used in the HUL workshop was adjusted to better fit the data content. For instance, "not stated" was added to code the scale-missing contributions (Fig. 1). Once coded the contributions and identified the themes, the challenges and solutions were analysed within each theme referring to the HUL steps to reveal patterns.

Throughout the remainder of this paper, challenges and solutions are collectively indicates as "factors". Specifically, direct quotes from contributions are indicated through their identification number, therefore "c.208-HUL1" indicates the "contribution 208" mentioned while discussing the "mapping" step.

### 3 RESULTS

The analysed dataset includes at least the 56% of contributions per each HUL step, except for “integrate”. For this step, only 3 out of 35 contributions satisfied the inclusion criterion (see Methodology and Fig. 1). The dataset (n=249) is described per HUL step, type of contribution, and scale in Fig. 2. For the “mapping” (HUL1) and “integrate” (HUL4), challenges are slightly more numerous than solutions. Solutions predominate for the “consensus” (HUL2) and “vulnerability” (HUL3), whereas the number of challenges and solutions is almost even for the “prioritization” (HUL5) and “partnership” (HUL6).

In terms of scale, most of the contributions do not refer to a specific scale or are general (n=242): only the 3% of contributions explicitly refer to the City of Amsterdam and there is no direct reference to Pakhuis de Zwijger. Hence, in reporting the results, the reference to the City of Amsterdam is made explicit, whereas no distinction is made between the general and the “not stated” scale.

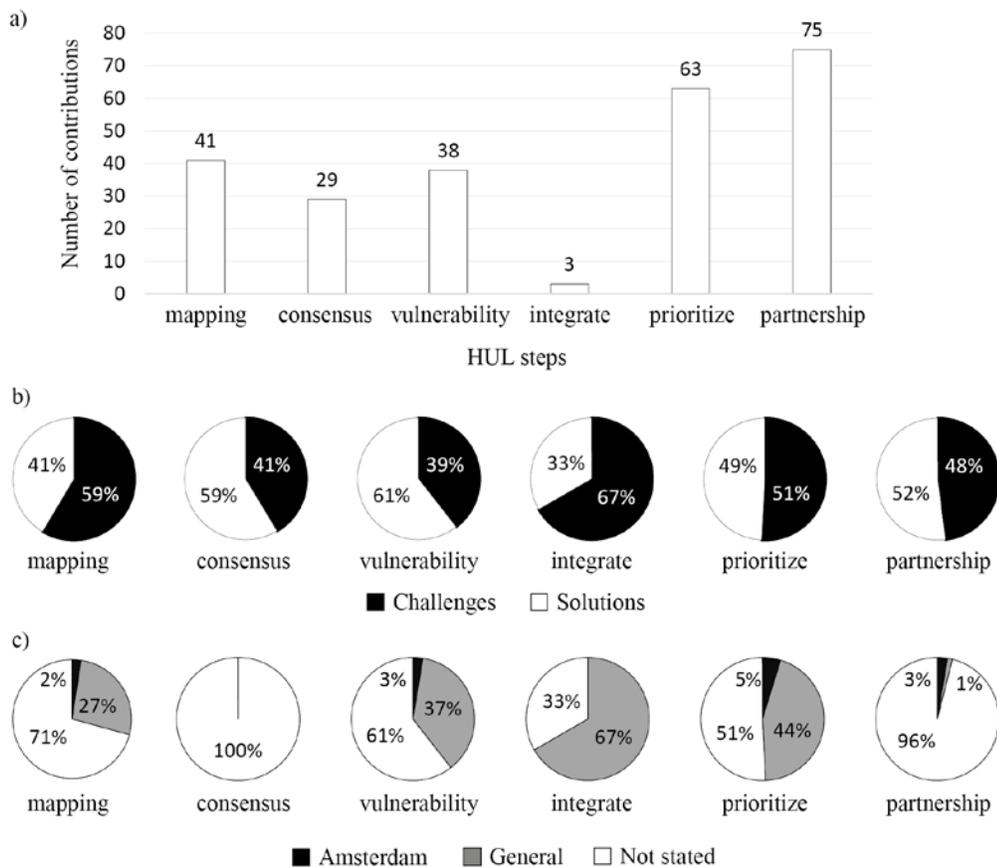


FIG. 2 Description of dataset analysed (n=249): distribution per a) HUL step; b) type of contribution per each HUL step; and c) scale per each HUL step.

To identify the factors, the dataset was inductively coded resulting in 61 themes (Fig. 3). The analysis revealed that the five most addressed themes refer to knowledge (n=28), civic engagement (n=24), interest (n=14), data (n=13), and approach (n=10). Factors related to civic engagement are associated

with the highest number of HUL steps, being identified in "mapping", "consensus", "vulnerability", "prioritize", and "partnership". Knowledge-related factors refer to "mapping", "consensus", "prioritization", and "partnership". Interest-related factors as well as approach-related ones affect "consensus", "prioritization", and "partnership". Data factors solely concerns "mapping". These five themes are described in more detail in the remainder of this section. However, relationship exist among these different themes independently from the type of contribution. For instance, the absence of interest is intertwined to challenges regarding civic engagement.

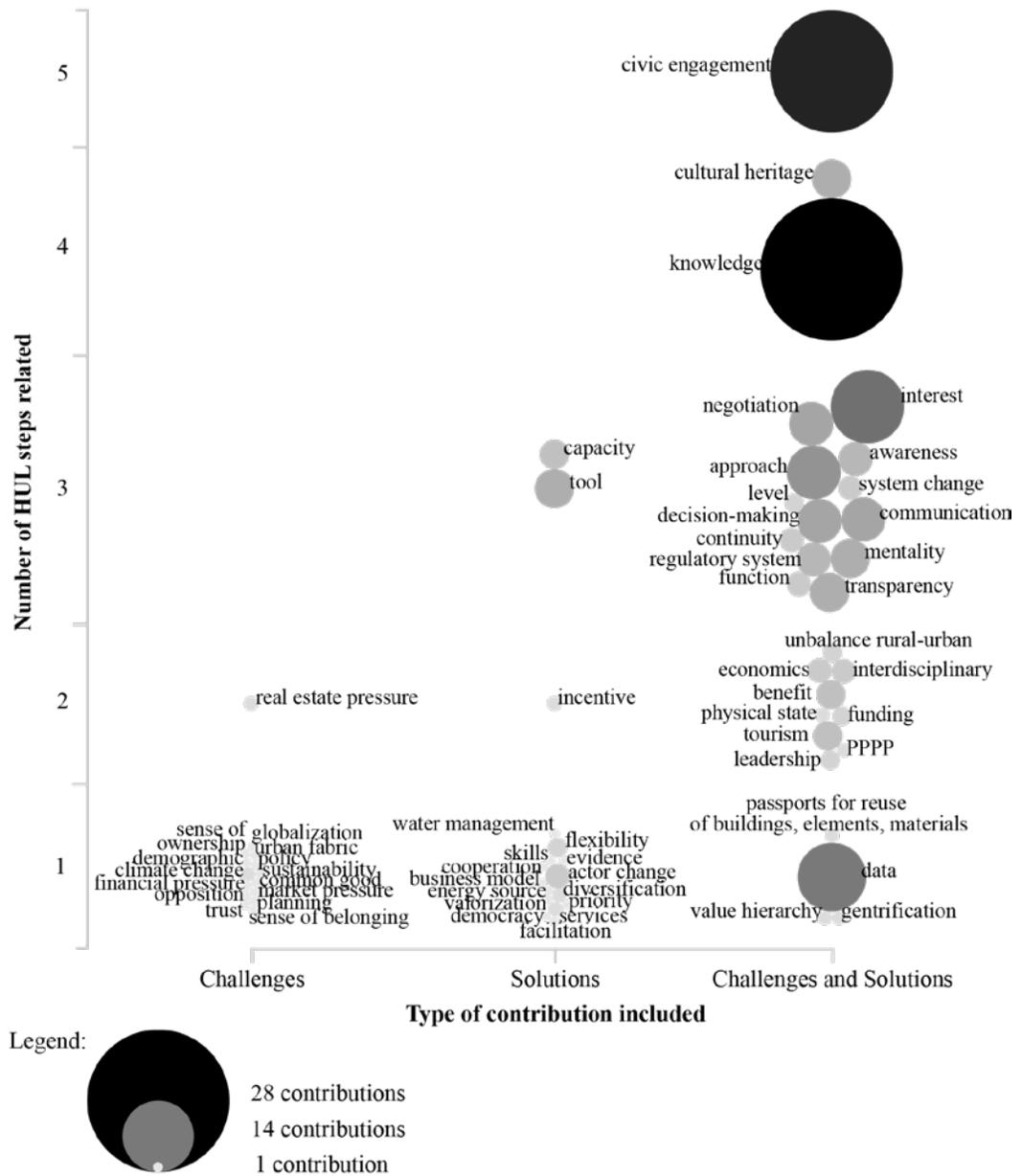


FIG. 3 Bee swarm plot of the factor themes representing their distribution per type of contribution included and per number of HUL steps in which they were revealed. The initial version of the chart was created using Rawgraphs.io

### 3.1 KNOWLEDGE

The knowledge theme refers to understanding of and information about cultural heritage, adaptive reuse, and their context. Overall, most of these contributions address “mapping” (n=19) independently from the type of contribution. Challenges mainly relate to lack of and access to knowledge, whereas solutions predominately refer to knowledge production and sharing. The lack of knowledge is reported for both tangible and intangible elements. At the tangible level, the absence of maps of vacant buildings is challenging both in general and within the City of Amsterdam (HUL1). At the intangible level, challenges are the lacking knowledge about values, perception, and needs of specific population groups, e.g. elderly and children (HUL1). Access to existing knowledge is challenging because of confidentiality issues (HUL1). Additional challenges are the time-consuming acquisition of information, and the knowledge gap between civic society and experts (HUL1). Over half of solutions concern knowledge production, acquisition, and dissemination also in terms of required tools to carry them out. For instance, to build a knowledge base, participants suggested “mapping the knowledge of society” (c.208-HUL1) and using roundtables, focus groups, perception data collections, and ICT tools. Knowledge is also lacking regarding opportunities and strategies for partnership creation. This challenge could be solved by producing and sharing knowledge on partnerships, for instance by “show[ing] good examples” (c.1238). Similarly, the knowledge-related solutions for prioritization refer to the dissemination of knowledge and best practices.

### 3.2 CIVIC ENGAGEMENT

These contributions mostly mention the participation of a broad range of related stakeholders, as described in the 2011 UNESCO Recommendation on Historic Urban Landscape (UNESCO, 2011, article 24). Overall, civic engagement is slightly more associated with solutions. Both challenges and solutions mainly refer to adopting and implementing civic engagement processes within cultural heritage adaptive reuse. The civic engagement-related challenges are highly varied: they span from the lack of time and resources for participation (HUL6) to the idea that civic engagement is a hindrance in reaching consensus for development projects. It is also mentioned as a challenge that politicians do not necessarily recognize the value of participation (HUL2). An additional challenge is the process of identification and inclusion of all stakeholders (HUL5). Similarly, referring to the city of Amsterdam, participants pinpointed that citizens' willingness to take part in processes of cultural heritage adaptive reuse is limited to the “well-educated (...)” (c1172 - HUL6). This entails a problematic low representativeness of the civic society's diversity (HUL6). Another challenge is the lack of interaction between cultural heritage and “citizens” associated with their lack of involvement in mapping. To tackle this challenge, participants suggested involving citizens in mapping processes and implementing such a strategy by employing ICT platforms (HUL1). Analogously, digital platforms were identified as solution to “(...) facilitate cooperation and empower the civil society” (c.1189 - HUL6). Along with these digital tools, solutions also include the allocation of participatory budgets dedicated to heritage to create partnerships (HUL6) and “storytelling perceptive methods” (HUL 5). Also, participatory governance is suggested as civic engagement to reach consensus and to prioritize.

### 3.3 INTEREST

Interest is a twofold theme. Firstly, this theme addresses the concern resulting into willingness to participate in processes of cultural heritage adaptive reuse. Secondly, the theme addresses either benefits or advantages from adaptive reuse, both foreseen and derived. Interest-related factors are mainly challenges indicated as lacking, conflicting, and prevailing interests of certain actors. Both these challenges are identified while discussing the processes of partnership creation (n=8) and building consensus (n=2). On the other hand, for "prioritization" (n=4), challenges solely relate to conflicting interests among actors and the dominance of some interests over others. For instance, the contraposition between the investors' interests and the ones put forward by communities and users (HUL5). Similarly, a divergence of interests was identified as a challenge for partnership as well as the "prevailing of external agendas" in attempting to reach consensus (c.392).

### 3.4 DATA

The data-related contributions completely focused on the mapping step, where two thirds of them mentioned challenges. These challenges predominantly relate to data management, mostly referring to already collected data. Data management presents issues at the level of interoperability and organization. For available data, challenges preventing their use are the lack of comparability among datasets, the lack of structure, and the fragmentation among different owners or people in charge. Furthermore, even once these fragmented data are collected, their merging is challenging due to its demand for "time and effort" (c.163). This fragmentation occurs at the local, national and European level. The only challenge identified for data collection is the adoption of an integrated approach while performing it. The suggested solutions mainly address the data management challenges by providing a framework for data acquisition and management; adopting a European standard to ensure data standardisation and interoperability; and using open data platforms that are interoperable and user-friendly.

### 3.5 APPROACH

Approach-related factors address the manners adopted in cultural heritage adaptive reuse. These factors, primarily solutions, are mainly identified discussing partnership (n=7). Such solutions advocate for a change in strategies and perspectives in favour of more collective and collaborative approaches. The only challenge concerns the competitive attitude within a sector hampering the creation of partnerships. Among solutions, participants pointed at favouring place making (HUL6) and sharing infrastructures, resources, and risk (HUL6). Particularly, sharing risks favours the creation of partnerships by decreasing the exposure of every single partner. Another solution mentions providing guidelines to change the decision-making approach to transformations brought by adaptive reuse (HUL6). Another suggestion has been the adoption of a business model perspective considering long-term investments and related returns of interests (HUL6). To build consensus, it is suggested a future-oriented approach and strategies based on "a common future instead of a common past" (c.380). In prioritization, solutions entail presenting "(...) heritage as an opportunity" (c. 996) and promoting self-management, -organization, and -government.

## 4 DISCUSSION

In literature, the existing knowledge on challenges encountered in cultural heritage adaptive reuse has either a highly specific or generic scope, (e.g. Conejos et al., 2016; Douglas, 2006). This knowledge is also often restrained to a specific geographical setting, (e.g. Bullen & Love, 2011; Conejos et al., 2016), such as Australia and Eastern Asia, or involves a limited variety of stakeholders in its production (Conejos et al., 2016). In this study, the methodology used to collect data addressed some of these limitations, and partially filled the gap on the European by context considering the City of Amsterdam as case study. This methodology incorporated the HUL approach, particularly the HUL steps, as a holistic and integrated framework to identify challenges and solutions. Furthermore, this identification was based on a participatory methodology, the HUL workshop, involving a broader and more varied spectrum of stakeholders. Hence, this study provides a baseline to inform actors, decision- and policy-makers about cultural heritage adaptive reuse challenges and solutions, mentioning 61 themes.. Particularly, it was found that the most identified themes for both challenges and solutions relate to knowledge, civic engagement, interest, data, and approach.

This finding differs from previous studies that often revealed design and technical aspects as well as “compliance with codes and regulations” (Conejos et al., 2016, p. 515) as challenges in reuse (Bullen & Love, 2011; Conejos et al., 2016; Douglas, 2006). These challenges are still present in our analysis, but less frequently and in a more general formulation than the ones found in previous studies. These results are likely to be related to differences in stakeholders, methodology, and geographical setting. Specifically, the process-oriented, holistic, integrated character of HUL steps might have broadened the participants’ focus partially shifting it from the design and technical aspects. In addition, this difference of thematic emphasis might also be explained by a growing interest in adaptive reuse potentially triggering the adoption of certain measures on design and technical challenges, thus they are less regarded as challenges as their solutions have been mainstreamed. At the same time, this difference might also reflect the evolution in the participants’ understanding of cultural heritage. For example, the increased discussion of civic engagement-related factors could be explained by the rising interest towards participatory practices within the context of sustainable urban development and heritage management (Li, Krishnamurthy, Pereira Roders, & van Wesemael, 2020). Moreover, this difference could also echo current changes in urban and heritage management approaches. For instance, overtime, cultural heritage is being recognized as having a role in sustainable development and circular economy.

To encourage an integrated and holistic reflection in identifying challenges as well as solutions, the researchers gave a framework constituted by the HUL steps, which were singularly addressed in each table discussion. This seems having broadened up the participants’ focus and drawn them to more process-oriented contributions, as discussed in the previous paragraph. However, the steps are sometimes intertwined and theme are cross-step, e.g. civic engagement. Hence, to stress the difference of thematic emphasis, the results were presented per theme and punctually related to the HUL steps. On one hand, this presentation reduces the impact of the fragmented use of the steps during the workshop. On the other hand, using the themes to report the results also allowed to cope with the bias derived from the inclusion of a minority of contributions about integrate in the analysed dataset. Furthermore, relations exist among challenges addressing different themes. The same interlinkage applies to solutions. Their fragmented reporting had been instrumental to their presentation. However, this interconnection advice for future approach of challenges as a united system and the same applies for solutions.

This study is a first step towards the creation of a baseline. The structure of the workshop allowed for a contextual validation of the results. However, since results depend on participants' reflections, it is advised to repeat the study. This repetition would allow to involve a higher number of stakeholders thus presenting results more generalizable for the City of Amsterdam. In addition, almost 75% of the contributions lack an explicit indication of a scale. This absence can be explained by the participants' implicit assumption of the scale since the data collection focused on the City of Amsterdam. However, while performing the explicit content analysis, the lack of a scale was assimilated to a general statement. On this regard, future research could confirm on the applicability of these contributions to either the City of Amsterdam or Pakhuis de Zwijger or both. Despite facilitated discussions, a certain degree of bias might be present. On the one hand, participants and facilitators might have had their own interests, some anchoring themes might have been addressed at length, and more active participants might have steered the discussion. On the other hand, participants' multidisciplinary and variety of background enriched the identification while introducing uncertainty in the use of technical terms and lay language. However, providing a glossary was discarded to avoid involuntary constrains on the identification. To account for these terminology issue, participants' wording was used as much as possible in reporting the results, e.g. "citizens" and "civil society". Also, terms afferent to the same domain were clustered, e.g. "community engagement" and "civic engagement".

## 5 CONCLUSION

This study contributes to building a baseline about challenges encountered in cultural heritage adaptive reuse proposing solutions to address such challenges. The analysis for identifying these factors was based on data collected in a participatory, multidisciplinary, and multi-scale fashion adopting the HUL steps as an investigation framework. The prevailing themes of the identified challenges and solutions relate to knowledge, civic engagement, interest, data, and approach. These findings expand the list of challenges identified in previous studies. Furthermore, different challenges and solutions are interrelated therefore it seems advisable to approach them as a unified system. By providing knowledge on challenges and solutions to actors, particularly the expanded overview of challenges identified using the holistic and integrated framework offered by the HUL steps, we support the transition towards proactive practices. This baseline informs decision- and policy-makers on the current state of the art of challenges improving assessments and informing future decisions and policies related to cultural heritage adaptive reuse.

### Acknowledgment

This work was performed within the framework of the European Union's Horizon 2020 research project called "CLIC - Circular models leveraging investments in cultural heritage adaptive reuse" which we thank. We gratefully acknowledge the help of Charlot Schans, Joey van Loo, and Carlijn Roovers of Pakhuis de Zwijger in organizing the workshop. We thank the participants of the workshop for contributing; Roelien van Steenberghe for assisting during the workshop; and dr. Gamze Dane, dr. Antonia Gravagnuolo, dr. Paloma Guzman Molina, and dr. Julia Rey-Pérez, for facilitating the round-table discussions together with APR and NP.

### Funding

This research project was funded by the European Union's Horizon 2020 research and innovation programme [grant agreement number 776758].

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# Operationalising the HUL Tools at Building Level: Circular Models of Adaptive Reuse

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## Abstract

*Adaptive reuse of historic buildings plays a significant role in the transition towards circular economy. The existing literature still regards heritage conservation, urban management, circular economy and sustainable development as different spheres of knowledge. The Recommendation on the Historic Urban Landscape (HUL) provides a holistic approach to integrate these spheres, along with a supplementary toolkit. However, its implementation is still sporadic, not fully aligned with the circular economy framework, and unframed in the adaptive reuse and regeneration policies and practices at local level. The aim of this paper is thus to provide a framework to investigate how the HUL approach and tools are operationalised at building level, bridging the gap between international policy documents, global aspirations circular economy, and local practices of adaptive reuse. For this, the circular models of adaptive reuse in terms of governance and decision-making structures, and environmental strategies are identified through a case study analysis of best practice: the Pakhuis de Zwijger (PdZ) case in Amsterdam. Focus group meetings have been conducted with internal and external local stakeholders of PdZ to formulate their governance model, and four levels of sustainable governance actors are identified. Then, their decision-making process is mapped, and the newly adopted sustainability measures are analysed. These circular models and strategies at building level are then aligned with the broader HUL toolkit. In this context, this paper contributes to the operationalization of HUL tools at building level, supporting the strengthening of efforts for the protection of world's cultural heritage (UN SDG 11.4) and reduction of waste generation through reuse (UN SDG 12.5). The identification and assessment of circular administrative and environmental models of adaptive reuse incorporates circular economy strategies and tools into the HUL framework.*

## Keywords

*Historic urban landscape approach, circular models, adaptive reuse, governance, decision-making, sustainability, Pakhuis de Zwijger*

## 1 INTRODUCTION

Cultural heritage is a driver for sustainable development in cities. The reuse of abandoned and underused cultural heritage buildings and sites is a practical substitute to demolition, bypassing the wasteful processes of demolition and new construction prolonging the cultural heritage lifespan. Adaptive reuse of cultural heritage can thus be instrumental to circularise the flows of energy, raw-materials, human and cultural capital, and hence plays a significant role in the transition towards circular economy.

According to the ICOMOS Burra Charter (2013), the goal of adaptive reuse of historic buildings is to sustain the value of a building to a place or community while ensuring its future usefulness. The UNESCO Recommendation on the Historic Urban Landscape (2011) also adopts a “conservation through transformation” approach, which aims to conserve the historic-cultural and social values of cultural heritage, engaging local communities and stakeholders in conservation, transformation and

adaptation choices. The HUL approach thus aligns with the global and urban aspirations of circular economy and sustainable development.

The HUL Recommendation provides an interdisciplinary and holistic approach, along with a set of six critical steps and a continually evolving toolkit that is classified under four categories of tools including: civic engagement tools, knowledge and planning tools, regulatory systems, and financial tools (UNESCO, 2011). It has been further underlined in the HUL Guidebook (WHITRAP and City of Ballarat, 2016) that the HUL Toolkit provides an ever-expanding set of innovative and multi-disciplinary tools, policies and actions that have to be adapted for local application for the successful incorporation of urban heritage management into the wider goals of sustainable development.

However the implementation of this holistic approach, application steps and suggested tools is still sporadic, not fully aligned with the circular economy framework, and unframed in the adaptive reuse and regeneration policies and practices at local level. The aim of this paper is thus to provide a framework to investigate how the HUL approach and tools are operationalised at building level, bridging the gap between international policy documents, global and urban aspirations of promoting circular economy, and local practices of adaptive reuse at building scale. For this, the circular models of adaptive reuse in terms of governance and decision-making structures, and environmental strategies will be identified through a case study analysis of best practice. The Pakhuis de Zwijger (PdZ) case in Amsterdam is selected as a successful case of sustainable and circular processes of cultural heritage adaptive reuse. Stakeholder engagement workshops and focus groups have been conducted with internal and external stakeholders of PdZ to better understand its governance structure, analyse its existing decision-making mechanism, and to reach consensus on circular environmental strategies to minimize their environmental impacts.

In this respect, this paper contributes to the operationalization of HUL tools at building level through the testing of their adaptability to different scales, and identification of circular models of adaptive reuse that can be complementary to the toolkit. The identification and assessment of innovative circular governance, environmental and business models of adaptive reuse contributes to the alignment of circular economy strategies and tools with the HUL framework, which have not yet been applied in recent HUL initiatives and guidelines.

## 2 METHODOLOGY

For this research, a case study analysis on circularity of cultural heritage adaptive reuse is conducted, where the Pakhuis de Zwijger Foundation in Amsterdam is selected as a best practice. The PdZ Foundation is a partner of the ongoing Circular Amsterdam initiatives, and a leading case example in Europe of reuse for community purposes practices. This case assessment is conducted as part of the "Circular models leveraging investments in Cultural Heritage Adaptive Reuse" project (CLIC project), the European Horizon 2020 Research and Innovation Action programme framing this study.

For identifying the currently operating governance model of PdZ, interviews and focus group meetings are conducted with the relevant internal and external stakeholders of the Foundation. Following an interview with the managerial unit of the organization to identify the objective of the focus group meeting, all the potentially involved stakeholders of the Foundation are identified. Then, we reached an agreement on three objectives of the focus group meeting: (1) to map the governance model, with focus on how the initiative of the individual users can affect the operation of PdZ and

decision-making; (2) to outline the ambition of PdZ in the area of sustainability; and (3) to identify the sustainability measures to undertake in the near future. Two focus group meetings are thus held with the internal (in-house) and external stakeholders of the Foundation to achieve these goals.

The data gathered is then analysed through a mixed methodology of qualitative data analysis. Initially, four levels of governance actors are identified, and their decision-making process is analysed and mapped based on the exemplary case of how solar panels were installed. Then, their newly adopted sustainability measures are analysed as circular environmental strategies (Foster, 2019). These circular models and strategies at building level are then aligned with the broader HUL toolkit, particularly the regulatory systems and citizen engagement tools.

### **3 CASE STUDY: CIRCULAR GOVERNANCE MODEL AND ENVIRONMENTAL STRATEGIES OF ADAPTIVE REUSE – PAKHUIS DE ZWIJGER**

#### **3.1 CASE INTRODUCTION**

Pakhuis de Zwijger Foundation is accommodated in a former cooling warehouse located in Eastern Docklands area of Amsterdam, currently functioning as a cultural communal centre and a public debate house. Constructed in 1933-34, the refrigerated warehouse was part of a continuous row of cold-storage warehouses along the inner harbour of Amsterdam. The building was designed by the principles and influence of the Nieuwe Bouwen (Dutch Modernism) period, representative of the style with its externally visible reinforced concrete structure, consisting of mushroom columns supporting cantilevered upper floors (Architectenbureau J. van Stigt B.V.,n.d.).

Functioning in good use until 1970s, the warehouse building became redundant after the abandonment of the dockyard in 1980s. Having laid vacant for numerous years, the building was squatted to be used for informal cultural activities until the late 1990s. When the city administration decided to give a new use for the building in 1997, they gave the squatting organisations to continue their cultural activities commercially through joining forces with grassroots initiatives to protect the building (Pakhuis de Zwijger, n.d.). In 2000, however, the City of Amsterdam approved a new development plan to connect the city center with the new residential neighbourhood located in the artificial Java island right across the building by demolishing the former warehouse and building a bridge instead. Following designation and listing of the building as a National Monument in 2001 with the initiative of the Royal Institute of Dutch Architects and the local grassroot organisations, an alternative solution was adopted through the removal of part of the first floor to leave room for the bridge and protection of the structural and physical integrity of the building.

The new renovation and reuse project was developed with the building owner, Stadsherstel Amsterdam – limited shareholder company for architectural restoration–, the project architectural group, Van Stigt, the project developers, the municipality and the involved cultural organisations as the future users. This inclusive and participatory approach in planning and project development phases were sustained in the funding of the project and its future operation where the Stadsherstel, Monumentenfonds (Monument conservation fund), and the De Zwijger Foundation under which diverse cultural organisations and creative industries are organised as future users collaborated. The building was inaugurated as Pakhuis de Zwijger, a cultural centre and public debate house where debates on urban-related topics are held weekly.

## 3.2 GOVERNANCE MODEL AND DECISION-MAKING PROCESS

For the better understanding and assessment of the governance model, the decision-making process and the involvement of relevant actors in PdZ, a specific action is further examined as a case example. This case is selected to be the installation of solar panels on the PdZ building. This action was taken both to improve the environmental sustainability and to save energy of the building as part of the adaptive reuse process. A two-tier decision-making process allowing communication two ways, supported effective decision-making to cope with the sustainability strategies and install the photovoltaic panels.



FIG. 1 Four Levels of governance relating to sustainability actions. Source: Ikiz Kaya, Lu, Pintossi & Pereira Roders, 2020

Based on the data collected through interviews, a four-levelled governance model (Fig. 1) is identified that operates the decision-making structure regarding sustainability and building management activities. These four levels include: the PdZ as the operating company, the users of the building that involves visitors for activities and other offices renting the shared space in the building, cultural institutions in the neighbourhood sharing the sustainability goals, and the municipality seated at the top with policy-making responsibilities on sustainability and cultural heritage topics. Within PdZ, the internal governance model related to decision-making for sustainable operation functions both bottom-up and top-down. This duality of decision-making structures is identified to be effective by internal stakeholders, as discussed during the internal focus group meeting. The empowerment of building users to initiate the action plan, however, is identified to be limited and supervised (Fig. 2).

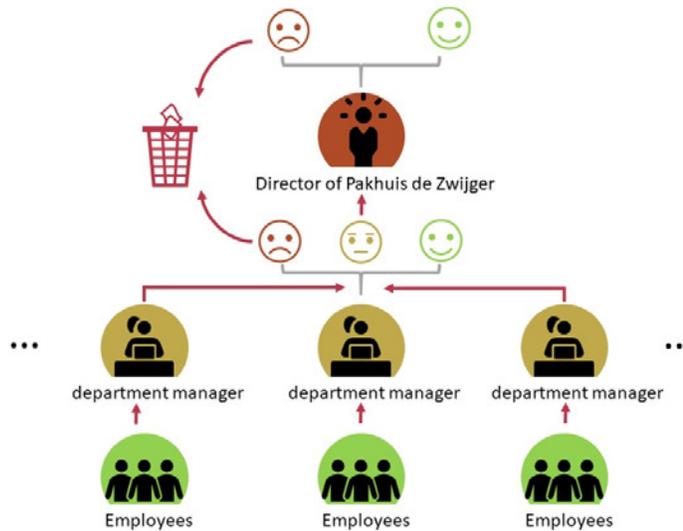


FIG. 2 The internal governance model for decision-making regarding the sustainability inside of Pakhuis de Zwijger.

This decision-making analysis also revealed how much public awareness and local policies regarding sustainability have impact on the decision-making towards sustainable development. Installing solar panels on PdZ was initially introduced by the property owner, Stadsherstel. This decision was incentivized by the pressure of the different groups, such as the visitors' curiosity on sustainable and energy-efficient buildings and the property users' interests in saving energy and sustainability. Besides, the newly adopted national Climate Agreement and green policy in Amsterdam also urged Stadsherstel to initiate actions for sustainable adaptive reuse as property owners of several historical buildings in Amsterdam. PdZ is selected to be a sustainable action precedent practice on a heritage building since it is an NGO and a public building. The culture of land use benefits the proceeding of the solar panel installation.

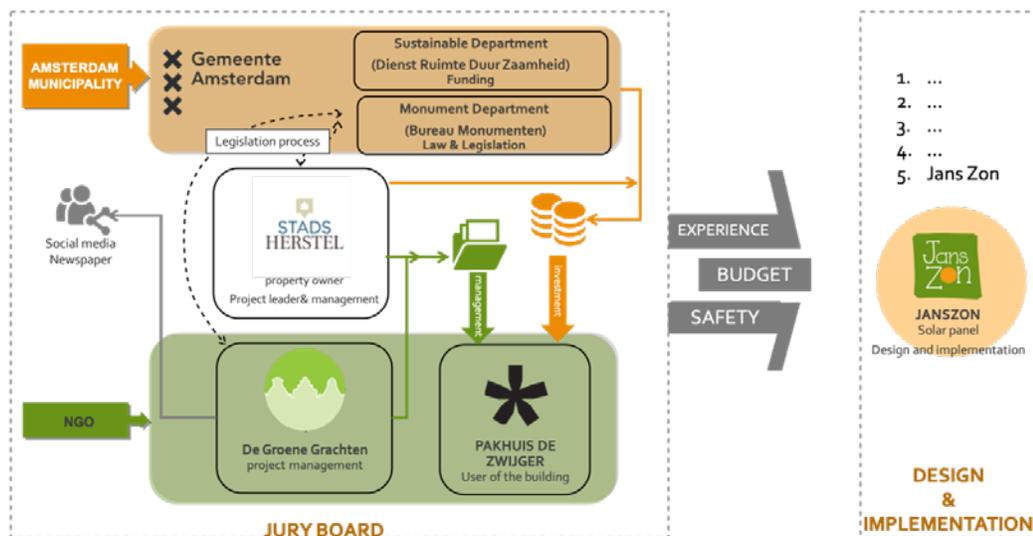


FIG. 3 Decision of Solar panel installation on Pakhuis de Zwijger. Source: Adapted from Heijns & Lu, 2019

Regarding the process of the solar panel installation, the main stakeholders involved in the decision-making have been the municipality, property owner, project management, property user and designer who implements the solar panels. De Groene Grachten, a consultant NGO in the sustainability of historic buildings, together with Amsterdam Stadsherstel have been in charge of the project management. For PdZ, they achieved an agreement with the Amsterdam Monument Department (Bureau monumenten) on the exemption to install solar panels on PdZ's rooftop. Besides project management, De Groene Grachten has also been in charge of communication activities. The sustainable department of Amsterdam municipality (Dienst Ruimte en Duurzaamheid) and Stadsherstel have been the main investors of this project. Company Jans Zon, as the solar panel designer and installer, was selected by the stakeholders among the five competitors. This selection/choice considered their experience, budget, and safety. Fig. 3 illustrates how the decision-making process for the solar panel installation took place.

### 3.3 ENVIRONMENTAL STRATEGIES

For data collection on the sustainable environmental strategies of the PdZ, we scheduled two levels of stakeholders' meetings: internal and external. The internal stakeholders involve all the heads of departments within the organization, such as the business director, catering and sustainability team. External stakeholders are the remaining three levels of actors identified in the governance model (Fig. 1) Therefore these external stakeholders represent the municipality, potential partners, the users of the building. A total of 31 measures were identified as environmental strategies during the stakeholders' meeting, contributing to a sustainable governance model and operation of PdZ (Figure 4). These included easy-to-implement measures, such as rechargeable batteries in the microphones, to more fundamental and costly measures.

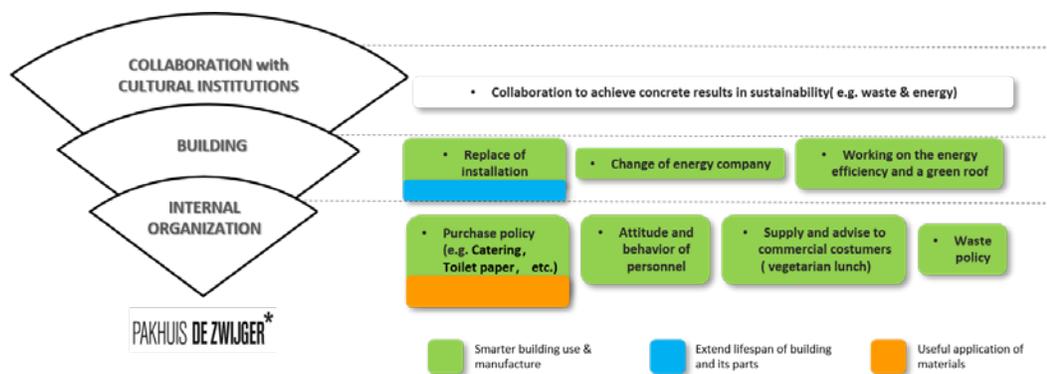


FIG. 4 31 measures of sustainability adopted by the PdZ in three levels and the decision-making process. Source: Ikiz Kaya, Lu, Pintossi & Pereira Roders, 2020

These 31 sustainability measures of PdZ are aimed to be applied at three levels. These three levels were identified during the interview, contributing to achieving effective communication in the stakeholders' meeting. The first level is relevant to the Foundation's operation, for example, the purchase policy, personal attitude and behaviour, supply and advice to commercial consumers and waste policy. The second level is about the invisible and visible measures having a direct impact on the building. The main consideration is energy efficiency and costs. They would like to

introduce sustainable evaluation tools to monitor the performance of the building. The third level is a collaboration with cultural institutions to achieve concrete results in sustainability, which is an innovative action to enhance circularity at neighbourhood level.

In the framework built for circular economy strategies to adaptive reuse of buildings to reduce environmental impact, the sustainability measures agreed upon and partially adopted by PdZ aligns with the “use and operate” phase of the building life cycle (Foster, 2020:12). In this phase, the historic building is challenged to continuously meet the needs of its users. Table 1, on page 322, illustrates the alignment between the 31 measures identified by PdZ and the environmental strategies developed by Foster (2020). Particularly, the majority (n=25) of these measures entails the highest degree of circularity according to the scale used to rank the strategies (Foster, 2020). In other words, these measures correspond to a “smarter building use and manufacture” (Foster, 2020:12). Conversely, among the remaining 6 measures, only 1 corresponds to an intermediate degree of circularity, namely “extend lifespan of building and its parts” (Foster, 2020:12) whereas 5 lack an alignment with the strategies. The measure entailing an intermediate degree of circularity is the hiring of the sustainable connector. About the alignment between measures and strategies, it is to note that 14 measures align with more than one strategy each. Therefore several measures entail a broader spectrum of impact. In addition, 11 measure align with one particular strategy: the one aiming at increasing the rate of reuse and recycling. When performing such comparison, a strategy was added to Foster’s list. This strategy entails the reduction of waste production and it aligns with almost a third of the measures identified by PdZ.

## 4 DISCUSSION & CONCLUSION

Referring to the HUL toolkit, the participatory and circular governance model and decision-making process provide an exemplary best case practice for civic engagement, regulatory and knowledge and planning tools. In the definition of civic engagement tools provided by the HUL Recommendation (UNESCO, 2011), involvement of a diverse range of stakeholders, and their empowerment to develop visions and reaching consensus on actions are highly advocated. The existing decision-making mechanism operating in Pakhuis de Zwijger, as illustrated with the example of solar panel installation, manifests a best practice of civic and stakeholder engagement with its four level participatory governance model.

The use of planning tools to allow management of change in Historic Urban Landscapes, and adoption of certain measures to promote integrated conservation and sustainable development have also been introduced as methods and tools to enhance management of historic urban landscapes. Adopting this approach to a single building designated and protected under national legislation as a monument, the sustainability measures agreed by all the relevant stakeholders of PdZ demonstrate how these planning and regulatory tools can be implemented to enhance sustainability and circularity at building level. The alignment of these measures with the circular economy strategies for the built environment also sets example for enhancing circularity in adaptive reuse practices, and their incorporation into the wider framework as targeted by the HUL approach.

As Veldpaus and Bokhove (2019) point out in a comparative policy analysis conducted in Amsterdam in years 2014 and 2017, while the local administrators are informed and acknowledge the holistic approach introduced by the HUL Recommendation, the citywide implementation of this approach is not in their agenda. However, the contacted administrators also indicated that the approach itself

31 MEASURES OF PDZ	CIRCULAR ECONOMY STRATEGIES FOR ADAPTIVE REUSE OF CULTURAL HERITAGE BUILDINGS TO REDUCE ENVIRONMENTAL IMPACTS : "USE AND OPERATE" PHASE
1. Collecting coffee grounds	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Provide facilities for easy collection of recyclable materials and biomass for compost</li> </ul>
2. Rechargeable batteries for wireless microphones	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Reduction of waste production</li> </ul>
3. Cable mats instead of tape for cords	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Reduction of waste production</li> </ul>
4. Giving office garbage to staff to take away on Friday	<ul style="list-style-type: none"> <li>— Implement fee for service arrangements that reduce material inputs and incentivize longevity</li> <li>— Reduction of waste production</li> </ul>
5. Paper tray in the communication department	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Provide facilities for easy collection of recyclable materials and biomass for compost</li> </ul>
6. Waste-free groceries for lunch	<ul style="list-style-type: none"> <li>— Implement fee for service arrangements that reduce material inputs and incentivize longevity</li> <li>— Reduction of waste production</li> </ul>
7. Use whiteboard (instead of paper)	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Reduction of waste production</li> </ul>
8. Apply waste separation to catering and café	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Provide facilities for easy collection of recyclable materials and biomass for compost</li> </ul>
9. Less packaging (rewarding or addressing suppliers?)	<ul style="list-style-type: none"> <li>— Implement fee for service arrangements that reduce material inputs and incentivize longevity</li> <li>— Reduction of waste production</li> </ul>
10. Addressing customers on event waste (include disclaimer in offers)	<ul style="list-style-type: none"> <li>— Implement fee for service arrangements that reduce material inputs and incentivize longevity</li> <li>— Reduction of waste production</li> </ul>
11. Worm hotel on the square	<ul style="list-style-type: none"> <li>— Create habitats for animals and insects</li> <li>— Improve land through pollutant remediation and / or increasing nutrients in soil</li> </ul>
12. Placing other Java island projects in and around Pakhuis de Zwijger communication	Implement fee for service arrangements that reduce material inputs and incentivize longevity
13. External communication: what does Pakhuis de Zwijger do in the area of sustainability? What is our vision?	--
14. Inform tenants about our policy in the area of sustainability	Implement, incentive, and encourage users to achieve high rates of product reuse and recycling
15. Sustainable website (like De Correspondent)	--

31 MEASURES OF PDZ	CIRCULAR ECONOMY STRATEGIES FOR ADAPTIVE REUSE OF CULTURAL HERITAGE BUILDINGS TO REDUCE ENVIRONMENTAL IMPACTS : "USE AND OPERATE" PHASE
16. Internal communication: exchange information on what is already being done with sustainability, understanding and awareness.	Implement, incentive, and encourage users to achieve high rates of product reuse and recycling
17. Make sustainable procurement policy mandatory for all departments	Implement, incentive, and encourage users to achieve high rates of product reuse and recycling
18. Sustainable cleaning equipment	
19. Making sustainable choices when choosing suppliers	Implement, incentive, and encourage users to achieve high rates of product reuse and recycling
20. Collaboration with Tres Hombres	Strive to increase proportion of purchased and produced renewable energy whilst phasing out fossil fuels
21. Buy less printed materials / flyers	<ul style="list-style-type: none"> <li>— Implement fee for service arrangements that reduce material inputs and incentivize longevity</li> <li>— Reduction of waste production</li> </ul>
22. Less dairy at the office lunch	--
23. After completion of programmes: turn off air treatment	Implement ongoing energy efficiency strategy
24. More efficient beamers	Implement ongoing energy efficiency strategy
25. LED lighting for halls	Implement ongoing energy efficiency strategy
26. Cooperation with Philips for lighting (sponsor)	<ul style="list-style-type: none"> <li>— Implement ongoing energy efficiency strategy</li> <li>— Implement fee for service arrangements that reduce material inputs and incentivize longevity</li> </ul>
27. Insight into water use: can it be done better?	Measure energy efficiency continuously
28. CO2 compensation from Pakhuis de Zwijger	--
29. Train staff (e.g. double-sided printing and less printing)	<ul style="list-style-type: none"> <li>— Implement, incentive, and encourage users to achieve high rates of product reuse and recycling</li> <li>— Implement ongoing energy efficiency strategy</li> </ul>
30. The sustainable connector: full time job	Improve users quality of life
31. Caretaker of worm hotel, roof garden, irrigation, etc (project manager)	Create habitats for animals and insects

TABLE 1 A table showing how the 31 measures align with the strategies defined in the use and operate phase as described in Fig. 6 of Foster's article (2020) with the addition of "Reduction of waste production". Source: Authors. The "use and operate" strategies are derived from Fig. 6 of Foster, 2020

aligns with the vision of the City of Amsterdam, specifically on topics of sustainability, participation and climatic adaptation (Veldpaus and Bokhove, 2019). Hence, best practice cases of adaptive reuse, such as the Pakhuis de Zwijger, are critical for the adaptation and operationalization of the wider HUL approach at smaller local scales, which can be adopted to different contexts to enhance the connection between circularity and sustainable development goals.

### Acknowledgement

We gratefully acknowledge Jan Heijns of Pakhuis de Zwijger for organizing the focus group meetings. We thank the guidance and feedback in the process, given by the CLIC team of ICLEI. We deeply thank the participants for their contributions in the focus group meetings. We acknowledge Caroline Koot for reviewing the translation towards English of the 31 measures.

This paper is an output of the science project "CLIC - Circular models leveraging investments in cultural heritage adaptive reuse", funded by the European Union's Horizon 2020 research and innovation programme [grant agreement number 776758].

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# Culture through Time: Models for Interactive Fruition

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## Abstract

*In recent years, there has been an increasing interest in the connection between cultural heritage and sustainable development. Indeed, in 2018, UNESCO's "Culture for the 2030 Agenda" has established new directions in order to transform culture into an engine for the accomplishment of the Sustainable Development Goals (SDGs). The constant and rapid evolution of society with the use of technologies is transforming some places into "non-places", while cultural heritage is often marginalized. The proposal addresses the theme of interaction and usability through a critical-analytical evaluation of new advanced models for cultural enjoyment. These are intended to enhance and optimize the person's experience, while at the same time valorising cultural heritage. There is a strong desire for diversity and almost a dependence on new engaging stimuli, a phenomenon that is partly a result of the continuous technological developments. This requires a different order and different spaces that could inspire new ideas and stimulate the 'users'. New forms of knowledge visualization and dissemination are being adopted, modifying the user's cultural experience and transferring information in a dynamic and polysensorial way, through the methodological approach of user centred design. The ergonomic dimension gets modified, the "immersed" user becomes an actor of the space and he interacts with the surrounding environment. Such change is reflected in the spatial design, which should be flexible and adaptable in order to satisfy the user's need to be dynamically stimulated. A personalized and active combination of space, time and technology can contribute to knowledge transfer, to cultural safeguarding and to an inclusive design, aiming at reaching the SDGs.*

## Keywords

*Knowledge circulation, invisible knowledge, augmented interconnection, design culture, humanistic culture*

## 1 INTRODUCTION

There is an increasing need for the creation of new cultural places proper for the new temporal dimension and contemporary tools must be used in order to attract the visitors' attention, but also to raise awareness of the local communities. Richards identifies three main elements as components of the "placemaking" process: tangible and intangible resources, meanings and creativity. This last one refers to the use of narrative to connect resources and meanings in a coherent storytelling that could catch the individual's attention (Richards & Duif, 2018). The person is no longer a simple user, but he transforms into a "prosumer" (Toffler, 1980), meaning that he becomes a cultural consumer and producer at the same time, while the knowledge acquisition process switches from passive to interactive.

Based on these concepts, the paper addresses the theme of interaction and usability through a critical-analytical evaluation of advanced fruition models, with reference to contemporary systems and tools that improve the possibility to access, enjoy and use cultural heritage. The challenge will be that of further enhancing content accessibility and provide the individual with significant and personalized storytelling through perceptive, immersive and multisensorial experiences that engage

the person at different levels, such as information, thorough study and knowledge of the inquired monument or site. The aim is to optimize the person's experience for the enhancement of cultural heritage and knowledge dissemination, going beyond the state-of-the-art.

The paper is based on a literature review of the main fruition models with reference to spatial design, experience, perception and narration, with the support of technology. To this purpose, human factors, user centred design and new human factors have been considered during the research following the principles of Human Centred Design (Norman & Spencer, 2019) and Universal Design (NC State University, The Center for Universal Design, 1997) methodologies.

In order to reach the Sustainable Development Goals (SDGs) of the 2030 Agenda (United Nations, 2015), there have been proposed principles and models for inclusive design that could contribute to improving informal education (Objective 4), protecting cultural heritage (Objective 11.4) and increasing access to scientific discoveries, technologies and innovations for the improvement of knowledge sharing (Objective 17.6).

## 2 USER-CENTRED APPROACHES AND MODELS FOR THE CULTURAL EXPERIENCE

The research is based on the methodology of User Centred Design, putting the person and its needs at the centre of the design process (Norman & Draper, 1986). The cognitive, psychological and anthropological approaches have been considered, based on concepts such as "place identity" (Proshansky, 1978) and "attachment to places" (Altman & Low, 1992).

In fact, cultural heritage has the potential to become a "creative milieu", as defined by Carta (2007). Strictly connected to the identity and culture of a territory, it can be considered "cultural commons", "the culture expressed and shared by a community" (Bertacchini et al., 2012). Common ideas and attitudes make possible the collaboration and participative actions with the aim to increase awareness regarding the values of this heritage and how can culture contribute to reaching the Sustainable Development Goals. This role is also highlighted through the document published by UNESCO (2018). To reach this purpose, a qualitative education and new models that could favour "the circulation of knowledge" (Darbellay, 2012) must be ensured.

Likewise, in accordance with the "Barcelona Declaration of Tourism and Cultural Heritage" (Network of European Regions for a Sustainable and Competitive Tourism, 2018), the new models need to enhance the sense of place of a territory by adding value to the tangible and intangible cultural heritage through interpretation, engaging storytelling and the creation of experiences to foster visitors' respect for places and to create better awareness regarding the potential impacts of their actions.

The fruition models have been analysed in connection to the main aspects identified: spatial design (Levasseur & Veron, 1983), experience (Falk, 2013), perception (Damasio, 2010), narration (Sturm, 2000), all supported by the emergent technologies. Despite the relevant progress lately registered both by research and by industry in the field of enhancement and enjoyment of cultural assets on site and online, most of the existent models are still much limited in their capacity to engage audience and to transfer knowledge for lifting recall. In many cases the applications hardly communicate with the real context, remaining therefore accessory, self-referential and quickly obsolete realities.

The experience results as barely attractive, if not even frustrating and the applications are abandoned soon after an initial superficial contact even if, from a scientific point of view, they could have great potential. The research aims to configure innovative polysensory and inclusive models for the fruition, transfer and enhancement of cultural heritage to create new cultural places by using the existent systems and overcoming them.

«Thanks to advances in technology, it has become possible to better control sound and smell experiences, as well as use complex digital and robotic technologies to amplify touch and movement. Multisensory immersion has taken the place of disinterested contemplation as the goal of much art (Jones, 2006; Schwartzman, 2011) and has in turn led art critics and philosophers to challenge the restrictive sensory politics of the modern museum (Drobnick, 2004, 2006; Voegelin, 2010; Serres, 2009; Kelly, 2011; Bacci and Melcher, 2011).» (Levent & Pascual-Leone, 2014)

### 3 THE CONTEMPORARY VISION OF KNOWLEDGE

The contemporary world requests for designers to focus on the diversity, therefore overcoming specificities. In order to truly comprehend the complex design required by the new forms of knowledge, we need to study, investigate and approach reality by putting into dialogue the visible and the invisible dimensions.

The imaginary modifies the designer's vision of reality in order to face the complex thinking and the permanent risks of error and illusion where knowledge of knowledge (Morin, 2001) is necessary to provide new answers and to search for the limits and possible transformations that reveal the continuity of thought and the research interconnected between "humanistic making" and "technical-scientific making".

Since Plato's time and even before, attempts have been made to give a formal order to the apparent world of matter, while now attempts are being made to make a world appear mostly encoded in numbers, a world of forms that multiply without control (Capece, 2009). Compared to Plato, Aristotle had further evaluated the sensitive experience by arguing that specific human action is not the object of science but that of sensitive knowledge and of the experience and ethical character, virtuous or not, of the person who does the action. He believed, therefore, that knowledge should be limited to receiving the sensed impressions, it was necessary for the human intellect to play an active role that would allow it to go beyond the transitory particularities of objects and to grasp their essence. Aristotle distinguished various degrees of knowledge, at a lower level, sensation, which has specific entities as its object, while at a higher level, intellectual intuition, capable of abstracting the universal from empirical realities. These processes of "making human" feed the ability to interpret sensory messages from the outside world, to be able to imagine, invent, solve problems but also the ability to make a certain action or, depending on the needs, not to make it. In the same way the designer, by analysing the subjective experience that people live through the interaction with the work of art, he interprets the person's experience as a source of inspiration and generation of solutions.

We are moving from a physical to a mental commitment, shifting the muscular load on the perceptive one. It became clear that the complex relationships with the context could not be truly understood without somehow actively engaging the user himself. Therefore, there is a direct link established between user, machine and production.

According to Freeman Tilden, the purpose of heritage interpretation is to stimulate the user through the desire to enlarge his horizon of interests and knowledge and help him acquire the awareness of more profound truths hidden behind every affirmation of facts (Tilden, 1977). The modern theories, influenced by semiotics, claim that works of art, literature and music do not have their own meaning, but they assume a different meaning for each person depending on the cultural, political and personal context (Carter, 2016). The same ideas are transferred in the field of interpretation of places, objects or events. Professionals in heritage interpretation must possess good communication skills, in order to be able to transfer scientific information even to non-scientists, and to offer them curiosity facts both about the things they can directly observe and about the past that can only be imagined.

## 4 THE HUMANISTIC AND TECHNOLOGICAL CULTURE FOR AUGMENTED AND INTERCONNECTED INTERACTION

When we reflect on how to transform the world of museums, archives and libraries by exploiting the potential of digital humanism, we must remember that true value does not lie in technology itself but in the uses we make of it. This is the approach we must have to understand the profound participatory, transformative function that digital technology has for culture (Schnapp, 2015).

In a moment of continuous change, when the cultural and sustainability perspectives need to find a common point, the neuroscientific studies have stopped considering the brain as a passive receiver of information through the senses. Instead, it is seen as active searcher of information to confirm or deny the expectations. The internal representations of reality, the expectations used to approach an experience and therefore experience itself are multisensory (Pascual-Leone and Hamilton, 2001). This is why during knowledge transfer and in the intention of raising awareness of people on contemporary themes such as sustainability, there should be considered the complex interactions between different aspects of the experience, not only the visual one, but try to engage the various senses (Levent & Pascual-Leone, 2014).

By now accustomed to passing without attrition from one dimension to another, we perceive boundaries less and less: we rediscover senses at a digital level learning to manage the multitasking universe in which we navigate and, through a screen, we connect with the whole world. The use, the ownership, the interaction with a machine can generate different types of cognitive perceptions and emotional answers. Beyond the functional correspondence, some systems represent the elements that contribute to defining the meanings of the contexts where people live, which serve to build their own identity.

A designer must think about what happens when an object enters a person's world, how do political and social behaviours change, a perspective that shifts towards the experience and functionality of assets. The result of a design aware of the needs represents the construction of increasingly "performing" fields, suitable to be "experienced" by people who have "different profiles", who move interacting with each other and with the environment. If we think of a blind person who manages to have a perception of his surrounding world and to acquire mobility due to a white cane, where does the perception of himself towards the other begin: at the end of the hand or of the cane? The interconnection between objects and humans is pervasive and in continuous relationship with reciprocal impact. Our own biological and cognitive structure is affected by the material culture, so we must study the relationship between body, mind and artifacts (Greco, 2019).

Therefore, the aesthetical value of an object is perceived through the combination of sensorial information (such as sight or touch, when objects can be touched), the personal (thus emotional) ones, and the theoretical knowledge regarding the specific asset, the so-called semantic memory (Ovadia, 2019).

## 5 PERCEPTION OF THE “INVISIBLE”

We need to find new ways to bring in front of people not only the cultural assets, but also what stands behind them: the science behind art, the studies behind a nice image and the people behind great past discoveries, by using present tools and imagining future ones. How to do this? We are still working on it, but several experiences going in this direction have been initiated around the world, both in Europe and overseas.



FIG. 1 Exhibition “Archeologia invisibile”, Museo Egizio, Torino, Italy. Source: <http://www.piemonteitalia.eu/en/eventi/dettaglio/archeologia-invisibile>.

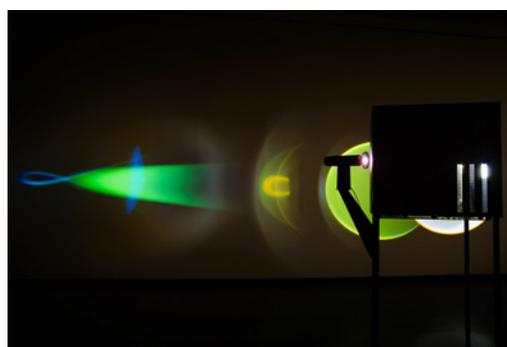


FIG. 2 Escaped light landscape, Symbiotic seeing, Kunsthaus Zürich, 2020. Source: Photo Franca Candrian Courtesy of the artist; neugerriemschneider, Berlin; Tanya Bonakdar Gallery, New York / Los Angeles © 2020 Olafur Eliasson. <https://olafureliasson.net/press/symbioticseeing>.

Current technological applications can be seen as recalibration exercises, which help redefining the way we understand objects. These forms of recalibration can modify our perceptive structure and they can divert us from the direct experience of a person inside an exhibition space. Instead, they bring us closer to the perspective of a person who looks into a microscope, enabling observation inside objects and the sight of layers which are not apparently visible inside a gallery. Our look might be getting redefined as a complex vision, enabling us to fly above archeological areas or to see inside the Great Pyramid. It is however obvious that these new visualization techniques are doing much more than enabling us to „see“ these artworks in greater detail, they actually become integral part of a wider policy of „sight“ (Geismer, 2019).

By bringing Egyptology and science into dialogue, an exhibition called “Archeologia invisibile” (Fig. 1) was organized in Turin, which illustrates the elements hidden behind objects that would otherwise remain “assets” on display, without really “touching” the person and even less allowing them to interact. It is therefore possible to transfer knowledge through advanced technologies that “excavate” beyond the visible. This is the approach that we must follow in order to build new fruition models: the visitor must

be completely immersed into the story of the object, being able to see not only the external form, but also everything that usually remains hidden and that completes the story in an even more fascinating manner. Thus, the object slowly reveals its story, it enables us to rebuild its biography and it becomes the key for understanding old customs and habits (Greco, 2019). By bringing together humanism and technical sciences, we can expand our ability to converse with objects and to preserve them so that, after “surviving” for centuries to get to our days, these “witnesses” can be returned to the current of time and to the questions that generations to come will be able to ask them (Ciccopiedi, 2019).

The direction is that of a “symbiosis”, as suggested by the experimental exhibition with the same name “Symbiosis – a new form of coexistence”, where the artist Olafur Eliasson intends to investigate on current themes such as climate change, but also the role of the person inside a greater system. As part of this event, with the experimentation “Escaped light landscape” (Fig. 2), the artist has the intention to offer hints on the mechanisms behind the artistic outcome, engaging the person in the process. Olafur Eliasson himself claims that the main theme regards the visitor’s or user’s role. There need to be investigated whether his activities or actions represent what really creates the work of art. Without the person’s participation, it seems to have no meaning (Kunsthaus Zürich, 2020). To increase awareness, advanced techniques are being used that engage the user in a polysensory manner. The artist’s objective is to get people involved and to stimulate thinking through experimentation.

## 6 CONCLUSION

The results of the research until now have proven that even if recently there has been made a lot of progress in this direction, current fruition models still have many limits regarding the person’s engagement. Furthermore, despite the recent efforts in building bridges between scientists and audience, there are still many gaps to be filled in communicating science to the general audience (Astbury & Hines, 2017; National Academies of Sciences, Engineering, and Medicine, 2018). For the achievement of new fruition models, we need to combine spatial perception and experimentation with immersive and interactive enjoyment, sharing and enhancement of the cultural experience in a polysensory way and personalizing „knowledge circulation” by considering the differences between people and by trying therefore to get them closer to their cultural heritage. Only then will we be approaching “sustainability” when we will have people more engaged with their own culture, thus increase awareness. Cultural heritage is supposed to be conserved, at least partly, yes, but we are supposed to get people closer to it and not to transform it into something sacred that cannot be touched or that should be admired from a distance.

The scientist and the humanist must work more and more together in order to be able to understand some of the contemporary world’s complexity. This increasing collaboration should go beyond the single discipline, since the definition of a shared semantics and the development of a true multidisciplinary approach are the only method that could help us face the future challenges. The changes will keep on coming. There will be mutations in the organizational spatial solutions and there will certainly appear new forms of cultural fruition. Our aim will be, however, that of enhancing the person’s visual, aesthetic and intellectual experience while he finds himself in front of an asset from the past trying to provide him with the necessary information in order to enhance understanding. We need to keep focused on research (Greco, 2019) but at the same time we need to improve the models of communicating the „invisible” knowledge to the general audience to help them approach culture in a sustainable way, thus contributing to the improvement of education, cultural heritage protection and knowledge sharing as required by the SDGs (United Nations, 2015).

## Acknowledgment

The paper is part of the research "Culture between Time, Space and Technology. Innovative and Inclusive Polysensorial Models for Knowledge Sharing", inside the PhD in "Environment, Design and Innovation" at the University of Campania "Luigi Vanvitelli", Aversa (CE), Italy.

In this paper, the second and the fifth paragraphs have been written by Camelia Chivăran, the third and the fourth have been elaborated by Sonia Capece, while the first and the last paragraphs have been curated by both authors.

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# Evaluation of Thermal Comfort Conditions of Traditional Houses: Sadeghi House and Haci Huseyinler House

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## Abstract

*Today, efficient energy usage and common discussions at the international science studies in this regard have become important. Energy and its utilization have an effect on designing architectural form, spaces and quality of life. Energy efficiency in traditional houses may provide beneficial solutions for current construction industry. From past to present, use of various systems for cooling and heating of residential units has been essential and they lead to the most appropriate space organizations and orientations. The traditional architecture of residential units in Middle East has been responsive to climatic needs of each region, considering social and cultural needs, aesthetic issues and the environmental conservation. It is observed that there are various traditional techniques and rules in the construction of mentioned buildings to reach the thermal comfort of spaces. This paper focuses on the thermal comfort in traditional houses and the approach for saving fossil energy. The paper also researches the space configuration of Sadeghi traditional house in Azerbaijani region of Iran Ardabil city and Haci Huseyinler traditional house in the Black Sea region of northern Turkey Safranbolu city. In this paper, the traditional solutions for thermal comfort in traditional houses were examined comparing approaches of two different countries. They were classified in the form of cooling and heating methods, which people experienced in similar traditions but different climatic conditions and the result suggests that most of the proposed methods of traditional architecture had been already considered by experiences decades before contemporary passive systems became popular.*

## Keywords

*Thermal Comfort Condition, Energy Efficiency, Traditional Houses*

## 1 INTRODUCTION

The sustainable architecture that advances to a point in order to be allowed to reach its aims and goals deems necessary the design off any building with the least adverse effect on environment as well as design consistent with nature (Çelebi, 2003). By considering the traditional houses and traditional construction methods, it is observed that traditional architectural characteristics conform to the rules of sustainable architecture; and can obtain sustainability in modern architecture by being revelled by certain features of traditional methods (Harputlugil & Çetintürk, 2005). Built environment has direct effects on human's satisfaction and well-being. Buildings response to inhabitants' physical, climatic and psychological needs is essential to give them a sense of health, self-worth and safety (Rouyandozagh & Acikgoz, 2017). Connection between building facades and nature is necessary for a healthy environment. Therefore, climatic condition is one of the most important factors to human comfort in the buildings. On account of this, due to different climate in different regions of the world, each region needs its design decisions and construction techniques in

its buildings to provide human comfort. The human being has been indirectly or directly affected by the climatic condition and design decision in the buildings (Ramezani, Maghsodi & Shafaghati, 2013). The facade of a building is the first defence line against outdoor climatic conditions. The climatic design considers providing climatic comfort for human in buildings especially in houses where people spend long time with each other inside the house. The houses in different climatic condition require different architectural and construction method responses. To satisfy the various necessities, vernacular architecture that have been developed through centuries has an original and interesting design practices and technologies.

After the industrial revolution and technical development, the building and construction sectors have faced great improvement. At the same time, the traditional structure shaped with the experience and accumulation of centuries was declared as "out of mode" in architectural designing (Harputlugil & Cetinturk, 2005). The energy crises have become a new problem for the human being following 1970s. The notion of sustainability or the necessity to a liveable world for next generations has been highlighted again in the architecture environment.

This study focuses on two traditional houses in Iran and Turkey, which were constructed around 1880. The houses were constructed based on energy sufficiency and cultural values and, currently, they are used with different functions (Cultural and touristic function). It is clear that the traditional houses have a lot to offer to learn about the organization of space. The materials of these buildings, the context of the evaluation of environmental and climatic factors as well as the combination of these factors should be examined for taking valuable lessons for modern houses.

## 1.1 THE CLIMATIC CONDITION, SETTLEMENT FEATURE AND CULTURAL FEATURE OF ARDABIL AND SAFRANBOLU

The City of Ardabil is an ancient city in northwest of Iran, and the capital of Ardabil Province. Ardabil is located about 70 km from the Khazar (Caspian) Sea. Neighbouring on the Khazar Sea and the Republic of Azerbaijan, it has been of great political and economic significance throughout the history, especially within the Caucasus region. It is located on an open plain 1,500 metres above the sea level, just east of Mount Savalan (4,811 m), where cold spells occur until late spring. Ardabil is the representative of extreme cold climate in winter times. Although this is very hard for people, many tourists come to the region for its cool climate during the hot summer months. The winters are long and bitterly cold, with a record of low temperature of  $-20^{\circ}\text{C}$ . The annual rainfall is around 380 mm.

According to the ICOMOS report regarding the City of Ardabil in 2007, the centre of the city has historic and heritage values. The report has examined the Ardabil Master plans and the precautions taken for the protection of the historic properties, regarding the buffer zone of the historical area of the city and the heritage of the city by the name of Sheyh Safi Al-Din Ensemble (Fig.1) (Acikgoz & Daneshvar, 2016). Since the city is located in a mountainous region with a cold climate, domestic architecture in historical region of the city has been significantly influenced by the climatic factors. On the other hand, religion and its associated culture had an effective role in spatial organization of these houses (Kharazmi Nezhad & Bastani, 2012). The results show that spatial configuration of the traditional houses is highly influenced by climatic condition and cultural factors. Also, it has been found that the importance of mass orientation of houses, public and private domains (privacy) are the most common characteristics in these houses. The thermal comfort in houses and cultural needs of users were main architectural subjects for designers. They tried to fulfil the motioned needs by various architectural solutions. The architects of traditional houses in Iran usually tried to

create a space in which they could provide comfort, relaxation and rest (Akbari & Teshnehdel, 2018). Therefore, the architects utilized natural factors to create these kinds of spaces and they trusted that architectural sustainability is merged with natural attributes.

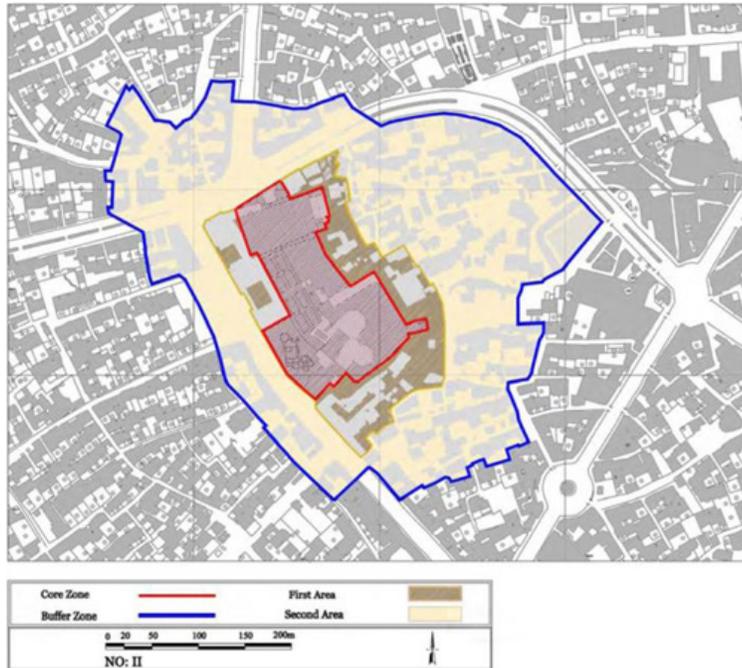


FIG. 1 Map displaying 'the protective boundaries' of the Ardabil city and Sheikh Safi Al-Din Ensemble in the nomination report. Source: (Rouyandozagh & Acikgoz, 2017)

The Iranian society was very conservative in Qajar era. Females were under the domination of men and family link was very essential in this period. Extended families were the dominant household model in Iran, composed of up to three generations, living together in the same house. After the sons' marriage, according to the household economic conditions, the house would expand or be sub-divided to create new living spaces. In this case, the house, like a living organism, would grow and adapt to the new situation.

### 1.1.1 The City of Safranbolu in Turkey

Safranbolu is located at 41 ° 16 'north latitude and 32 ° 41' east longitude in the Northwest Black Sea region. It is located at a height of 400-600 m above sea level. The weather is rainy in all seasons. Therefore, the continental climate that is common in Anatolian region of Turkey is not very effective in the city.

The City Safranbolu is located in the surrounding of a low slope plateau descending from north to south. It has two different settlement parts; summer and winter parts. The valleys, which are created by both thin and thick brooks, are named as winter settlement parts and used by people in winter (Harputlugil and Cetinturk, 2005). Although the valley protects settlement from windstorm and cold wind, it is very hot in summer times. The traditional houses of Safranbolu located on the slopes of the valley provide the opportunity to use the sun and the view without covering each other (Fig.2). Safranbolu is a cultural bridge between past and present and gives new lessons to the future of humans. Recent appearance of City of Safranbolu is like an open museum as a whole. Being in the world heritage list is also important in attracting tourists from all over the world. The history of settlement in Safranbolu goes back to approximately 3000 B.C. The civilizations reigned in this region were The Hittites, Paphlagonia, Kimers, Lydians, The Persians, The Seljuq Empire and The Ottoman Empire (Kaya, H., & Kurt, H. 2011).

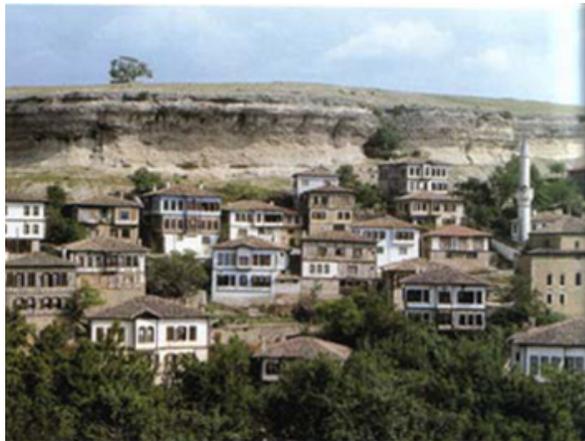


FIG. 2 The position of houses in Safranbolu.  
Source: (Harputlugil & Cetinturk, 2005)

## 2 ARCHITECTURAL SOLUTION IN SADEGHI HOUSE IN IRAN FOR ACHIEVING THERMAL COMFORT

The Sadeghi house was constructed around 1870 in Uch Dukkan neighbourhood in historical region of Ardabil. The Sadeghi house was one of the residential units in the neighbourhood near the Mosque and public bath (Fig.3). According to the plan layout analysis, the findings show that the Sadeghi traditional house consists of three different parts (Fig. 2). The designer of the house considered the climatic condition of the Ardabil city and cultural needs. The house consisted of summer and winter parts. The other finding is that the residents had a very strict privacy boundary in internal part of the house. This spatial organization is the solution to the residents' belief, religion and rituals as well as behaviours. The house is introverted, or looks inwards. All the spaces of the house were arranged around an open, rectangular courtyard that formed the link between different areas of the house. The arrangement follows certain geometrical rules. According to Haji-Qassemi, this geometry not only defines the general body of ensemble and gives shape to its every single detail, but also imposes a hierarchy to its different areas, which determine their locations and relationships in accordance with their character and importance. While harmoniously connected to each other in the design, the areas of the house enjoy complete independence and are always separated from the others by intermediary areas (Haji-Qassemi, 2003).



FIG. 3 Position of Sadeghi house in Uch Dukkan neighbourhood in Ardabil.

Source: (Rouyandozagh & Acikgoz, 2017)

The form of the building was influenced by the privacy, which created security and peace. The privacy had an essential role in the configuration of internal spaces, which had four layers as public, semi-public, semi private and private in the house (Fig.4). In this regard, the house included two main parts: inner part (Andarouni) and external part (Birouni). The mentioned yards (Hayat) had an essential role in separating the mentioned zones. On the other hand, the cold climatic condition of Ardabil was another problem for the designer of the house. Therefore, the boiler furnace and kitchen were designed under the living area of Sadeghi house (Fig.4).

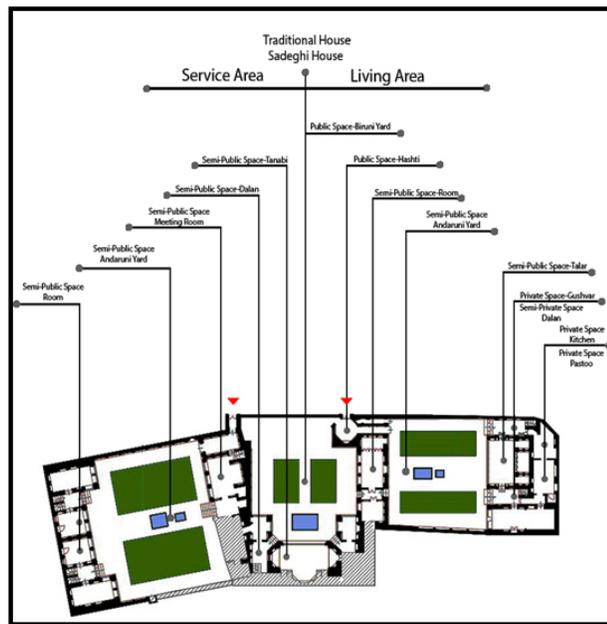


FIG. 4 Layout of Sadeghi House. Source: (Rouyandozagh, Y. D., & Acikgoz, E. K.,2017)

The openings in a house was very important for designers of houses in Qajar era in Iran. Designers had designed the windows and doors very carefully and they considered all privacy points and climatic factors in the openings of houses. For example, most traditional houses in Muslim societies have very small windows, whereas some houses use high-level windows (approximately 1.75m parapet high) on ground floor windows. Another design approach in these houses used to ensure visual privacy (Fig.5) (Daneshpour, 2011). The Sadeghi house's relation with the street was designed based on the above-mentioned regulation (Fig. 6).

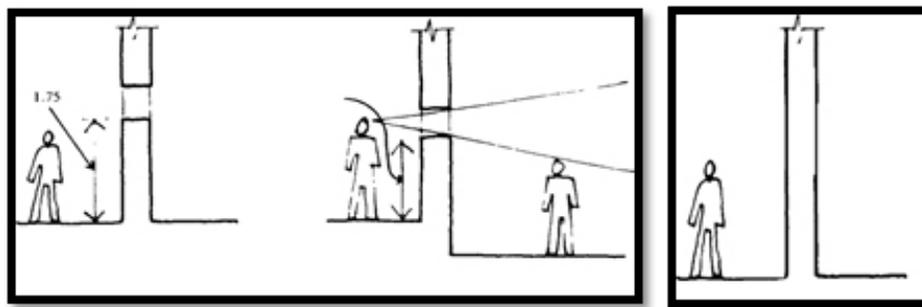


FIG. 5 Type of visual privacy between outsider and residence of traditional houses. Source: Drawn by Yousef Daneshvar Rouyandozagh



FIG. 6 Sadeghi house's relation with street.  
 Source: Photographed by Yousef Daneshvar Rouyandozagh

Due to cultural factors (privacy) internal spaces in the Sadeghi house in question were enclosed, ensuring light was very essential. The most reasonable way of using the natural light source for producing light and heat was the use of windows. Concerning the cold climate of Ardabil, concentration on absorbing the sun's heat through windows to inside of house was the focus of designers (Ebnalshahidi, 2011). The architects designed opening in the house; double-glazed windows were installed to retain the warmth of the inside (Fig.7). It is noteworthy that only coloured glasses were utilized in welcoming salons (Tanabi or Shahneshin). These colourful glasses let the ray of white light penetrate into Salon (Tanabi or Shahneshin) in colours and create a pleasant atmosphere.

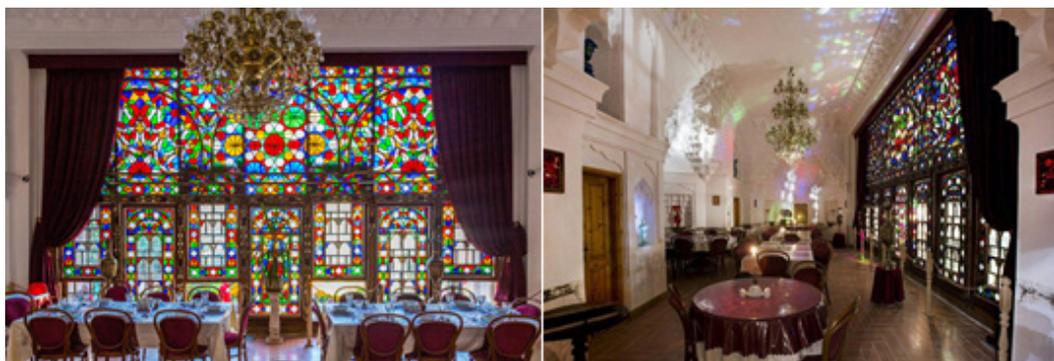


FIG. 7 The window of salon (Tanabi) in interior of Sadeghi house.  
 Source: Photographed by Yousef Daneshvar Rouyandozagh

The windows employed in the Sadeghi traditional house served a substantial role in absorbing solar energy, lowering the heat loss, as well as aesthetics. The other finding regarding windows opening in this house use of appropriate glass area in different fronts was in accordance with the amount of required natural light and absorbing solar energy in those fronts, which was conducted intelligently. The function of space in interior of the Sadeghi house has a major role in design of frame of the windows. For instance, the salon named Talar is part of the Sadeghi house, which was used by family members 24 hours of the day. Non-coloured transparent glasses were used in this salon (Fig.8). Therefore, the living area's salon named Talar had suitable atmosphere for users. The windows of the living area salon had double-glazing technique, which has been utilized for heat loss to be reduced inside the architectural space. Using large windows in Talar and Tanabi salons in southern side of the house shows that the department was designed with great consideration of function and thermal comfort.



FIG. 8 The window of salon (Talar) in interior of Sadeghi house. Source: Photographed by Yousef Daneshvar Rouyandozagh

The Haci Huseyinler House is located in the Ulukavak alley of Akcasu neighbourhood in Safranbolu and known as "Hacı Huseyinler House" (Fig.9). The house was constructed in 1870 and located on a very large land. The total usage area of the building is 467.14 square meter. In Safranbolu traditional house layout, the internal of the house is not seen from the outside. Therefore, the stone walls of the entrance floors of the houses rise up to the upper floor. The ground floor and entrance of the Haci Huseyinler House were also designed in this arrangement. This configuration is rooted in the Islamic cultural values. Based on the Islamic cultural values, visual privacy is very essential in house configuration and it was organised with different shapes in various regions of Muslim countries. According to Daneshpour (2011), the opening in the traditional houses was very important for designers. They designed the windows and doors very carefully and they considered all privacy points in opening of houses (Fig. 5). The windows in the Haci Huseyinler House was designed and installed with a visual barrier among households and outsiders. On the other hand, the designer used ground floor to reach energy efficiency in internal of the house. The ground floor of the Haci Huseyinler House was used as a barn for animals and boiler furnace. This architectural solution responded to the users' cultural and thermal comfort needs.



FIG. 9 Environment of Haci Huseyinler house. Source: (Harputlugil and Cetinturk, 2005)

According to climatic feature of Safranbolu, cooling system is very serious for users in summer time. Natural ventilation was used for cooling in internal of the Haci Huseyinler House. The whole organization of the space was built to make natural ventilation inside.

Thermal comfort in the house interior has been affected by the climatic feature, topography of the land, relations with the environment, space organization, construction system and the materials and components. The designer of the house, in view of the mentioned factors, tried to use passive heating and solar energy for heating which was a successful method (Günay, 1999). The other thermal comfort solution in this house was the separate internal parts that are described as the summer space and the winter space (Fig.10). The middle floor consists of winter spaces and the upper floor consists of summer spaces in the Haci Huseyinler House. According to the residents of the house, the position of the rooms and the height of the ceiling in the rooms affected cooling and heating of the rooms. The rooms with low ceilings, which are located above the barn and hayloft, are hotter than the other rooms. Therefore, the residents used these rooms as winter rooms. Construction materials also have a major role in thermal comfort as the adobe blocks and stonewalls in the ground floor serve as thermal mass. They were the best options for reaching thermal comfort in those periods, because these materials featured storing hot air from the external in summer time and hot air from internal side of the house.



FIG. 10 Sections of Haci Huseyinler house and winter and summer time's parts.  
Sections of Haci Huseyinler house and winter and summer time's parts

### 3 CONCLUSION

In this paper, we discussed architectural methods in two houses to reveal traditional methods of thermal comfort. Today, modern houses are dependent on new technologies by using different kinds of energy such as electricity and fossil fuels. Researching traditional houses with energy efficiency is very important in sustainable architecture. Taking some lessons from traditional houses in different climatic conditions can help us find ways to reduce energy consumption. These lessons can be useful for decision makers in energy strategies. In contrary to today's houses, considering the analysis of natural elements existing in Sadeghi and Haci Huseyinler Houses, we can see close and mutual relationship between nature and architecture in Table 1.

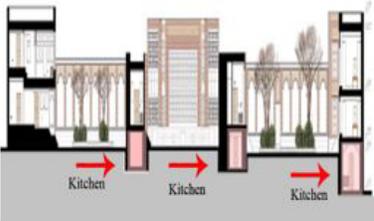
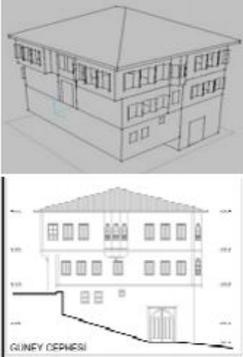
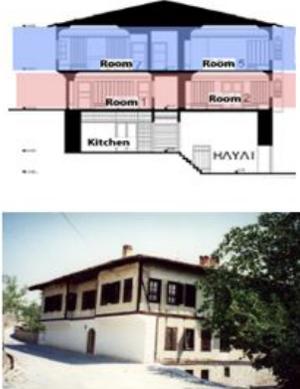
House Name	Use of Natural Light	Thermal Comfort	Strategy
<b>Sadeghi House</b>			Climate-based design Nature-creator approach Very successful./Designed based on cultural codes./Protection and improvement of natural values.
<b>Haci Huseyinler House</b>			Climate-based design Nature-creator approach Very successful./Designed based on cultural codes./Protection and improvement of natural values.

TABLE 1 Analyzing sustainable solution and thermal Comfort in Sadeghi and Haci Huseyinler Houses. Source: Authors

Considering the issues investigated, we can conclude that despite the fact that simple and pure traditional buildings are in harmony with nature in historical architecture, in contemporary times, there is no link between houses and the nature. Yet, just a few number of this kind of architecture exists in them. Furthermore, traditional buildings teach us very precious points about designing. Both Sadeghi and Haci Huseyinler houses were built respecting nature and coexistence, responded to the cultural needs of users and guaranteed thermal comfort by using local materials in the

constructions. Cultural values and material analysis are analyzed in Table 2. Both houses were built respecting nature, coexistence and using local materials and natural models which had a considerable role in creation of architectural works.

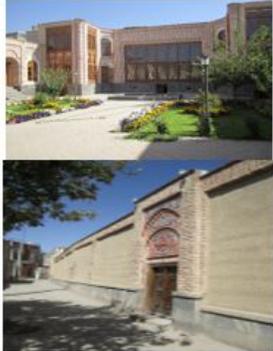
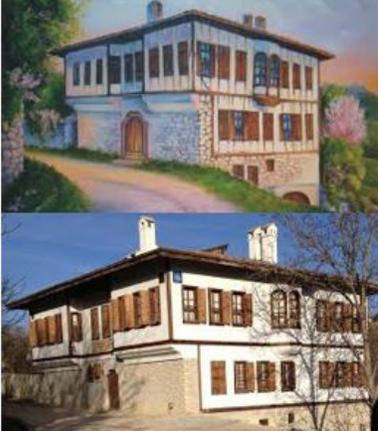
House Name	Cultural Values	Construction Materials	Strategy
<p><b>Sadeghi House</b></p>			<p>Used local material (Brick and wood structure) approach Very successful for cold weather areas. /Designed based on privacy and separation house department based on thermal comfort and cultural codes.</p>
<p><b>Haçi Huseyinler House</b></p>			<p>Used local materials (Masonry and wood structure) approach Very successful for cold weather areas. /Designed based on privacy and separation house department based on thermal comfort and cultural codes.</p>

TABLE 2 Analyzing cultural values and construction materials in Sadeghi and Hacı Huseyinler House. Source: Authors

The information on the impact of climatic condition on houses and traditional architectural methods for control thermal comfort will enable the architects to obtain advice and guidance for new house design. In these two samples, it is clear that the houses in Ardabil and Safranbolu were designed in accordance with the climate that prevailed at the time of construction. The houses responded to all needs -cultural and thermal- of users in that period and many people lived in these houses without any problems. Due to increasing human expectations of quality of life and also the major problem of climate change, the existing apartments and residences will not provide expected level of thermal comfort and cultural needs in the future. It is essential to adapt the houses for future conditions by considering traditional house construction techniques. By observing and researching the houses, it can be concluded that the houses have been constructed with materials with a high heat capacity and thermal mass. The rooms, food preparing areas and habitat for animals have been designed

based on energy efficiency and cultural needs. It is clear that the construction materials are linked closely to the provision of climate conditions. The orientation of mass in both examples had the main role in energy efficiency. The separation of interior of the house was designed that the winter rooms were directed to south and summer rooms were directed to north (Table 3).

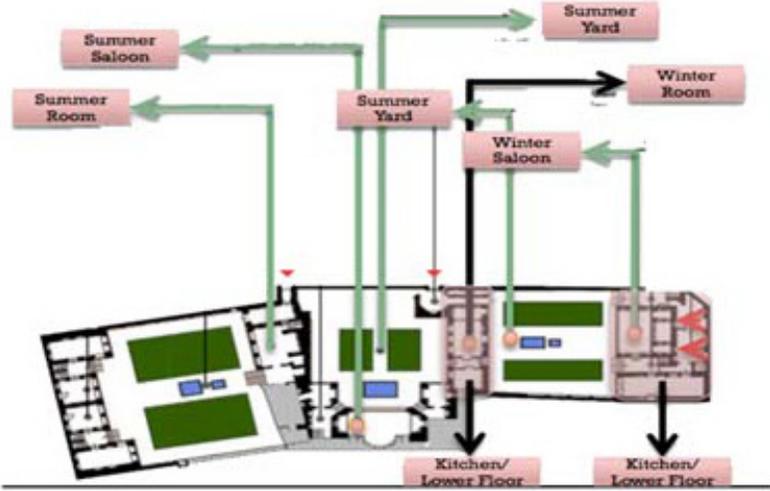
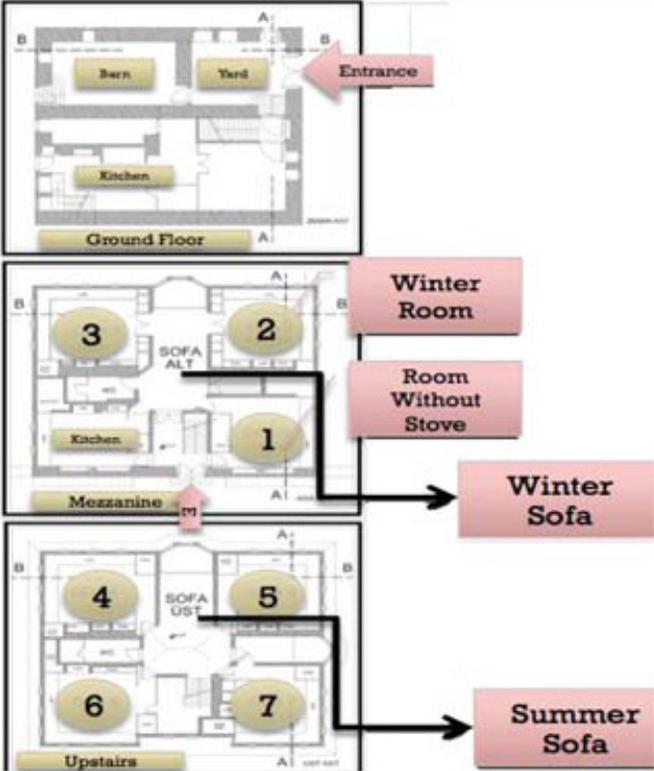
House Name	Separating Internal Departments Based on climatic factors
Sadeghi House	
Haci Huseyinler House	

TABLE 3 Analyzing internal department of Sadeghi and Haci Huseyinler Houses. Source: Authors

While the debate on the value of traditional houses' planning and energy efficiency goes among the urban scholars and practitioners worldwide, comparative analysis of different countries and different climatic conditions patterns enables us to identify the failures and successes, extract lessons of great traditional houses, and adapt them to modern contexts to achieve more sustainable world. Traditional house design concepts could help to achieve sustainable housing development, energy efficiency, minimal consumption and sustainable societies.

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# The Utility of System Dynamics to Heritage Research: an Example from a Study on Residents' Attitudes towards Energy Efficiency in Heritage Buildings

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## Abstract

*In this paper, we demonstrate the potential of applying critical systems thinking and the method of system dynamics in order to explore a complex heritage problem with a time dimension. More specifically, within the context of heritage and sustainable development goals (SDGs), one of the critical questions that heritage researchers, practitioners and policy-makers are asking is: 'what is the impact of heritage on multiple SDGs and what methods do we need to explore this question? In this paper we go beyond SDG 11, to show the potential of interactions of heritage with SDG7 (affordable energy) and SDG 12 (responsible consumption and production), the latter linked with energy consumption and re-use of old materials. Questions on the impacts of heritage are not only complex but also have a time dimension as we can only be able to assess the impacts of heritage over a period of time. Through this paper, we intend to contribute to this discussion by illustrating how system dynamics can offer a tool (if used critically and if applied by collaborative, interdisciplinary teams) to explore such issues. We do so by specifically focusing on the detailed analysis of an interview excerpt with two residents owning an 'old' traditional building in East London (Walthamstow). This interview sample derives from a large dataset of in-depth interviews that we have been building over the last 5 years and which aim to explore residents' attitudes towards energy efficiency and thermal comfort, and the degree to which the values assigned to their 'traditional' (listed and unlisted) residents drive or prohibit certain decisions over time.*

## Keywords

*Energy efficiency, thermal comfort, heritage values, system dynamics*

## 1 INTRODUCTION

To exemplify the use of system dynamics in the context of heritage we will use analytically an interview excerpt extrapolated from a set of 15 in-depth interviews that were carried out as part of a research and public engagement project funded by a Beacon bursary at East London (Walthamstow) (for results on this project, see Fouseki and Bobrova, 2018). The aim of the project was to investigate how the tension between the need of residents for thermal comfort and desire to preserve original, but deteriorated, features of an old house affects residents' interventions on energy efficiency and heritage preservation. Interviews were combined with informal chats on photographs taken by the residents regarding the aspects of their house they liked the most (photo production method) and images of energy efficiency technologies (e.g. insulation, underfloor heating, wind turbine etc) that residents commented upon.

The paper outlines and reflects on the individual steps undertaken during the system dynamic analysis of the interview excerpt. We consider this process of vital significance because several interdisciplinary studies often tend to 'cherry-pick' tools and methods without critical evaluation and reflection. Moreover, due to inevitable subjective biases with which the system dynamic modeller is imbued, it is important to outline in a critical manner the methodological journey followed during a system dynamic analysis, especially in studies that combine qualitative and quantitative data. Qualitative data in system dynamics are growingly recognised as important sources for building simulation models (Luna-Reyes and Andersen, 2003; Tegegne et al., 2018). However, for better analysis and integration of both types of data a synergy between social scientists, such as heritage managers, and physical scientists (such as engineers) is pivotal. Hence, this paper is co-authored by a heritage manager and a system dynamist. We argue that this interdisciplinary collaboration is essential for ensuring scientific credibility as well as reflective and critical thinking. Finally, we propose that such interdisciplinary work is absolutely essential when it comes to explore and provide robust evidence of the contribution of heritage to the Sustainable Development Goals.

## 2 METHODS IN ANALYSING HERITAGE CHANGE

Studies on the dynamic nature of heritage and its socio-economic impacts over time tend to be limited and fragmented. They also tend to either drawn exclusively on qualitative data (e.g. Baker 2013; Balkenhol 2014; Hudson et al. 2013; Meyer and De Witte 2013) or quantitative data from lab experiments when they relate to understanding material degradation (e.g. Dillon et al. 2012). In this paper we would like to offer an additional, useful tool in the palette of analytical tools for heritage research, that of system dynamics. It not only allows the integration and modelling of qualitative and quantitative data but, more importantly, it forces researchers to think in a systemic, complex and dynamic way offering new insights to heritage.

Although there are some sporadic attempts in the broader field of heritage who have tried to use system dynamics (e.g. Avrami 2012, Bernardi, 2008; Hall et al. 2011; Jung and Love 2017) none of these studies have endeavoured to take the extra mile and rigorously use qualitative and quantitative data for mapping and modelling the dynamic interconnections of a complex heritage system over time. Our paper attempts to fill this gap by critically showing how system dynamics can be applied in addressing a heritage-related problem or question that has a time dimension.

## 3 APPLYING SYSTEM DYNAMICS IN STUDYING HERITAGE CHANGE: STEP BY STEP

The method of system dynamics is underpinned by the theory of systems thinking. Systems thinking is underscored by the idea that events and patterns we observe are caused by systemic structures and hidden mental models (Checkland, 1999). By understanding the interconnection and systemic structure of elements that form a whole, systems thinking can provide a useful approach to understanding and solving perplex problems using conventional reductionist thinking and explaining dynamic and non-linear behaviours of systems (Monat and Gannon 2015, 11).

Systems have traditionally (and rather problematically we would argue) been distinguished between 'hard' and 'soft' systems (Jackson, 1982). 'Hard systems' refer to the technical operations of a system

while 'soft systems' signify systems 'in which human beings play an important part' (Flood and Jackson, 1991a). Initially, systems thinking prevailed in hard systems approaches back in the 1960s, such as operation research and systems engineering. In the 1970s, hard systems approaches were challenged by new developments in soft systems thinking which acknowledged the role of people in the operation of systems but failed to deal with critical issues of power and social change (Checkland and Hayes, 1994). The lack of engagement of soft system approaches with critical issues led to the emergence of critical systems thinking in the 1980s which is characterized by the commitment to critique the chosen methods, to allow equal participation in community with others (emancipation) and to accepting that all system approaches have a contribution to make (pluralism) (Flood and Jackson, 1991b; Jackson, 1991; Jackson, 2001). Our exemplifying analysis will predominantly be underlined by the principles of 'critical systems thinking' as we will be demonstrating the critical path that we followed during the application of system dynamics in our example.

The ultimate goal of system dynamics is to develop a model that maps the change of a system's parameters over time. Although different experts use different ways in which they organize the steps of modelling a dynamic system, most authors conceptualize the steps of modelling as an iterative process that comprises the following steps: problem definition and system conceptualization; model formulation and representation; model evaluation, policy analysis and model use; policy formulation and evaluation (Fig. 1).

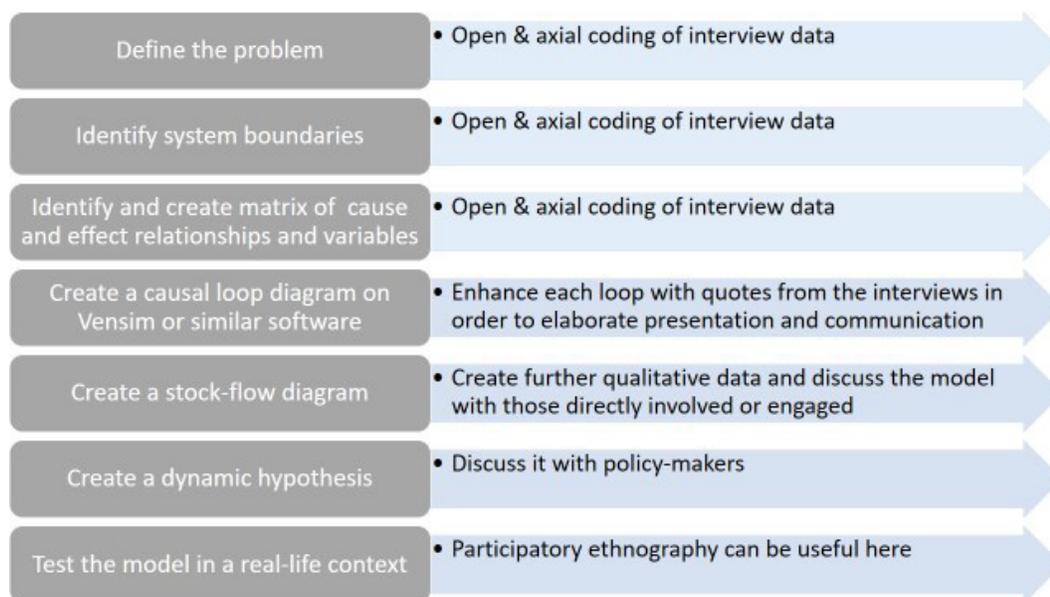


FIG. 1 Steps in developing a system dynamics model. Source: Created by authors

The key elements in system dynamics are: a) *complex and non-linear systems* b) *feedback structures* c) *feedback loops* and d) *stocks and flows*. A complex and non-linear system comprises of a structure of multiple loops interlinking multiple factors and creating nonlinear relationships (meaning that one relationship that dominates the present may disappear in the future) (Forrester 1987, 107). In other words, the structure of a system is a set of cause and effect relationships while the behaviour of the system is a process/a chain of events (Randers 1980, 120). The ultimate output of a system dynamics analysis is a system dynamics model that simulates the behaviour of a system over time. It is worth clarifying at this point that what is modelled is not the system *per se* but the

problem and its behaviour over time (Sterman 2000). The behaviour of the system within which the problem is located is generated by its feedback structure (Forrester 1987, 133). There are three main feedback structures. A positive feedback structure generates exponential growth. A negative feedback structure leads to goal seeking to bridge the gap between a desired and an actual goal, and a negative feedback structure with delays generates oscillation (Forrester 1987, 133).

*Stocks and flows* are two central concepts in system dynamics (Forrester 1987, 191). The term 'stocks' refers to anything (tangible or intangible) accumulated over time. What drives the accumulation of stock over time is known as the 'flow'. In order to understand the interconnection of multiple variables that lead to the accumulation of stocks over time, system dynamics provide a tool to map, visualise and understand the complexity of the basic behavioural structure of a complex system. For this to be achieved, the boundaries of the system need to be determined. *System boundaries* denote the endogenous parameters of a system that, if they change, the whole system changes.

System dynamics have traditionally been using quantitative data as they have been applied in analysing 'hard systems'. However, in recent years, there is increasing emphasis in system dynamics literature on the need to use more qualitative data for building simulation models (e.g. Coyle, 2000; Lune-Reyes and Andersen, 2003; McCusker & Gunaydin, 2015). The emergence of a social approach to system dynamics highlights the growing need for qualitative research that can feed the development of system dynamics modelling. While for system dynamists this need requires a new skill set that needs to be exercised, heritage researchers' familiarity with qualitative research can compensate for that lack.

### 3.1 DEFINING THE PROBLEM AND IDENTIFYING THE BOUNDARIES OF THE SYSTEM THROUGH CODING QUALITATIVE DATA

Defining and articulating the problem and the boundaries of a system is the first step in developing the first 'dynamic hypothesis' (a hypothesis that shows how the parameters of a system interlink with each other over time) (e.g. Luna-Reyes et al. 2003, 275). In our case, the problem that triggered the research project is the tension between thermal comfort and the preservation of original features. Given that system dynamics explore a problem over time, our problem in this case was "how do cultural values, with which original features of an old building are associated, change over time, and how does that change affect decision-making on energy efficiency interventions and the preservation of heritage values"? The problem was further refined by looking at the interview data with an 'open-eye'. Following the principles of grounded-theory according to which the data drive the theory (Glaser and Strauss, 1967), we coded the interview text through an *open coding* process which allows the identification of themes and variables related to the key research question (Strauss and Corbin, 2014). The identified variables were then grouped into wider themes through *axial coding* process. This process facilitated the refinement of the problem and the identification of the system boundaries which consist of: the building material, the people, and the values assigned to the original features of the building.

### 3.2 VISUALIZING CAUSE AND EFFECT RELATIONSHIPS VIA A CAUSAL LOOP DIAGRAM

Using the analytical process developed by Kim and Andersen (2012) we mapped a series of cause-effect relationships on an Excel Table (Table 1).

<b>Cause variable</b>	(Original features e.g. sash windows)	(Visual attractiveness) I love the look of it
<b>Effect variable</b>	(Visual attractiveness) I love the look of it	(Satisfaction)
<b>Relationship type</b>	Positive (the more the original features, the higher the visual attractiveness)	Positive

TABLE 1 Example extrapolated from the detailed matrix of cause and effect variables. This formed the basis for developing the causal loop diagram displayed below. Source: Created by authors

The first row depicts the 'cause' variable and the second row, the 'effect' of the cause. Information inserted in brackets indicates our personal phrasing while direct quotes extracted from the interview are cited in quotation marks. For instance, the presence of 'original features' is a cause variable in that it enhances the visual attractiveness of the house. The relationship between the cause and the effect is positive and reinforcing as it implies that the more the original features the stronger the visual attractiveness. Identifying cause and effect variables provides the basis for creating a *causal loop diagram*, a diagram that visualizes the feedback loops that are assumed to have caused behaviour of key variables over time (Randers 1980, 119). Each cause-effect relationship is indicated with + or - depending on whether the relationship is positive and reinforcing (e.g. the more... the more) or balancing (e.g. the more...the less). Fig. 2 depicts the causal-loop diagram reflecting our interview excerpt.

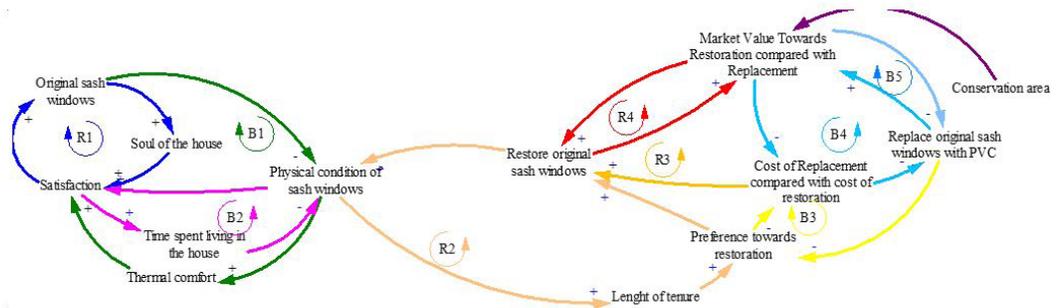


FIG. 2 Causal-loop diagram. Source: Created by authors

The first reinforcing loop of the causal-loop diagram (R1) signifies residents' attitudes at the time of purchasing the house. This reinforcing loop implies that the higher the number of original sash windows the stronger the 'soul of the house': "Well they're part of the fabric of the house and it was nice to keep the house as it was, as it was meant to work, you know it still had all the original weights and the cavities and, so yeah, you know, it was part of the soul of the house". Furthermore, the stronger the soul of the house, the more satisfied the residents are with the overall house. However, over time, the residents perceive the poor physical condition of the original sash windows an obstacle to their thermal comfort affecting their overall satisfaction with the house. The balancing loop B1 indicates that the large number of original windows increases the risk for poor physical condition of the house and the risk for low thermal comfort. B1 represents a gap between the desire to maintain the original features and aesthetics of the house, and the desire to improve thermal comfort and reduce energy bills. To address this gap, the residents are exploring the options of maintaining and restoring or replacing original windows with PVC windows. The decision will depend on the costs of restoration versus replacement (R3), the extent to which the market in the area values the

original windows more than the uPVC (B4) and the time that residents plan to spend in the same house (length of tenure) (R2). Indeed, the more the years they intend to stay, the more likely it is for them to restore the original windows: *"if I plan to sell the house in a short to mid-term there was no point, if it's my forever house yeah, but if it's not a house I'm planning to stay for a longer time then I won't bother"*. Similarly, if the original features have high market value, then the likelihood to restore them is higher. *"And the decision you know, it was also because those houses, especially at the time, they weren't expensive houses... we just felt that spending money and restoring windows if you're in a conservation area in a nice neighbourhood, or even you know, like in the village or somewhere where the real estates move premium it makes sense, but spending money on restoring sash windows in this area it didn't really add with the price of the house"*. Creating, in the first instance, the causal-loop diagram, provided an excellent opportunity for close systematic and reflecting looking of the interview itself. Secondly, the resulting diagram also provides an effective communication and visualization tool of the factors that contribute to change of heritage values and the shaping of decision-making (see, also, Richardson 1986).

### 3.3 MODELLING THE DYNAMIC HYPOTHESIS

The causal-loop diagram illustrated in Fig. 2, depicts a *dynamic hypothesis* that is applicable for home-owners who do not intend to live in the same house for years to come. According to the *dynamic hypothesis*, cultural values associated with the original features of an 'old' house prevail at the early phase of purchasing an old building but decline over time as the need for thermal comfort increases. However, if the market value of the surrounding neighbourhood area appreciates the preservation of original features or if the house is located in a conservation area, then cultural values are in the rise again. Once the *dynamic hypothesis* is created, the next step is to model the hypothesis on a relevant software (in our case we used Vensim). The modelling process requires the development of a stock and flow diagram. This diagram illustrates the variables that accumulate over time in boxes (stocks) and the rates that drive this accumulation (rates). The interrelationship of the variables is then described using simple mathematical equations (Sterman, 2000). In other words, the principle idea is that the dynamic behaviour of the system occurs when flows accumulate in stocks. For instance, Fig. 3 illustrates the interrelationship of the stock highlighted in orange in box (*perceived fit of the windows to the soul of the house*) with the flow indicated through the rate arrow (*change in perception of fit to the soul of the house*).

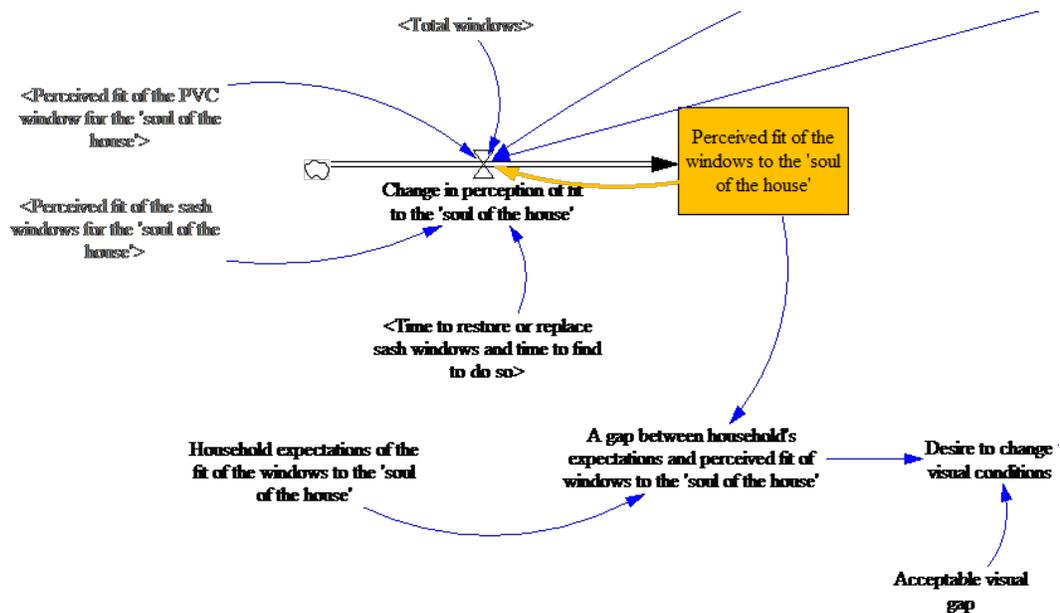


FIG. 3 Stock and flow diagram. Source: Created on Vensim by authors

The stock in orange accumulates as a result of the flow 'change in perception of fit to the soul of the house'. In the equations editor tool of Vensim, the stock – as with all stocks – is entered as type 'Level'. One of the critical moments was to assign a number for variables (units on the model) that cannot be measured such as the aesthetics or the soul of the house. Through critical debate we reached the conclusion that the allocation of numbers is in effect a different (numerical) language that the software can read in order to express our dynamic hypothesis. We conventionally named the 'unit' representing the aesthetics as 'visual points'. We determined a scale from 0 to 1 in order to signify where on this scale 'aesthetics' are appreciated based on the interview data.

The flow 'change in perception to fit the soul of the house', on the other hand, is an Auxiliary type of variable which depends on the interrelationship of the following parameters (perceived fit of the sash windows for the soul of the house, sash windows in the house, total number of windows, perceived fit of the PVC window for the soul of the house and PVC windows in the house). Since this is a flow that changes over time, the unit that will be used to measure it is visual points/month. The equation relationship used to depict the interrelationship of the above variables is as follows (fig. 4):

$$\begin{aligned}
 & \left( \frac{\text{Perceived fit of the sash windows for the 'soul of the house' * Sash windows in the house}}{\text{Total windows}} \right. \\
 & + \left. \frac{\text{Perceived fit of the PVC window for the 'soul of the house' * PVC windows in the House}}{\text{Total windows}} \right) \\
 & - \text{Perceived fit of the windows to the 'soul of the house' } \\
 & / \text{ Time to restore or replace sash windows and time to find to do so}
 \end{aligned}$$

FIG. 4 The equation relationship

The next challenge is to translate this relationship into an equation. To do this, we had to re-read carefully the interview transcript. The interview showed that initially the sash windows were *fit for the soul of the house* and was the main driver for purchasing the house (according to our scale this translates into 1). On the contrary, uPVC windows were rated very low at the beginning (We did not assign a 0 as it was still an option but of low priority, so we assigned the value of 0.3). The total number of windows in the house were 10, 8 of which were sash and 2 uPVC. We also know that it took residents 10 years to reach a decision in terms of the future of the original sash windows. The most interesting, and one of the fundamental concepts in system dynamics, is the gap between *perception* of what is happening and what is *actually* happening. The gap between the residents' initial expectations and perceptions that the sash windows contribute to the soul of the house and what is currently happening 10 years after they moved will determine their desire to change the current condition. Similarly, their desire to change the aesthetics (visual attractiveness) of the house will depend on the gap that exists between their initial and current expectations of the contribution of the windows to the 'soul of the house'. The larger this gap the stronger the desire is to change the visual conditions. Following the example above of modelling the *stock* of 'soul to the house' and its correlated flows, Fig. 5 depicts the flows associated with the stock of 'thermal comfort'.

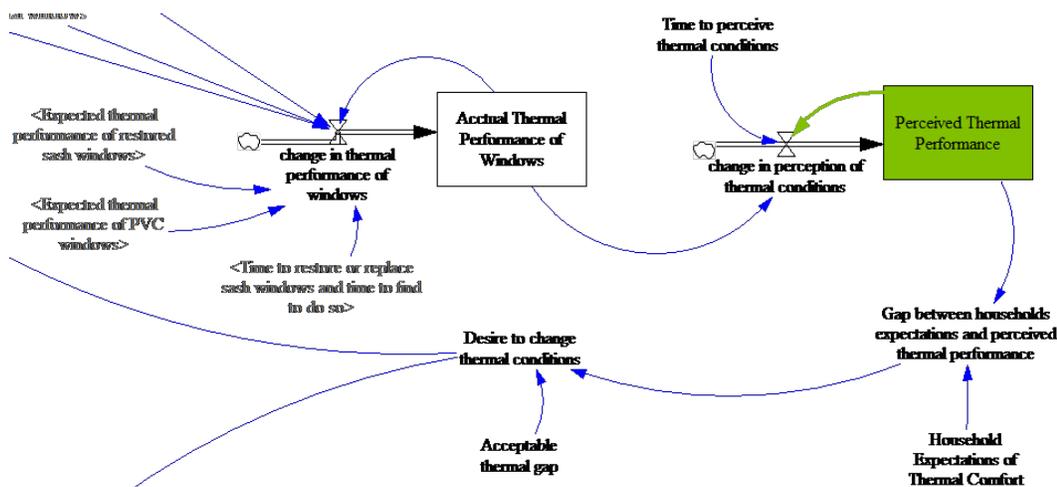


FIG. 5 Stock and flows of thermal comfort. Source: Created by authors on Vensim

Fig. 5 shows that the desire to change the thermal conditions of the house will depend on the expected thermal performance of the windows and the ways in which the perception of residents towards the thermal performance change over time while they get used to living in the house. The higher the gap between residents' expectations and actual performance, the higher their desire to change the thermal conditions through the restoration or replacement of sash windows with PVC.

### 3.4 SIMULATING THE DYNAMIC HYPOTHESIS

Having completed the equations, the next step is to test a few simulations in order to determine whether the simulations will illustrate what we expect them to illustrate (Homer and Oliva 2001, 349-350). For instance, we ran a simulation of the interrelationship between 'thermal comfort

points' and 'visual points' in order to test whether our hypothesis that original sash windows and their contribution to the soul of the house declines over time but gradually increases as a result of changes in the market. The thermal comfort need, on the other hand, grows steadily (Fig. 6).

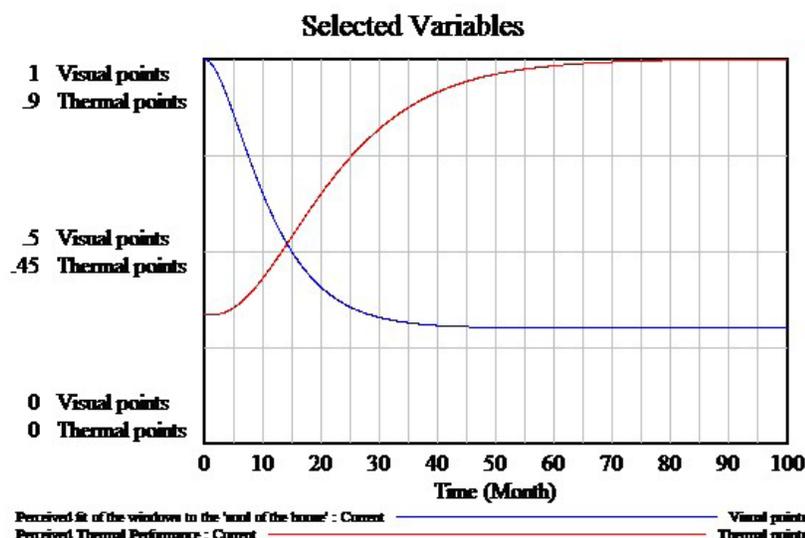


FIG. 6 Simulating residents' priorities between cultural values and thermal comfort over time. Source: Created by authors on Vensim

#### 4 TOWARDS A CRITICAL APPLICATION OF SYSTEM DYNAMICS IN HERITAGE MANAGEMENT STUDIES

This section summarizes the critical issues and debates that we faced during the application of system dynamics in the analysis of the interview data. One of the main contributions of this process was that the decision to apply systems thinking and system dynamics dictated a new way of looking at heritage change. This new way of thinking would have not occurred if only a thematic analysis of the interview had been applied. The process of modelling was eye-opening in that much of the learning about the system was developed through it, rather than through seeing the simulation results. This allowed a deep understanding of the underpinning process which was the object of modelling.

One of the key issues in debate was 'what is the added value' of using system dynamics for the analysis of qualitative data. Through discussions and experimentation with the systemic modelling process, we concluded that the unique characteristic of system dynamics is that it looks at the underpinning structure of a systemic problem and its change over time through a non-linear manner. This has significant implications for future studies on heritage and its contribution to the sustainable development goals. An additional issue of debate was the terminology *per se*, which is a recurrent challenge in interdisciplinary studies. For instance, the terms 'stock' and 'flow' may not reflect the intangible nature of heritage, perceptions, values, attitudes and behaviours. Ultimately, it will depend on how these terms are being used. The core idea represented by the terms 'stocks' and 'flow' is the idea of accumulation and change over time (stock) and the force that drives this change (flow).

System dynamics are problem-driven, as explained above. However, one of the critical questions that emerges from this problem-based approach is "what makes a problem a system dynamics problem" and, consequently, what makes a system a complex system? Is a house, like in our case, a complex enough system? Researchers in 'hard systems' might argue that a house is not a complex system but our research has shown that a house is a dynamic and complex system, especially a heritage buildings because of the cultural values.

System dynamists adopt a problem-based approach to the conceptualization of systems as they are driven by the need to inform policies and strategies. In our example, we concluded that what we map is not just driven by a practical problem (in our case the tension between thermal comfort requirements and heritage preservation), but more by the enquiry to understand human behaviour and human action in relation to this tension. This proved particularly challenging because, as mentioned above, system dynamics are not the best tool for visualizing the human agent – they somewhat depersonalize the system by looking at its endogenous forces. However, they can help setting the foundation of depicting the system and then explore ways in which they can be enriched.

Another issue of debate was what one of the co-authors identified as the paradox of system dynamics. Given that system dynamists claim to depict complex systems, they do so through a rather reductionist approach. Indeed, as Sterman argues, a system dynamics model 'must address a specific problem and must simplify rather than attempt to mirror an entire system in detail' (Sterman 2000, 89). While one of the co-authors had initially problems with this reductionist approach, it soon became clear that by focusing on those variables that really make the change and have an impact helped with the identification of the system structure and behaviour.

In other words, system dynamics do not model systems *per se* but the problem that results from a system outlining the interactions of factors that lead to and change the problem. Every model is a representation of a system – a group of functionally interrelated elements forming a complex whole (Sterman 2000, 89).

The issue of 'modelling behaviour and perception' provoked debate as well. Modelling is, possibly, connoted with the idea of prediction. However, modelling can very rarely function as a tool of prediction. On the contrary, modelling provides a tool for exploring whether the understanding of the system gained through the modelling process is capable of generating a behavioural pattern of interest. Modelling can thus enrich a hypothesis and provide a tool for policy makers. Thus, the change over time that system dynamics visualise does not refer to the prediction of change in the future but to the identification of the most significant variable that can cause change or the impact of a change of a parameter. Finally, as with any type of research, we had to constantly reflect on our biases and assumptions and how those direct the creation of the model. By doing so through collaborative work between two scholars from different expertise, the biases can be reduced.

## 5 CONCLUSION

This paper illustrated the critical application of system dynamics in understanding and managing heritage change. By using an excerpt from an in-depth, semi-structured interview we developed a *dynamic hypothesis* regarding the change of the interrelationship of the *functional value* associated with thermal comfort with *cultural values* assigned on traditional buildings and the impact of that change on energy efficiency and heritage preservation decisions in residential homes. We advocated for the adoption of a 'critical' and 'socio-technical' approach to system dynamics that draws and merges qualitative and quantitative data and which is informed by critical systems thinking and complexity theory. Critical systems thinking encourages self-reflection on the use and adoption of the methodology and complexity theory stresses the fluidity of the system under examination.

We argued that system dynamics – despite their limitations – can provide a useful tool for understanding and managing change over time. Heritage is a dynamic and complex system which is subject to constant change. Change results from the interaction of various factors leading to dynamic and non-linear interrelationships that change over time. System dynamics can unveil the critical variables and factors that affect the system. We also argued that a system dynamic analysis of heritage requires interdisciplinary and open-minded collaboration of system dynamists with heritage experts. We strongly contend that a critical approach to system dynamics can only be achieved through a critical collaboration.

System dynamics, especially the so-called 'soft system dynamics' are not without limitations. There are several questions that require further research. The development of causal loop and stock-flow diagrams based on qualitative data raise issues of subjectivity and reliability. The field must certainly address the relationships between qualitative mapping and quantitative modelling—in short, when to map and when to model. To advance in this area, the field requires both academic research and reflective, constructively self-critical practice.

More research needs also to be carried out on merging system dynamics with other approaches (such as the agent based modelling) in order to capture decision-making behaviour of more than one individual. More studies in heritage are also needed in merging 'soft' and 'hard' variables which will be particularly useful in studies related to the impacts of heritage on SDGs.

The next steps of our research are to enrich and amend our system dynamics model with the additional interview data which will be discussed with policy-makers and heritage practitioners as well as with environmental data (temperature, humidity, ventilation) and condition assessment data. This work has already began and is in progress. By doing so, we will model desired, perceived and actual sense of thermal comfort and its dynamic interactions with energy efficiency and heritage conservation decisions. Since one of the main applications of system dynamics is to inform, design and evaluate policies, our next future research stage is to also examine the impact of current heritage conservation policies and guidance on decisions made by the residents on energy efficiency. The *dynamic hypothesis* represents a growing association of aesthetic values linked with the preservation of original features with an increased market value. Heritage preservation, thus, in this example, becomes a practice of the elite as a well as a practice that relates not with the 'soul of the home' but mainly with the market value of the 'asset'. At the same time, the potential of increased market value may lead to less energy-efficient interventions. Moreover, it becomes apparent from the interviewee that other interventions (such as draught proofing) are not taken into account into the decision-making. Similar research on a larger scale and in different cultural and geographical contexts can provide a better picture of how owners and tenants make decisions on energy efficiency interventions and heritage preservation.

## Acknowledgment

This paper is an output of the Beacon funded project 'Energy Efficiency and Heritage Values in Traditional Buildings in East London'.

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# Contributions to a Revised Definition of Sustainable Conservation

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## Abstract

*The inclusion of Heritage in the global agenda for sustainable development has contributed to a broader discussion around the interconnection between heritage and sustainability. However, the definitions of both concepts lack consensus. In the last decade, hundreds of definitions of sustainability can be identified in the scientific literature. Often these definitions focus on different dimensions of sustainable development and do not cover the overlapping of social, economic and environmental aspects. The indicators vary according to the main goal and/or specific building under assessment. Moreover, the concept/notion of heritage is understood as a social process based upon definitions and values, which are dynamic and evolve. During the last decades, there is growing attention for the integration of such comprehensive concepts and several frameworks have been developed. However, a systematic definition of the relation between the two concepts is lacking. Some authors even pointed out that the multiple approaches, too specific for each context, lack objectivity and reduce credibility. The main goal of this paper is to contribute to a revised definition of sustainable conservation at the intersection of these two concepts, based on a narrative review of the recent literature and international reference documents, developed by different organisations, such as ICOMOS, the United Nations, and the International Organization for Standardization and the European Committee for Standardization.*

## Keywords

*Heritage; sustainable development; sustainable conservation*

## 1 INTRODUCTION

Heritage and sustainability have traditionally been studied as separate concepts, by different disciplines. Codes, recommendations, and standards are being established with specific focuses and goals. Depending on the approach, heritage can be understood as either a vector for development<sup>1</sup> or a victim of development.<sup>2</sup> Therefore, the role of heritage for sustainable development is not being embraced in its full potential.<sup>3</sup>

Despite the increasing number of studies on Heritage and Sustainability, both concepts lack consensus on their definition, as well as on their relation. The integration of such comprehensive concepts in a common framework has been a recurrent challenge for several decades<sup>4-16</sup>. However, there is still the perception that such a framework is still lacking<sup>4,5,11,12</sup> and that the multiple approaches, too specific for each context, lack objectivity and reduce credibility.<sup>9</sup>

This paper presents the results of a review of the literature and international reference documents on the definitions of heritage conservation and sustainable built environment, to contribute to a revised definition of sustainable conservation.

## 2 METHODS

The review on recommendations, standards, and codes was performed on the topics of heritage and sustainability, with a focus on the definitions of these main concepts. This review is divided into three parts: 1) the evolution of the concept of Heritage in the international charters, since the beginning of the 20<sup>th</sup> century; 2) the evolution of the concept of sustainability in international regulations and standards; and, 3) the integration of the two concepts in the documentation where both concepts were referenced.

This review aims to provide a better understanding of the several factors that the concepts of heritage conservation and sustainable built environment have in common. By understanding these concepts, further research can be developed for the definition of a framework on the contributions of heritage to a more sustainable built environment.<sup>17</sup>

This review was performed by analysing official documents from ICOMOS, United Nations, International Organization for Standardization and European Committee for Standardization. Fig. 1 lists the reviewed documents in chronological order. These illustrate the current international reference documents in the domains of heritage (top line), sustainability (bottom line) and both (middle line), in the scope of the built environment.

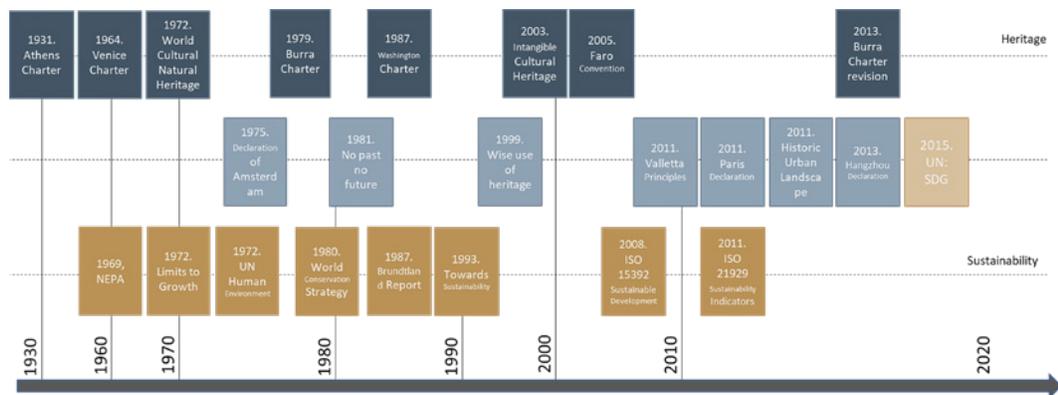


FIG. 1 Timeline of international documents on heritage and sustainability. Source: Joana Gonçalves

A sample of 32 documents on international recommendations for best practices, both in heritage and sustainability of the built environment, were analysed. The documents were examined by searching for the keywords "heritage", "conservation", "sustainable" and "environment", in the glossary and terminology sections. If those sections were not available, the definitions of the concepts were deduced by content analysis of the integral documents. If the documents did not directly contribute to the theoretical evolution of the concepts, they were excluded from the analysis.<sup>18-20</sup>

## 3 RESULTS

### 3.1 HERITAGE CONSERVATION

The word “heritage” refers to an inheritance: something transmitted or acquired from a predecessor or passed down from previous generations.<sup>50,51</sup> Since the 19<sup>th</sup> century, the concept has been used in the cultural sector, overcoming the limits of an individual inheritance to represent a collective legacy.<sup>52</sup>

Follows a comprehensive evolution of what is recognised as heritage, clustering the definitions of the most important international documents accordingly.

#### HERITAGE AS MONUMENT

The *Athens Charter for the Restoration of Historic Monuments*<sup>21</sup> (Athens Charter) was the first doctrinal document internationally ratified on the principles for heritage interventions. The concept of heritage was limited to historical monuments: particular buildings or human-made objects valuable for their historic or artistic interest. About 30 years later, the *International Charter for the conservation and restoration of monuments and sites*<sup>23</sup> enlarged the concept of monuments to include the urban and rural settings, claiming the importance of smaller buildings as historic documents with their own value. Conservation is defined as “a common responsibility to safeguard [monuments] for future generations”.<sup>23</sup>

#### HERITAGE AS PLACE

In 1972, UNESCO integrated the conservation of natural and cultural heritage in the *Convention concerning the protection of the World Cultural and Natural Heritage*.<sup>25</sup> The definition of heritage was redefined to include buildings, groups of buildings and sites, natural or “combined works of nature and Man”.<sup>25</sup> In this shifting environment, the *Guidelines for the Conservation of Places of Cultural Significance (Burra Charter)*<sup>29</sup> aimed to clarify the terms used by experts to define cultural heritage. It uses the concept of “place” instead of the expression “monument”, to refer to all the “sites”, “areas”, “buildings” and “other works” with cultural significance.<sup>29</sup> Conservation is the most integrative term, used to refer to all the actions taken to look after a place and retain its value.

#### HERITAGE AS ECOSYSTEM

In 2003 a new concept to define “heritage” was introduced by UNESCO, to recognize the need to complement existing recommendations on cultural heritage with the concept of “intangible heritage”.<sup>38</sup> It includes practices, knowledge and skills, developed for communities through generations as a response to environment and nature. The *Convention for the Safeguarding of the Intangible Cultural Heritage*<sup>38</sup> is the pivotal document that would influence the subsequent policies of heritage management.<sup>39,42,43,46</sup> In the latest revision of the Burra Charter - *The Australia ICOMOS Charter for Places of Cultural Significance*<sup>46</sup>, “place” is still the broader expression used to define “heritage”. However, while the original version was focused on the fabric – the physical attributes of the “place” - the revision states the importance of considering that value is also embodied in the associations – the connections between people and place. The *Framework Convention on the Value of Cultural Heritage for Society*<sup>39</sup> systematises an inclusive concept of heritage as “a group of resources inherited from the past”, that shape a unique urban ecosystem<sup>43</sup>. [...] With this broadening of the concept, the *Recommendation on the Historic Urban Landscape (HUL Recommendation)* introduces a new approach no longer defined by categories of “Heritage”, but recognising “a historic layering of

cultural and natural values and attributes” in the whole human environment, formed by the broader urban context and its geographical setting.

## 3.2 SUSTAINABLE ENVIRONMENT

The word “sustainable” refers to a state in which something is maintained and continued for a long period.<sup>53,54</sup> The origin of the concept, as it is commonly used nowadays, associated with responsible use of resources for balanced development, dates to the 1950s. This section presents the origins of the concept “Sustainability”, along with the relationship established with the evolving concept “environment”.

### SUSTAINABILITY OF THE HUMAN ENVIRONMENT

In the United States, the *National Environmental Policy Act (NEPA)*<sup>24</sup> was one of the first national environmental policies worldwide. It aimed at promoting “general welfare” by maintaining the harmony between man and nature for present and future generations. This harmony between nature and the human-made environment was later designated as “Human Environment” by the United Nations.<sup>27</sup> It includes the natural environment – comprising water, air, land, fauna and flora – and the built environment that constitutes the setting where people work and live.

### SUSTAINABILITY OF THE LIVING RESOURCES

In 1972, the Club of Rome envisioned a world system capable of ensuring ecologic and economic stability in the future, without “sudden and uncontrollable collapse”,<sup>26</sup> in the *Report on The limits to growth*. “Sustainability” is used to define a state of equilibrium between economic growth and natural resources. Also, the World Conservation Strategy<sup>30</sup> uses the word “sustainable” in the sense of a balance between humanity and the planet - the living resources and the non-living resources on which they depend. It states that sustainability is not possible without conservation. While ‘development’ aims at achieving human goals using resources, ‘conservation’ aims at achieving them “by ensuring that such use can continue”.<sup>30</sup> A few years later, the Brundtland Report - *Our Common Future*<sup>34</sup> established the most accepted definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own”. Development is understood as a process of change that has as a major objective the satisfaction of human needs and aspirations, in three dimensions: economic, social and environmental. “Environment” is defined as the result of the interrelationship between people and natural resources, that “doesn’t exist as a sphere separated from human actions, ambitions and needs”.<sup>34</sup>

### SUSTAINABILITY OF THE BUILT ENVIRONMENT

Stating that standardisation is needed to “establish a common basis for communication”<sup>40</sup> between the different stakeholders, the *ISO 15392:2008 - Sustainability in building construction — General principles* establishes general principles for the adaptation of sustainable development to the building construction sector. “Built environment” is defined as the “collection of man-made or induced physical objects located in a particular area or region; including buildings, landscape, infrastructure and other construction works”, but refers the importance of embracing the human dimension, considering communities, traditions, health and comfort and social equity<sup>40</sup>. The standardised definition of sustainable development goes back to the definition of the Brundtland report<sup>34</sup>, detailing, however, that it concerns “all resources providing a better quality of life”. Sustainability is defined as “a state in which components of the ecosystem and their functions are maintained for the present and future generations”.<sup>40</sup> Till today, this definition is the basis of several international regulations and standards.<sup>41,49</sup>

### 3.3 SUSTAINABLE CONSERVATION

This section presents how the concepts of “heritage conservations” and “sustainable built environment” have been linked over time.

#### INTEGRATED CONSERVATION

Despite focusing on the natural environment, the NEPA from 1969<sup>24</sup> states the need to preserve important historical, cultural and natural heritage, to safeguard the harmony between man and nature. Only that can ensure an environment that supports diversity and variety of individual choice for all citizens. Heritage, built and natural, is understood as part of the environment. Also, the *European Charter of the Architectural Heritage*<sup>28</sup> defines “heritage” as an irreplaceable expression of wealth and diversity. It introduces the concept of integrated conservation, defined as the responsibility of passing this resource to future generations. The *No past, no future Assembly*<sup>31</sup> highlighted the need for a higher awareness of the world to adapt to new conditions for a more balanced life. By introducing priorities as the conservation of energy, use of endogenous materials and methods and appropriate technology, it states that the study of man’s history and the contribution of heritage for a better quality of life is part of an environmental policy to improve the relationship between man and nature.

#### MANAGEMENT OF CHANGE

The *Wise Use of Heritage Assembly*<sup>36</sup> outlined that the key objective of both sustainable development and urban conservation is to manage change for the survival of humanity. Urban sustainable development must include economic, social, environmental and cultural dimensions to “offer economic opportunities, provide the context for social cohesion, ensure a safe and healthy habitat, as well as reinforce the sense of place and the sense of identity of its residents”.<sup>36</sup> Heritage is defined as second nature – the physical environment resulting from the tangible and intangible relationships between man and nature. It states the urgency to include urban conservation in the principles of sustainable development, considering heritage as an irreplaceable resource for present and future generations. Heritage is understood as an essential resource of the urban ecosystem, composed of tangible and intangible elements. To ensure the harmonious development of historic towns and their settings – the natural and human-made contexts, the goal of conservation is the management of change on the natural, built and social environment, to provide for a better quality of life and enhance valuable resources.

#### CONSERVATION AS SUSTAINABILITY

The *Paris Declaration on heritage as a driver of development*<sup>45</sup> stated that development is not to achieve economic growth but to achieve “a more satisfactory intellectual, emotional, moral and spiritual experience”. Heritage is defined as a crucial, non-renewable resource for present and future generations. Culture contributes to social cohesion and well-being and “must be integrated as the fourth pillar of sustainable development, alongside the economic, social and environmental pillars”.<sup>45</sup> Despite the title “heritage as a driver of development”, heritage is not understood in its contributions for the three dimensions of sustainability, but as a separate factor. Instead of a separate pillar of sustainability, the *Hangzhou Declaration: Placing Culture at the Heart of Sustainable Development Policies*<sup>47</sup> positions culture at the heart of sustainable development. Heritage is defined as an enabler of sustainability, a resource for innovative solutions, knowledge capital and an economic asset. It outlines the contributions of heritage for a more inclusive social development, for the reduction and poverty and economic development, and to promote environmental sustainability and reduce the environmental footprint of societies. Instead of the isolated protection of architectural buildings/elements, the HUL Recommendation fosters the conservation of the overall urban setting.<sup>42</sup> The

definition of sustainability is integrated and inseparable of the concept of conservation, attained by a "balanced relationship between the urban and the natural environment, between the needs of present and future generations and the legacy from the past".<sup>42</sup> Assuming that the principle of sustainable development provides for the preservation of existing resources, it states that the protection of urban heritage is a condition *sine qua non* for sustainable development.

#### THE SUSTAINABLE DEVELOPMENT GOALS (SDG)

In 2013, the Hangzhou Declaration targeted directly the post-2015 UN Development agenda to consider culture "in equal measure with human rights, equality and sustainability".<sup>47</sup> Despite all the recommendations that since the 1970s reflected on the links between heritage and sustainability, only in 2015 the world leaders in the United Nations adopted the *Sustainable Development Goals (SDG)*, that mention cultural heritage as part of a goal concerning the sustainability of cities.<sup>48</sup> Accordingly, the importance of "protect and safeguard the world's cultural and natural heritage" contributes to making "cities and human settlements inclusive, safe, resilient and sustainable".<sup>48</sup>

## 4 CONTRIBUTIONS FOR A SUSTAINABLE CONSERVATION TERMINOLOGY

From the review of the links between heritage conservation and sustainable built environment, it is concluded that the latter has been more integrated by the domain of the former than the other way around, mostly in international expert recommendations and guidelines. From the analysis of the literature, some integrative definitions can be derived.

### 4.1 TO A REVISED CONCEPT OF HERITAGE CONSERVATION

It is possible to recognize a shift in the meanings of the semantic evolution of the concept of "Heritage", by analysing its definitions since the *Athens Charter*<sup>21</sup>. (Fig. 2). This starts with the inclusion of single architectural monuments, passing through the gradual inclusion of surroundings, to a more comprehensive concept based on a holistic and integrative urban ecosystem, composed of material and intangible elements, valuable for future generations. As stated by Howard<sup>56</sup>, heritage is "anything that someone wishes to conserve and to pass on to future generations". Two elements are certain and recurring in the definitions across time: heritage is about resources inherited from the past; conservation is about transmission for future generations.

Based on this analysis, the following definitions are presented:

- **Heritage:** a group of resources inherited from the past that communities wish to pass on to future generations. It is an ecosystem, that includes tangible and intangible dimensions, as a result of the interaction between nature, fabric and people through time;
- **Conservation:** includes all the processes of looking after heritage, as the ecosystem inherited from the past, to retain its value for future generations. It may include different actions, such as maintenance, preservation, restoration, reconstruction or adaptation.

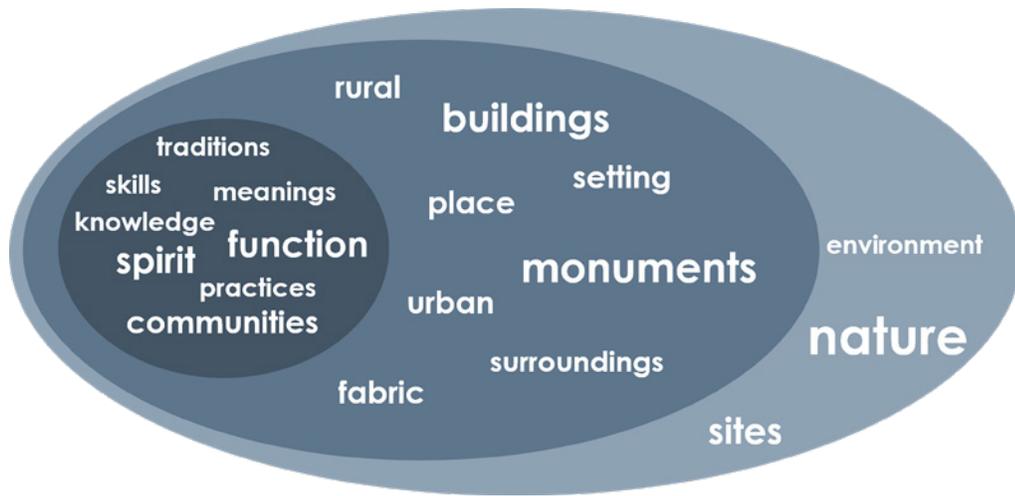


FIG. 2 Concept of "Heritage", including intangible (dark), tangible, and natural (light) elements.  
Source: Joana Gonçalves

#### 4.2 TO A REVISED CONCEPT OF SUSTAINABLE ENVIRONMENT

The semantic evolution of the concept "sustainability" (Fig. 3) confirms the broadening of the concept of "environment" with gradual inclusion of tangible and intangible attributes that contribute to a better quality of life. As stated by Kristinsson, "sustainable is everything that future generations want to inherit, use and maintain."<sup>57</sup> Two elements were kept constant in the definitions across time: the environment is made by living and non-living resources; sustainability is about preserving those resources for future generations. Based on this analysis, the following definitions can be extracted:

- **Environment:** concerns the interrelationship between people and natural resources, the built environment and the human sphere. It includes all the resources providing a better quality of life;
- **Sustainability:** state of equilibrium in which the components of the ecosystem - comprised by nature, humans and built environment, and its functions are maintained for present and future generations.



FIG. 3 Concept of "Environment", including intangible (dark), tangible, and natural (light) elements.  
Source: Joana Gonçalves

### 4.3 TO A REVISED CONCEPT OF SUSTAINABLE CONSERVATION

Originally, heritage was understood as part of the environment, with a growing relationship with the social dimension of sustainability. Gradually, it was recognised that heritage is cross-cutting to the three dimensions of sustainability: it is an economic asset, it is knowledge capital on how to cope with the natural environment, and it provides for social cohesion and a better quality of life.

In the analysed documents, it is possible to identify the evolution in heritage planning as defined by Janssen *et al.*<sup>1</sup> Heritage and sustainability evolved from a sectorial approach – being tackled as two separate domains, to a factor approach – with heritage being considered as one of many factors that contribute to sustainability. Lately, the vector approach, where heritage is considered as a driver for development, can be identified in the international recommendations such as the HUL Recommendation and the Hangzhou Declaration.<sup>42,47</sup>

The reference to cultural and natural “heritage” in the *Sustainable Development Goals*<sup>48</sup> is expected to promote reform in the field of heritage planning in practice, by introducing the topic into supra-national governance, and expect local implementation. However, it is still partial compared to other international documents on heritage<sup>42,43,45,47</sup> and sustainable built environment<sup>40</sup> – going back to a factor approach. It does not recognise the contributions of heritage in its full potential, from the perspective of the three dimensions of sustainability, but only on its protection by the state parties. The UN’s Sustainable Development Goals (2015) added very little to what was already stated in the American NEPA in 1969.<sup>24</sup>

Based on this analysis, the concept of “sustainable conservation” was defined. Considering the evolution of the concepts of heritage and sustainability, but also the way they have been interrelated in the last decades, it is possible to derive the following definitions:

- **Heritage environment:** concerns the irreplaceable and non-renewable resources that form the overall urban ecosystem, with natural, tangible and intangible elements (Fig. 4). It is an economic asset, knowledge capital and it ensures a better quality of life for present and future generations;
- **Sustainable conservation:** concerns the processes of management of change of the ecosystem inherited from the past, so its resources can benefit present generations while retaining its value for future generations.

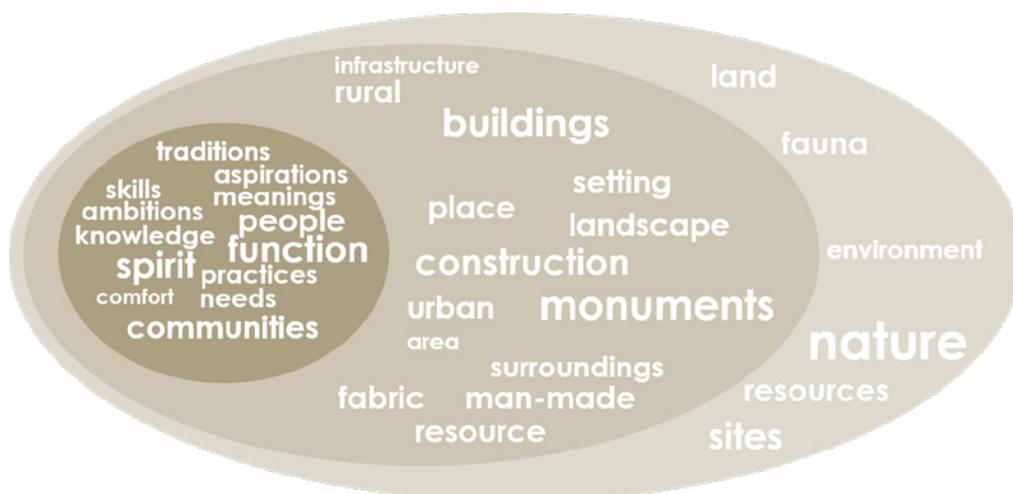


FIG. 4 Merging the concepts of Heritage and Environment. Source: Joana Gonçalves

## 5 CONCLUSIONS

The revision of the concepts of "heritage" and "sustainability" evidence that there are several commonalities between the two concepts: both involve the ecosystem inherited from the past, resulting from the interaction between people and nature through time, comprising tangible and intangible attributes that enable a better quality of life.

Also, the relationship between conservation and sustainability becomes clearer, since the two concepts share the same goal: to preserve the ecosystems for future generations. While conservation focuses on the past – safeguarding resources from the past for future generations – sustainability focuses on the present: ensuring that those resources (that are inherited from the past) are of benefit for present generations while retaining its value for the future. Using the two concepts together – sustainable conservation - results in an extension of their boundaries, defining balanced management of change that recognises the inheritance of the past, its benefits for the present, and the legacy for the future.

Finally, the results of this study are an invitation to produce further investigations with an expanded focus on the indicators and values for sustainable conservation. Hence, this study can be used as a stepping-stone to build a common language to objectively consider sustainability in well-founded decisions in heritage conservation.

### Acknowledgements

The authors would like to acknowledge the support granted by the Portuguese Foundation for Science and Technology (FCT), in the scope of the Doctoral Program Eco-Construction and Rehabilitation (EcoCoRe), to the PhD scholarship with the reference PD/BD/127853/2016, and the support of CERIS, from IST-UL, and of the Heritage & Architecture section, from AE-T-BK at TU Delft.

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# SESSION 7

## Heritage and the Natural Resource Bases

**Sandra Fatorić**

The world as a biophysical system is experiencing unprecedented changes that have a critical impact on its irreplaceable resources. Considered as essential for sustainable development, the Natural Resource Bases cluster (SDGs 13, 14, and 15) encompasses goals relating to the natural environment. These address the governance of natural resources and public goods such as land and oceans, as well as the maintenance of biodiversity and the management of climate change. Unlike heritage resources, these “natural systems” appear to exist independently of human activities, even though the latter have a great and potentially devastating impact on many of those systems. How can the governance of the Natural Resource Bases be integrated with heritage-related concerns, so as to contribute to sustainable development?

# Thirsty Cities: Shared Water Heritage in the Small Island States of the Dutch Caribbean

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## Abstract

*Securing fresh water supply on the Dutch Caribbean islands, former colonial overseas territories of The Netherlands from the 17<sup>th</sup> century, always has been, and still is, a challenge. Between 1904 and 1915 the cartographers Werbata and Jonckheer drew the first topographical maps of the islands. Detailed data was needed for the (re-)development of fresh water management system based on rainwater harvesting. The re-development of this decentralized water system as envisioned by governor De Jong van Beek en Donk was stopped short due to the regions oil boom. The water intense oil industry turned to groundwater exploitation and seawater desalination. Post oil Dutch Caribbean communities still rely predominantly on energy intensive desalination plants for their water supply. The destructions of Hurricane Irma on Sint Maarten in 2017 exposed the vulnerability of this system. Decentralized fresh water management systems enabling island communities to become more self-sustaining in the face of climate change and disaster are needed. In the field of water management there is growing acknowledgement that nature based solutions (NBS) offer an "alternative approach to increasingly relying on engineering solutions". Heritage inspired design and solutions, learning from vernacular and historical systems and practices, has the potential to add to the body of knowledge, possible strategies and solutions to manage fresh water resources sustainably and cope with the consequences of climate change. This paper therefor investigates the development of fresh water management systems and strategies in the Dutch Caribbean island of Curaçao during colonial rule. The Werbata-Jonckheer maps are an important source in this investigation for the development of a first landscape typomorphological overview of fresh water supply systems.*

## Keywords

*Heritage inspired design and solutions, rainwater harvesting, storm water storage, water supply, micro catchment and soil storage systems, climate resilient fresh water management.*

## 1 INTRODUCTION

"Venice is in water and has no water" (Historian Marin Sanudo, 1466-1536 qtd. in Distefano, 2016)

This observation still holds true for most small island states world wide then and now. Small Island States (SIS) of the Caribbean, like oceanic SIS the world over, are limited in geographical space and natural resources. Sustainable management of water resources can be especially difficult due to economic specialization in tourism and/or agriculture with often high levels of (seasonal) water consumption (Kliot, 2010, pp. 330). This gives rise to the special needs and circumstances of SIS (John & Firth, 2005). According to Acevedo "Fifteen Caribbean islands are in the top-25 positions of most tropical cyclone disasters per square kilometre" (Acevedo, 2016). In 2014 The World Bank established the Small Island States Resilience Initiative (SISRI) program to help build their resilience to climate change and natural disasters (The World Bank and Global Facility for Disaster Reduction and Recovery (GFDRR), 2016).

Securing fresh water supply on the Dutch Caribbean islands, former colonial overseas territories of The Netherlands from the 17<sup>th</sup> century, always has been, and still is, a challenge. Without naturally occurring surface water and quickly depleting ground water resources the island communities completely depended on rainwater harvesting to secure their water supply. Governor De Jong van Beek en Donk of Curaçao, deployed between 1901-1909, who found the island agricultural sector in disrepair and many of its residents in deep poverty was convinced that innovation on the drought stricken islands water management system was needed (Van der Krogt 2005; Van Soest 1977 ). At the turn of the 19<sup>th</sup> century the Dutch government acknowledged the dire water supply circumstances and gave Indo-European<sup>1</sup> cartographer J.V.D. Werbata commission for the mapping and survey of its Caribbean territory. Peter van der Krogt's research on the cartographer and the creation and development of the maps reveal that the commission was indeed intended to provide detailed information on the topography of its terrain to restore, upgrade and expand a vernacular decentralized rainwater harvesting system (Van der Krogt 2005; Renkema 1981). This system, consisting of dams to direct water and store water making use of the sloping terrain, was thought to be beneficial for the islands ailing agricultural sector and its communities. The development of the rainwater harvesting system as envisioned was stopped short by the oil boom. Due to the profitable oil refinery industry between 1918-1950 the Dutch Caribbean region became one of the first regions in the world who could afford energy intensive seawater desalination plants (Cooley, Gleick & Wolff, 2006). Today the Dutch Caribbean islands are among Qatar and Bahrein with the highest desalination capacity in the world (Jones, 2010). When hurricane Irma hit the island of Sint Maarten in 2017 desalination plants and storage tanks were demolished, leaving inhabitants and businesses exposed to water insecurity. A lack of decentralized and off the grid low tech water supply systems to enable communities to be more self-sustaining in general and in case of emergency in particular is exemplary for many small island (developing) states. Low tech and site specific solutions are needed. Studying historical and vernacular water management systems of the island could provide knowledge, inspiration and clues for the future.

## 1.1 HERITAGE INSPIRED DESIGN AND SOLUTIONS

According to Brears (2020) nature-based solutions (NBS) refer to "ecosystem-based approaches, biomimicry and biodiversity" and offer an "alternative approach to increasingly relying on engineering solutions" in the face of climate change. In addition to the concept of nature-based solutions the concept of heritage inspired design and solutions is a much-needed step forward towards an integrated and holistic approach of spatial planning and design in general and water related design and management in particular. Hein argues in *Adaptive Strategies for Water Heritage* that "policy makers and designers can work together to recognize and build on the traditional knowledge and skills that old structures embody" to "help us develop sustainable futures for cities, landscapes and bodies of water" (Hein, 2019). As a pendant to eco-system services in the nature-based approach Karen Gysen introduces the concept of heritage-system services in the heritage based approach (Gysen, 2018). Kosian and van Lanen in 2018 stress the importance of integrating historical spatial analyses in the so called 'climate stress-tests' that are being carried out in the context climate adaptation strategies to predict and depict flooding and inner-city heat risks. According to Kosian and van Lanen (2018) historical spatial analyses, incorporation of historical water systems, natural landscape dynamics and urban morphology in the analyses and modelling,

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1 Indo-Europeans, also known as Euresians, Dutch Indonesians or Indos, held European legal status in the former Dutch East Indies but were of mixed Dutch and Indigenous Indonesian descent as well as their descendants today. Indos are associated with colonial culture of the former Dutch East Indies, a Dutch colony in Southeast Asia and a predecessor to modern Indonesia after its proclamation of independence shortly after World War II. (Van Imhoff & Beets, 2004)

is essential for accurate climate stress-test calculation. Kosian and van Lanen argue that in their proposed method of “history integrated solutions” heritage “can be applied both as inspiration and as a mean towards the solution” (Kosian & van Lanen, 2018).

Kosian and van Lanen were not the first to address this concept of heritage inspired or “history integrated” approach. In their 2006 publication *Springs of Life: India's Water Resources* environmental and water resource experts Pangare, Pangare & Das (2006) documented the tangible and intangible aspects of traditional water systems in India to show amongst others “the ways in which communities live and interact with water...and their common-sense solutions to local water problems”. The authors express hope that “their account will be useful to anyone...in any part of the world working to address water related issues”. For the authors the documentation of the “broad spectrum” of traditional water systems served not only the preservation of the systems in question but also explicitly served the greater goal of acquiring knowledge and inspiration for water related issues worldwide. By subsequently developing a systematic overview of India's traditional water systems Pangare & Pangare (2015) the authors argue that “traditional water harvesting techniques and water management systems can provide valuable lessons for today”. While Pangare & Pangare acknowledge that “traditional water systems cannot meet the water needs of today” they do “demonstrate their significance and relevance to present times” challenges. They argue that “if traditional systems are revived and protected they can still meet part of the water demand in the ecosystem within they function” (Pangare & Pangare, 2015).

The apparent lack of historical awareness of policy makers, engineers and spatial planners and designers in the development and execution of climate adaptation strategies, as addressed by Kosian and van Lanen (2018), Hein (2019) and Pangare & Pangare (2006;2015), demonstrates the need to bring more attention to the heritage inspired approach as a valuable contribution to the nature based approach and the engineering approach. Within the scope of the Thirsty Cities research project I aim to bridge this gap with a focus on water resource management in the (former) Dutch territories where, in contrast to flood risk management, the engineering approach still dominates the sector. My chapter “Thirsty Cities: Learning from Dutch Water Supply Heritage”(Loen, 2019) showed “the potential heritage contains for creating an integrated approach to water supply, landscape conservation and water-secure livable cities” (Hein, 2019).

This paper focuses on the development of a typo-morphological overview, building further on Pangare and Pangare's systemic overview to create historical awareness and to develop a foundation for future studies that investigate the potential of water heritage “as inspiration and as a mean towards the solution” in future developments.

- Part 2 of this paper elaborates on the method of typo-morphological research and the materials used;
- Part 3 provides a short overview of the development of water management systems in the Dutch Caribbean in general and the typologies of Curaçao in particular;
- Part 4 provides conclusions and discussion.

## 2 METHOD & MATERIAL

This paper focuses on developing a first typo morphological overview of fresh water management systems. The research method that I am using in this study on the development of historical water systems and typologies in relation to their context builds upon work of academics, designers, planners and researchers in the field of heritage studies, (historical) geography, hydrology, landscape

architecture and urban planning. Needless to say, this method is in development and tested on the case study of the Dutch Caribbean Islands. Below I provide a condensed overview of the methods and works that have informed the method used in this study.

## 2.1 WATER SHAPES, LANDSCAPE AND PEOPLE

With the publication of 'Zee van Land' (Sea of Land) (Reh, Steenberg and Aten, 2005), landscape architectural and contextual aspects of water management systems were for the first time put centre stage. In their landscape architectural analyses of the anatomy of monumental Dutch polder-drainage systems the authors introduced the layered approach. This type of landscape analyses explains and puts emphasis, through drawings, on the interaction between natural, cultural and architectural layers. In 'Haard en Horizon' (Hearth and Horizon) Zwart and Bobbink (2004) introduced the concept of beeldtypen (image types) for the analyses of gardens and parks. In addition to these publications with a focus on 'grand designs' with Land inSight (Bobbink, 2009) and Water InSight (Bobbink & Loen, 2013) the authors shift the attention to the vernacular everyday Dutch landscapes. Both books provide an overview of the historical development, typical steppingstones and spatial characteristics of cultural landscapes. In their 2006 publication Springs of Life: India's Water Resources Pangare, Pangare & Das analysed traditional water systems in India. The study focuses on the relation between the water systems and their social, cultural and geographical context and the regions climate. The role of the people and communities constructing and managing the water system, most often women, is explicitly highlighted. Building upon "Springs of Life" Pangare and Pangare published a systematic overview of traditional water systems of India in 2015. Although the authors admit that these systems are not able to meet current water demand their investigations objective is "to raise awareness of the systems and the communities and ecosystems they serve and may serve as inspiration for the future" (Pangare & Pangare, 2015). As water resource experts and environmentalist their studies do not comprise spatial or typological analyses. In that regard the European Interregional researchproject 'Water Shapes' (from 2007-2013) is an invaluable study with a primary focus on the shape of historical water systems, artefacts and their usage. The aim of this collaborative project between scholars from Italy, Spain, Portugal and France collaborated was to "create a systematic approach for enhancing knowledge relative to architectural artefacts related to water, by a thematic database.." and to "increase awareness at European and extra-European level of the need to preserve and enhance tangible and intangible heritage assets connected to water because "climate change and growing scarcity of water makes it unceasingly urgent to reflect on the fundamental role of water sources... not only concerning its use but also its cultural and artistic significance" (Genovese & Porfyriou, 2012). A different take on water is introduced in the body of work by Mathur and Da Cunha (landscape architect and architect respectively) and most notably in the latest publication 'The Invention of Rivers' (Da Cunha, 2019). Da Cunha argues that the "colonisation" of water by geographers has forced the substance of water into waterbodies and formal shapes and has led to the artificial, and in their opinion destructive, division of water and land meanwhile ignoring the hydrological cycle and natural dynamics of the context. Mathur and Da Cunha rather speak of different states of wetness, be it clouds, fog, rain or liquid, then of water and waterbodies.

Building upon the methods, concepts and ideas mentioned above the following aspects are taken into account in the method of typological analyses of the water systems:

*Shape, context, symbolic representation, hydrological cycle, time, authorship, management and everyday usage*

## 2.2 MATERIAL

The primary material for this study are the Werbata-Jonckheer maps (1911-1915) of the Dutch Caribbean Islands. The maps were drawn by Indo-European cartographer J.V.D. Werbata. The government commissioned the task to a cartographer from the East Dutch Indies because they were familiar with mapping sloping and tropical terrain. Born in then Dutch colonial territory of Padang, Indonesia he was commissioned by the Dutch Government to survey the islands and draw the maps of the islands of Aruba, Bonaire, Curaçao, Sint Eustatius and Sint Maarten. The maps were commissioned in light of much needed improvement of the islands water supply system. The maps therefor provide detailed information regarding the landscape, water utilities and even seasonal water fluctuations (fig. 1) (Van der Krogt, 2005). This research focuses in particular on the leeward island of Curaçao, and to a lesser degree on the windward island of St. Eustatius (Sint Eustatius). For both islands, at some time in history important trading ports on the regional and global market, there is relatively more research and information available.

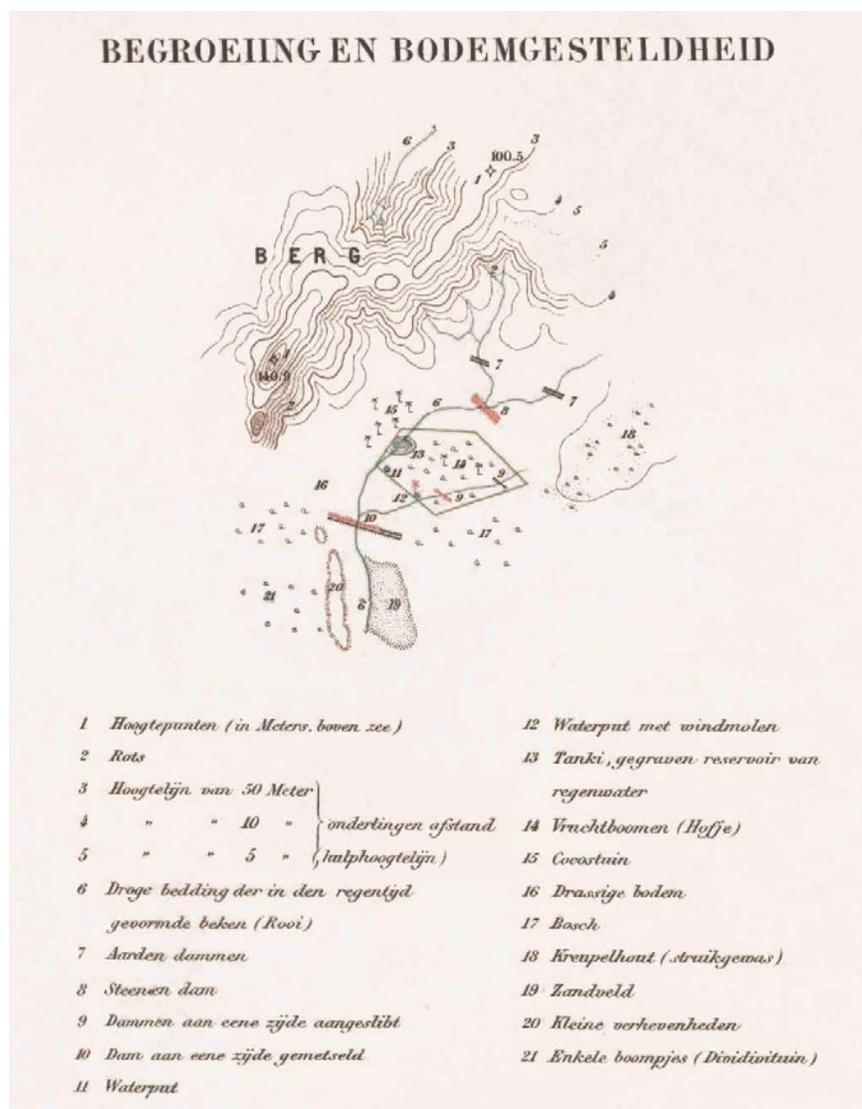


FIG. 1 Detail Legend of Curaçao Map indicating a.o. 6) rooi or dry bed brook filled with water during rainy season, 7) earthen dams, 8) stone dams, 11) water well, 12) waterwell with wind-powered motor, 13) Tanki, dug reservoir voor rainwater and 19) zandbed. Maker: Werbata-Jonckheer. Source: authors own.

### 3 FRESH WATER MANAGEMENT AND WATER HERITAGE OF THE DUTCH CARRIBEAN<sup>2</sup>

<sup>2</sup> The terms West Indies, Antilles and Caribbean are used interchangeably, there is no general agreement on definitions of these terms (Blouet & Blouet, 2010)

In almost every study related to the subject of (historical) fresh water management the researchers report a lack of research on their subject in the (Dutch) Caribbean. Subsequently I can also start of by stating that the subject of historical development of water systems in relation to spatial development in the Dutch Caribbean is relatively under researched. However, for the islands of Curaçao and Sint Eustatius, that at some time in history rose to global importance in the international trade of goods and oil, relatively more research and resources on the subject is available. Renkema's study into the plantation economy of Curaçao has a strong focus on the water supply system (Renkema, 1981). In 2017 Van Keulen studied the *regenbakken* (cisterns) on St Eustatius (fig. 17), Pulsipher & Goodwin (1982; 2001) research on water management on Montserrat (neighbouring St Eustatius) provides insight in traditional water catchment systems. By putting together the scattered pieces of the puzzle it is possible to get an informed idea of how water supply developed in the colonial period.

#### 3.1 CURRENT STATE OF WATER & LAND

The Dutch Caribbean are part of the Lesser Antilles, an island 'arc' comprising of three island groups: Leeward Islands, Windward Islands, and Leeward Antilles islands of Saba, St. Eustatius and St. Martin, in the Netherlands known as the S Islands, are part of the northern Leeward Islands group of which the Virgin Islands and Guadelope are more well known and also significantly larger. The Windward Islands group consist of amongst other Barbados, Grenada and Trinidad and Tobago. To the south, off the coast of Venezuela, are the leeward islands of Aruba, Curaçao and Bonaire. In the Netherlands we speak of the ABC Islands and the S islands. Saba and St. Eustatius are geologically active volcanic islands, while St. Martin, Aruba, Curaçao and Bonaire are sedimentary Islands. (Garmon et al., 2017)

The islands lie in a maritime tropical air mass, with average annual temperatures of about 26.7 C and little seasonal temperature variation (Blouet and Blouet, 2010). Aruba, Curaçao and Bonaire are part of the southern Caribbean dry zone outside the hurricane belt. However hurricanes do hit the ABC islands. Historically the islands were considered fit for livestock grazing, also salt export, mineral mining and wood exports were important before they were impacted by the oil boom (Schmutz, Potter and Modlin, 2017). Cash crop plantation for cotton and sugarcane never became viable due to unfavourable conditions such as water scarcity and competition from large overseas plantations in the US and South America (Renkema, 1981). Curaçao is the main and largest island of the three and has a land area of about 444 km<sup>2</sup>. It has the largest population of 158,986 and has a population density of 358 people per km<sup>2</sup> (Central Bureau of Statistics Curaçao). Post oil the tourist industry developed on the ABC islands. In 1997 the historic area of Willemstad, the capital of Curaçao, was declared a UNESCO Heritage site.

It's highest peak is the Mt Christoffel at 372 m. The moderate height differences clouds from being pushed to higher cooler atmosphere and rain down on the island. Annual rainfall varies extremely but has an average of 550 mm. January – September are the dry months, October – December is the wet season. The irregular rain patterns and periods of severe droughts of the ABC islands have always been a source of much speculation. Upon arrival in 1634 Van Walbeek already mentions in his logs that "the island is dry but that they heard that it used to rain more frequently" (qtd in Renkema, 1981). The overhanging clouds that refuse to descend from the sky in form of rain are notorious.

In 1818 the Nederlandse Huishoudelijke Maatschappij (a local NGO) proposed to organize a competition to collect ideas on “how to help turn the clouds into rain, to prevent droughts” (Renkema, 1981). In his 1962 publication “Hydrology, Water Conservation, Erosion Control, Reforestation and Agriculture in Curaçao” P.C. Henriquez (a local governor and chemist) argues that the island is subject to a rain cycle of 6 years. Only one or two times in six years there is significant rainfall. According to Henriquez all was not lost if Shell oil refineries would stop pumping groundwater and a system of small dams would implemented to restore green cover and stop erosion (Enriquez, 1962). Unfortunately, non of his advises were followed up (Van Soest, 1977). Schmutz et al. (2010) also mention the assumption that the ABC islands once had a much wetter climate and refer to a hypothesis held by German geologist Karl Martin, the first to study karst caves on the ABC islands, in the 1880’s. Martin suspected that one type of karst cave owes their existence to periods with significant higher rainfall.

## 3.2 A SHORT HISTORY OF LAND AND WATER

“...man finds to his dismayed surprise that he conquered the forest too well. He finds that although too much forest was a handicap to his progress, the absence of forest is an actual menace to his agriculture, his water supply, and to his very existence.” (Gill 1931 qtd. in Westerman 1952)

With this quote Westerman illustrates in his report ‘Conservation in the Caribbean’ (Westerman, 1952) the dire state of the forest in the Dutch Caribbean, the impact of deforestation on the water cycle and fresh water resources and the lack of efforts for conservation and reforestation. The relation between land clearing and deforestation on deterioration of soil and water resources was well known in the Caribbean. One of the worlds earliest legally protected nature reserves is Main Ridge Forest on the island of Tobago, that became protected by the Crown in 1776.

According to Derix (2016) the landscape and vegetation in the Lesser Antilles changed due to fluctuations in geological and climate conditions and the impact of human activity. Derix defines four periods where human activities and resource exploitation had their distinctive impact on the green cover and hydrological cycle. Below follows a short history of water related developments in Curaçao.

### 3.2.1 Pre ceramic – slash and burn

In pre-Columbian time the islands were semi permanent inhabited by Amerindians. Their settlements were oriented on the coastal mangrove forest where fresh water could be found on the foot off cliffs and in the cave system. Ancient water sources can be found in the Hato caves (Debrot, 2009). The land was covered with dry forests. The Arawak or Caquetio tribes would cultivate the land with slash and burn practices. Pollen research suggest large scale forest clearing and land erosion in that period.

### 3.2.2 Ceramicage – Small scale forest clearings and mangrove clearings with slash and burn

In the ceramic era the settlements became more sedentary and horticultural subsistence practices developed. The settlements moved more inward uphill to terrain more suitable for agriculture. In this period native inhabitants had profound influence on the natural vegetation (Harris 1965; Watts 1987 in Day, 2010). There is however little known about the way the Amerindian people secured

their water supply other than obtaining water from the karst. Research by Mary van Soest, a Curaçao resident, who has made an inventory of so called *karstbronnen* (karst springs) and *waterkuilen* (water holes) (MOWIC 2016) and fieldwork by Debrot (2009) suggest that the Caquetio people dug *waterkuilen* or *pos di pia* (water holes or foot wells) and that this practices and some of these elements may have survived and / or came in use by landowners and/or the enslaved Afro-Caribbean community.

### 3.2.3 Spanish rule 1499-1634 – Large scale land clearings

Although the Spanish spoke of *Islas Inútiles* (useless islands) the impact of the exploitation of the wood resources and agricultural practices can be felt up until today (Blouet & Blouet, 2009). Pollen research indicates large scale land clearings and deforestation in early colonial time of mangrove forest and dry forest for brazilwood, a textile dye. The import of cattle for grazing prevented regrowth of green cover. There was intensive mining of salt, chalk, phosphate (Derix, 2016). Indigenous agricultural and water management practices must have been observed by the Spanish while wielding their power and control over the native people and their existing water sources for their own convenience. In 1515 a mass deportation of the indigenous people to the cash crops plantations in the region was carried out. Upon arrival of the Dutch in 1634 the Caquetio population had grown again and outnumbered the Spanish (Hertog, 1968).

### 3.2.4 European colonial subsistence farming and last stage land clearings

Van Walbeeck, the first Dutch West Indian Company (DWIC) director of the Island until 1639, described Curaçao as covered with forest (Teenstra 1836 in Derix 2016). Walbeeck built a fort and castle at St. Anna Baay near a water source to protect water supply which is depicted in the 1715 map (fig.2; fig.3). On the 1715 maps also other watering places are indicated. In absence of Dutch governing bodies the DWIC were also responsible for securing public water supply (Renkema, 1981). Public wells were established to secure free access for watering cattle. To secure food supply the DWIC relied on the produce of the Caquetio people and African enslaved labourers. After a mass killing and deportation of Caquetio people by the DWIC there were only 75 Caquetio people left on the island (Hartog, 1968). They were spared to secure the food supply. The unfavourable conditions of the land however prevented the establishment and development of commercially successful cash crop plantations. The first plantations that were established were managed by the DWIC, so called *compagnietuinen*, but due to a lack of know-how, time and money they never flourished (Renkema, 1981). In order to secure the supply of fresh produce DWIC allowed the enslaved to cultivate small patches of land on the least favourable sloped terrains. These so called slave gardens, provision grounds, *tuinen* or *kostgrondjes* (in Dutch language) played an important role in the agricultural sector in the Caribbean region (Berleant-Schiller & Pulsipher 1986, Briana & Kimberly 2017; Gill 2008; Pulsipher 1990). According to a 1721 government report there were a large amount of “negerstuijnen” on the island (Renkema, 1981). The enslaved were allowed to sell their produce on the local market, but also traded their produce with other islands in the region. There are strong indications that the enslaved labourers (and after emancipation Afro-Caribbean small holder farmers) developed and managed their own micro water cathment systems on the sloping terrains (Henriquez 1962; Renkema 1981; Van Keulen 2017; Pulsipher & Goodwin 1982a/b). When the first private plantations were established there were often conflicts between landowners about illegal confiscations of the public watering places or so called public *compagnieputten* as water was a scarce and valuable commodity.

Throughout the Dutch rule agriculture remained on subsistence level and land clearings and deforestation continued. Most notably for the export of the red dyewoods Stockvishout and Logwood throughout the 17<sup>th</sup> and 18<sup>th</sup> century. Meanwhile clearing of more land took place for (failed) experiments with sugar, cotton and indigo. Mangrove forest were cleared to use the wood for the construction of buildings. The grazing of cattle caused further soil erosion and prevented regrowth of quality green cover. In 1952 Westerman even argues that there are no real 'forests' left on the island only woody areas of inferior quality (Westerman, 1952). Chopping of firewood for cooking and other domestic chores also must have had an important impact on the reduction of woody green cover (Verstapen, 2020). Upon the instigation of the government, to stimulate innovations in the ailing the agricultural sector, the last large land clearings were carried out in the 20<sup>th</sup> century to establish aloe vera and sisal culture. The introduction of wind powered wells around 1880 allowed for a short-lived modest boom in the cultivation of a local species of lime tree used in a liqueur. The wind powered wells not only supplied agricultural irrigation systems with steady amounts of water for the orchard but were also beneficial for the operation of the so called commercially operated *waterplantages* (water plantations). The *waterplantages* supplied urban residents, cargo ships, businesses, governing bodies and army of water up until the introduction of the first water desalination plants in the slipstream of the oil boom in the 1920's.

Part 3 of this paper describes the development of water management system and typologies in more detail.



FIG. 2 Detail of 1730 map of the island of Curaçao. Clearly indicated are the “water plaets” (watering place) and “Ronde put of kuil daer men vers water haalt” (round well or hole where people get their water). Maker: Gerard Van Keulen. Source: Leiden University.

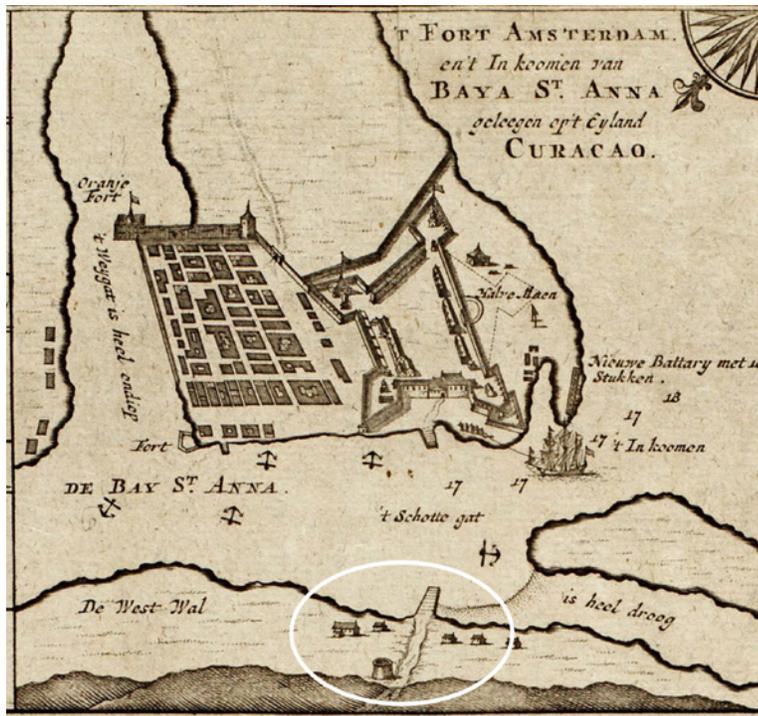


FIG. 3 Detail of 1730 Map of the island of Curaçao. On the foreground of Fort Amsterdam a well is depicted. Maker: Gerard Van Keulen. Source: Leiden University.

### 3.3 WATER MANAGEMENT STRATEGIES, WATER ELEMENTS AND TYPOLOGIES OF CURAÇAO

#### 1 *Bronnen* (natural springs, seeps)

Prior to the Spanish occupation of the Island the native Amerindian community was around 2000 people large. Their first known settlement was at Rooi Rincon near the airport of Hato. Here water moving through the karst formation would have poured out from the rock formation below a natural overhanging cliff or notch (Haviser 1987; Hartog 1967; Versluys 1934). Enslaved people who fled captivity sought hiding in the caves making use of these water sources. Today water stills flows through the Hato caves. According to Versluys infiltrated rainwater moved too fast through the porous karst, eventually spilling out to sea at the foot of cliffs, and that therefore '*bronnen*' quickly ran dry. Versluys mentions the ancient *hongerbronnen* (hunger springs) used by the natives near plantage Hato. According to Versluys the quality of the water from these springs was low. According to Eeuwens (1934) upon seizing control from the Spanish in 1634 over the island the Dutch discovered the abandoned settlement at Hato. Here the DWIC established Plantage Hato, the first plantation or so called *compagnietuin* for the provisions of food and water for its people, founded on prior native and Spanish settlements with ready access to fresh water (Renkema, 1981; Eeuwens 1934). Sold in 1796 by the DWIC it was also the last plantation the DWIC managed themselves (Renkema, 1981). The grounds of Hato were pre-dominantly in use as *kostgrondjes* (slave gardens / provision grounds) by the enslaved labourers who, throughout the Dutch Caribbean, were allowed to sell their harvest at the local market in an attempt to ensure local fresh food provisions (Pulsipher, 1990). The garden of the Hato manor house, in use as country residence by the DWIC

director and later governor of the island, was furnished with a pond (Versluys 1934). Monumentzorg Curaçao describes a *regenbak* (rainwater cistern) next to the manor house, with overflows to a terrace, probably the pond, and also the *hof* with *putten* (wells), terraces, *kanalen* (gutters) and “other constructions” for an irrigation system (Curaçao monuments, 2020a). The irrigation system in the *hof* was supplied with *putwater*. Interestingly the garden of the governor’s house of St. Eustatius also boasted a pond (Van Keulen, 2017). According to Van Keulen the pond was, in a region where water was a valuable and scarce good, an important status symbol and an indication of wealth. Hato is an interesting example of how native water sources and settlements were occupied, transformed and adjusted to meet the practical needs and architectural style of the colonial power.

On map fig. 4 Plantage Hato is named “Landhuis Hato”. Here “*bronnen*” and “*waterbassins*” are indicated. These open *waterbassins* refer to the terraces described by Monumentzorg Curaçao. In his description of the waterplantage economy Renkema argues that rainwater was more sought after than ‘*putwater*’ (Renkema 1981). Versluys also states the inferior quality of brackish springwater from the karst near the coast. Water obtained from *bronnen* on higher altitudes was less brackish and of better quality.

Although Werbata does not provide an individual symbol for ‘*bron*’ in his legend on map C.08 he indicates a ‘*bron*’ (fig.9) surrounded by an earthen dam or *faha* on plantage Poos di Wanga located on the foot of a hill just north-east of plantation Hato. In the local Papiamentu language *faha* is translated as girdle. As many words in Papiamentu are of native Caribbean origin, this could also be the case with *faha*. According to Hartog (1968) the use of shallow *karstbronnen* or karst wells was well developed upon arrival of the Dutch. Although there is little known about Precolumbian (Arawak & Caquetio) water management systems on the Lesser Antilles I think it is highly probable that the native Caribs would have developed micro water catchment systems such as *faha* to secure water supply by storing and harvesting and saving it from running into sea. From 1499 until 1515 the Spanish observed and took over Caquetio agriculture practices (Hartog, 1961). As water was equally if not more important the Spanish must have observed where and how the native Caribs obtained and managed fresh water. The Spanish deported almost the whole native Caribbean population to the cash crop plantations of Hispaniola in 1515 to work as enslaved labourers. When the Dutch took control over the island in 1634 the Caquetio population had grown and outnumbered the Spanish. Upon seizing control over the island the WIC also took control of its settlements and subsequently its water resources (Eeuwens, 1934). Soon the DWIC granted the Caquetio free passage to Venezuela with their Spanish lords. Only 75 Caquetio were believed to have remained on the island to secure food supply (Hartog, 1968) and most probably also to secure water supply. According to Debrot (2009) the influence and legacy of the native Caquetio has been often underestimated while archeological findings and early eye witness reports support his hypothesis that their legacy and influence was much more lasting and profound.



FIG. 4 Landhuis Hato with surrounding tanki water elements. At Landhuis Hato waterbassins and springs are indicated. Detail map C.09. Maker: Werbata-Jonckheer. Source: authors own.

## 2 *Karstputten* (karst wells)

According to Hartog (1968) the use of shallow *karstbronnen* or karst wells (fig.5; fig.6) was well developed upon arrival of the Dutch. Debrot (2009) also refers to them as shallow water holes. Water moving through to karst is recharged by surface and point infiltration in the naturally occurring holes, pits and cracks in the surface. During periods with significant rainfall these cracks and pots, the *karstputten*, would fill up and sometimes even spill over forming water pools. During droughts the pits and pools would run dry quickly. According to Versluys (1934) the quality of karst water on higher altitude at a distance from the coast is less brackish and of better quality. As mentioned before with the *bronnen* it is highly probable the Caquetio built dams or walls around these pits to prevent water loss from overflowing *karstputten*.

Probably a number of these water sources used by the Caquetio people were later used and/or controlled by the Spanish and the following Dutch rulers and landowners. See typology waterput or *plantageput*. Werbata uses the term "waterput" and "*bron*" on his maps. It is not clear if he is referring to naturally occurring *karstputten*, manmade wells or both. Since *karstputten* were also transformed or adapted to their use as *plantageputten*



FIG. 5 Karstput at the Noordkant. Photographer: Mary van Soest. Source: MOWIC)



FIG. 6 Bron (spring) with a stone wall at Roi Rincon. Photographer: Mary van Soest. Source: MOWIC

### 3 *Rooi*

According to Werbata's legend (fig. 1 nr. 6), a *rooi* is a "in the rain season filled dry bed of a brook". During rain runoff water flows downhill through the bed of the *rooi*. Some *rooi* are also fed with seepwater that flows out at the foot off porous karst formation hills, cliffs and notches. The *rooi*en played an important part in the islands water catchment system. Werbata's legend shows a tanki (water reservoir) with *faha* on the course of a *rooi*. Veenenbos describes the local practice of planting fruit trees at the end of the course of a *rooi* (Veenenbos, 1955). This is a type of micro catchment and water soil storage in the rootzone that prevents soil deterioration (Boers, 1994).

4 *Pos di pia / waterkuilen – faha* system (small water holes and dam system)

Debrot (2009) refers to shallow hand dug water holes or *pos di pia*, a native Carib practice. Local resident Mary van Soest made an inventory of water supply related heritage. Soest describes a “sunken water hole” called *Pos di orashon* in Papiamentu, which translates as ‘source for prayer. Local people believe it was used by the native Caribs. It is possible that *waterkuilen* are either seasonally overflowing *karstputten*, sinkholes or dolines (geological terms), rainfed natural depressions (transformed by man) and/or manmade pools. The *waterkuilen* are fed directly and via runoff in brooks and streams (*rooien*) and via dams. *Waterkuilen / pos di pia* are usually located in forested terrain. However Breemen describes how small holder African Caribbean farmers dig out small circular area and built a stone wall around it on their *kostgrondjes*. In the middle they dig out a well from which they obtain water (Breemen, 1934). Breemen however does not describe how these holes are recharged with water.



FIG. 7 Girls in the hof (garden) of boarding school Welgelegen posing in front of a tanki with earthen dams. Photographer: Soubllette et Fils. Source: RCE.

According to Breemen (1934) when large pools or *tanki* on the estate grounds fill up with rainwater the farmers quickly start sowing the moist slopes of the pool in circles around it. The difference between a *waterkuil* and *tanki* (fig. 7) is not clear. It seems they both refer to pits or pools either manmade or natural depressions transformed by men. Werbata only uses the term *tanki* or *reservoir*. According to Renkema there were two types of dam systems in use. A small dam system and the large dam system. The small dam system could be found primarily on the *domeingronden* or unfavourable grounds of plantations with irregular and steeper terrain (Renkema 1981). As mentioned before during slavery these *kostgrondjes* were in use by the enslaved as kitchengarden. After 1863 the African-Caribbean community continued this practice as subsistence / small holder farmers. Renkema describes “many small dams as no higher than a few decimetres to maximum 1 meter” constructed “on the slopes and in small *rooien*”. Henriquez (1962) describes the system in the Schottegat area (fig. 8). The small earthen dams are called *faha* (girdle in Papiamentu) suggesting that they have a circular shape. Werbata’s legend shows a *tanki* with a circular *faha* on the course of a *rooi* (fig. 1). Explicitly connecting

the three elements of the system. The large dam system was actually the same system but applied and magnified on the privately owned plantation grounds in the valleys. The Dutch socialist member of parliament Henri van Kol made rather patronising remarks in his report regarding how the African-Caribbean small holder farmers built their 'crippled terraces' on the steep terrains he observed during his fieldtrip in 1904 (Renkema, 1981). However according to Renkema the government considered the small *waterkuilen-faha* system (a micro water catchment system) to be more effective than the large *tanki-dam* system to raise the groundwater table. Governor De Jong van Beek en Donk promoted the use and renovation of this system in an attempt to help improve the ailing agricultural sector (Renkema, 1981). Boers (1994) refers to these types of rainwater harvesting as micro-catchment systems as highly beneficial and effective for land reclamation and soil improvement in arid and semi-arid regions. Pulsipher & Goodwin (1982; 2001) on Montserrat and Van Keulen (2017) on St. Eustatius both describe similar small water catchment systems on the more irregular and steeper terrains, outside the formal plantation fields in the valleys, consisting of small dams and man dug water holes. Both Van Keulen and Pulsipher & Goodwin mention that these systems are no longer in use and that locals are unable to tell them who built and managed these systems. Pulsipher & Goodwin argue they were designed, built and managed by the African-Caribbean people during slavery and some time after emancipation. According to Renkema the *waterkuil-faha* system was found in disrepair after emancipation of the enslaved (Renkema, 1981). In spite of government funding the planters were not enthusiastic to adapt to the micro catchment *waterkuil-faha* system. According to Do Rego owners of large estates resisted against the reforms of Governor de Jong van Beek en Donk (Do Rego, 2012). According to Renkema the planters preferred the larger *tanki-dam* system. Perhaps the planters lacked know-how and/or was it too expensive for the planters to pay the former enslaved labourers after emancipation to manage the micro catchment *waterkuil-faha* system as Pulsipher and Goodwin suggest in the case of Montserrat Pulsipher & Goodwin (1982; 2001). According to Do Rego the reforms to stimulate the micro catchment *waterkuil-faha* system turned out to be beneficial for the African-Caribbean community to improve and develop their small holder farms (Do Rego, 2012). I believe it is very well possible this micro catchment system and practices could have been appropriated from the native Caribbeans and passed on to the enslaved African-Caribbean to manage their *kostgrondjes*.



FIG. 8 According to Henriquez (1962) this area north of Schottegat was known for its small holder farmers and their small dam system. It fell victim to urban development due to the oil boom. Detail of map C12. Maker: Werbata – Jonckheer. Source: authors own.

5 *Tanki* (man made pool) - dams

According to Werbata's definition a *tanki* is "dug reservoir for rainwater". Werbata's legend shows a *tanki* with a circular *faha* on the course of a rooi. The use of the word *tanki* is interesting. In arid and semi-arid regions of India and Iran *tanka* or *tank* systems for rainwater harvesting are well known (Pangare & Pangare, 2016). How and when the word *tanki* came into use, is not known. From 1807-1816 the English governed the island. It is possible they introduced the word *tanki*<sup>2</sup>. As mentioned before the *tanki* were fed by rainfall and runoff from the catchment area and consisted of a system of large stone dams, rooien and gutters directing water to the catchment pools: the *tanki*. This large dam system was based on the micro catchment *waterkuil-faha* system but adjusted and enlarged at the discretion of the landlords on their privately-owned plantation grounds in the valleys (Renkema, 1981). The 19<sup>th</sup> century Dutch traveller and writer Marten Douwes Teenstra was unimpressed with this large dam system. He noted in his observations published in 1836 that the construction of the dams was much too steep and easily collapsed during rain (Teenstra, 1836 in Renkema, 1981). According to Breemen (1934) when large pools or *tanki* on the estate grounds fill up with rainwater the farmers quickly started sowing the moist slopes of the pool in circles around it. On the fringes of the pool and on the foot of the dams beans, melons and other fruits were cultivated. As water would evaporate seeds were sown on the receding slopes until eventually the whole pond was in use as a gardenplot. Sometimes the dam catchment system made use of natural depressions without digging out a significant hole. Fig. 11 shows a dam with a gentle slope on the water retaining side on Bonaire. *Tanki* served not only agricultural but also domestic activities. On Fig. 7 girls of boarding school Welgelegen just west of Willemstad on the shore of Schottengat are posing in front of a *tanki* or *waterkuil*. Werbata indicated three *putten* and two *faha* on the premises of Welgelegen and the neighbouring orphanage. The maps indicated many wells and/or small *tanki* in the area on the foot of Seroe Jan Kok (seroe translates as hill in Papiamentu) (Fig. 9). As mentioned before, in spite of government funding the planters were not enthusiastic to adapt to the micro catchment *waterkuil-faha* system. According to Do Rego owners of large estates resisted against the reforms of Governor de Jong van Beek en Donk (Do Rego, 2012). According to Renkema the planters preferred the larger *tanki-dam* system (Fig. 10). But still the planters had to water their crops by hand. With the introduction of wind-powered wells around 1890 in the Dutch overseas territories (30 years earlier than in the introduction in the Netherlands) a lot changed in the eve before the oil boom.



FIG. 9 The detail of map C.08 shows a series of tanki on the foot of hill Seroe Jan Kok. On a premises called 'Poos di Wanga a bron' is indicated (poos or pos is Papiamentu for source or well). Maker: Werbata-Jonckheer. Source: authors own.

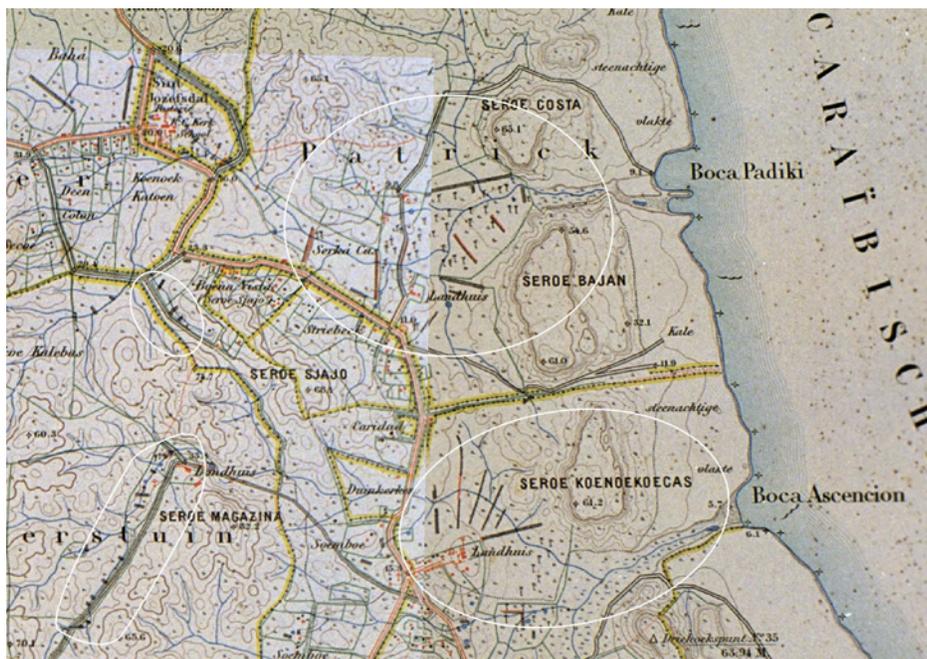


FIG. 10 The detail of map C.05 shows the large dam system near the manor houses with waterplantages North-east of Willemstad with roeien leading to water reservoirs on the sandy boca (outlets) to the sea. The small dam systems are located on the higher sloped terrain west of the manor houses where possibly the kostgrondjes of the Afrocan Caribbean small holder farmers. Maker: Werbata-Jonckheer. Source: authors own.



FIG. 11 Valley in Bonaire with large dam structure on the foot of a. Photographer: Boy Lawson. Source: Het Geheugen van Nederland.

#### 6 *Putten* (dug wells)

According to Versluys (1934), upon arriving on the island, the DWIC immediately started digging wells. According to Versluys with little success. So called *putwater* was of poor quality while rainwater was preferred for human consumption. *Regenbakken* were constructed to supply the troops and other DWIC workers with water. They were constructed on the forts and manor houses but water was always scarce. As the DWIC was also responsible for the public water supply it oversaw several *compagnieputten* on compagnie grounds where all residents were free to water their cattle (Renkema, 1981). According to Versluys (1934) and Curaçao monuments (2020c) the *voetput*, *pos di pi*, *pos di trapi* and/or *belopen put* (foot well or stair well) at Fort Nassau is the oldest type of dug well of the island. The *voetput* is a rectangular shaped reservoir or well and has 3 straight walls and one sloping ramp or stairs leading into the well. Rather confusingly terms for water elements like *waterkuilen* and *pos di pia* are used for both water holes, karst wells and man made wells. For these types of rectangular wells I will not use the word *pos di pia* but rather *pos di trapi* and *voetput* used for watering cattle and land. Governor Raders who tried to push innovation and reforms on the island during his tenure from 1836-1845, introduced *noria's* (waterwheels) against the objections of the locals as they knew that water levels in wells were hardly predictable. The wells were either dry or overflowing. The use of *noria's* never gained any following (Renkema, 1981). As soon as the planters of privately managed plantations started farming their lands from 1660, emphatically invited by the DWIC to the island to help keep up fresh food supply, conflicts emerged around these *compagnieputten*. Next to taking control over and digging wells and *tanki* on their private lands the planters immediately confiscated the land around the *compagnieputten*, claiming the land and taking control over these water sources (Renkema, 1981). Land and water disputes were often legalised by allowing landowners to buy the land. *Compagnieputten* then became *plantageputten*.

– *Pos di trapi / voetputten.*

Earliest type of wells built by the DWIC (Versluys, 1934). An example of a *voetput* can be found on the foot of a hill of Fort Nassau (1796-1797) (fig. 12). On map CWO Werbata indicated the voetput as waterreservoir.



FIG. 12 Photo of pos di trapi at Fort Nassau (1796-1797).  
Source: Curaçao.com.

– *Compagnieputten*

As mentioned before under *bronnen* it is likely these wells were established on shallow wells or water holes used by the Spanish and /or native Caribbean (Debrot, 2009). A most famous dispute occurred around Zuurzakspuit in 1722 between several plantation owners. Neighbouring plantations accused the owner of plantation Savonnet of illegally occupying the *compagnieput* of Zuurzakspuit. A map drawn in 1723 by the DWIC mentions the disputed well in the "forest in question". As well as water sources also forests were often subject to dispute due to illegal occupation (Renkema, 2016). Fig. 13 shows the hand drawn well Zuurzakspuit in 1905 (Gravenhorst, 1905). The well is, typically for the typology of the plantation, situated in a *hof* surrounded by bush, fruit trees and kitchen gardens. Fig. 15 shows plantation Savonnet with wells and wind-powered mills.

– *Plantageputten* (plantation wells) & *Regenbakken* (rainwater cisterns)

Wells belonging to the property of the plantation where either dug wells constructed by the (enslaved) workers of the plantation, old dug wells, *bronnen*, *karstputten* of Spanish or native origin or *compagnieputten* adjusted to the convenience and needs of the plantation. They could be square or rectangular *voetputten*, or circular dug wells constructed in stone and/or on top of shallow karst wells. As mentioned under *compagnieputten* the *plantageputten* were located in the valley just below the foot of the hills where the manor house was located. According to Renkema (1981) the *plantageputten* in the *hof* were surrounded by fruit trees, the owners vegetable gardens and sometimes slave gardens and huts all conveniently located near this source of *putwater*. The manor house was located at the highest point on the foot of the seroe overlooking the *hof*, fields, *savanen* (grazing grounds) and *kunuku* (enslaved) labourers settlement. The slave gardens were usually located on higher unfavourable steep grounds or on neighbouring *compagnie* grounds. Rainwater was collected from the roofs of the manor house and other buildings and directed to *waterbakken* or *regenbakken* (rainwater cisterns). These *regenbakken* were located near the manor house, usually half below surface (fig. 17). The *regenbak* from *plantage Hato* supplied the garden pond on a terrace with rainwater via overflows (monuments, 2020a) The manor house of plantation San Juan is even

supplied with rainwater via an aqueduct architecturally integrated in the architecture of the complex (fig. 14). Monumentenzorg (monuments, 2020b) describes the complex as "A group of *magasina*'s with cistern connected with an aqueduct to the main building". The enslaved labourers would have been restricted from use and/or subject to rationing of rainwater and/or *putwater* (Pulsipher & Goodwin, 1982; 2001) from their landowner. According to Pulsipher and Goodwin the enslaved therefor developed their own micro water catchment systems.

That water supply could be challenging also speaks volumes when Werbata indicates a "zeer diepe leege put" (very deep empty well) on map C.17



FIG. 13 Picture of the much disputed *compagnieput* and later *plantageput* Zuurzak in around 1900 in a grove surrounded by labourers or small holder farmers. The *putten* (wells) are always located in the grove with forest and/or fruit trees and near vegetable patches. Photographer: Soubllette et Fils. Source: Gravenhorst, J., 1905.



FIG. 14 Photo of the manor house of Landhuis San Juan in 1954. The arched aqueduct on the right directs the rainwater from the roofs to the *regenbak* (cisterns). Photographer: Van der Wal. Source: RCE.

– *Windwaterputten* (wind powered wells)

According to Renkema American windmills were introduced around 1880 on (Renkema, 1981). Interestingly the introduction of the windmills on the overseas territory preceded the introduction in Netherlands by 20 years (Molendatabase, 2020). In the overseas territory of the Dutch Caribbean the windmills were applied to overcome water shortages by mining groundwater for irrigation and consumption. In the Netherlands the windmills were applied to manage surface water levels and drain excess of water from the low-lying polders. The sudden abundance of water the windmills provided made it possible to start growing oranges on the island. The owners of plantage Groot Kwartier and Joontje placed so many windmills in 1888 that it allowed them to water their cattle as well as an orchard boasting 400 oranges (Gravenhorst 1905; Renkema 1981). To store and support the constant flow of *putwater* closed and open stepped *waterbassins* or terraces were constructed (fig. 15). Cattle could directly drink from these bassins or water was channelled via gutters to cattle wateringplaces or the fields for irrigation. This extensive system of wind powered wells, *waterbassins*, terraces, stone gutters and iron pipes was only viable if the groundwater was sufficiently replenished with *zakwater* (infiltrated rainwater). Which was not always the case. The *windmotoren* also made work easier for so called '*waterplantages*', plantation whose primary source of income was the selling of water (and salt) to the urban population, docking ships and army (Renkema, 1981). Throughout the Dutch Caribbean islands wind powered wells were (and sometimes still are) in use for private and public water provision (fig. 18).



FIG. 15 Windwaterputten (wind-water-well) with series of water reservoirs in the valley of Plantation Savonet around 1900. Between the cattle and the water system a rooi is situated. Large earthen dams are built around the premises as water catchment system. In the hof divi divi trees are planted. Photographer: Soubllette et Fils. Source: RCE.

– *Waterplantage* (water plantation)

The *waterplantages* are quite a remarkable and contradictory phenomenon on an island frequently suffering from severe droughts and water stress that could last for several years. Water selling by private landowners, to local residents, cargo ships, government and army, was however a common practice on the Islands of Lesser Antilles. In the Dutch Caribbean most notably on Curaçao and St. Eustatius who both experienced 'golden' years as regional and global trading posts (Van Keulen 2017; Espersen 2013; Renkema 1981). Renkema's study on the plantation economy of Curaçao revealed that plantations where, in terms of agricultural practices, actually small holder or subsistence enterprises. They pre-dominantly supplied food to the landowners, the enslaved labourers and the local and regional markets (Renkema 1981; Versluys 1934; Breemen 1934). These plantations had very little in common with plantations of the era that produced cash crops like sugar and cotton on a large scale for the global market. As mentioned before some plantations of relatively small size and/

or with little agricultural value and viability were taxed at surprisingly high rates due to their trade in so called 'putwater' (well water) and sometimes also salt. As water was a scarce commodity for residents of Willemstad, where room and/or means to build *regenbakken* often lacked, water became a very highly valued good. For plantations located at comfortable distance from Willemstad the trade in freshwater was in fact the only commercial pillar of their enterprise. The introduction of American *windmotoren* or windmills around 1880 had profound impact on the volumes and speed with which water could be drawn from the ground. The lack of water was compensated with a secure supply of *passaatwind* allowing for a continues supply of *putwater* (Versluys, 1934). Before the introduction of these mills *waterplantages* often struggled to meet demand and failed to meet the quantity they were obliged to supply by contracts to their clients such as DWIC. According to Renkema the most prominent *waterplantages* were located near Willemstad around the shores of the Schottegat bay. Plantations De Hoop, Valentijn, Asiento and Groot Kwartier (with the orange orchards) were the most important *waterplantages*. *Putwater* drawn from the wells was stored in stepped *waterbassins* and via gutters and pipes channelled to the shore of the bay. There the water was loaded onto waterkanoes or waterboats and sailed to the clients. Plantage Asiento boasted 13 *windwaterputten*. Per day 100-ton water was drawn from four of these wells to supply the newly built oil refinery at Schottegat Bay in 1918. Before the introduction of windmills the *waterplantages* also directed runoff water to open waterreservoirs on the shores of the Schottegat. Werbata indicated several large waterreservoirs on *zandvelden* (sand fields). This practice was used to improve the water quality of these planes and to make them more suitable for agricultural purposes.

The islands oil boom changed everything on the island. The sudden wealth due to the availability of fossil fuel as energy source and skyrocketing water demand led to quick depletion of groundwater resources and the installation of one of the world's first desalination plants. Up until today, the region still relies heavily on desalination plants. Accoring to Verstappen (2020) the oil boom did have some unexpected benefits for the return of green cover of the island. Because of the sudden availability of petroleum inhabitants were no longer required to chop firewood for cooking. Also goat herding was abandoned in favour of work in the oil and service industries (Verstappen, 2020).



FIG. 16 This map shows the waterplantages around Schottegat bay. At Plantage Groot Kwartier an iron pipeline was constructed to direct water to the water reservoir on the shore of the bay. In 1911 Asiento only had three wind-powered wells. By 1918 there were 13 mills. Next to large earthen dams there are also soil storage waterreservoirs on the shore of the bay. In the east corner of this map there is a pumpingstation. Most probably for pumping water into cargo ships.



FIG. 17 Ruin of waterkelder/regenbak (cisterne) the benedenstad of Sint Eustatius. Relative high rainfall of 1200 mm (700-900 NL) turned Sint Eustatius into a strategic transshipment port in the Caribbean. Rainwater was 'harvested' and sold to cargoships. Today Bij gebrek aan adequate centrale watervoorziening worden bewoners in droge perioden geconfronteerd met drinkwater tekorten. Photographer: Saskia de Kock. Source: RCE.



FIG. 18 Men fetching water at a wind-powered well in Bonaire in 1964. On Bonaire the historical water supply systems have been restored but problems with management have occurred (Bonaire.nu, 2019). Photographer: Boy Lawson. Source: RCE.

## 4 CONCLUSIONS & DISCUSSION

### 4.1 WATER TYPOLOGIES AND WATER TERMINOLOGY

The Werbata-Jonckheer maps were drawn specifically to provide detailed information for the implementation of the micro water catchment *waterkuil-faha* system. The level of detail and information the maps provide on the field of topography, landscape structures and elements and water management was unprecedented (Van der Krogt, 2005). One difficulty are the inconsistencies in the terminology used in the legend and on the map. It is necessary to study what definitions Werbata used and which Jonckheer used. Werbata drew the first maps of Curaçao assisted by Jonckheer (Van der Krogt, 2005). Jonckheer drew the other islands maps building upon Werbata's method and knowledge. However Jonckheer was born and raised in Curaçao and perhaps had additional knowledge that led him to use slightly different legend and terminology for the other islands. A next step in this research project is to further develop a glossary on landscape and water elements to determine the terminology. This first overview also needs further development by studying the systems of the other Dutch Caribbean islands and those of the Lesser Antilles in general.

### 4.2 BIOGRAPHY OF NATIVE CARIBBEAN AND AFRICAN CARIBBEAN WATER MANAGEMENT SYSTEMS

This study highlights the lack of knowledge on Arawakan and Caquetio influence and legacy in water management systems (Debrot, 2009) in the Lesser Antilles. As Van Keulen (2017) and Pulsipher & Goodwin (1982; 2001) have argued before this is also the case with the lack of knowledge on the influence, development and legacy of African-Caribbean enslaved and small holder farmers on agricultural practices and water management systems. While local and regional (inter island) food supply was heavily dependent on the African-Caribbean enslaved labourers, and after emancipation, small holder farmers, and their work on the *kostgrondjes*, the topic is under researched. Though I would not say 'surprisingly under researched' as scientific research is still subject to the 'postcolonial gaze' (Beard, 2000). Related to race is also the subject of gender as knowledge on water management might have been passed through female lines in an economy where able young enslaved men were often sold or, after emancipation, left the islands in pursuit of study and work. Pangare & Pangare have addressed the gender issue in their work. Van Keulens and Pulsipher & Goodwin research to identify authorship of watersystems in the Lesser Antilles underscores the importance of field research and interviews with local people. Most likely local practices and knowledge is undocumented.

### 4.3 PUBLIC WORKS AND INSTITUTIONAL GAPS

Another aspect of the 'clashing' of cultures in overseas colonial territories in relation to water management and 'public works' have been addressed by Ravesteijn and Kop (2004). In their research on public works in the Dutch East-Indies (Indonesia) the authors argue 'institutional gaps' led to failure during implementation of 'improved' public works. Most notably on several dam and irrigation works. The authors argue the Dutch engineers and governing institutions had difficulty fully understanding the local physical water management systems and the socio-cultural management behind them, this however did not stop them from 'improving' them. The introduction

of noria's (waterwheels) by Raders is a telling example. Bhattacharyya (2014) has highlighted the problematic transfer of public goods to capitalist and/or colonial governing bodies and institutions and the loss that comes with it of social, cultural, economic, legal and spiritual ownership for indigenous communities.

#### 4.4 OIL AND POST OIL PERIOD WATER MANAGEMENT

The Netherlands and the islands of the Dutch Caribbean were two worlds apart in terms of landscape, economy and water management systems. The Dutch water system was based on draining excess water while in the Dutch Caribbean water was scarce. This led to completely different development and innovations in the field of fresh water management and water supply systems. The early introduction of the American windmills is one example. The other example is the introduction of one of the worlds first desalination plants. The physical landscape Werbata documented on maps changed dramatically from 1918 when the region's first oil refinery opened for production. This research project focuses on decentralized water supply systems and stops with the introduction of centralized water supply system based on desalination technology. The spatial impact and water management of that time deserves attention.

#### 4.5 WATER HERITAGE FOR THE FUTURE: SPATIAL MODELLING AND HERITAGE MANAGEMENT

The oil boom stopped the development and implementation of the small *waterkuil-faha* and large *tanki-dam* system on a large scale short. While landowners questioned the benefits and effectiveness of the micro catchment system (Renkema, 1981) in modern day science there is consensus that micro catchment and soil storage systems combined with woody plants and trees are beneficial in arid and semi-arid regions (Boers, 1984). It is also safe to say that large scale land clearing and deforestation between 1700-1950 must have had affected the hydrological cycle and induced drought (Derix, 2016). We can only speculate if and how the islands soil quality and water management would have benefitted from the implementation of these system and if it would have provoked reforestation. Therefor integrated spatial modelling, akin the method of "history integrated solutions" as proposed by Kosian and Van Lanen (2018; 2020) is needed. An integrated approach to spatial modelling, that also takes eco-system and heritage-system services into account, enables heritage experts, spatial planners and water resource experts and professionals to start a conversation on equal terms on the value of heritage assets, both tangible and intangible, for the development of resilient water management systems for the future.

#### Acknowledgment

This paper is an output of the science project Thirsty Cities. MOWIC and Mary van Soest allowed the use of photos of her extensive fieldwork on water supply related heritage. Her inventory provided invaluable additional information and imagery. Curaçao resident Harrie Verstappen provided me with insights and observations on landscape conservation and water management. I thank Debjani Bhattacharyya and Carola Hein for their interest in and feedback on this research.

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# SAWAHLUNTO: Perspectives on the Future of a former Mining Town

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## Abstract

*The Ombilin Coal Mining site at Sawahlunto (Indonesia) has been listed as a World Heritage site in 2019. Since coal extraction ended the town is in urgent need of new developments to provide a base of existence for the heritage in question. Is tourism the single and best solution towards sustainable development, or can other options be tapped into to the achieve same goal?*

## Keywords

*World Heritage, sustainable development, tourism*



FIG. 1 Former soup kitchen. Source: author, 2004.

## 1 INTRODUCTION

Whoever is willing to undertake the effort of a long journey into the mountainous highlands of Western Sumatra will be rewarded at last with a stunning view over the valley where the rivers Lunto and Sumpahan meet. This is the location, 90km from Padang, of the former mining town of Sawahlunto. During the 43<sup>rd</sup> session of UNESCO's World Heritage Committee in Baku on July 6, 2019, the town of ca. 61,000 residents has been listed as a World Heritage Site.

The Ombilin Coal Mining Heritage of Sawahlunto has been listed as an "outstanding example of a technological ensemble designed for maximum efficiency in the extraction of a key, strategic natural resource – in this case industrial grade coal" (criterion IV). In addition, the site "exhibits a significant interchange of mining technology between Europe and its colonies during the second half of the 19<sup>th</sup> century and early 20<sup>th</sup> century" (criterion II). Indonesia's unconventional and challenging site nomination consists of the complete mining system. It includes not only the mine site and company-town of Sawahlunto but also the associated harbour facilities in the city of Padang, as well as the 155km-long railway track linking both (UNESCO, 2019).

When coal extraction ended in 2002, Sawahlunto suddenly lost its primary base of existence. The main challenge the former mining town and the community living around it are facing is therefore to find a new base of existence. In the context of this topical urgency, the key question we try to answer in this article is whether the historical features can help to alleviate this societal need. Can the heritage be used to accommodate the community's current needs? And reversely: with Sawahlunto now being a listed World Heritage Site, how may new impulses provide a base of existence for the heritage at stake?



FIG. 2 Left: Map of Indonesia, showing the province of West Sumatra. Right: listed World Heritage Property. Source: Office of Cultural Affairs, Historical Remains and Museum, 2017.

## 2 HERITAGE BEYOND TOURISM

The Sawahlunto Municipality was keenly aware of the urgent need for a new economic orientation. As early as 2004 the town council approved a policy document on tourist development, in which the town's heritage was positioned as asset for a new future for its inhabitants (Kota Sawahlunto, 2011). In the years that followed the city worked at remarkable speed on the policy document's implementation. Tourist facilities were created, museum programmes executed, and the city centre was rescued from dilapidation in order to make it more attractive. The recent World Heritage listing

was the latest, but not the last, remarkable success of that same policy. Main instigator of this policy was the former mayor, Mr Amhran Nur, a visionary who unfortunately passed away before the site was listed.

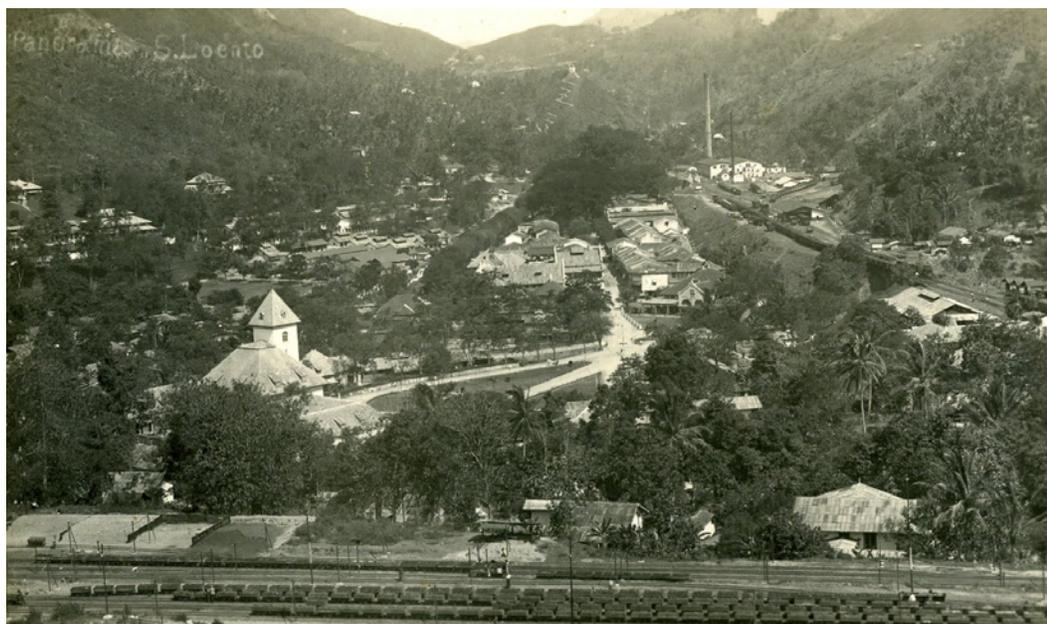


FIG. 3 View on the town of Sawahlunto, 1925. Source: Collections KITLV.

Despite the policy's success, questions remain regarding additional or alternative scenarios beyond tourism. Today's Corona-pandemic shows how vulnerable an exclusive tourist orientation can be. But not only that; currently we are repeatedly confronted with the negative impacts of tourist development (Cuccia et al. 2016, p. 506). Not infrequently, World Heritage Sites have degenerated due to congestion, crowding, and growing tourist numbers (Hall & Piggin 2001, p. 103). The issue was addressed during the Site Event on Sustainable Tourism of the World Heritage Committee Meeting held in Baku last year (Bhwana, 2019). A city like Venice is overwhelmed by tourists, a situation which affects its historical features. The fortified city of Galle in Sri Lanka is losing its significance for the local population as gentrification leaves hardly any room for the services, facilities and meeting places the city used to provide to its citizens. In Zanzibar, urgently needed new jobs in the tourist industry tend to be low-skilled and hardly contribute to the desired edification, while profits earned in the tourist industry are often siphoned off to Western suppliers.

Although (or maybe: *because*) the negative impact of tourism is generally acknowledged, today's heritage discourse is almost inseparable from tourism (Hitchcock & King 2003; Smith et al. 2012; Staiff et al. 2013; Waterton & Watson 2014; Winter 2010). We seem to have lost the ability to think of heritage beyond tourism. The best we can come up with in today's numerous debates on this topical issue is to mitigate the negative impacts (Bandarin & Van Oers 2012, p. 67), resulting in UNESCO's Sustainable Tourism Programme (UNESCO, n.d). But what about the alternatives? What other new impulses may lead to a sorely needed base of existence for the heritage we cherish? This is not a plea to exclude tourism, but rather an urge to extend the debate beyond tourism. In this article, we explore alternative development potentials of Sawahlunto's historical features. Not to exclude tourism but to broaden the city's perspectives and to make Sawahlunto less vulnerable to the impact of a volatile

industry. As Martokusumo already exclaimed in 2010, “a more critical look on [...] future needs and economic viability is a necessity in developing a future development policy.” (Martokusumo, 2010). We therefore first dive into the town’s history.

### 3 HISTORY

For centuries, daily life on the banks of the river Lunto was dominated by rice cultivation on small but fertile paddy fields. This changed abruptly in the late 19<sup>th</sup> century, when a thriving mining industry emerged. By the early 20<sup>th</sup> century, the town of Sawahlunto had already become a typical company town in which all activities revolved around coal mining. The Ombilin coal mines were neither the only nor the first coal mines in Indonesia, yet the largest and for a long time the most productive in this immense country (Ministry of Education and Culture, 2017).

Although the presence of rich seams of minable coal was demonstrated already in 1868, it was 1891 before the first coal could be extracted. This was due to the area’s geographical situation; the Ombilin basin was not only remotely located but also surrounded by an inaccessible mountain range which made the site difficult to reach. While economic factors such as supply and demand were highly favourable to coal extraction, the main challenge was logistical. Several railway engineers studied the area for years in order to find a passable access route. The first plan, presented in 1875 by Jacobus Leonardus Cluysenaer (1843-1932), was robust and realistic but not cost-effective. It took another ten years to find a shorter access route, which only became feasible by using a recent Swiss invention, the rack railway.



FIG. 4 Transport of coal in the Loento II Mining Pit. Source: Collections KITLV.

For the same reason of cost-efficiency, forced labour was employed in the Ombilin coalmines under colonial rule. Convicts from all over the archipelago were put to work in the dark mine pits. The number of these *orang rantai* (chained people) rose from 1,234 in the late 19<sup>th</sup> century to 11,046 in 1921 (Erwiza 1999, p. 2). Their numbers were supplemented by a small contingent of Javanese and Chinese contract workers. Labour conditions were harsh, as contemporary sources indicate (Rodgers, 2005). The heavy work led to many injuries, while coal dust caused lung diseases, and many individuals suffered from parasitic worm infestations due to a lack of hygiene (Erwiza 1999, p. 50). These conditions necessitated the presence of a specialized medical staff. Soon after the mines opened, a well-equipped hospital was established which provided excellent medical care to the region; Sawahlunto's present hospital is its immediate successor. However, the hospital was unable to prevent all cataclysms. A doctor's note from the early 20<sup>th</sup> century mentions a rise in mortality rates as a result of the enormous workload due to a growing demand for coal in the colony (Drieënhuizen, 2019).

Recent studies revealed the importance of Sawahlunto to the development of mining techniques. Global expertise in exploration, extraction and labour management got intertwined with local expertise and resulted in an advanced mining system. The experience gained at Sawahlunto found its way to mining practises around the world, especially in South Africa and the Netherlands. Theoretical knowledge entered academia, particularly at the institution known today as the Delft University of Technology (Leidelmeijer 2017). The material expression of this international exchange of knowledge was Sawahlunto's mining school, once famous but less prominent today.



FIG. 5 Former coal conveyor belt. Source: author, 2019.

## 4 CURRENT SITUATION AND CHALLENGES

Sawahlunto's history, as described in the previous section, suggests three potential development opportunities: knowledge exchange, medical care, and tourist facilities. The feasibility of these opportunities for achieving a sustainable future was investigated by means of desk research and subsequent fieldwork in and around Sawahlunto. A literature study provided the theoretical framework, while governmental policy papers, municipal statistical reports, and sector-specific documentation were consulted for local details. The fieldwork involved in-depth interviews and a one-day workshop for local stakeholders and experts. The results are presented in the next section.

### 4.1 MINING

Although mining has ceased within the boundaries of the World Heritage Site, some mining activity still occurs outside it. As stated in the nomination dossier, Sawahlunto possesses an important tradition of mining technology exchange in the form of the mining school, which provided the necessary labour force and expertise to establish and operate the integrated mining system (Ministry of Education and Culture, 2017). Today, this highly modernist school building is no longer used for educational purposes. Mining-related courses are now held at the Soengai Doerian Mining Pit Compound, a site 5km outside the town of Sawahlunto. Here, the Sawah Luwung Underground Mining Tunnel, which opened in 1980, functions as a centre for mining education. This Vocational Training Centre for Underground Mining, in Indonesian *Balai Diklat Tambang Bawah Tanah* (BDTBT) was established in 2002 (BDTBT, n.d.). It is an advanced institute for mining expertise, and the only underground training centre in Indonesia. Skilled training prepares future employees for deep-mining activities. As the only deep-mining training centre in Indonesia, the number of students varies each year depending on market conditions and company requirements.

Despite the successful students it has produced over the years, BDTBT remains an exclusive institution with limited impact on local economic development. Recent plans included the establishment of an additional Mine Polytechnic College in Langkok Village, near Sawahlunto. This new Polytechnic would then be part of a cooperation with other similar institutes like the Jakarta State Polytechnic and the Bandung State Polytechnic. Education would then centre on technical training for underground and open-pit mining, on health and environmental impact, and safety-related issues. However, a declining interest in the mining industry has made the immediate execution of this plan unfeasible.

Other new initiatives with respect to Sawahlunto's geography and mining history are also ongoing. In cooperation with the Indonesian Ministry of Energy and Mineral Resources (*Kementrian Energi dan Sumber Daya Mineral*, KESDM) and the Sawahlunto Municipality, BDTBT is currently preparing the establishment of a national Geopark Sawahlunto within the Ombilin Basin area. Geopark Sawahlunto is intended as a geological campus for education in sustainable mining and post-mining activities, and besides as a destination for mining tourism.

BDTBT's current premises are limited and lack sufficient facilities and dorm capacity for the present student population. Depending on how the plans will unfold, there will be a growing need to expand student facilities. Student housing will compete with, currently limited, tourist accommodation. This raises new opportunities for the - presently vacant - premises on the World Heritage Site of the former mining company, *PT Bukit Asam (Persero) Tbk*. The immediate successor of the Dutch colonial Ombilin Mining Company, *Unit Pertambangan Ombilin* (PTBA UPO), owns many assets in and

around Sawahlunto pertaining to mining. PTBA was also directly involved in the UNESCO nomination process. Though some of the facilities are still functional or have been repurposed, many are still vacant. PTBA is currently working with a consultant towards the revitalization and re-usage of PTBA assets. One of the challenges encountered during this process is the adaptation of the historical structures in such a way that the nominated attributes are enhanced.



FIG. 6 Former Mining School. Source: author, 2019.

## 4.2 MEDICAL CARE

During the colonial period the hospital at Sawahlunto was one of the most modern and prestigious hospitals in central Sumatra, providing advanced medical care. Built in 1915 and currently known as *Rumah Sakit Umum Daerah* (RSUD), the hospital premises are in good condition and strategically located at the heart of Sawahlunto, making it easily accessible for patients. Although the hospital's original function still remains, over the years it has lost much of its former prestigious status. Though a 2014 Ministerial Regulation<sup>1</sup> compels patients to first consult local clinics before consulting regional hospitals, patients from outside the region still frequently visit the RSUD due to its long-standing reputation.<sup>2</sup>

In recent years the municipal population has grown to 61,000, increasing the challenge for the hospital to cater to all people. In 2014, in response to the need for expansion and infrastructural improvements to improve accessibility, the RSUD drafted a master plan. The addition of a new building was considered necessary in part because the old structure no longer conformed to modern standards. However, as a part of the World Heritage Site, the hospital was refused permission to alter its physical structures. Efforts to modernize or redevelop the hospital while enhancing the historical structures still constitute the greatest challenge.

1 Peraturan Menteri Kesehatan RI No 28 Tahun 2014 tentang Pedoman Pelaksanaan Program Jaminan Kesehatan Nasional

2 The actual reputation of the hospital can be substantiated: 16% of its patients came from outside Sawahlunto. RSUD was expected to contribute 29 billion Rupiah, or half of Sawahlunto's total annual regional revenue. By the end of the year 2018, RSUD alone managed to contribute more than 20 billion Rupiah, which amounts to 72.1% of the total target (BPS Kota Sawahlunto, 2019; Indrawati, 2019)

In the course of this study it became apparent that four existing community health centres have been handling general diseases quite well. During our workshop the idea was raised to develop these community health care centres in order to solve the expansion problem. Quality improvement and physical expansion of the health care centres would increase their patient capacity, which in turn would render expansion of the old hospital premises less urgent. The hospital would thus be able to focus on the more serious cases: quality enhancement instead of quantity. In that case, no substantial modifications to the old hospital building would be required.



FIG. 7 Ombilin Mine Hospital in 1925. Source: Collections KITLV.

Under the 2009 No. 44 Government Act,<sup>3</sup> government hospitals are to be converted into independent Public Service Agencies, or *Badan Layanan Umum* (hereafter BLU). This will allow each hospital to become financially flexible whilst maintaining its efficiency, effectiveness and productivity with regard to quality service. A BLU wishing to qualify for a development loan has to submit a number of official documents including proof of land ownership. However, the land on which the RSUD and surroundings are located is owned by PTBA, the successor of the colonial Ombilin Mining Company. This ownership issue not only creates a financial problem but, without the consent of PTBA, also renders illegal any plans for future physical expansion. In total, PTBA owns ca. 32.45% of the land in Sawahlunto (BPS Kota Sawahlunto, 2019).

A subsequent challenge the hospital faces is to hold on to highly skilled doctors in a small town like Sawahlunto. Having received government grants for further education, most of them tend to leave for the bigger cities. By improving Sawahlunto's social and physical attractiveness, doctors are expected to stay after completing their training, thus retaining skilled medical expertise and improving its

quality. Here, tourism development should be considered as an important factor; a development that will see either too many or too few tourists coming in may disturb the town's attractiveness as a residential area.

### 4.3 TOURISM

Although tourism contributes a mere 1.9% to the gross regional domestic product while the manufacturing sector contributes 13.9% (BPS Kota Sawahlunto, 2018), tourism has become the main focus of Sawahlunto's economic development (Anarta, 2016). Over the years, various successful events and policy regulations by the municipality and the province have been developed to increase tourist numbers. With 810,000 tourists visiting Sawahlunto in 2015, the municipality is aiming for at 1.4 million by 2023.

The major challenge in achieving this target will be to expand the number of tourist attractions. More than 100 heritage structures and several abandoned mines are spread over seven districts. They have huge development potential due to their unique historical profile as a cultural and industrial heritage site (Martokusumo, 2010). The question is how to creatively reuse and redevelop them to re-create a town that is attractive not only to tourists but also to residents and workers. This means looking beyond a museum function; a creative challenge as well as a managerial and financial one.



FIG. 8 The Ombilin Hotel. Source: Office of Cultural Affairs, Historical Remains and Museum of Sawahlunto, 2017.

An important constraining factor for tourist development is Sawahlunto's remote geographical position in the Sumatran highlands, at a considerable travelling distance from Padang, West Sumatra's central hub and the point of arrival for most visitors. Situated a two-and-a-half hour journey from Bukittinggi and Pagaruyung, two of West Sumatra's most popular destinations, tourists often skip Sawahlunto. Competing with these longer established and well-known tourist destinations is a challenge.

The second constraining factor is visitor capacity. At present, existing hotel facilities are insufficient to meet the set targets. The town's main hotel is the Wisma Ombilin, built in 1918 to cater to high-end guests. At the time of this study the hotel was temporarily closed for renovation, leaving only the Parai City Garden Hotel, with 41 rooms and the town's only three-star hotel, to cater to tourists. Even with both hotels filled to capacity they would be utterly unable to accommodate the targeted tourist numbers. One potential solution is to encourage private citizens to open up their dwellings as a homestay. With approximately 80 homestay facilities spread around the city, especially the Old Town and the Talawi district, further development and training are needed.

Current food catering standards are a third constraining factor. A wide selection of food and the presence of street vendors who appear along the river at night notwithstanding, the quality and hygiene remain questionable. The provision of adequate facilities continues to pose a huge challenge.



FIG. 9 Sports field in the very centre of Sawahlunto. Source: author, 2004.

## 5 CONCLUSION

Since the start of the municipal strategy to move development from mining- based to tourism- based activities so as to create new economic opportunities, and following the more recent UNESCO World Heritage designation, the municipality has embarked on a strategy to find sustainable ways that are in compliance with UNESCO's Sustainable Tourism Programme, to accommodate future development. Sawahlunto has great potential to grow into a sustainable and attractive place to live, work and recreate. This article has identified three development potentials that may contribute to that goal. In addition to a tourism potential, the study pointed out opportunities for further developing the mining sector and medical care. An additional policy that aims to balance these three sectors will also have to address the issue of adapting the highly valued historical features to current and future needs, in order to improve living conditions. Finding a suitable future function on the basis

of the identified potential is an important challenge that will benefit all stakeholders. The recently published comprehensive documentation of Sawahlunto's built heritage by ITB Bandung offers a good starting point for further exploration of possible reuse (Wibowo, 2019).

A major condition for reaching this goal is a close collaboration between public, private and civic parties. Linked to this is the current issue of land ownership; the study revealed that this issue often imposes constraints on the development process.

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# Between Nature and Culture: From Italy and the Netherlands new Perspectives towards a sustainable Use of Historical Landscapes

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## Abstract

*The introduction of historical landscapes in the international heritage debate has triggered some new issues, among which the one related to the preservation of coexisting cultural and ecological values. Although preserving such values means dealing with their conflicting trends, finding a balance is, however, a fundamental issue, so that the heritage field can contribute to the global challenge of sustainable development. In relation to this, the Italian and Dutch experiences with the revitalization of military structures represent an interesting observatory in Western Europe, in which the dialectics between cultural and ecological values has been variously addressed according to their different appreciation. Considering this conceptual premise, the paper investigates some recent revitalization projects involving the forts of the Entrenched Field of Mestre (IT) and the New Dutch Waterline (NL), two 19<sup>th</sup>-century military landscapes embedded in the hydraulic setting of their area of influence. Linking documentary research, interviews and field observations, it highlights the role that an integrated approach to cultural and natural values can play in the promotion of a sustainable use of historical landscapes.*

## Keywords

*Historical military landscapes, cultural values, natural values, sustainable development*

## 1 INTRODUCTION

Among the global issues to be addressed when dealing with the preservation of historical landscapes, the coexistence of cultural and ecological values has a key role in the heritage contemporary debate. Several steps have been done for going beyond the distinction between cultural and natural sites (Scazzosi, 2017), given the constant interaction between anthropic and natural factors in shaping every life environment (Tosco, 2009). If the landscape in its physical consistency can be interpreted as a matter of architecture and vice versa (Russo, 2014), the inclusion of vegetal components in the range of human products has, however, determined the need for a reflection about the strategies to be applied in the field of built heritage preservation.

In this sense, military fort sites represent significant observatories, the architecture of which is characterized by a symbiotic combination of stone and vegetal components, organically designed to fulfil a common purpose. However, colliding trends frequently emerge when dealing with their combined preservation. Obsolescence, misuse and abandonment of such sites has often led to the loss of significant cultural traces, while generating a new biophysical equilibrium equally worthy of being safeguarded. Hence, their preservation involves finding a balance, thus, contributing to the achievement of the Sustainable Development Goals (SDGs).

In relation to this, the recent Italian and Dutch revitalization experiences of military structures have been identified as relevant examples in Western Europe. The two contexts have matured different approaches to the landscape over time according to a different interpretation of its man-made character.<sup>1</sup> Such a difference still has an impact on the more recent preservation strategies for military fort sites, in which the dialectics between cultural and ecological values has been variously addressed according to their different appreciation.

Consequently, the paper compares the projects involving the forts of the Entrenched field of Mestre (IT) and the New Dutch Waterline (NL), two 19<sup>th</sup>-century military landscapes which are embedded in the hydraulic setting of their area of influence. Following an historical overview, the Dutch and Italian revitalization processes are, at first, individually investigated. Finally, the arising issues are cross interpreted, in order to deepen the possible ways in which such experiences can benefit from each other.

## 2 THE ENTRENCHED FIELD OF MESTRE

### 2.1 BACKGROUND

The Entrenched Field of Mestre is a defence system built from the second half of the 19<sup>th</sup> century on the mainland of the Venice lagoon. It was conceived as a strategic point in the military organization of the new-born Italian state (Zanlorenzi, 2009), which determined a turnaround in the water-based defence trend of the city.<sup>2</sup> It resulted, at first, in the construction of three forts (1883-1889) crowning the already-existing Fort Marghera.<sup>3</sup> Subsequently (1907-1911), the fear for a world conflict led to the addition of a second line of forts<sup>4</sup> (Fig. 1).

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1 In Italy, the man-made character was identified with historical architecture which, already in the first half of the 20<sup>th</sup> century, represented a central element in the landscape to be preserved (Picone, 2017). In the Netherlands, the anthropic interventions of reclamation and land consolidation represented the distinctive character of the Dutch landscape, perceived at an early stage as an obstacle to nature protection (Renes, 2008).

2 Until that moment, defence was based on the water presence and the fortifications spread in the lagoon (Scroccaro, 2015).

3 The first line is composed by Fort Gazzera (1883), Carpenedo and Tron (1886) (Zanlorenzi, 2009).

4 The second line is composed by Fort Rossaroll (1907), Pepe (1909), Poerio (1910), Mezzacapo (1911), Sirtori (1911), Cosenz (1911). Additionally, the Bazzera powder magazine and the two Fort Marghera's redoubts, Rizzardi (now disappeared) and Manin, were auxiliary fortifications (Zanlorenzi, 2009).

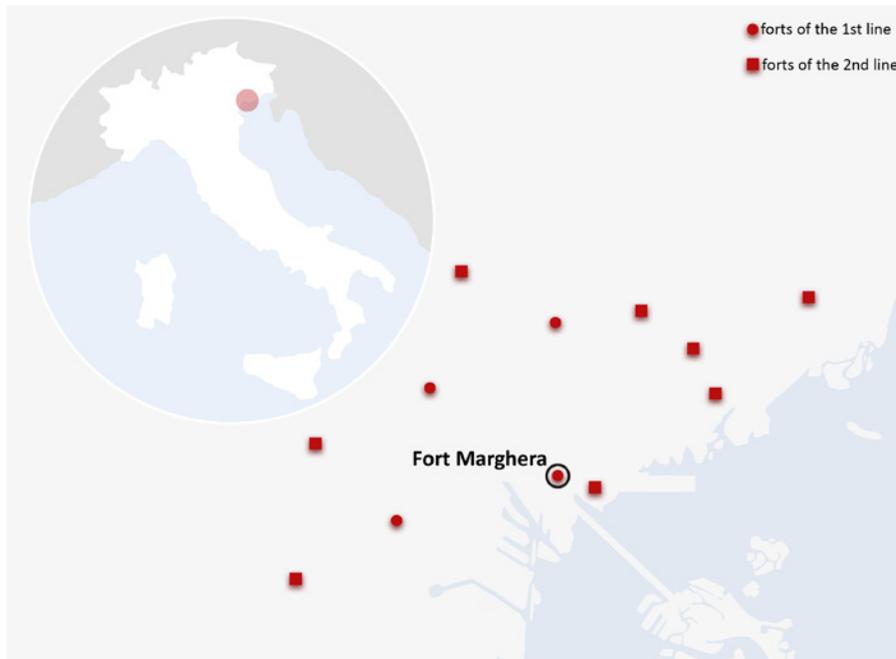


FIG. 1 Italy, the Entrenched field of Mestre. Source: *Author's elaboration.*

Nevertheless, Venice military role started to be diminished already during the WWI. The forts were, however, kept by the National Defence department as logistic sites until the 1990s (Zanlorenzi, 2009; Scroccaro, 2015). Subsequently, some of them have been acquired by the municipality of Venice.<sup>5</sup> Although the entrenched field has been included in the UNESCO site of “Venice and its Lagoon” in 1987 (Comune di Venezia, 2012) and the local authority has promoted some reflections for preserving the whole system,<sup>6</sup> in the last decade concrete actions have, however, been concentrated on the oldest of its objects: Fort Marghera.

## 2.2 FORT MARGHERA: HISTORY AND LAYOUT

As the heart of the Entrenched Field of Mestre, Fort Marghera was settled in a location with a strategic character since its origins.<sup>7</sup> But it was during the first French rule (1797) that the site was identified as a crucial point for protecting the city. The French plans were, however, put into practice by the Austrians (1805) and completed during the following Napoleonic era (1805-1814) (Zanlorenzi, 2009; Scroccaro, 2015).

The fort has a concentric bastioned layout made of three earthwork rings, defined by canals and connected through drawbridges (Fig. 2) (Zanlorenzi, 2009; Vio, 2009; GLFM, 2014). Originally, only the inner ring, the pentagonal redoubt, had buildings: the two “Napoleonic barracks” and two powder

5 In 2003, the Municipality of Venice started the purchase of seven forts: Marghera, Gazzera, Tron, Carpenedo, Rossarol, Mezzacapo and Pepe (GLFM, 2014).

6 Reference is made to the *Coordinamento per il recupero del campo trincerato di Mestre* (Committee for the rehabilitation of the Entrenched Field of Mestre), instituted in 1996 by the municipality of Venice (GLFM, 2014).

7 Staging point along the *via Annia* in the roman period, during the Middle Ages the area was turned into a flourishing hamlet (Vio, 2009; GLFM, 2014).

depots. The intermediate ring was given four casemates (1880) and a cannons battery (1906-1910) only after the inclusion of the fort in the Entrenched Field; moreover, a masonry bridge<sup>8</sup> was kept in this area, representing the only left trace of the former Marghera hamlet. About the three isolated lunettes, conceived as the outer line of defence, only one of them was given logistic constructions during the 20<sup>th</sup> century. Finally, the architecture of the fort was complemented by the articulation of earthworks, canals and vegetal components, designed to fulfil the military purpose.<sup>9</sup>

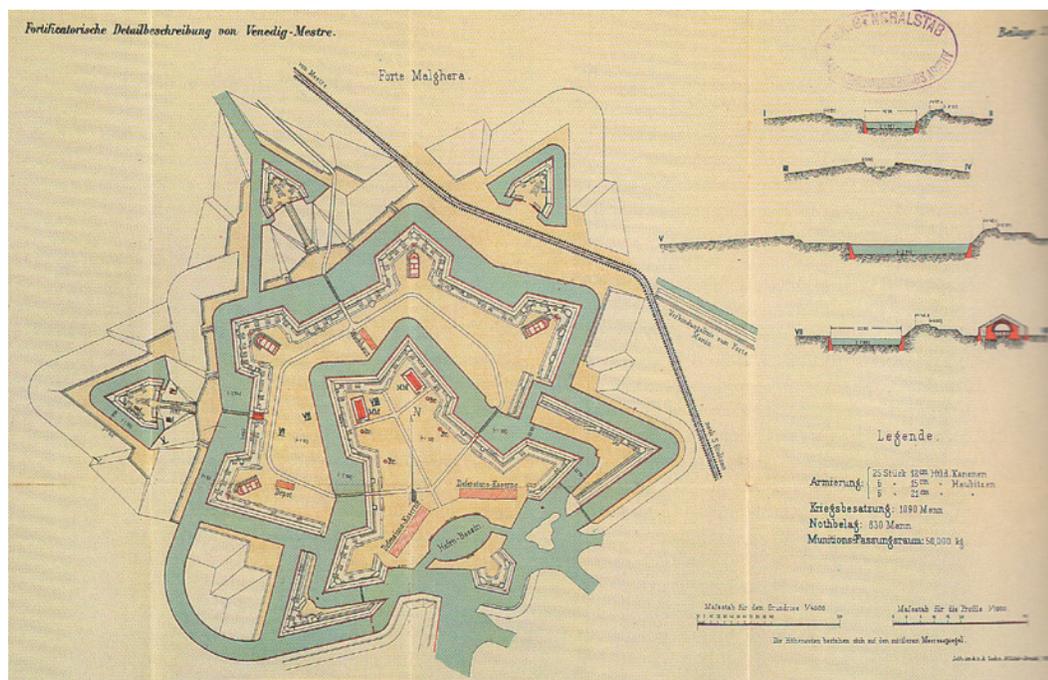


FIG. 2 Italy, Venice. Fort Marghera (1900). Source: Zanlorenzi, 2009: 166.

In the time span going from the WWI until its final demilitarization (1995), the National Defence department kept on using the fort as a logistic base. Indeed, several of its seventy-eight buildings date back to this phase; additionally, also the green and earthen features have undergone significant alterations (Brunello, 1988), resulting in a fragment of a wider historical military landscape threatened by misuse and abandonment.

## 2.3 FORT MARGHERA: THE REVITALIZATION PROCESS

Shortly after the municipality of Venice had concluded its purchase (2009), a plan for Fort Marghera was elaborated in 2012: the *Piano di Recupero di iniziativa pubblica – Compendio “Forte Marghera”* (PdR).<sup>10</sup> In it, specific attention was given to the historical buildings; an in-depth analysis was

8 During the second Austrian rule (1857), the bridge was given an upper level for hosting a powder depot (Zanlorenzi, 2009).

9 Along the canals, particular species of shrubs (Robinia) were planted with the dual function of preventing the erosion of the banks with their roots, and of hiding the fort with their foliage (Brunello, 1988).

10 The PdR is available at the Archive of the *Soprintendenza Archeologia, belle arti e paesaggio per il Comune di Venezia e Laguna* (SABAP) (Cultural Heritage Agency for Venice and its Lagoon), binder: Mestre, Forte Marghera, Progetto di Recupero (PdR). An overview can be found in: Trovò et al., 2017.

carried out considering several aspects (i.e. period of construction, role in the fort site, construction homogeneity, architectural quality, state of conservation). Such observations have led to the definition of the allowed degree of transformation<sup>11</sup> (Fig. 3) and to a detailed explanation of the possible interventions for each building. Moreover, all the vegetal species were catalogued, spatially identified and described in their ecological features, paying attention to those cases in which they represented a threat for the buildings or an obstacle to the fruition of the fort; however, no reflection can be reported on the cultural value of such elements.<sup>12</sup>

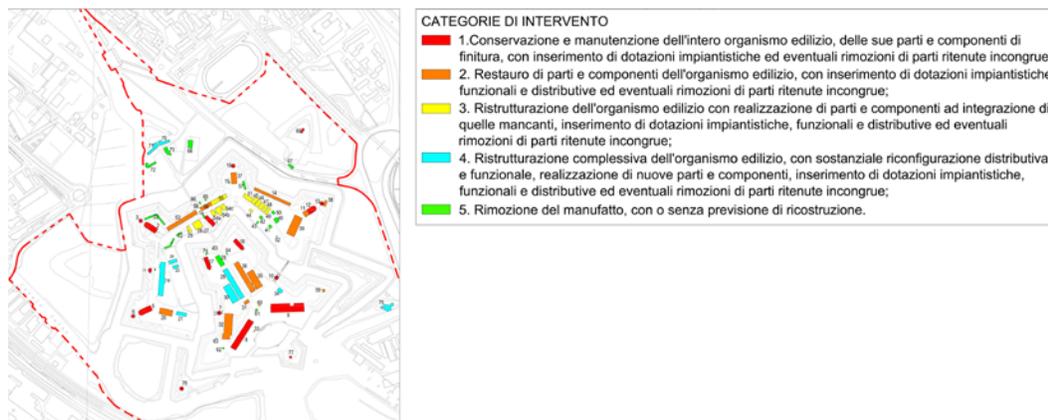


FIG. 3 Italy, Venice. Fort Marghera, PdR (2012): allowed interventions on historical buildings. Source: Trovò et al., 2017: 1133.

Consequently, the analysis of the stone and vegetal components has led to the definition of guidelines for the future reuse of the fort as a centre for cultural production.<sup>13</sup> In particular, three areas with specific functions have been identified. The central redoubt, characterized by the presence of the most valuable buildings with low transformation degree, has been defined as a high conservation area and, thus, suitable for cultural activities (e.g. museums and exhibitions). The external belt is foreseen as a functional regeneration area, with the combination of both cultural and recreational activities (e.g. shops and restaurants). Finally, the lunettes are conceived as urban 'forests'. Additionally, an organic design and management plan of green open spaces is envisaged for the whole fort site and in strong connection with paths and infrastructures.

Even if the PdR has not yet been officially adopted by the municipality, it has represented the main reference in the first implemented actions. Thanks to public funds, in 2015 the Study Centre for Military Architecture was realized as part of a conservation and reuse project for two buildings of the external belt.<sup>14</sup> Subsequently, in 2017 a second public fund has been concentrated on the restoration and reuse of the buildings on the central redoubt, together with the needed infrastructures for the

11 The five grades are: 1) conservation and maintenance; 2) restoration; 3) rehabilitation of some parts; 4) rehabilitation of the whole building; 5) demolition. Cf. PdR, Paper 32.

12 Cf. PdR, Paper 16.

13 Cf. PdR, Paper 32.

14 The two buildings are the powder depot incorporating the 16<sup>th</sup>-century bridge and an early 20<sup>th</sup> century barracks (Trovò et al., 2017).

whole site (Trovò et al., 2017). As a result, the implemented and on-going punctual interventions conceived for preserving and re-using the built heritage of Fort Marghera can give a clear image of a slow revitalization process in which the historical buildings represent the driving force.

### 3 THE NEW DUTCH WATERLINE

#### 3.1 BACKGROUND

Conceived at the beginning of the 19<sup>th</sup> century for defending the province of Holland, the New Dutch Waterline was a military structure primarily designed as a water machine, the main scope of which was to create a continuous 85-kilometer-long strip of inundated fields. Subsequently, the hydraulic works were complemented by forts and military works aimed at assuring defence in those places where inundation was not feasible (Fig. 4). The construction of the forts gradually took place through six phases (1815-1940) in which the evolution of military tactics and regulations led to a great variety in terms of military architecture (Steenbergen et al., 2009; Verschuure-Stuip, 2014; Will & NPNHW, 2019).

The New Dutch Waterline kept its defence role until the WWII, while the special military protection measures were repealed in 1963.<sup>15</sup> Following its candidacy for the UNESCO tentative list (PONDW & PODLA, 2018), in 1999 the defence line has been identified as the first National Pilot Project within a governmental program aimed at fostering a greater integration of heritage preservation in spatial planning: the *Belvedere Memorandum* (Feddes & Wilkens, 1999; Janssen et al., 2014). Accordingly, the specifically-set *Projectbureau Nieuwe Hollandse Waterlinie* has developed a master plan — the *Panorama Krayenhoff* — for the whole military structure (Luiten, 2004; Luiten, 2011). In it, a *pars pro toto* approach has been applied for the local artefacts; in particular, Fort bij Vechten has been identified as an *exemplum* in which the memory of the Waterline's military architecture could be preserved on a local scale.<sup>16</sup>

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15 Between the 1960s and the 1990s, the Dutch Ministry of Defense held a large part of the forts, while starting a gradual transfer to *Staatsbosbeheer* (National Forestry Service), private owners or municipalities (Verschuure-Stuip, 2016; Will & NPNHW, 2019).

16 This is one of the final results of a wider inter-scale approach, in which preservation and development needs have been tackled considering three different scales (the Waterline, the regional landscapes and the local artefacts) then mutually crossed. Moreover, at the local scale also a *pars pro toto* for waterworks (the *Schalkwijk Eiland*) is identified (Luiten, 2004), the analysis of which does not fit the scope of this paper.

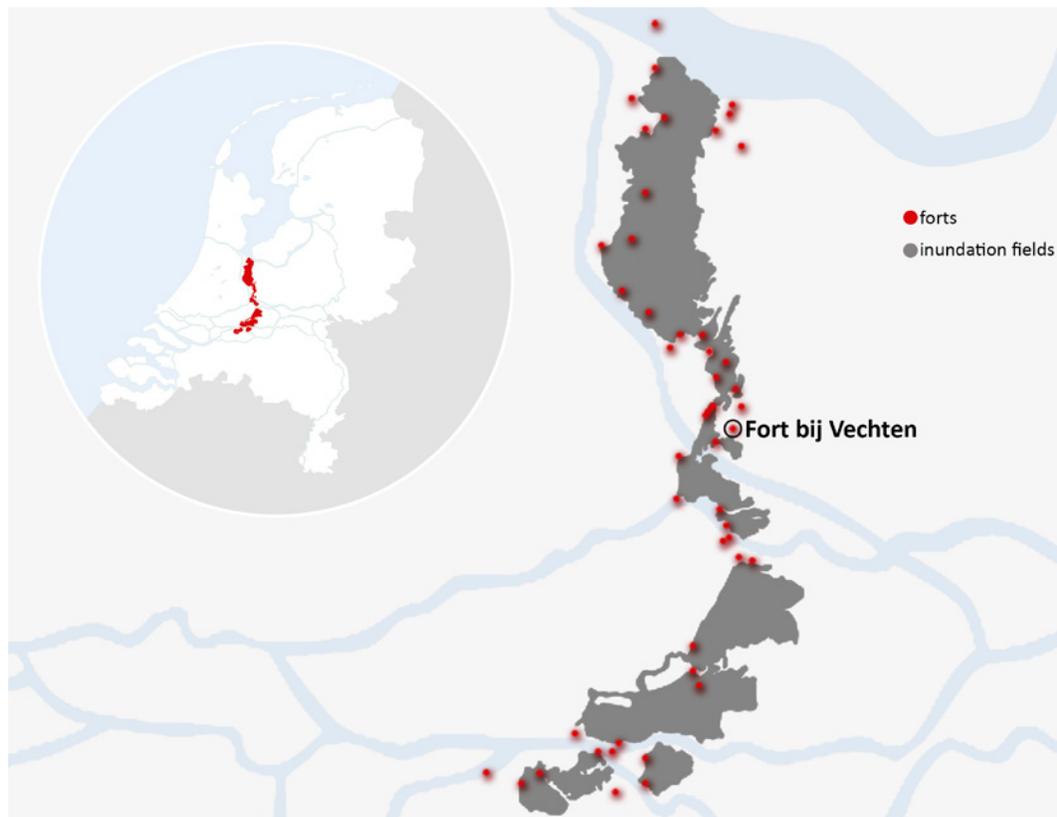


FIG. 4 The Netherlands, the New Dutch Waterline. Source: Author's elaboration.

### 3.2 FORT BIJ VECHTEN: HISTORY AND LAYOUT

Fort bij Vechten was one of the six forts<sup>17</sup> which, starting from the third construction phase of the New Dutch Waterline (1867-1870), were built to create a second line of defence around Utrecht. Located in a place with a millennial military history,<sup>18</sup> it was realized in more phases. At first (1867-1869), the earthworks, eight batteries and a guardhouse were built. Subsequently (1869-1871), the bomb-free redoubt with annexed canal and drawbridge were added and followed, shortly after, by two outer bridges and two access buildings. Finally, the fort was given a bomb-proof barracks and additional depots between 1879 and 1881 (Fig. 5) (Will & Groot, 2018).

<sup>17</sup> The other five are the forts Ruigenhoek, Voordorp, Rijnauwen, 't Hemeltje and Werk aan de Hoofddijk; the first line, built starting from the 1820s, was composed by the forts de Klop, Gagel, Blaukapel, de Bilt, Vossegat and the four Lunettes on the *Houtense Vlake* (Koppert, 1985; Will & Groot, 2018).

<sup>18</sup> Here, a Roman camp site, *Castellum Fectio*, was settled as part of the *Limes*, the northern border of the Roman empire (Will & Groot, 2018).

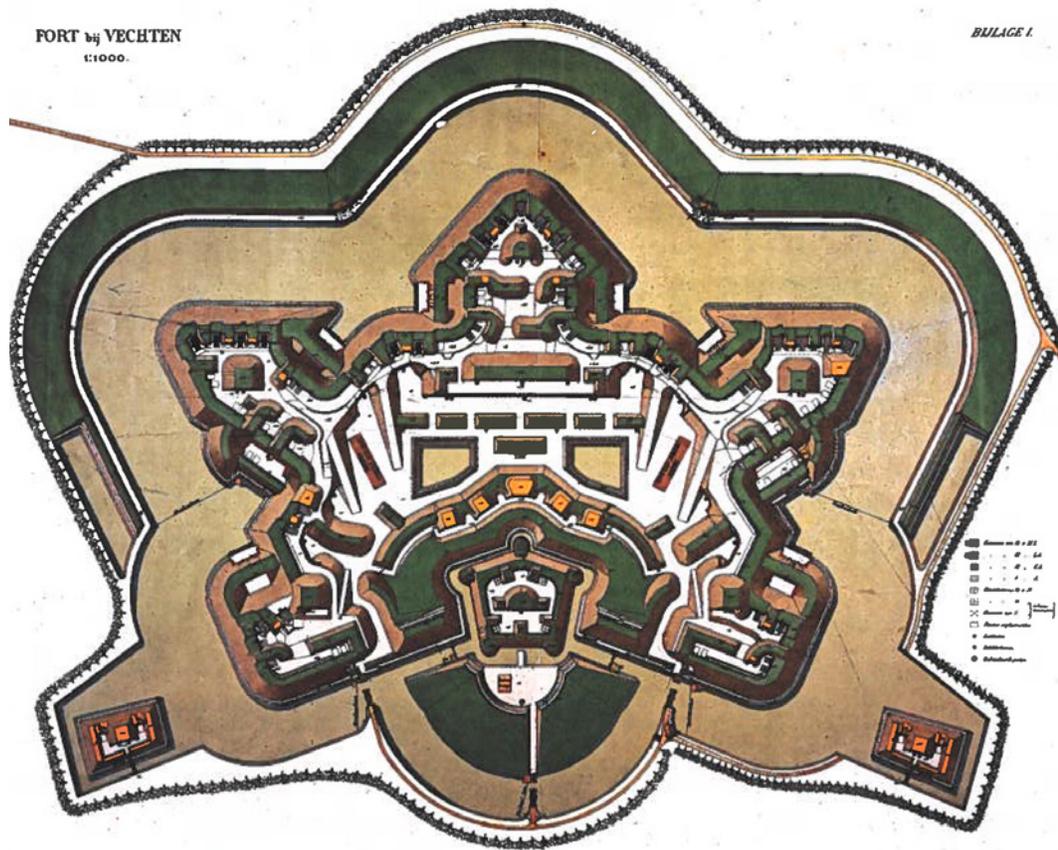


FIG. 5 The Netherlands, Bunnik. Fort bij Vechten (1880). Source: Will & Groot, 2018: 37.

After the end of the New Dutch Waterline military function, Fort bij Vechten was kept as a storage site by the Ministry of Defence; during this period, the lack of maintenance led to significant alterations of its architectural and environmental features. Subsequently, in 1996 *Staatsbosbeheer* became the owner of the fort and, from 1998, the foundation *Werk aan de Linie* was settled for managing the exploitation activities (Will & Groot, 2018). However, it was only after its identification as one of the recreational poles within the *Panorama Krayenhoff* that the revitalization of Fort bij Vechten as the Waterline visitor centre really got started.

### 3.3 FORT BIJ VECHTEN: THE REVITALIZATION PROCESS

Following the guidelines given by the *Panorama Krayenhoff*, Fort bij Vechten was identified as the ideal place in which the storytelling of the whole Waterline in its historical significance could be materialized. Indeed, in 2004 the architecture firms West 8 & Rapp+Rapp were assigned to draw up a master plan, the main task of which was finding a balance between the cultural, natural and economic interests involved.<sup>19</sup> Accordingly, the designers proposed a concept made of land-art interventions aimed at turning the fort into a museum with no labels, but expressing itself and the Waterline through direct spatial experience.

19

"There were three clients: the *Projectbureau NHW*, protecting the historical values; *Staatsbosbeheer*, which wanted to keep the natural value of this property; then, we had the Province of Utrecht, which had to finance the whole operation. These were very diverging forces" (Hangelbroek, 2019).

Among the 'scenes' put in place, the so-called *Strook* (strip) can be seen as the ordering principle of the master plan. It consisted in the cut of a strip in which the fortress — at that moment completely overgrown with spontaneous greenery — has been returned to its 1880 situation (Fig. 6). As previously pointed out (Hannema, 2016; Kegge, 2016; Molteni, 2016), this design solution represents a clear answer to the need of finding a balance between the cultural and ecological values of the fort's vegetal and earth components;<sup>20</sup> however, significant is also the influence it had on the buildings' preservation and reuse choices.

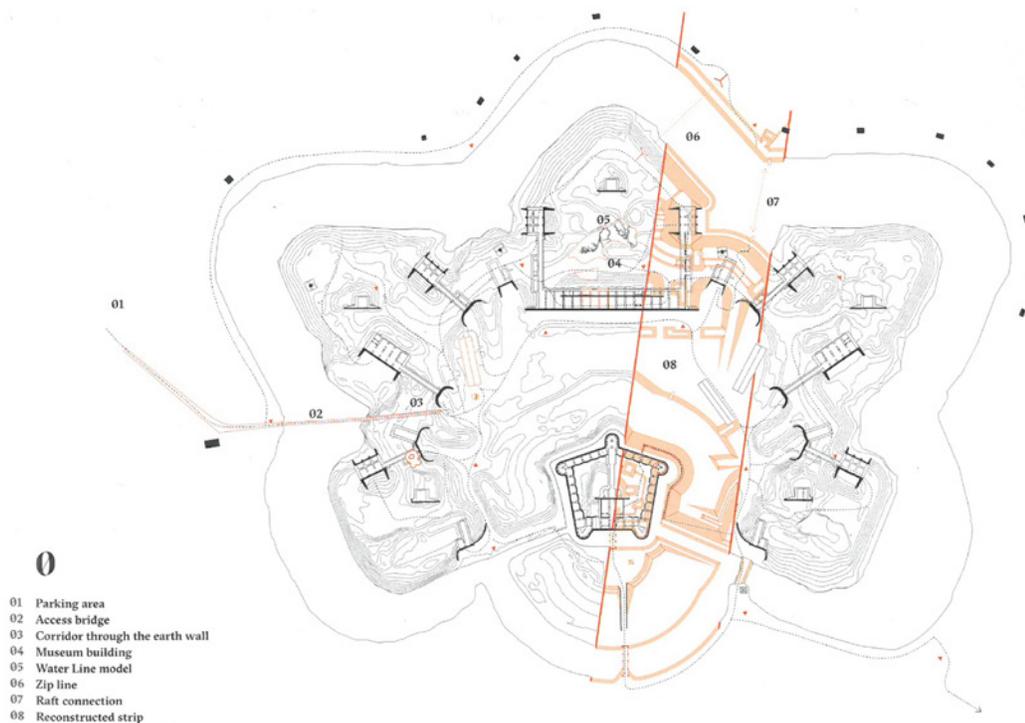


FIG. 6 The Netherlands, Bunnik. Fort bij Vechten, master plan (2004): the Strook. Source: Hannema, 2016: 131.

Indeed, the starting concept included the restoration of the two buildings' parts included in this strip. Due to financial matters, the restoration of the central redoubt was, however, not feasible<sup>21</sup>, while the façade of the bomb-proof barracks was only interested by the cleaning of that portion falling within the *Strook*. Additionally, the latter was involved in another iconic intervention: the *Waterliniemuseum* (2015), realized as an underground addition (Hannema, 2016; Kegge, 2016; Molteni, 2016).

Conversely, the rest of the buildings — falling outside the *Strook* and its narrative — have been variously transformed for recreational uses or closed for bath hibernation. Moreover, together with the need of making the fortress visible from the highway,<sup>22</sup> the size and position of the *Strook* were

20 "There was a question from the *Projectbureau* to show the whole fortress, while *Staatsbosbeheer* was asking to preserve its ecological value [...] the debate was between the 'virgin' fortress and the 'forest' fortress [...] From this, it came out the design of the big *Strook* of 80 to 90 meters wide and 450 meters long, perfectly restored into the historical situation, while the rest of the fortress was kept as it was" (Hangelbroek, 2019).

21 "There is one exception: the *reduit*. There, we only restored the earthwork on top of it, but not the building; [...] we would have consumed almost the entire budget" (Hangelbroek, 2019).

22 "We positioned the *Strook* in such a way that, when you are on the highway, you are able to see the fortress by exactly looking into it" (Hangelbroek, 2019).

carefully designed according to the symmetry of the fort shape, in order to show a sample with no repetitions;<sup>23</sup> however, the historical buildings did not represent a determining factor in this choices. As a result, the project implemented on Fort bij Vechten can give an example of a revitalization process in which, reproducing the *pars-pro-toto* approach of the *Panorama Krayenhoff* at the fort scale, the vegetal and earth components with their cultural and ecological values are the driving force.

## 4 CONCLUSIONS

Stone and vegetal elements are characterized by different ways of reacting to the test of time, and different can be the appreciation of the effects resulting from abandonment or misuse phenomena. On the one hand, leaving the vegetation with no maintenance can result in the alteration of its original state and in a threat for the historical buildings; but it can, simultaneously, generate new ecological values. On the other hand, abandoned buildings are threatened by the loss of their material consistency; at the same time, they can acquire a new aesthetic, new cultural appreciation, and become the house for flora and fauna, still with a high ecological potential.

Positive or negative implications can be found in both perspectives, but some stimuli come out from the cross reading of the case studies. Despite several differences, they show a common strategy: the need for selection in making choices and establishing a hierarchy of priorities; however, different are the selection criteria, as well as the way of interpreting the cultural and ecological significance of the forts.

In the Italian case, a selection is made for preserving the historical buildings. Such a hierarchy is the driving force for the whole revitalization process and the influencing factor on whether keeping the vegetation or not; the latter is, in turn, to be preserved for its ecological value – with no distinction from its cultural value – unless it is not harming the historical buildings. Lastly, buildings preservation is the starting point when funds are available. Thus, cultural values seem to have a priority on the ecological ones, and, the historical buildings are seen as the main custodians of the fort's cultural significance.

In the Dutch case, a selection is made for preserving the vegetal components, with the aim of finding a balance between their cultural and ecological significance. This issue represents the inspiring principle for the whole revitalization process, in which the historical buildings are interpreted as tools for expressing the overall narrative; when they do not serve this scope, their ecological role as habitat for fauna is also accepted. Moreover, the interventions on green and earth components are the starting point when funds are available. As a result, a dialogue is reached between the cultural and ecological values, in which the vegetal components have a predominant role on the historical buildings.

In conclusion, both cases show an attempt to address, through their selective criteria, the conflicting trends arising from the combined preservation of stone and vegetal components. Although a selection seems to be indispensable, a combined assessment in which both the aspects are simultaneously taken into account is, however, lacking. As the comparison highlights, such an integrated approach, prior to choices, could contribute to a greater balance between their cultural and ecological values, for a sustainable future use of historical landscapes.

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"The biggest step was the decision on where to position the *Strook*. The fortress is symmetrical, and if you do it wrong, you hit aspects that you see two or three times" (Hangelbroek, 2019).

## Acknowledgment

This study, as part of the author's Ph.D. research, was financially supported by UniNA and Compagnia di San Paolo, in the frame of the Programme STAR.

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# Beyond Economic Indicators: Rural landscapes as heritage: community-centred preservation and management methodologies towards sustainability inclusive perspectives

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## **Abstract**

*Rural landscapes as heritage might represent an ideal "demonstration laboratory" to monitor the progress towards the achievement of Sustainable Development Goals, being a complex system encompassing the different dimensions of heritage. In this context, the research considers actions to support social inclusion and sustainable development in Italian sites listed in the National Register of Historical Rural Landscapes and set in the so-called Inner areas, through a systematization and a cross analysis of the available information as expressed by projects and strategies in the Italian context. In analysing a peculiar case study of rural landscape as heritage in Italy, the paper outlines the main critical aspects in achieving sustainability in a broader perspective, setting the importance of communities' well-being to foster preservation and development. In conclusion, the contribution proposes some first considerations on complementary indicators and actions that might be addressed to facilitate monitoring processes in the context of rural landscapes heritage sites.*

## **Keywords**

*Rural landscapes, heritage, indicators, communities, sustainability*

## **1 INTRODUCTION**

Preservation and management actions specifically focussed on rural landscapes as heritage have been recently defined and implemented. The application of these programs has posed newer challenges, particularly in the regards of monitoring processes and of the assessment of sustainability. In the framework of the Sustainable Development Goals, targets that might address rural landscape as heritage are not limited within the solely 11.4, but comprise also targets 2.3, 2.4 and a consistent range of the ones as defined in goal 15, together with the indicators as specified under each target.

Rural landscapes as heritage represent, in fact, the continuous relationship between cultural and natural dynamics, being an association of complex social, cultural and biological systems. In the context of the rising consideration of rural sites as heritage, a wider and inclusive perspective in monitoring conservation and management of heritage as stated under target 11.4 should be fostered, which must not be reduced solely to economic indicators. Attention should therefore be set over supplementary indicators, considering for instance parameters related to social sustainability.

In this direction, UNESCO is developing a set of thematic indicators. The recent publication *Culture | 2030 indicators* outlines indicators expressed according to the diverse domains in which culture could play a central role in addressing Sustainable Development Goals targets. Being management and preservation of rural heritage sites the subject of this research, the domain "Environment and resilience" is considered relevant for the purpose of this paper: the dimension addresses how "the integration of intangible cultural heritage and traditional knowledge into policies and strategies encourages sustainable development, through sustainable food production, resilient agriculture, and the conservation of natural resources" (UNESCO, 2019).

Given these premises, rural heritage sites have the potential to represent "demonstration laboratories" to understand if the strategies and actions for their management and conservation are moving towards objectives as expressed by SDGs.

On the international level, efforts in order to promote the preservation and management of agricultural heritage are already set towards sustainability in a broader perspective. Since 2002 the Food and Agriculture Organization (FAO) has developed the *Globally Important Agricultural Heritage Systems* (GIAHS) program. The initiative relies on the fact that rural heritage can bring benefit, if correctly managed, to the populations who are its custodians. The program integrates preservation and sustainable development within the sites, considering them as a system in which every component is crucial for the conservation of the whole and its balance in time.

As of January 2020, the GIAHS program recognizes 59 sites, set in 5 regions and 22 countries<sup>1</sup>. China is the country that registers the major number of sites over the total, counting 15 presences (FAO, January 2020a).

Along with the development of GIAHS initiative on the international level, attention over preservation of rural heritage sites has risen on the national level in different countries, leading to the urge to structure local programs specifically designed to safeguard rural heritage. Besides being actively involved in the GIAHS program since its launch, China has started in 2012 the *China-Nationally Important Agricultural Heritage Systems* (China-NIAHS) initiative, a safeguard program of agricultural heritage on the national level. Between 2013 and 2017, 91 sites have been listed as eligible to become China-NIAHS (Min & Zhang, 2019).

A similar approach to the identification and classification of rural heritage sites has been developed in Italy. The *National Catalogue of historical rural landscapes* was firstly published in 2010 (Agnoletti, 2010), as the result of an extensive research conducted by diverse Italian universities (Agnoletti et al., 2019). The catalogue identifies 123 rural landscapes distributed on the Italian territory. As a further step towards preservation of this heritage, the *National Observatory of Rural Landscape* (*Osservatorio Nazionale del Paesaggio Rurale*) and the *National Register of Historical Rural Landscapes* (*Registro Nazionale dei Paesaggi Rurali Storici*) were both established in 2012 (D.M. n. 17070 – Osservatorio Nazionale del Paesaggio Rurale).

The *National Observatory* collects applications from stakeholders on the national territory. The Ministry of Agriculture then lists in the *National Register* traditional rural landscapes of historical interest and related traditional practices among the candidacies received. As of China-NIAHS, sites listed in the *National Register of Historical Rural Landscapes* in Italy are eligible for candidacy to become GIAHS.

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The 59 GIAHS sites are distributed in regions as follows: 3 sites in Africa; 36 sites in Asia and the Pacific; 7 sites in Europe and Central Asia; 4 sites in Latin America and the Caribbean; 9 sites in Near East and North Africa (FAO, January 2020b).

In time, the 123 rural landscapes as identified in the *National Catalogue* have been further classified by applying, on each site, a set of indicators that returns a “general” picture of analysed areas. These criteria include: the total area of the site identified, expressed in HA; the Geographical location (North; Center; South and Islands); the altitude band; the surface area subjected to landscape and monumental constraints as of Italian national law expressed in percentage; the surface area of the site as protected on the national and international level, expressed in percentage; the “type of landscape” defined by homogeneous clusters of landscape (ISMEA & Mipaaf, 2018).

As of January 2020, 13 historical rural landscapes are listed in the *National Register*, together with two traditional agricultural practices: the *Transumanza* and the *Piantata Veneta* (Rete Rurale Nazionale, 2019).

## 2 RESEARCH METHODOLOGY

### 2.1 ANALYSIS OF INDICATORS

The research methodology involved the cross analysis of indicators already identified in different databases, relying on accessible data (e.g. Italian National Institute of Statistics - ISTAT), in order to recognise the most suitable ones within the purpose of the study in the Italian context.

The indicators and database chosen are considered significant in the context of rural landscape heritage conservation, management and sustainable development.

In the Italian context, the monitoring process for the implementation of the SDGs targets is assessed not only on the national level, but also on the regional one, depending on the availability of data. Considering the dimension of heritage, the global indicator 11.4.1 is declined on the national level by comprising also biodiversity and landscape heritage (ISTAT, 2019a).

Another step in this direction is the development of the BES project (*Benessere Equo e Sostenibile – Equitable and Sustainable Well-being*), started in 2010 by the Italian National Institute of Statistics – ISTAT and CNEL (ISTAT, 2019b). The initiative follows the need to assess the quality of life going beyond the data ascribable to the economic dimension. Thus, a set of indicators that might be complementary to the economic ones was developed within the project. The indicators are divided in 12 domains, aimed to assess well-being under a completer and more general framework<sup>2</sup>; among them, the domain of landscape and cultural heritage was included, given the relevance of both themes in Italy (ISTAT, 2012).

The analysis on the different domains aims also to guide policies, by raising awareness concerning critical aspects and strengths of each sphere considered on the national level (ISTAT, 2019c). Concerning the monitoring indicators as proposed within the domain of landscape and cultural heritage, the role of rural landscape is recognized as central. Specifically, rural landscape is defined in the indicators as follows:

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<sup>2</sup> The domains are identified as follows: health, education and training; work and life balance; economic well-being; social relationships; politics and institutions; security; subjective well-being; landscape and cultural heritage; environment; innovation, research and creativity; quality of services (ISTAT, 2012: <https://www.istat.it/it/files//2018/04/12-domains-scientific-commission.pdf>).

- *Erosion of rural space from urban sprawl*;
- *Erosion of rural space from abandonment*;
- *Spread of rural tourism facilities* (ISTAT, 2012; ISTAT, 2019d).

The general domains and the indicators on rural landscape as defined in the BES project recall another strategy developed in Italy: the *National Strategy for Inner Areas* (*Strategia Nazionale per le Aree Interne* - SNAI), particularly in addressing the phenomena of abandonment of rural areas.

SNAI is a pioneering example of cohesion strategy within the European Union: the strategy structures an innovative polycentric reading of the Italian territory (Cersosimo et al., 2018). The mapping of the so-called *Inner Areas* starts from the analysis of three services essential to citizenship: education, health and mobility; municipalities that have these services are classified as “poles”, while others are categorized by travel times (20’- 40’; 40’-75’; > 75’). If a municipality is set at more than 20’ from a “pole”, it is classified as *Inner Area* (Carrosio & Faccini, 2018).

It is estimated that *Inner Areas* constitute about the 60% of the Italian territory, representing the 52% of the municipalities and almost ¼ of the Italian population (Carrosio & Faccini, 2018).

As of January 2020, the SNAI has recognized 72 *project areas*, scattered over the entire national territory. Each project area is identified after an assessment of specific domains, such as: demography; primary services to population (healthcare, education), accessibility, economy, digital divide, agriculture, heritage and tourism (Agenzia per la Coesione Territoriale, 2018).

The data analysed through SNAI indicators provide a general picture of the state of the arts of each *project area* examined, by including also variations of the criteria surveyed in a diachronic reading. The criteria are expressed by comparing each investigated *project area* with the corresponding information of the reference region and of the Italian territory. Thus, the analysis of SNAI data and indicators returns also the social and development dimensions of territories, and might represent a roadmap to assess the accomplishment of SDGs targets (Barca et al., 2018).

Starting from these premises, it is clear that rural landscape should be considered among the main pillars to achieve well-being and, at the same time, to assess the progress towards the SDGs in the Italian context.

## 2.2 THE SELECTION OF CASE STUDIES

Completed the review on indicators, strategies and data, the selection of case studies was conducted accordingly, so as to better address the identification of complementary indicators within the scope of the research. The intersection of different data, in the context of Italian historical rural landscapes, might help to recognise the presence of sites set in marginal areas, which could be threatened by dynamics related to land abandonment and de-population.

To do so, data referring to the localization and general information of the 123 sites listed in the *National Catalogue of historical rural landscapes* were associated with the ones of SNAI *project-areas*. Concerning the sites of the *National Catalogue*, the data were collected from the documents as provided by the National Rural Network Italian program (ISMEA & MIPAAF, 2018) and integrated with information retrieved from the description of sites as of the *National Catalogue*, which presented

localization information (municipalities covered, also partially, by the presence of rural landscape heritage sites). As of SNAI, the research in this phase taken into account the classification of municipalities as *Inner Areas* and the data referred to *project-areas*.

In order to better define the localization of sites within municipalities limits, and to update the data retrieved concerning to date administrative boundaries, information were further processed through a GIS map<sup>3</sup>. The GIS file uses as source also the open maps created in late 2018 by ISMEA, representing 80 of the 123 sites of the *National Catalogue* (ISMEA, 2018). The application of these criteria resulted in 28 sites within the *National Catalogue of historical rural landscapes*, which are also set in one of the 72 *project-areas* as defined by SNAI.

A further process of the data returns which sites, among the 28 identified, are also recognized in the *National Register of Historical Rural Landscapes*. The sites matching the criteria of selection are two: the *Mandrolisai Vineyards*, in Sardinia (nominated in 2018) and the *Sylvo-Pastoral landscape of Moscheta*, in Tuscany (nominated in 2016). This additional filter for the selection of case studies was necessary, in order to understand which of the sites were subjected to the actions of each program. This variation has allowed to further investigate the sites potentials and vulnerabilities, creating the base to identify more specific indicators to assess the progresses in the areas.

Besides the ones mentioned, it was felt the need to apply other criteria related to heritage in the selection of case studies. Information related to the incidence of heritage identified or in charge by national and supra-national heritage protection agencies were therefore added, including: sites managed by the *Fondo Ambiente Italiano* (FAI – National Trust for Italy); World Heritage Sites (*World Heritage Center*, UNESCO), and specifically on rural landscapes as heritage, the presence of listed *Globally Important Agricultural Heritage Systems* (GIAHS, FAO).

This last adjustment was considered in order to verify, on the sites examined, the possible simultaneous application of different heritage management and conservation programs. In the context of the two rural landscapes sites as identified, none of them matched with the last criteria added.

### 3 FIRST OUTCOMES OF THE RESEARCH AND DISCUSSION

As the identification of the potential case studies is concluded, referring to those sites both listed in the *National Register of Historical Rural Landscapes* and part of a project-area as defined by SNAI, specific reflections over the *Mandrolisai Vineyards* in Sardinia will be explored.

The site was listed in the *National Register of Historical Rural Landscapes* in 2018, following the integration of the candidacy dossier in the same year (Dettori et al., 2018). The site is comprised in the municipalities of Atzara and Sorgono, which are encompassed in the SNAI project-area “Gennargentu-Mandrolisai”: the strategy concerning this area was adopted in the early months of 2019 (Comunità Montana Gennargentu-Mandrolisai, 2019).

By analysing the candidacy dossier as presented for the recognition in the *National Register of Historical Rural Landscapes*, the main vulnerabilities to the preservation, effective management

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Some municipalities were subjected to fusion with others and do not represent a singular administrative unit anymore, which might generate criticalities in the process of data elaboration.

and sustainable development of the site are related to dynamics of population degrowth and ageing, together with the progressive abandonment of rural land (Dettori et al., 2018). In relation with the wider territory considered in the SNAI "Gennargentu – Mandrolisai" area, in which the rural landscape heritage site is set, the examination of the dossier recognizes the importance of rural areas to foster the general development: the presence of vineyards, of rural tourism facilities and of manifestation related to intangible heritage related to cultivations emerge as potentialities.

As already evidenced in the candidacy dossier for the *National Register of Historical Rural Landscapes*, the strategy individuates as critical aspects affecting the area the ageing of population, abandonment of the territory and several issues related to primary services to citizens (SNAI, 2019). If compared with the domains of BES project as previously outlined, seems evident that the well-being of population is crucially intertwined with the preservation of rural landscape as heritage and its sustainable development as a system.

In order to invert the process that might lead to the collapse of the system, the strategy sets the community at the centre of the actions proposed, by strengthening the existing services to citizens, reinforcing the rural activities towards inclusion policies, connecting the system of widespread heritage and developing specific education programs that involve the awareness of the territory.

As the *Mandrolisai* site was listed in the *National Register* just two years ago and basing on the fact that *Gennargentu-Mandrolisai* strategy has been approved recently, it is still early to evaluate if the actions put in place will be effective to strength sustainability of this area in a broader conception.

The investigation of this specific case study in the Italian context returns some considerations not only in the regards of the management of rural landscapes as heritage, but also concerning the need to set the community inhabiting these sites in a central role to achieve sustainability.

Besides the indicators as expressed in the strategies and projects analysed, other information might be useful to recognise the inclusion of communities and the assessment of SDGs targets. As seen in the case study examined, the importance of intangible heritage, education and awareness of the territory, the presence of programs for the transmission of traditional ecologic knowledge and of rural productions recognized at the national and international level might contribute to the well-being of communities and, as a consequence, contrast abandonment and loss of traditional rural landscapes and practices. Among the complementary indicators might be included: the incidence of intangible heritage in the examined area; the number of programs specifically dedicated to traditional ecologic knowledge; the presence of training and capacity building activities related to rural heritage.

Given the recent recognition of sites in the *National Register* and the possible lack of updated information, in addition to a diachronic monitoring of trends made on available data, a capillary field work on the territory can integrate assessment in shorter times than to those of the censuses, based on interviews, focus groups and checklists. Such activities might also provide information necessary for *in itinere* adjustments of the actions aimed at the protection of such a complex heritage, when needed.

Although these considerations are specific to the Italian context, having analysed strategies put in place on the national level, this investigation might be useful in similar international cases.

About monitoring of the progress towards the achievement of SDGs, the paper suggests how a cross reading among existing indicators as structured by different strategies and projects might be beneficial to better guide policies and actions. The choice to analyse historical rural landscape sites

in the *inner areas* to assess sustainability is given also by the already well-defined set of indicators accessible for the areas examined.

The recognition of rural landscapes as heritage, both on the national and international level, represents a first step towards investigation, safeguard and possible valorisation strategies of a system encompassing many components, set at risk of disappearance for various reasons. In this perspective, the association of complementary indicators besides the ones referring to the economic domain can provide a first framework to structure more precise indications and actions towards the protection of this heritage.

Rural landscape heritage sites might represent a model for testing the effectiveness of policies implemented towards the achievement of Sustainable Development Goals, given the heterogeneity of their components; to accomplish this objective, well-being and inclusion of communities should be set as focal points in policies, so as to contrast and prevent the possible abandonment and loss of this heritage-system.

### Acknowledgment

This paper is an output of the post-doctoral research the Author is conducting at Politecnico di Milano – DASTU with the support of Fondazione Fratelli Confalonieri (Milan).

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# SESSION 8

## Heritage, Governance Institutions and Means of Implementation

**Charlotte van Emstede**

The extension of the scope of heritage has pushed the field of heritage management toward more inclusive approaches. This results in the integration of distinct aspects of heritage, and brings together governments, the private sector, civil society, international organizations, and other relevant actors. Such an integrated approach calls for transparency of governance institutions, equitable development, and inclusive societies to arrive at more sustainable development. For its implementation, it is essential to strengthen partnerships based on cooperation across financial, technological, entrepreneurial, and capacity-building scales. This present cluster (SDGs 16 and 17) encompasses contributions reflecting the relations between heritage and governance. How is heritage being listed? What heritage? How does heritage listing foster strategies and plans targeting various sectors e.g. transportation, energy transition, health, climate change, digital governance?

# Bridging Heritage Conservation and Urban Development Planning Policies: Exploring Research Methodologies in the Literature

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## Abstract

*Cities are the main drivers in the race to sustainable development, and the needed transformations would affect their built environment. Transformations through development plans or projects are often regulated by local planning policies, which are assumed to simultaneously enable transformation and the conservation of irreplaceable resources such as heritage. Earlier research, however, denounces a different reality, where local planning policies omit heritage or a share of these resources e.g., intangible, or even when local planning policies acknowledge heritage as a whole, but their guidelines of transformation are unrelated to heritage and/or their attributes. This paper is part of doctoral research that aims to discuss the dynamic between heritage conservation and urban development in planning policies and tools. It introduces the results of a systematic literature review crossing both fields. Focused on the methodology adopted recent researches, it discusses the outcomes of an in-depth analysis of 37 publications, with a detailed methodology description. The analysis explored the type of data sources, actors addressed and heritage categories, values and attributes. Results confirmed the recent trend in which the relation between heritage and planning is shifting, from being considered a threat to a crucial resource to development. Although still far from the leading role as promoted by international documents as the UNESCO 2011 Recommendation on the Historic Urban Landscape. The results of this research are relevant for science, but also for society, by highlighting how these approaches can raise the efficiency of planning policies, the results assist cities developing more sustainably.*

## Keywords

*Heritage, conservation, planning policies, development, systematic literature review*

## 1 INTRODUCTION

Recurrent economic crises and the growing awareness for resources scarcity are pressuring societies to rethink their models of development. The challenge strives as the demands for transformations and needed resources clash with ambitions to conserve resources for future generations. From tangible to intangible, cultural to natural, object to landscape, heritage resources have been broadened in categories, and consequently also the group of stakeholders involved in its identification and consequent management.

Urban transformations are generally lead by development plans or projects, often regulated by spatial planning policies, assumed to simultaneously enable urban development and the protection

of public interest (Nadin and Stead, 2013). Spatial planning policies have a significant impact not only on the built environment but also on how people sense the place (Nadin et al., 2018) and thus on the value ascribed. Indeed, even if not directly addressing heritage, regulatory tools such as policies, legislation, land-use plans, or building codes, may contribute both to conserve or destroy cultural significance (O'Donnell, 2014).

Tensions between heritage conservation and urban development is a “hot” topic in policy analysis, being cultural heritage often perceived as the weakest link, mainly when development is exclusively focused on short-term economic growth. While the planning focused on heritage conservation is already being researched (e.g., protected areas, conservation areas plans, management plans), far less is known on if and how these resources are being addressed in general planning policies and tools (e.g., master plans, strategic plans, development tools such as Transfer of Development Rights). This lack in research is the scope of a doctoral project in development in the University of Technology of Delft (The Netherlands) and the Research Center of Architectural and Urbanism of Faculty of Architecture of Porto University (Portugal). The aim is to understand how this phenomenon influences the perspective over heritage and its management, and finally to confirm the role played by this valuable resources, tangible and intangible, on the construction of contemporary societies and urban development models.

A conceptual framework identified three approaches on the degree of integration between heritage and planning (Fig. 1): “sector” as isolated and a threat, “factor” as included and a resource, and “vector” as leading and vital for sustainable development (Janssen et al., 2017). Although these approaches are considered to have evolved, they can be coexistent in the same city, depending on the heritage resources, actors, and/or transformations.



FIG. 1 Dutch Heritage-Planning nexus Source: Authors, adapted from Janssen et al. 2017.

This paper presents the results of a systematic review on published research addressing the dynamics between heritage conservation and urban development policies and tools. Particularly, this analysis focuses on revealing and discussing the methodologic proceedings, namely which data sources, actors, and heritage categories, values and attributes that had been considered by published research. The application of a systematic method to search and analyse literature distinguishes this research from more traditional methodologies based on conventional narrative literature reviews. This paper aims to unveil how research has been evolving in the last two decades, namely, if this heritage-planning nexus remains a concern exclusively for conservation planning. Besides, it also

aims to understand, if the perspective over heritage in planning context has been evolving towards from sector, to factor and vector approaches, on the track for more sustainable development models. A growing of inclusiveness and integration between urban development and heritage conservation policies, that have been promoted and supported by international documents such as the UNESCO 2011 Recommendation on the Historic Urban Landscape, the United Nations Sustainable Development Goals and the New Urban Agenda (UN, 2015, 2016; UNESCO, 2011).

## 2 A SYSTEMATIC METHOD TO PUBLISHED LITERATURE

This literature review applied the Boland (2017) systematic method for qualitative research, aiming to provide a less-bias and analytical overview of how approaches to heritage in urban development planning have been addressed in published literature. Based on a search made in March 2019 in the acknowledged scientific online database *Scopus*<sup>®</sup>, this research used the following search syntax - *heritage AND planning AND polic\* AND urban OR ("urban development" OR conservation OR governance OR regulations OR legislation)* - applied to *Titles, Abstracts and Keywords*. The definition of these keywords derived from previous scoping searches and the identification of key papers (Parkinson, Scott, & Redmond, 2016; Pellegrini & Micelli, 2019; Puren & Jordaan, 2014a) illustrating the studies variety that best suit described research goals.

The original 802 identified records were screened and cumulatively excluded – first by keywords, abstracts, and finally, the full-texts. Following a set of defined criteria, selected papers reflect research assessments taken at urban contexts, addressing regulation documents (e.g., plans, regulations, legislation, etc.) and over the actual urban management dynamics, instead of the studies proposing models to assess heritage issues on planning policies. This research took as base 88 publications, from the last two decades (2000-2019), being mostly articles (83), and few chapters (2) and conference papers (3). More than half of the publication's reports on case studies were identified in the UNESCO region Europe and North America. China, however, stands out as the country with more case studies, and in particular, the city of Hong Kong was the most researched.

From the 88 publications selected for the general literature review, less than half (37) explicitly detail their methodological proceedings, used as the absolute quality criterion to select the final pool to be systematically analyzed in this paper. The main aim was to reveal and discuss data collection methods, data sources and analysis issues. Data was extracted through a pre-coding process based on tested taxonomies (Tarrafa Silva & Pereira Roders, 2011; Veldpaus, 2015), following the evaluative criteria and parameters detailed in Table 1. The quantitative analysis enabled to make results comparable between the two types of planning perspective: (a) *conservation planning* and (b) *general planning*. These two perspectives were defined following the dominance of the kind of planning documents: conservation planning when heritage protection tools are prevalent, e.g. conservation/ safeguard plans, management plans. General planning was considered when general regulations and plans prevail (e.g., masterplans, built controls). Results revealed a slight dominance for research focusing on conservation planning (59%) over general planning (41%). Seldom were found relating these two categories of planning sectors.

EVALUATIVE CRITERIA	CATEGORIES	PARAMETERS
Data Sources	Type	Media; On-site observation; Interviews; Official information; Decisions; Plans; Regulations, laws and acts.
Actors	Type	(Pb) National officers; Local officers; (Pv) Professional/Experts; Developers; Daily users.
Heritage categories	Protection categories	Listed; Non-listed/Designated.
	Attributes (urban scale)	(T) Asset - Building elements; Building; Urban element; Natural element; (T) Area – Ensemble; Context; Area; (T) All – Landscape; Layering; (I) Relation – Character; Relation; Concept; (I) Social – Use; Knowledge; Association; Community; (I) Process – Planned; Not planned.
	Values	Social; Economic; Political; Historic; Aesthetic; Age; Scientific; Ecological.

TABLE 1 Exploratory framework for data analysis. Sources: Bryman, 2008; Pereira Roders, 2019a; Veldpaus, 2015; Gutscoven, 2016; Pereira Roders, 2007; Tarrafa Silva and Pereira Roders, 2011.

Note: (Pb) Public; (Pv) Private; (T) tangible; (I) intangible.

### 3 FINDINGS AND ANALYSIS

Qualitative methods, such as document analysis (100%), interviews (65%) and observation (30%), fully dominate the research assessments analyzed throughout the 37 publications selected as describing the methodology followed.

The analysis also revealed that the dynamics between heritage and urban development planning had been addressed across three main themes: conservation plans analysis (Cho & Shin, 2014; Katapidi, 2014; Lee, 2016; Nordh & Evensen, 2018; A Parkinson, Scott, & Redmond, 2016a, 2016b; Arthur Parkinson, Scott, & Redmond, 2015; Puren & Jordaan, 2014b; Slae, Kark, & Shoval, 2012), followed by researches focused on the consequences of urban renewal projects (Mowery & Novak, 2016; Pendlebury, 2002; Swensen & Berg, 2018; Wang, 2011; Yung, Zhang, & Chan, 2017; Zhai & Ng, 2013; Tao Zhou, Zhou, & Liu, 2017), or urban management policies and programs (Al-hagla, 2010; Bagader, 2018; Higgins, 2010; Shin, 2010; Shipley, Reeve, Walker, Grover, & Goodey, 2004).

#### 3.1 DATA SOURCES AND ACTORS ADDRESSED

Breaking the collection methods into data sources, particularly into the different types of documents (Fig. 2), results indicated that most research focused on society, applying structured (e.g., surveys, online inquiries) or semi-structured interviews (individual or focus groups). Those were found complementing document analysis methods and combined with *in situ* observations. The comparison

between planning perspectives demonstrates that the use of interviews and observation methods is more commonly used in conservation planning perspectives. In contrast, comparatively, general planning researches prefer official information (e.g. official websites, newsletters, etc.).

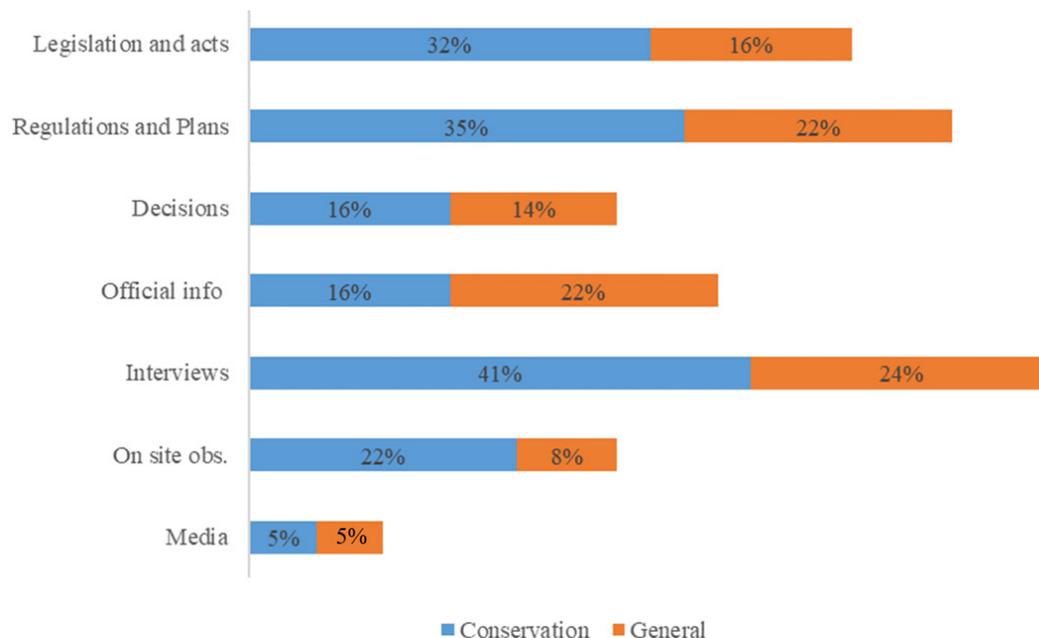


FIG. 2 Data sources. Source: authors

Results through the lens of proposed planning revealed that actor's perspective (Fig. 3) has more weight for conservation planning. This occurs in all categories of actors, particularly official entities, either national and local governments, as also considering the voices of daily users, residents, or workers, as well as of private developers. On the other side, it revealed a higher preference of general planning approaches to expert's views, as well as for the official information retrieved from institutions' communication channels, such as the institution's websites.

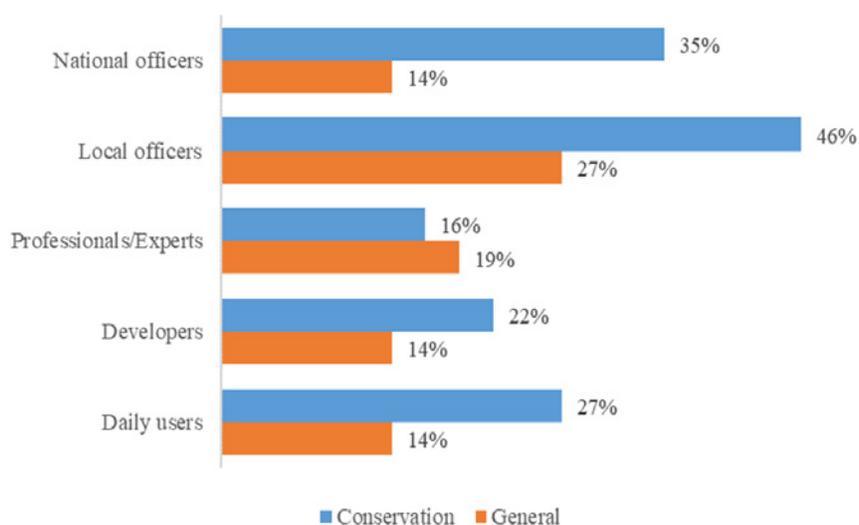


FIG. 3 Type of actors. Source: authors

Moreover, if the combination of private and public perspectives, or exclusively the latest view, are more common, mainly for conservation planning (40%), approaches addressing only private actors, even a few (11%), are more related to general planning. The clear relevance attributed to actors and the recipients of the process reveals the growing of signals related to the new institutionalism theory in research assessments (Lowndes & Roberts, 2013). According to it, planning policy analysis processes cannot anymore rely on formal practices exclusively but include the informal ones, such as the beliefs, feelings and perspectives of key actors. The integration of the actor's perspective, directly or indirectly involved in urban planning processes has been established as a common practice.

Relevant is also the assessment of official decisions combined with the analysis of urban management tools (e.g. regulations and plans) or the legal frameworks. Those generally express how local decision-makers, namely local public officers, interpret the legal requirements and, for instance, to unveil the conditions that lead to pro-conservationist or pro-development decisions (Mualam & Alterman, 2018).

### 3.2 HERITAGE CATEGORIES, ATTRIBUTES AND VALUES

The last analysis criterion concerned the types of heritage addressed, based on the designation or statutorily listed categories; and the values and the attributes, or qualifiers, carrying those identified values.

As illustrated in Fig. 4, the analysis demonstrates a dominance of heritage statutorily listed (solo or combined with designated heritage assets) as the dominant heritage category addressed by heritage and development planning assessments. Meanwhile, it also indicated a lack of publications addressing designated heritage solely, i.e., assets with heritage value recognized, in urban plans or inventories, but not statutorily listed, and then protected. The analysis by planning perspective seemed to indicate that conservation planning researches are more traditional and administrative, preferring the assessment over listed heritage. While general planning researches showed to be more opened also to designated heritage, which the lower legal protection often makes it more vulnerable to development pressures.

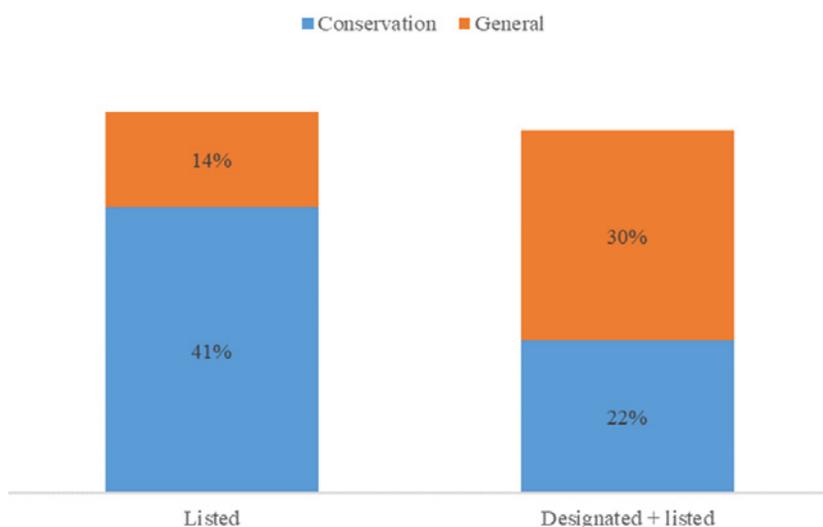


FIG. 4 Heritage categories. Source: authors

The cultural significance assessment is performed through the identification of values (*why*) and attributes (*what*) that entitles a particular heritage asset. While attributes are more frequently referenced than values (Fig. 5), there was noted a tendency tangible macro-categories, e.g., built environment instead of urban environment, which could be both tangible and intangible. The use of other ambiguous terms, such as “heritage” or “valuable assets” was also common. Values were rarer to found referenced, as they depend on the justification of why selected resources are listed or designated as heritage.

Nevertheless, values were found researched in sixteen papers, within which only four of the seven of cultural values categories were found: *Age*, *Historic*, *Economic* and *Social*<sup>1</sup> (Pereira Roders, 2007). Values related to the property use – *Economic* – were the most referenced (Djukić, Stupar, & Antonić, 2018), followed by *Social* values, meaning the relation with the community (Tunefalk & Legné, 2019), mainly for conservation planning. Nevertheless, values related to justified by property age and antiquity (*Age value*) and the connection with historic events (*Historic*), were exclusively found for general planning researches (Nordh & Evensen, 2018; T Zhou, Zhou, & Liu, 2017). While conservation planning addresses a wider variety of values, including *Ecological*, general planning also focused on traditional values, e.g. age and historic values.

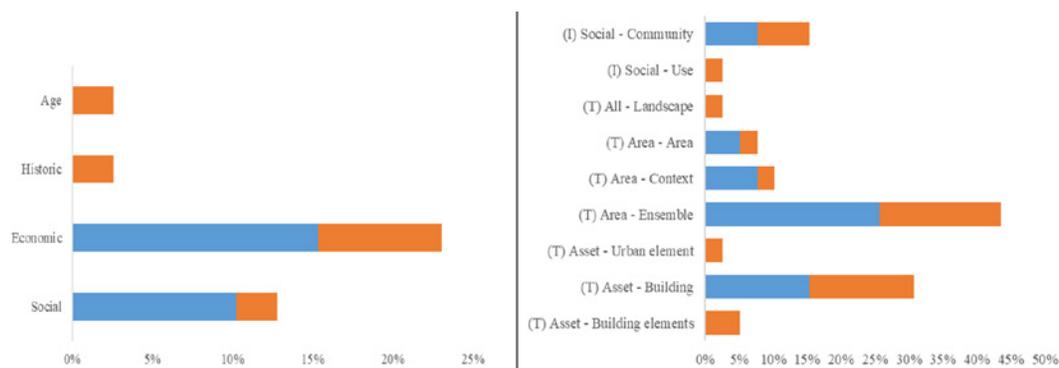


FIG. 5 Heritage Values and Attributes. Source: authors

Concerning the attributes of cultural significance<sup>2</sup>, the analysis identified nine out of the eighteen categories defined by Veldpaus (2015): seven tangible and two intangible. Tangible attributes are prevalent, being the references to single *Buildings* and *Ensembles* the most mentioned categories for both conservation and general planning. In comparison, research addressing general planning demonstrates a wider variety of categories, such as *Building elements* in the case of the renewal projects impact over building’s courtyards (Shin, 2010), or over *Landscape* (Shiple et al., 2004), *Urban Element*, e.g. sculptures (Liu, Uyttenhove, & Zheng, 2018), and *Use* functions (intangible).

Overall, the selected papers demonstrated a wider variety of attributes and values for general planning, than for conservation planning. However, results also revealed that the focus was common and primarily to traditional tangible attributes related to conventional architectural heritage, such as isolated buildings, architectural ensembles, and historic centers. Research on the intangible attributes of architectural heritage remains limited, as well as on intangible heritage. But, the preponderance of researches concerning Economic and Social values, over the ones traditionally

1 Missing values categories: Political, Aesthetic, Scientific, Ecological.

2 Missing attributes categories: (T) Asset - Natural element; (T) All - Layering; (I) Social - Knowledge; Association; (I) Process - Planned; Not planned.

considered, e.g. historic, age and aesthetical (De la Torre & Mason, 2002), might indicate a paradigm shift into a greater integration between heritage conservation and urban planning. Heritage is no longer considered solely due to its aesthetical, historic or antiquity qualities, that should be protected against any change, but as a valuable resource to development.

## 4 FINAL REMARKS AND FURTHER DEVELOPMENTS

The efficient management of urban resources is of outstanding relevance at this moment, where awareness over resources scarcity is growing. Despite the long-established debate over the dynamics between heritage conservation and urban planning, limited research still exists comparing research methods applied. This paper gave the first step to fill this gap, confirming the prevalence of a lack of systematic analysis applied to qualitative research, as well as the lack of researches in this field that valorizes detailed methodologies.

Results confirm a, still slow, growing concern into integrating heritage and planning. The latest research appears to be more inclusive, entailing a higher percentage of other heritage categories besides the statutorily listed heritage, as well as a broader range of attributes, primarily intangible categories. The valorization of non-traditional cultural heritage values, such as Economic and Social, confirms that the relationship between heritage and planning is moving from a conflict to functional integration. In other words, planning is no longer seeing heritage as a threat – sector - (and vice-versa) but as a resource to development (factor).

Howbeit, we can also confirm that in the research community, the integration of heritage in planning policies is still weak, being clear the dominance of research assessments focused in conservation planning and few concerns on the perspective of general planning. Facing this, and despite the last decades' evolution in their disciplinary field, these results reveal the persistence of a traditional view led by conservation planning assessments, primarily focused on tangible urban heritage attributes (buildings and ensembles). The road to the final stage of the conceptual heritage-planning nexus proposed by Janssen et al. (2017), where heritage, with all its categories and attributes, leads the development process (vector) remains too long. Move the research focus from conservation to general planning policies and practices, as proposed by this doctoral project shall reveal the pitfalls, but as the features and links that should support this paradigm shift in which heritage became a crucial driver towards more efficient and sustainable cities (SGD Goal 11).

### Acknowledgments

This paper is an output of a doctoral project founded by Fundação para a Ciência e Tecnologia (Portugal) with the reference SFRH/BD/135923/2018.

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# Development Plan Strategies of Old Aleppo City and Sustainable Development Goals: Between Theory and Practice

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## Abstract

*The Old City of Aleppo, one of the oldest continuously inhabited cities in the world, has been inscribed on UNESCO's World Heritage List in 1986. In the early 1990s the Aleppo municipality initiated the project for the Rehabilitation of the Old City with the German Technical Cooperation Agency (GTZ) as a partner. As part of the process, a Development Plan was issued as a general framework including ten strategies for upgrading the historical urban fabric in line with the sustainable development. Despite implementation of these strategies, the physical fabric of the Old City has continued to deteriorate, and the demographic transition has continued to increase until the escalation of the Syrian Civil War in 2011. The paper analyses the development plan's strategies in the Old City of Aleppo, mainly those related to housing aspects. It evaluates the effectiveness of these strategies based on the concept of good urban governance that intersects with the Sustainable Development Goals (SDGs) aiming to overcome the administrative gaps to rebuild the Old City more sustainably after the Syrian Civil War.*

## Keywords

*Old Aleppo City; development plan strategies; housing; sustainable development; urban governance.*

## 1 INTRODUCTION

In Rio de Janeiro in 1992, countries of the world, as well as Syria, adopted the Agenda 21, the signatory governments were obliged to work with their local communities to develop national plans in the field of environment and sustainable development called Local Agenda 21 (MLAE, 2007). In this context, Aleppo started creating its Local Agenda 21 within the framework of Municipal Administration Modernization (MAM) Project in Syria with a focus on actions, continuous improvement and indicators related to the preservation of the Old City (MLAE, 2008). The relationship between urban governance and sustainable development has been highlighted by Agenda 21 since 1992. Different chapters emphasised the role of governance in achievement of sustainable development. This includes the necessity of broad public participation in decision-making (United Nations Conference on Environment & Development - AGENDA 21, 1992). Similarly, every development project will not be sustainable unless it is governed properly and supported sufficiently by concerned institutions (Rogers et al., 2008).

The 2030 Agenda for Sustainable Development obviously has a strong commitment to good governance through its goals (United Nations UN, 2015). In fact, good governance requires the relationship between the state and the people and rests on the two core values of inclusiveness and accountability (Development, 2003). Besides, it is measured by the factors of participation, transparency, responsiveness, equity and inclusiveness, effectiveness and efficiency, and accountability, etc.

Likewise there are four basic steps for getting started with SDG's implementation in cities 1) Initiate an inclusive and participatory process, 2) Adapt the global SDGs into a local agenda, 3) Set up a goal-based planning that adopts a long-term, multi-sectoral perspective, supported by adequate implementation capacity and financial resources, and multi-stakeholder partnerships, and 4) Set up a local monitoring and evaluation system (Kanuri et al., 2016) (Krellenberg et al., 2019). In 2019 the International Cooperation and Planning Institution in Syria launched the First National Report for the Sustainable Development. Despite the limited resources, difficulties and the huge destruction left by the Syrian Civil war, Syria is committed to realize a sustainable development and its universal goals for 2030 (Eyon, 2019). Generally, in developing countries, the strategy to empower local communities to respond to the inability of governments to improve the conditions of informal settlements and poor neighbourhoods has emerged as a practical application of the relationship between governance and sustainable development (UN-Habitat, 2003). In post-war UNESCO World Heritage Cities, UNESCO focuses on engaging communities and local governance at every point of the recovery process, using financial models that align immediate/short-term needs with medium/long-term development timeframes in reconstruction plans, and ensuring successful management of the reconstruction process by balancing people's basic needs and preserving the historic character of a city: it is especially hard to balance the need for people to quickly rebuild their damaged homes with the need to direct reconstruction in the sense of cultural heritage (UNESCO; World Bank Group, 2018).

## 2 METHODOLOGY AND ANALYTICAL FRAMEWORK

The research described in this paper has the aim of understanding the city's residential neighbourhoods, in order to restore heritage sites while improving living conditions. The study began with a literature review on the concept of relationship between urban governance and sustainable development. An additional data study was carried out to analyse previous experiences and actions, mainly the rehabilitation of the Old City of Aleppo project with respect to the housing issues as a main research focus, to expose the weaknesses and inabilities of the government to promote the objectives of sustainable development. The research works are based on government legislation and policies, mainly development plan (Windelberg et al, 2001) and the reliable dissertations at master's level in Aleppo University (Knefaty, 2015). Besides, based on author's prior experience, knowledge and field work from 2010 till 2012. The paper established an analytical framework by combining a) the parties and core values of good urban governance and b) the basic steps for getting started with SDG implementation in cities, and relating them particularly to housing and social development strategy. At the first level of the analytical framework the description of the residential circumstances in the Old City of Aleppo show the urban system as a product of social, physical, economic, ecological, political, cultural and historical factors. This makes it possible to identify key social, environmental, and economic sustainability challenges to be part of the analysis in level 2.

### 3 PREVIOUS LOCAL EXPERIENCE IN REHABILITATING THE OLD CITY OF ALEPPO

The Municipality of Aleppo initiative, in collaboration with the GTZ project 'Rehabilitation of the Old City of Aleppo' in 1992, was supporting the inhabitants in ameliorating the deterioration of their residential neighbourhoods with a housing fund. Within the framework of this project this fund was also supported by the association 'Friends of the Old City of Aleppo'. Quantitative and qualitative documentation surveys and studies were conducted during this period, and a comprehensive development plan was carried out as a general framework including ten strategies for upgrading the historical urban fabric in the line with the sustainable development (Chibli, 2002) (Fig. 1).

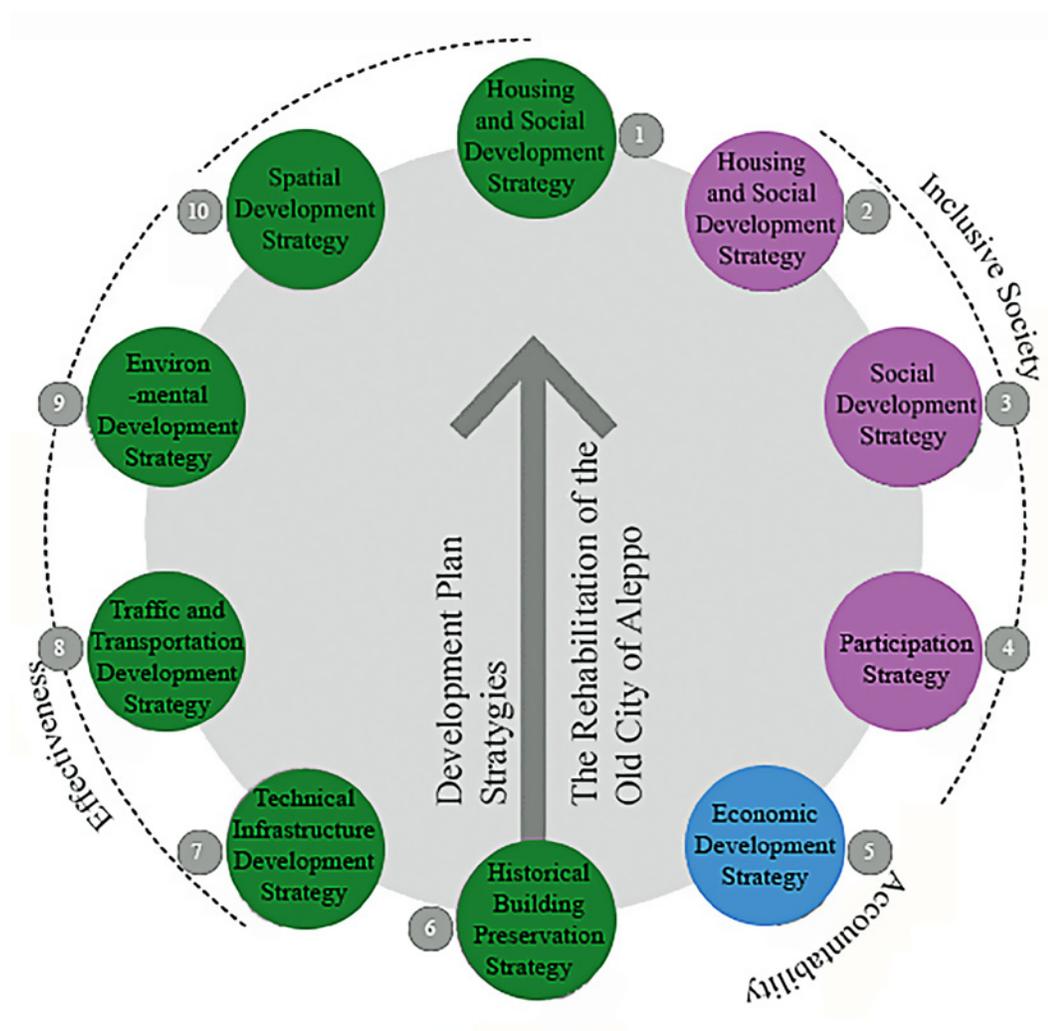


FIG. 1 Development plan strategies and their relationship with the sustainable development dimensions and the indicators of good urban governance. Green; environmental dimension, violet; social dimension and blue; economic dimension. Source: authors.

Unfortunately, these surveys took a long time and the actual achievements were negligible compared to the size of the Old City and its population. An important aspect that has been accomplished is the infrastructure. In organisational terms a special administration structure 'Directorate of the Old City' has been established. Further, the first action area was identified as a pilot project 'the Bab Qansreen neighbourhood', which covers an area of 6.5 hectares or 1.8% of the total area of the old city, and includes 130 houses with a population of about 1,300 (about 200 families). Highlights of what has been achieved are land use schemes and amendments to the urban system (Fig. 2). Plans were developed for projects aiming at reforming the region at all levels and making it more attractive to the population, through: (1) the typical renovation of an area of commercial character and containing important historical buildings; (2) the typical renovation of a residential area; and (3) the completion of restoration studies for several historic buildings and others owned by government institutions.

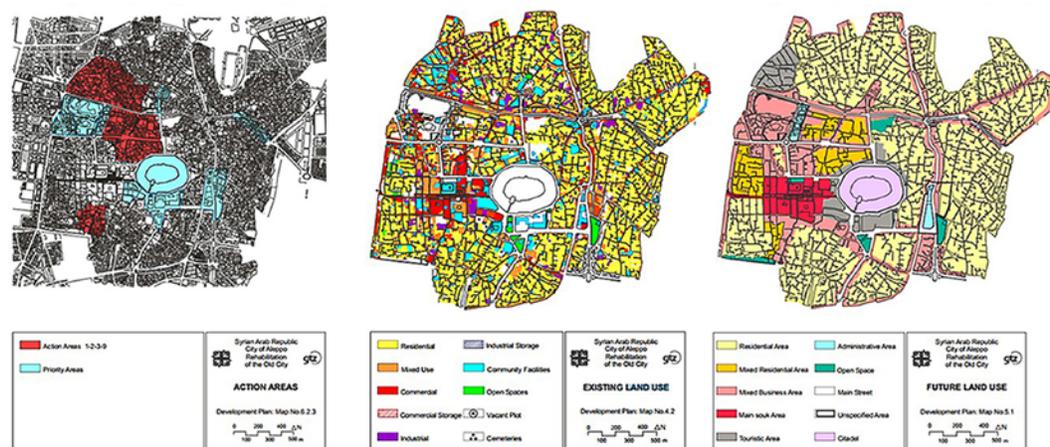


FIG. 2 Action areas, existing land use and future land use was proposed by the Rehabilitation of the Old City of Aleppo project; (left to right). Source: Windelberg et al, 2001.

#### 4 HOUSING AND SOCIAL DEVELOPMENT STRATEGY

This strategy was suggested to improve the condition of the housing stock in the Old City of Aleppo and operated on two levels 1) improvement of residences and 2) improvement of residential neighbourhoods assuming that rehabilitating the housing stock is an important element of urban conservation and development. The strategy improves living conditions and can help to reverse trends of emigration and to contribute to preserving the residential function of historical neighbourhoods (Fischer, 2012). The objectives of this strategy target the environmental and the social dimensions of sustainable development in terms of density of residential zones, architecture and urban form, and social structure (Tab. 1).

OBJECTIVES / FACTORS	DENSITY OF RESIDENTIAL ZONES	ARCHITECTURE AND URBAN FORM	SOCIAL STRUCTURE
<b>Strategy sub-objectives</b>	Reduce the general density in residential areas to create space for social services and recreational activities in the Old City	Strengthen the traditional pattern of living in courtyard houses with a maximum of two floors	Encourage upper-level income groups to buy, renovate houses and relocate into the Old City  Provide soft loans to lower-income house owners for renovation and modernization
<b>Tactics</b>	Manage the spatial distribution pattern of population indirectly	Propose some revisions of existing regulations	Promote the emergency and rehabilitation fund
<b>Dimensions</b>	Social dimensions	Environmental dimensions	Social dimensions
<b>Good urban governance indicators</b>	Inclusiveness, participation and equality	Accountability, transparency, responsiveness, effectiveness and efficiency.	Inclusiveness, participation and equality
<b>Governance parties</b>	Administrative system, economic system and civil society	Administrative system, economic system and civil society	Administrative system, economic system and civil society
<b>SDG 's implementation guideline</b>	Inclusiveness, Participation	Multi-stakeholder partnerships, local monitoring and evaluation system  Adapt the global SDGs into a local agenda  Financial resources	Inclusiveness, Participation  Financial resources

TABLE 1 Table 1: In this matrix the objectives are arranged in columns and the factors to analyse and evaluate them are arranged in rows. The key to using this matrix is to realize that all of the intersections are more or less simultaneous foundations for sustainable development in cities. Source: authors.

#### 4.1 IMPROVEMENT OF RESIDENCES – ANALYTICAL STUDY AND DISCUSSION

This level of the strategy is related to the environmental dimension of sustainable development. It included a continuous maintenance program and the support to residents for technical and construction level restoration. Particularly, in the most endangered areas. That needed a legal base and therefore some revisions of existing regulations were proposed. In this context, in 1998 the amendment of the Old City Construction Code was proposed to make it more flexible to deal with maintenance, restoration, rehabilitation, and the addition of new elements to the historical buildings. From a financial point of view, it was necessary to assess the capacity and willingness to pay for renovation and maintenance in parallel to the application of further promotion of the Emergency and Rehabilitation Fund.

In 2004 both funds were merged into one single 'Housing Fund' and its area extended to the entire Old City while the 'Emergency Fund' was in high and the 'Rehabilitation Fund' remained nearly unused. This led to severe financial shortages in the Emergency Fund, slowing down its performance and, in return, the speed of house renovation. The strategy also proposed that the engineers and architects working for the Project of the Rehabilitation of the Old City of Aleppo can be placed at branch offices distributed through out the city. These branch offices can act as liaison offices among the residents and the various authorities responsible for the Old City (Municipality, Antiquities Dept., utilities services etc.). The encouragement of trade union housing cooperatives to adopt traditional housing at sites provided for future residential cooperatives. The repair and maintenance of old houses will improve traditional housing as well as introduce new social strata into the Old City.

#### 4.1.1 Administrative system – Local legislation and implementation

The lack of detailed studies made it impossible to address building anomalies, and the permits were limited to restoration; with the availability of the emergency and rehabilitation fund, and not to build in keeping with the traditional model recommended by the project. Therefore, random change in the urban environment to a worse degree happened and reduced the impact of the administration's achievements. The role of the administration in developing a stable legislative and legal environment that allows for controlled and focused reforms has been inefficient, as the administration was unable to provide licensing and settlement mechanisms for homes and residential properties that meet the demands and needs of the community. At the same time, the principle of maintaining housing has led to a continued divide and the continuation of architectural anomalies and changes in functions. Nevertheless, in 1999 the Licensing, Emergency and Surveillance Department was established, but in the light of the weak institutional management system and its monitoring methods, oversight and accountability mechanisms, the levels of infringement and change in the architectural and urban structure have continued to escalate.

#### 4.1.2 Economic system – Funding

From 1994 to 2006 the administration was able to secure financial resources by providing funding for restoration through emergency and rehabilitation loans obtained in the context of the project, with local and international support and grants from a number of organizations in the form of donations rather than investments. Nevertheless, these donations lasted for a limited period of time and the funding ceased without any initiatives encouraging private business interest to invest in this field. However, the private sector and housing associations have made no commitment to building on the traditional model and promoting development in the old city and maintaining the existing urban fabric.

#### 4.1.3 Civil society – Participation

Activating the commitment and involvement of the community in this initiative of preservation of the traditional model was absolutely absent. Neither the inhabitants nor the beneficiaries of the urban fabric of the Old City had any will or incentive to demolish their new houses, and rebuild them according to the traditional model. This was due to many factors, the most important of which was the lack of the legal, technological and financial environment that promotes it, which is an administrative task, for instance, studies, facilities for investment procedures, tax exemption, labor

and contracts, etc. However, residential building owners and tenants were somewhat inconsistent with the concept of maintaining the traditional model, and restoration and reuse guidelines governed by strict legislation. Besides, the lack of detailed studies promoted the continuation of uncontrolled interventions and changes in functions e.g. from housing to warehouses or workshops. Therefore this strategy has lost its effectiveness (Figs. 3, 4).



FIG. 3 Architectural anomalies and changes in functions made by inhabitants before the Syrian Civil War: adding rooms on the first floor, adding additional floors and changing the residential functions to commercial one, and adding a toilet and a bathroom in the courtyard (left to right). Source: author – field work 2010.



FIG. 4 Samples of destroyed built environments and traditional courtyard housing illustrate the extent to which the conservation task ahead is challenging (left to right). Source: author – field work December 2016 and July 2018

## 4.2 IMPROVEMENT OF RESIDENTIAL NEIGHBORHOODS – ANALYTICAL STUDY AND DISCUSSION

This level of the strategy is related to the social dimension of sustainable development. It included periodic maintenance of public utilities and provision of public services near the residential neighbourhoods such as educational facilities and health centers, etc. While safeguarding of the residential fabric from the intrusion of harmful commercial and industrial activities. Besides, it identified the Action Areas for the short-term improvement of housing stock, Action Area-1, Action Area-2 and Action Area-3 (Fig. 2 left).

### 4.2.1 Administrative system – local legislation and implementation

Before the Syrian civil war, the administration was relatively able to maintain the population within the urban fabric of the old city of Aleppo and this is a positive indicator to achieve one of the main objectives in the project, which is that the city center remains populated. However, the administration's

efforts were ineffective in terms of providing civil and urban services and achieving a lifestyle and living conditions in the Old City equivalent to modern neighborhoods at various levels, such as transport superstructure, infrastructure and social attraction facilities, etc. It was not able to encourage the opposite migration of upper-level income people from Great Aleppo to the Old City in order to raise the educational level of the Old City residents and improve the social and cultural structure. In contrast, the Old City continued to attract the poor and nuclear families that lived in the divided houses. Therefore, the population density remained high and the residential areas continued to deteriorate.

#### 4.2.2 Economic system – Funding

The private sector investments in cultural sector to raise the education level of the Old City residents through establishing kindergartens, literacy and cultural centers that were completely absent. However, the administration succeeded in securing restoration and renovation loans, but it did not provide similar loans to finance small projects that raise the social, cultural and qualification levels of women, youth and all population groups.

#### 4.2.3 Civil society – Participation

Contribution and participation of the local community as well as organizations and NGOs such as the Women's Union and Trade Unions, etc. were ineffective in the field of population development in terms of awareness campaigns, donations and volunteerism. And they did not prepare inhabitants to be more effective participants.

### 5 THE REASONS BEHIND INEFFECTIVE STRATEGIES

The following points summarise some of the reasoning behind ineffective strategies:

- Despite loan program used and provided to low-income homeowners, it was restricted to cases that present building risks, and therefore would not protect all buildings and inhabitants.
- Despite certain free exemptions, facilities and studies, implementation belongs to the owner and this affected the quality and standard of the work performed.
- There is no specific strategy to tackle ownership and the lack of a mechanism to resolve the related multi-ownership issues.
- There is no definition or strategy for coping with the problem of large's houses division, overcrowding, and redistribution.
- The lack of a mechanism to deal with landlords and tenants, and the rent standard.
- Lack of a clear view of the scope and scale of interference by the project-based body, or to what extent local laws regulate internal interventions were made by inhabitants.

### 6 CONCLUSION

The good urban governance is compatible with the sustainable development dimensions; environmental, social, economic and culture. Therefore, it would be an effective analytical method for sustainable development management. The administration was inefficient in securing the suitable

needs for improving the citizen's living conditions in a formal and legal manner, which contributed to the promotion of the concept and culture of violation, and the continued uncontrolled change of the residential architecture, this was promoted by the absence of detailed studies, which in turn led to ineffectiveness of the housing and social development strategy. In the future, in the reconstruction phase, the local administration of the Old City of Aleppo must work to implement the good urban governance process to ensure that its performance is directed towards achieving sustainable development goals. It is necessary to reconsider the application of new concepts of participatory urban planning, flexibility, cohesion, and equal opportunities to ensure greater effectiveness of the housing and social development strategy of the Old City of Aleppo. More precisely, for current administration, this paper recommends an overhaul of the legislative framework in terms of detailed studies, procedures and implementation. Consideration should be given to amending the formulation of housing and social development strategy so that it is easier for those responsible for its implementation to differentiate between objectives, strategies and activities. The paper proposes that all targeted bodies, including local communities, academic authorities, unions and the private sector, be given the opportunity to participate in the decision-making process as a matter of urgency so as to ensure that they serve all and guarantee people's desires and needs while maintaining the city's historic character.

### Acknowledgments

The research described in this article is a part of a PhD study on the sustainable reconstruction and development of the Old City of Aleppo supported by Katholischer Akademischer Ausländer-Dienst (KAAD) in Germany.

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# May the Stones<sup>1</sup> keep preaching: Re-appropriated colonial Shinto Shrines in Taiwan as new sacred Spaces

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## Abstract

*Built during the Japanese colonial period (1895-1945), Shinto shrines in Taiwan were political symbolisms embodied in religious architecture. This paper showcases these colonial shrines' various forms of existence as sacred spaces of different faiths in current Taiwan, despite the post-colonial Kuomintang (KMT) authority's instructions in 1974<sup>2</sup> to eliminate these eyesores. How much of the perceived/conceived sacredness—be it Shinto-related or not—is palpable in the current settings? How much of these shrines' political connotations are considered together with the notion of heritage conservation? With visual documentations, this paper showcases two methodologies adopted in re-appropriating colonial Shinto shrines in Taiwan since the early post-war era. The KMT's persisting (but failing) eradication of the colonial signs in the early post-war period nation-wide; and the localised, (un)intentional yet creative practices which re-appropriate these 'colonial heritage' for various types of sacred spaces. The paper outlines the causal link between such variety of approaches and Shinto's never prominent presence in Taiwan's belief systems. With Lefebvre's trilogy of 'production of space', it proceeds to showcase, nevertheless, how the perceived 'sacredness' of the original shrines' 'preaching stones' became instrumental in producing the new religious spaces, hence how Taiwan (un)intentionally manages to conserve many of these Shinto shrines.*

## Keywords

*Colonial Shinto shrines, Taiwan, political symbolism, re-appropriation, colonial heritage, production of space*

## 1 INTRODUCTION

The colonial government enforced in the colonial populations' quotidian routine with colonial infrastructure such as Shinto shrines, schools, municipality offices and hospitals which facilitated the colonial control in different means (Huang 1997). During the Japanese colonial period from 1895 to 1945, more than three hundred Shinto shrines were (un)officially constructed in Taiwan (Kaneko 2013). While many of the unofficial Shinto shrines embodies the colonial entrepreneurs' aspirations for lucrative operations in their sugar and cement factories or department stores, the official ones served a distinctive political purpose of ideological control, despite their apparent pious acclaim. Realised through means of meticulous urban planning as spatial execution of the *Kominka* (Imperialisation) Policy, official Shinto shrines functioned as physical nodes in Shinto pilgrimage. As the sacred host of the colonial power, Shinto shrines situated far away and elevated from the

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1 'Interpretation of the Habakkuk 2,11 from the Old Testament, describing how stones expresses emotions.

2 The Internal Civil Affairs No. 573901, released by the Ministry of the Interior of the Republic of China (ROC – Taiwan) on 25 February 1974, set out the framework for how the country was to treat the colonial relics. This document, known as 'Notes to Eradicate Colonial Memorial Relics which Demonstrate Japanese Imperialism Left from the Japanese Colonial Era in Taiwan' 臺內民字第 5 7 3 9 0 12號函, 除臺灣日據時代表現日本帝國主義優越感之殖民統治紀念遺跡要點 (Original in traditional Chinese) <https://nchdb.boch.gov.tw/assets/overview/historicalBuilding/20160906000001> (accessed on 14 March 2020)

conceivably uncivilised colonials to project a prestigious and intimidating image (Huang 1996:93). Chen describes that the shrines were built next to, or even inside schools to facilitate pupils' regular pilgrimage. Situating mostly in the northern side of each town, they connected to the municipal offices-- the colony's administrative power, usually situated in the southern part, both visually and physically along a virtual grand axis, represented in the form of a grand boulevard. The two centres of power, one sacred and one administrative, engulfed and hence supervised the colonial populations in the urban scale. This also means that the colonised, started from their school time, who travelled to the elevated shrines would automatically perform unintentional but frequent movements of bowing while walking uphill and upstairs towards the north—where the Tenno-- the Japanese emperor sat in relation to the Taiwan colony (2007:243). Architectural and urban design played a crucial role in fabricating the colonisers' desired monumentality and sacredness, executed through the Shinto faith and its spatial practice, in Lefebvre's term (1974).

In 1949 Taiwan was retroceded to the Kuomintang (the KMT or the Chinese Nationalists) after they lost the Civil War to the Communists in mainland China. Perceiving the Taiwanese as mentally contaminated by the Japanese colonisers, the KMT urged for robust sinicisation to legitimise themselves as the new ruler in Taiwan (Chun 1996:87). In spatial sense, the grand official colonial Shinto shrines were converted into Martyrs' shrines or Confucius Temples. Claiming themselves as the guardian of Chinese traditional culture (Chung 1996:115), the KMT transformed the Shinto shrines into imperial palace style replicating the ones in Beijing--on the exact location-- in an attempt to override all kinds of colonial materiality (Kam 2020). The unofficial Shinto shrines of smaller scale, as observed in my fieldtrips in between 2017-2018, were either left derelict or transformed into a variety of new sacred spaces-- often initiated by the local everyday users.

The colonial shrines, whether converted by the KMT into Martyrs' shrines/ Confucius Temples after the 1970s, or transformed by local users into various forms of sacred spaces, share certain spatial characteristics which represent their sacredness and monumentality. The sacredness represented in the architectural languages, either considered to be colonial eyesores or heritage, related to Shinto or not, are conserved— with the original embodied political symbolism inevitably entangled.

With visual documentations, this paper showcases both the authorities and the local population's different ways adopted to re-appropriate the colonial Shinto shrines since the early post-colonial era. It outlines the causal link between such variety of approaches and Shinto's never prominent presence in Taiwan's belief systems. The paper proceeds to showcase how Shinto's absence in fact contributes to Taiwan's success in (un)intentionally conserving many of the colonial Shinto shrines. With Lefebvre's trilogy on 'production of space' the paper illustrates how these colonial Shinto shrines as hybridised spatial practices as both political and religious—perform(ed) as 'spatial practice, representations of space and representational space' (Lefebvre 1974) since the post-war era depending on the temporality and the subject. Then the paper displays how the KMT's interventions and attempts to override the previous social spaces in fact failed to dismiss the sacredness of the representations and, how the localised and individual creative approaches—while living with/in these spaces-- essentially emphasise and sustain the sacredness and the 'preaching' nature of the shrines.

## 2 COLONIAL SHINTO SHRINES IN LEFEBVRE'S 'PERCEIVED/CONCEIVED/LIVED' TRIAD

Lefebvre in his illustrious theory on the three productions of space-- the perceived space, the conceived space, and the lived space—displays how the various protagonists who take initiatives (or take part) in producing social spaces, both (in)actively, individually or overlapping each other along the timeline. According to Lefebvre, the society's spatial practice proposes and presupposes its space. The spatial practice produces its society's space 'slowly and surely as it masters and appropriates it' (1991:40). Representations of space are, 'shot through with a knowledge (*savoir*)—i.e. a mixture of understanding (*connaissance*) and ideology—which is always relative and in the process of change. Such representations are thus objective, though subject to revision...' They are abstract, but also play a part in social and political practice: established relations between objects and people in represented space are subordinate to a logic which will sooner or later break them up because of their lack of consistency (41). Such consistency or cohesiveness are, however, not necessarily obeyed in representational spaces. These representational spaces can be studied detached from their representations, and can even ignore social practice: it is individual (41). It is alive, embracing the loci of passion, of action and of lived situations, and thus immediately implies time (42) ... Studying the history of space would mean, along this logical line, study of the history of representations as well. Lefebvre's idea applied to the colonial shrines in Taiwan reifies two conceptual questions: The colonial power (Japan)-- via concrete plans such as the Urban Correction Plans directed by the *Kominka* (Imperialisation) Policy (Yoh 1994) -- presupposed the spatial practice in the colonial Taiwan hence the pattern of spatial design and their usage. Such spatial practice, as described earlier on, was materialised with schools, hospitals, Shinto shrines and municipal offices, which all functioned together to represent the colonial power symbolism. Through architects and urban planners' efforts injected with knowledge and intellectual input in Lefebvre's terms, in the case of Shinto shrines, several specific representations constituted to represent such architectural prototype. These two social spaces, both the social practice and the representations of space, were both so forcefully ingrained in the colonial society but simultaneously, detached from its real meaning to the public. As hybridised representation of both political and religious power, the shrines were constructed with design languages which strongly emphasised its superiority and grandiosity. Such set of design languages, or the representations (despite its materiality), were but transferable, which made it feasible for, firstly, the post-(neo-) colonial authority, the KMT, to conveniently perform their versions of necropolitics on-site by setting up their own material stage (the Martyrs' shrines) and; secondly, the local individual space users to deduce their individual lived/living experiences while interacting with the changing perceived space. The small scale shrines, carrying representations of the Shinto *Kami*'s (god) sacredness, or the 'preaching stones', are evolving together with the locals' creative method of using them. The following examples illustrate both the post-(neo-)colonial KMT's (failing) effort in erasing the colonial signs by means of Martyrs' shrines, as well as the locals' creativity to convert certain smaller colonial shrines into other forms of religious structures. In both ways, the representations of space, the 'preaching stones' of the colonial Shinto shrines, are (un)intentionally conserved in the nowadays Taiwan.

## 2.1 FROM THE COLONISERS' SHINTO SHRINES TO THE KMT'S MARTYRS' SHRINES/ CONFUCIUS TEMPLES

The sixty-eight officially built Shinto shrines all over Taiwan demonstrated the maximum grandiosity, majesty and monumentality. Colonial architects and urban planners in Taiwan such as Ide Kaoru, Itō Chūta and many others designed these shrines with the mission to ensure, on the one hand, that they embodied the highest respect to the Japanese Tenno as the suzerain of Taiwan. On the other hand, these colonial shrines functioned as physical nodes where colonial populations obliged to attend to as part of their quotidian experience, starting from the early age in school. This is to facilitate the inculcation of the Shinto belief as well as the loyalty to the Japanese Empire in the colonised population. The colonial authority perceived such inculcation as essential, especially during the Pacific War when the colonial authority urgently needed to conscript a high amount of Taiwanese young men into military to fight against the rest of East Asia.

According to my informant Ahma<sup>3</sup>, colonial school pupils were obliged to join the official pilgrimage to worship in the shrines in their townships scheduled in every last day of the month. In the prime time of *Kominka* Policy after 1936, the colonial planning authority regulated every construction of colonial Shinto shrines. Chen (2007) summarises five characteristics of the official Shinto shrines' locations: They were often 1. in the north of the town; 2. south-facing; 3. situated on elevated areas; 4. With river, lake or harbours in the front and; 5. Facing and serving the purpose of 'guarding' the urban area.

Japan lost the Second World War in 1945 and had to let go of all its colonies including Taiwan. In 1949 the KMT lost the Civil War to the Communists in mainland China and retreated to Taiwan. Viewing the freshly colonised islanders as ideologically contaminated after 50 years of Japanese colonisation, the KMT perceived the need to proclaim themselves as the new legitimised ruler on the island (Chun 1996). Proclaiming themselves as the guardian of the true Chinese culture thus served two purposes. Firstly, this contributed to justify their intention to 're-conquer' back to the mainland in the near future; secondly, facing the complicated demography in Taiwan with majority being ethnic Han Chinese who fled mainland China and crossed the strait to Taiwan throughout the last two centuries-- who might be susceptible to the KMT's governance and legitimacy in Taiwan-- the KMT needed a convenient solution to accelerate the identification process of the Taiwanese population. While construction of Shinto shrines executed spatially the Japanese's colonial *Kominka* Policy, transformation of the colonial shrines into Martyrs' shrines/Confucius Temples under the sinicisation policy was KMT's equivalent version in spatial politics. Taking the set of architectural and spatial design languages embodied in the colonial Shinto shrines, the conversion of the grand official Shinto shrines into Martyrs' shrines and Confucius Temples for embodying the new political symbolism was, convenient, yet powerful. It did not take the KMT authority much more effort than adopting, directly, the architectural order of the Imperial Palace in Beijing. Replacing the colonial Shinto shrines' *Zukuri* (Japanese architectural order) with the grand imperial yellow double-eaves roofs decorated with auspicious animals, the Martyrs' shrines and Confucius Temples inherited the Shinto shrines' monumentality by simply situating at the end of the same grand axis connecting and

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<sup>3</sup> 'Ah Ma' in Taiwanese language means 'grandma'. In Spring 2018, I had the precious chance to interview Ah Ma, Mrs Wang at her residence in Taipei City. A 101-year old Taiwanese lady who survived the Japanese colonial period in Taiwan and the Pacific War, Ah Ma departed three months after our interview. In our long but extremely fascinating conversation, she shared her memories on the colonial past as a young lady being invited by the colonial government to take part in filming a propaganda movie; and her journey fleeing from the war calamity with a toddler in her right arm and a bag of rice in the left arm as a young mother during the Pacific War.

overlooking the town centres. (Fig. 1: the elevated Hualien Martyrs' Shrine replacing Karenko Jinja) The only, but yet significant difference was the new dimension of necropolitics. The transformed spaces enshrined no longer the Japanese Tenno, the Prince Kitashirakawa Yoshihisa (who was the national hero having established the colonies for the Japanese Empire), *Amaterasu* and the other Shinto deities. Instead, the new national heroes who sacrificed their lives fighting against the Japanese and contributed to the establishment of the Republic of China are enshrined. Confucianism and new necropolitics replaced State Shinto, hosted but in the same, if not more monumental and majestic structures (re-)presented in the design languages with the same architectural style housing the last imperial power back in Beijing-- which Sun Yat-sen, the founder of the KMT thrived to overthrow in Wuchang back in 1911 (Fig. 2: The frontal approach leading to the National Taiwan Revolutionary Martyrs' Shrine replacing Taiwan Jingu; and Fig. 3: Grand imperial yellow double-eaved roof decorated with auspicious animals—an architectural order exclusive to the Qing Emperors in Beijing, now also in Taipei).



FIG. 1 The elevated Hualien Martyrs' Shrine replacing Karenko Jinja. Source: author's own photo.



FIG. 2 The frontal approach leading to the National Taiwan Revolutionary Martyrs' Shrine replacing Taiwan Jingu. Source: author's own photo.



FIG. 3 Grand imperial yellow double-eaved roof decorated with auspicious animals—an architectural order exclusive to the Qing Emperors in Beijing, now also in Taipei. Source: author's own photo.

The monumentality of the Shinto shrine sustains, in Martyrs' shrine/ Confucius Temples/ others—in and by means of spatial design—regardless of who the enshrined deity is. The spatial design languages, sublimed from the materiality—or in Lefebvre's term-- the representations of space, are essentially the same although the spatial practice has been changed.

## 2.2 FROM THE COLONISERS' SHINTO SHRINES TO THE VARIETY OF RELIGIOUS SPACES

To further support my argument of the existing kaleidoscopic transformations from colonial Shinto shrines as related to Shinto's never prominent presence in Taiwan, the coming part showcases three examples of sacred spatial prototypes which, in different levels (limiting to the materiality), 're-placed' their precedent colonial Shinto shrines. Despite the failed inculcation of Shinto in the Taiwanese belief system-- the sense of piety which exists in / in relation to the created architecture/ space, or in Lefebvre's term, the representations of space-- are prominent. Such representations are not necessarily cohesive to the presupposed spatial practice that the respective representation pairs with, and should be detached from one fixed temporal plane when considered. In many cases, the representations are even universal and applicable even after the 'replacement'. As hybridised perceived space of both religious and even more, political, colonial Shinto shrines in Taiwan is unique, which determined the peculiarity when considering its changing (or lack thereof) representations of space, as well as the representational space.

Mostly patronised by colonial business owners, the smaller scale Shinto shrines were less monumental comparing to their grand official counterparts. For a long period of time after 1945, many of these spaces were left derelict. Local residents gradually took initiatives to incorporate these former shrines in their contemporary daily life. While some of these shrines became touristic attractions as part of the current paradigm in terms of treating 'colonial heritage' in the last two decades<sup>4</sup>, some of them are now host to variety of deities such as Buddhism, Taoism, Catholicism and more— on top of the same spatial/architectural settings.

- 1 Jinbu Sha (仁武社, current Renwu Temple) in Kaohsiung: adding on to the original  
In Kaneko's (2018) work cataloguing colonial Shinto shrines in Taiwan, the paragraph on the Jinbu Sha, (仁武社) in Kaohsiung, Taiwan (in Mandarin as the Renwu Shrine), reads as follows:

*No one knows who built the shrine and for whom it was built. Situated on where currently known as the Fude Palace (福德宮), the back part of the Main Hall (Honden) of the original shrine was incorporated into the nowadays Tudigong (土地公, the God of land and soil) Temple. To avoid the post-war destruction of the Shinto shrine<sup>5</sup>, part of the original Shinto shrine became part of the current temple. The Torii gate in front of the Fude Palace, originally made of wood, was replaced by a new one which is made of concrete...*

Believably to be home to the *Inari* deities to whom the colonial sugar company's owners worshipped for optimum rainfall to grow sugar cane, the original Shinto shrine building situated at the end of a stair with approximately 20 steps and a side stair of about 10 steps. The journey was not physically demanding, but one does recognise the level difference between the temple and its frontal approach (Fig. 4: Frontal approach to the Fude Palace which replaced the Jinbu Sha).

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<sup>4</sup> Since 2000 with the changing political paradigm, Taiwan official attitude towards Japanese colonial relics switched, from the previous 'eradication' to 're-use' or 're-appropriation'.

<sup>5</sup> notes on KMT's policies and attitude towards colonial relics from the Japanese time.



FIG. 4 Frontal approach to the Fude Palace which replaced the Jinbu Sha. Source: author's own photo.

As described by Kaneko, the re-constructed concrete Torii still sits at the end of the frontal approach. It is now painted in red with traditional Chinese scripts crafted on its vertical and horizontal elements. They read as this:  
(Fig. 5) Vertical Right: 福而有德千家祀, means 'lucky and moral, thousands (people) worship'  
Vertical Left: 正道為神萬世尊, means 'good way as god, ten thousand (people) respect'  
Horizontal right to left: 護朝衛國萬民, means 'protect the nation and bless ten thousand of its nationals.



FIG. 5 Traditional Chinese characters engraved on the Torii (Shinto element) of the formerly built Shinto shrine. Vertical Right: 福而有德千家祀, means 'lucky and moral, thousands (people) worship' Vertical Left: 正道為神萬世尊, means 'good way as god, ten thousand (people) respect' Horizontal right to left: 護朝衛國萬民, means 'protect the nation and bless ten thousand of its nationals. Source: author's own photo.

As shown in Fig. 6, the original Shinto shrine is now serving as part of the temple hosting the God of Land and Soil. In between the white structure and the red Torii in the front, additional elements are constructed to facilitate the current worshipping activities such as placing tribute articles and incense right in front of the current God (Fig. 7+ Fig. 8). This is not Shinto's common practice.



FIG. 6 The original Shinto shrine is now serving as part of the temple hosting the God of Land and Soil. Source: author's own photo.



FIG. 7 + FIG. 8 In between the white structure and the red Torii in the front, additional elements are constructed to facilitate the current worshipping activities such as placing tribute articles and incense right in front of the current God. This is not Shinto's common practice. Source: author's own photo.

- 2 Keishiyu Sha (溪州社, now Yong'an Temple) in Pingtung: The new deity at work  
The Main Hall (Honden) of the Keishiyu Sha is located behind the current Yong'an Temple. As a shrine in the colonial sugar factory, the *Honden* was not large, with the dimension of approximately 3x3 metre. The upper half of the structure does not exist anymore—the stone base of the *Honden* is exposed, but not demolished, with weeds growing around and inside. No longer left with any apparent sign of colonial power nor Shinto's piety, one could but see three statues of deities from Taoism on the two sides, with red sticks (ends of worshipping incense) placed in the middle of the *Honden* stone base. (Fig. 9) The space, in spite of its shabbiness, is but still perceived as sacred and conferred with a pious function. The representations of the space being sacred essentially stay.



FIG. 9 No longer left with any apparent sign of colonial power nor Shinto's piety, one could but see three statues of deities from Taoism on the two sides, with red sticks (ends of worshipping incense) placed in the middle of the *Honden* stone base. (Fig. 9) Source: author's own photo.

- 3 Shinjiyou Sha (新城社, now Hsincheng Catholic Church) in Hualien: Virgin Mary in the Shinto Main Hall  
The third example situates in Hualien in north-east Taiwan. Since 1969 the former Shinjiyou Sha (新城社) has been the host to the Hsincheng Catholic Church. The *Torii*s stay in their places, marking the start and the end of the frontal approach to the former shine. The *Honden* of the shrine is however now sitting Virgin Mary. (Fig. 10 + Fig. 11) The spatial setting obviously suggest

pious sense which demonstrates similarities to many other sacred space: the frontal approaches, formerly for cleansing Shinto pilgrims' mind, are now serving a similar purpose for Catholicism. The architectural language itself does not transform. The representations of the colonial political symbolism might have faded, but the stones still preach, just 'dressed' in a different form.



FIG. 10 The Honden (Main hall) of the shrine is however now sitting Virgin Mary. Source: author's own photo.



FIG. 11 The Honden (Main hall) of the shrine is however now sitting Virgin Mary. Source: author's own photo.

These three examples, out of many other 'former Shinto shrines-current religious spaces', exemplify the creative approaches that the post-war Taiwanese population have taken to conserve what they have believed as sacred.

### 3 CONCLUSION

Executed either institutionally or non-institutionally, the three examples of former-Shinto shrine-converted-to-sacred spaces demonstrate how the colonial structures sustain to exist, physically, despite Shinto's non-prominent presence among the Taiwanese populations in an ideological sense. It is true that Shinto as a faith did not penetrate into the Taiwanese belief system. However, the space produced around such faith does sustain in creating a sense of sacredness in the everyday physical routine of the people in Taiwan. On top of that, considering the colonial Shinto shrine's hybridised spatial practice as colonial authority's political symbolism in religious name, it is not as straightforward, as how the KMT's failed efforts demonstrated, to eradicate the representations of these space by making superficial conversions on the perceived space, not to mention the additional lived space which never ceases to unfold and blossom over time. As how Kaneko puts it, *'To avoid the post-war destruction of the shrine, part of the original Shinto shrine became part of the current temple.'* Obviously, judging by the status-quo of the shrines/temples, the post-war and current temple users intentionally conserve the former shrine spaces/ structure and use it as the sacred home to the Chinese Gods.

Lefebvre emphasised in his work that the perceived-conceived-lived triad could only stay strong when it is treated as a concrete 'model' (1974: 40). 'The three realms should be interconnected so that the 'subject', the individual member of a given social group, may move from one to another without confusion', as a logical necessity (1974: 40).

Authority's spatial practices, architects' representations of these definitions, and space users' lived experiences which re-define these space over time: the trilogy which Lefebvre denotes as three social spaces (1974). Seeing the logical coherence of the three as necessity to closely function together with each other, the colonial Shinto shrines in Taiwan are dynamic and concomitant coordinates in Lefebvre's trilogy, each of which shifts, in relation to the other two, on the one momentary plane along the timeline. People's perception of space is a multi-layer result mixed with architects' efforts and years of usage over/along the history of the space. Colonial power was certainly what was grounded as the spirit of the colonial Shinto shrines. With education (visiting Shinto shrines as part of school activities) and infrastructures (Shinto shrines) functioning well together, colonials developed, since an early age, a sense of submission to Shinto, its sacredness, and the colonial authority which these shrines represented. As embodiment of both the political and religious representations of the colonial regime, the shrines are hybridised spatial practices. The sacredness it represents did not dismiss with the KMT's dint in transforming the sets of representation of space from Shinto shrines to Martyrs' shrines/ Confucius Temples—since essentially, despise of the physical materiality transformation, the essence, or the representations of post-/neo-colonial stay with the architectural languages such as axis, level difference and use of landscapes. The idea applies further in the observation of the small scale shrines which individuals take initiatives to intervene with both representations of space and representational space.

In the Old Testament, the chapter Habakkuk 2.11 interpreted what Jesus once said in response to some authority ordering his supporters in Jerusalem to silence. 'The stones of the wall will cry, and the beams of the woodwork will echo it.' 'Stone (might) preaches', as Grundmann book's entitled-- *'Wenn Steine predigen'* (If Stone preach') (Grundmann 1993). With the three examples, this paper shows how the everyday space users have taken the creative approaches stressing the piousness of the colonial shrines in fact contributed to conserve these Japanese colonial relics, which in the past in the Taiwanese contemporary history were seen as eyesores and would have been all, eradicated.

Discussions on which building/ infrastructure should be conserved as heritage never cease. In Taiwan's case, although there is a complete framework and rules with a thorough listing of historical buildings and monuments, looking at the previous decades, politics on what to be commemorated has been subjected to paradigm changes in partisan politics. The set of criteria on heritage conservation would be beyond the realm of this paper to discuss, however, witnessing the current authority's openness in cohabitating and accepting the various methodologies adopted depending on temporal and local situations, such methodology could well be, a reference for heritage policy makers and scholars-- since any act of institutionalisation would inevitably lead to selections, hence, inclusions and, exclusions.

### Acknowledgments

This paper is an output of the science project on colonial Shinto shrines in Taiwan. The project was funded by the Max-Planck Institute for Ethnic and Religious Diversity in Goettingen.

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# Sustainability and Spanish Cathedrals: A controversial Update

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## Abstract

*Religious architectural heritage in Spain, which includes no less than 68 Cathedrals (18 listed as UNESCO sites), is confronted with specific challenges added to the ones suffered by non-religious architectural heritage, in particular in relation with the social, environmental, economic and cultural dimensions of sustainability. We mention some in particular: increasing pressure from tourism, hampering the use of the buildings for worship; current demands of accessibility, security, fire safety, digital appliances and others; modern living standards, which require increased levels of comfort, such as sanitary facilities and heating systems which should be powered by sustainable means; particular Spanish shared responsibilities of the Church-institution (the owner), and the state (controller of historic monuments). Faced with a decreasing number of priests and following, church authorities tend to be overwhelmed by these challenges. Cathedrals have a crucial significance for Christianity, European culture and general public, which complicates the update without damaging their religious use. The opportunity of tourism involves different stakeholders, each with their own interests and ways to relate to that heritage. The extraordinary architectural quality of the buildings and the great variety of the works of art preserved in them (altarpieces, paintings, musical instruments, sculptures) is specifically susceptible to alterations in both climate and microclimate. The sustainability of historical Cathedrals and simultaneously the safeguarding of their authenticity becomes extremely complicated. What should the hierarchy of values be? Methodologies should be developed on the basis of the outcome of this discussion. Some Spanish examples will be presented and conclusions will be suggested.*

## Keywords

*Sustainability, heritage, updating, cathedrals, Spain.*

## 1 INTRODUCTION

Professionals involved in the protection of heritage buildings need to reflect on how the change of use affects sustainability. The case of the Spanish Cathedrals is a very clear example, but this dynamic also affects to architectural heritage all over the world. This is a step to encourage the development of a knowledge to highlights the need to investigate and consider adaptive reuse in the context of maintain architectural quality in buildings of exceptional cultural value (vg, the current situation of convent of Van der Laan in Belgium, the former Embassy of the USA of Breuer in The Hague, etc.)

Cathedrals have a special significance; the current pressures they are facing must be solved in the field of SDG, considering “*the fact of the role of culture, through cultural heritage and creativity, as an enabler of sustainable development across the Sustainable Development Goals*”, according to (UNESCO 2019) and “*the protection of exceptional heritage properties cherished by people all over the world – such as great natural sceneries and landmark monuments - can be considered as an intrinsic contribution to human wellbeing*”

In the context of studying the reuse of religious buildings, Cathedrals offer a specific particularity. These buildings maintain their original use but are being gradually modified in order to adapt to new challenges. However, since these circumstances are transforming their purpose progressively and inadvertently, they are undergoing, de facto, a silent change of use.

From their original purpose as sacred places they present an evolution to become museums, places of cultural events and objects of touristic consumption, purposes for which they were not built. The evolution of the management of this heritage has a dynamic that causes an undeclared, and perhaps not conscious, reuse that deserves to be analyzed.

The study of how this dynamic evolves is particularly important for its exemplariness. There is not a single town in Spain without Catholic religious heritage of churches, parishes, hermitages, convents, monasteries, etc.<sup>1</sup> and most of them have difficulty keeping up maintenance.

## 2 BACKGROUND

A Cathedral (as definition) is the temple in which the bishop has his seat or “*cátedra*”. The Catholic Church in Spain (C.E.E. 2019, a) is made up of 14 ecclesiastical provinces, divided into 70 dioceses, led by a bishop. These dioceses are distributed across 50 administrative provinces. On the other hand, the *Plan Nacional de Catedrales* (Rodríguez Blanco, M. 2003) (National Plan of Cathedrals), the specific instrument of the State to manage them, includes 90 cataloged buildings (between cathedrals, con-cathedrals and basilicas)

This disparity of figures already indicates the particular administrative situation of these buildings between the State and the Catholic Church (C.E.E. 2019, b). According to the Catholic Church, the cathedrals:

*“[...] are artistic creations for divine service, which express faith and are an extraordinary instrument to evangelize those who contemplate them. It has a liturgical, evangelizing and pastoral purpose, while being open to the study and contemplation of society.”*

While, for the State administration (Ministerio de Educación, 2015 a), *“Cathedrals are complex monuments resulting from a collective and prolonged effort over time. In addition to their religious content, they also possess the social and symbolic values that create our cities, becoming their spatial reference, conditioning their urban planning and becoming the physical expression of their identity. Within the integral concept that today defines what is cultural heritage, the cathedral complex manifests all their historical background and are the best evidence of the great historical lines of artistic and evolution of thought. In that sense, they are the leading role of the urban landscape whose evolution continues until today. Furthermore, they are historical monuments but still alive. Their current image, both in their architecture and art they contain, is the result of successive episodes of superposition, extension and reform.”*

And for a writer (Llamazares, 2018, a)

*“Cathedrals are the “black boxes” of the cities; they summarize their gist, contextualize them.”*

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The non-Catholic Church in Spain has been a minority, so there is hardly any non-Catholic heritage

They are secular buildings; their life cycle is measured in centuries and even millennia, and in this unit of measure they must be analyzed and studied. The history of these buildings dates back to the history of religion in Spain. Cathedrals as a whole concentrate all known artistic styles from evangelization in the first century to the twentieth century, not only in architecture, but in many other artistic manifestations such as sculpture, painting, ironwork, carpentry, tapestry, gold and silversmithing, textiles, furniture, codices, books, musical instruments, glassware, plasterwork, etc. (Fig. 1)



FIG. 1 a) Presbytery and b) Choirs and their “sillería”; Cathedral of Burgos.  
Source: Photographs by author.

### 3 CHALLENGES IN THE CURRENT CONTEXT

The current pressures suffered by the cathedrals can be synthesized, at least, in the following:

#### 3.1 SOCIO-CULTURAL AND RELIGIOUS CHANGES

Since 1975, sociological changes show a continuous and notable decrease in Catholic following. However, at present times, 69.2% of Spaniards still declare themselves Catholic (one third of which are observant), 2.2% follow of other religions and 28.6% consider themselves atheists, agnostic or indifferent to religion (C.I.S.,2019). The increase in urban population in Spain contrasts a decline in rural population, where a large portion of religious heritage is located. As an example, the region of Castilla y León, with a surface area of 94,226 km<sup>2</sup> (twice the size of The Netherlands), currently has 2.5 million inhabitants, (one fifth of The Netherlands), and has 2,294 monuments catalogued BIC, (*Bienes de Interés Cultural*, Goods of Cultural Interest), of which 12 are cathedrals.

The clergy has also declined markedly (Orlandis, J. 2003), especially in monasteries. The maintenance of the religious uses, including in cathedrals, is challenging in these circumstances.

### 3.2 THE MAINTENANCE OF ARTISTIC WORKS

Cathedrals have accumulated a great quantity and variety of artistic works throughout centuries, through donations from churchgoers or the ecclesiastic hierarchy itself: altarpieces, paintings, sculptures, goldsmithing, forge, stalls, furniture, codices, bibliography, ethnography, musical instruments, textiles, tapestries, ecclesiastical clothing, etc. (Fig. 2)



FIG. 2 Variety and quantity of artistic works: a) Guadalupe b) Burgos.  
Source: a) Photograph by. Instituto Patrimonio b) Photograph by author.

The objective of these artistic pieces is closely related to the Eucharistic use and the authenticity of the building. These buildings are one of the few instances in which the works of art are exhibited at the same place for which they were made, and the circumstances of their contemplation are similar the original ones; this contrasts the ubiquitous practice of displaying artworks in museums and galleries, far from their original context.

Their maintenance requires a microclimate and strict environmental conditions in temperature, humidity, air quality and movement, but also safety against accidents, fire, theft and vandalism. Furthermore, each artistic piece requires specific environmental conditions. Nowadays, these conditions must be maintained in spite of external forces (changes in weather, noise pollution, traffic) and the comfort needs of users, especially in temperature and humidity, which are not always coincidental. Any damage could be irreversible. Therefore, preventive conservation is required. (Herráez, J. A. 2009).

### 3.3 TOURISM MANAGEMENT

In recent years, the pressure of tourism has increased enormously, especially affecting well-known buildings as universal heritage, both because of the so-called effect of a UNESCO- site and the economic opportunities of the tourism industry. The Basilica of Zaragoza, Santiago de Compostela, the Sagrada Familia in Barcelona and the Cathedral of Cordoba each receive 3 to 5 million annual visitors. The *Cabildos* (cathedral chapter, priests responsible) are overwhelmed with the difficulty of managing and maintaining these buildings and the expenses that it entails. The apostolic mission and the cultural aspects of the buildings are reduced and annulled confronted by the industrial and recreational facet of tourism, and whose dynamics far exceed the provisions of the *Plan Nacional de Catedrales*.

The Cathedral, an urban, social and religious center in other times, is now an obvious resource of tourist potential, economic wealth and production of jobs. In the current secular time, is this compatible with their religious use? The (UNWTO. 2019) UNWT (United Nations World Tourism Organisation) suggests "sustainable tourism", defined as

*"Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities."*

But does anyone know exactly how this is managed in a Cathedral? Isn't it an oxymoron?

### 3.4 THE TECHNOLOGICAL UPDATE

The use of very elementary technologies (electrical system, primary heating systems) introduced changes in the internal image of cathedrals. After that, the Second Vatican Council (1962-65), an important religious milestone, introduced significant conceptual changes in the rites, the participation of churchgoers and the spatial distribution of churches, to which the cathedrals also adapted (other centrality, changes in the altar and in the baptistery, etc.) Gradually, pulpits were abandoned, or disappeared (these were often valuable artistic pieces, such as that of the Cathedral of Valladolid) or were replaced by electrical cables and conduits, speakers and microphones, in an improvised way but accepted by the public.

One of the particularities of many Spanish cathedrals are the choirs and their *sillerías* (seats), placed in the central nave according to their function (Navascués Palacio, P. 2001). Due to them, and despite the large dimensions of the cathedrals, the participatory space (as we consider it in present times) is relatively small. Electronic screens have been placed to follow the acts in the side aisles or spaces without visibility towards the presbytery. Gradually, elements of monitoring, security, control (input turnstiles), fire protection (sensors, fire extinguishers), signals, codes for audio guides and other devices have been necessarily appearing on the sacred space, but often haphazardly and designed in disarray with the quality of the building. Nobody has protested about those devices since even being strange elements in a church, we find ourselves familiar with them.

However, visual impact is important. These small practical interventions, apparently innocuous, carried out urgently and needfully are introducing changes in the image, perception and use of the building imperceptibly and cumulatively. Any operation, however small or big, to enlarge the life span of the building requires a project of the complete impact, an impact projection, and specialized, heritage-sensitive technicians and hierarchical criteria on intervention.

### 3.5 NEW DEMANDS

Accessibility (barrier suppression, sign language, braille, magnetic induction loop, typhology, etc.), comfort and energy efficiency are criteria that are now required in religious buildings, also in cathedrals.

*"Sooner or later, monuments - including those dedicated to worship - are similar in many ways to any new building. This circumstance must be taken advantage from what in the new norms can agree or benefit to the monuments".* (Garcés, M. 2009).

Indeed, a cathedral is a very special area, in which the building codes required for standard buildings must not be assumed according to conventional criteria. Their conditioning, especially heating, is perhaps the one that produces the greatest impact on the buildings (many cathedrals are located in the northern half of the Iberian Peninsula, where the winter is very severe). The introduction of heating systems, optimized for new construction, presents great difficulties in historical buildings. The quality of the materials, including the floor (an element of the same architectural importance as any other structural element) can suffer great damage due to the inclusion of inadequate heating systems.

Damage can also be irreversible in works of art when the climate conditions inside the cathedral, naturally maintained for centuries, are modified. The introduction of any conditioning system must be justified. Any change must be applied from the understanding and respect for the individual character of the building, and its justification and need must be clearly defined (CEN 2011).

The life span of a cathedral is measured in centuries or millennia, and scenarios must be established in these terms. We must guarantee the reversibility of any action (Camuffo, D. 2006)., (Spolnik, Z., Worobiec, A., & all. 2007). Tectonics lasts centuries; additions last for decades. That was the purpose of the *"Estudio sobre acondicionamiento térmico para la Catedral de Burgos"* (giSCI-UPM, 2013)., (Study on thermal conditioning for the Cathedral of Burgos), replacing the previous idea of introducing floor heating, aggressive for the historic floor, with a harmless system for the cathedral's tectonics and one with a rigorous control of microclimatic variations. (González Díaz, M. J. 2019).. (Fig.3)



FIG. 3 a) Reversible heating device in Burgos  
Source: Photographs by author



b) Innovative heating. San Isidoro, León.

The requirement of energy efficiency and the use of renewable energy in the management of the conditioning of religious buildings is other important current requirement that hardly fits into this scenario. Heating is not an objective in itself, but to improve the comfort conditions of the users. In this case, the strategy of Pretelli, M., Fabbri, K., & Signorelli, L. 2015) and (Fabbri and Pretelli 2014) is the most appropriate. Therefore, the application on heritage buildings of tools prepared to ensure energy efficiencies in standard buildings is limited (RENERPATH2, 2019).

## 4 MANAGEMENT AND PROPERTY

Compared to other countries, cathedral management is a particular case in Spain. The competency between the State and the Church (Holy See) stems from the *Acuerdos* (Agreements), especially that of 1979<sup>2</sup>, which have range of state agreement. The works on the heritage maintenance are in accordance with the *Ley del Patrimonio Histórico Español* (Spanish Historical Heritage Law), autonomous legislation, and national and international recommendations. Public authorities support the Chapters in their task of preserving the monuments. In summary, it is a joint action between the Autonomous Communities, the Central Administration, and the Church itself.

The cited *Plan Nacional de Catedrales* is a state plan that manages and determines the risks factors related to stability and tightness, seismic and catastrophic hazards, and the effects of atmospheric pollution of the environment (urban, industrial, etc.). It also provides for the incidence of specific meteorology (microclimate) and the effects of demographic variations, the intensity of touristic use and the possible lack of maintenance and the incidence of theft, vandalism, etc.

This plan was a collaboration agreement from 1997, between the Ministry of Education and Culture and the Catholic Church. After 20 years, state self-criticism recognizes an insufficient economic investment, and many other cases in which only one of the parties has participated (Ministerio de Educación, 2015 b). The fact of the matter is that the circumstances and the evolution of events are much faster than the forecasts of the document, and any management to different bands, with different interests, can be a source of diverse opinions and even controversies.

## 5 BASIS FOR DISCUSSION: AUTHENTICITY VS. ADAPTATION?

The challenges mentioned describe a pressing scenario. Each of the cathedrals faces these challenges in one way or another. The result of these difficulties is solved day by day, making them compatible with their religious use. Small update actions are apparently harmless. However, nothing is harmless. Lighting is essential today, but it is not the same to illuminate for the religious service as for the tourist function. Heating them up; it's really necessary? Accessibility: is it truly necessary to comply in the same way as in a conventional building? Does the furniture not influence the use of space? Do all these elements not affect the appreciation of the interior space of the architecture? Control turnstiles and armed security guards: are they compatible with a Church?

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Agreement January 3, 1979, the Spanish State and the Holy See on education and cultural affairs..

Tourism is considered harmless or even beneficial, as it produces economic profitability. Attempts have been made to solve the compatibility (or incompatibility) between tourism and religious services through separate accesses between tourists and parishioners. For the daily religious rites small chapels, free access exclusively for prayer is isolated. Main ship spaces, or sometimes entire cathedrals, are destined only for special events of the Church, (Easter, the Saint of the city, or others) in which they are open to all public. Commonly, the rest of the time they are open for tourists under an entrance fee (currently, ranging from 2 to 25 euros, reduced for some groups or neighbors).

This is the case in the cathedrals with the greatest tourist attraction (Seville, Burgos, Segovia, Salamanca, Toledo, etc.). Other, such as Valladolid or Barcelona (Cathedral of Santa Creu and Santa Eulàlia, not to be confused with the Basilica of the Sagrada Família) are open at their usual time for all those who wish freely visit it. Less than twenty cathedrals maintain the free entrance for anyone who wants to visit them, either to pray or with a cultural objective. A notable exception is the Cathedral of Santiago. Despite its 3 million annual visitors, it is open for free. The dean *“does not even consider the option of collect”* The archbishop of Santiago (Arzobispo de Santiago, 2019) says that the Cathedral is the *“pilgrimage Church of the world”*, so *“it has to be open to pilgrims.”* The other four less known Galician cathedrals (Tui, Ourense, Mondoñedo and Lugo), require a fee to visit their interior. (Fig. 4)



FIG. 4 a) Tourist queue in Sevilla  
Source: a) Photograph by Sevilla ABC.es

b) Interior Santiago  
b) La Voz de Galicia

Services such as guides, audio guides or guided visits are considered lawful to charge. Cathedrals frequently have many other annexed religious dependences such as cloisters, sacristies, diocesan museums and cathedral treasures, where art pieces are exhibited as a museum experience, under payment. Other annexes are the Observatory of Cathedral, stairs to the tower, etc. It is obvious that these revenues represent an important and constant economic income, necessary to aid maintenance. The small churches or hermitages, spread over the vast territory, have begun to follow this same system of demanding an entrance fee, however small, for the maintenance of the building.

Certainly the difficulty of maintaining heritage, and especially after the fire of Notre Dame de Paris, has become obvious. Cathedrals stand at a great cost. According to (Delclaux, P. 2019), Director of the secretariat of the Episcopal Conference for Cultural Heritage, *“cathedrals remain thanks to becoming museums”* But that is controversial. In Castilla y León, 3% of the buildings listed as cultural monuments have been reused, usually monasteries desacralized and repurposed as hotels (Nóra Kóródy, A., & Vukoszávlyev, Z. 2015), or simply left in ruins. In the context of religious architecture, cathedrals are an exception, since they are standing and in use.

## 6 A SPECIFIC METHODOLOGY

Facing such a wealth of heritage, experts (Garcés, 2009) advice preventive conservation against rehabilitation or restoration, and especially against the urgent restoration strategy. New research has been done and BIM technical models have been created to collect more information on heritage buildings, but these were limited to the study of the energy issues and are oriented to the application of existing commercial devices, which are unable to solve the particular problems of these unique buildings. Under the argument of energy efficiency, tools that ignore the special configuration and secular structure of these buildings are applied. There are no universal answers to these specific problems, and therefore the management of cultural heritage must be focused on the unique values that each cultural good possesses. Decisions must be made considering long-term consequences and making the fewest possible alterations. These criteria should be valid in technical matters and in symbolic and cultural ones too. The authentic and true revealing dimension of the objective of the building must be preserved.

On one hand, cathedrals remain standing and, in general, in good condition, despite the difficulties. On the other hand, it is evident that the process of change of use that inadvertently is transforming churches (sacred spaces, according to their owners) into museums at best, or objects of touristic consumption, at worst.

What methodology to use for the complete maintenance of these buildings? How to maintain its authenticity? All maintenance or updating of the building requires a very clear hierarchy of values, in whose pyramid the highest point must be an ethical concern. Any intervention in a cathedral must abide by that order of values with subordination.

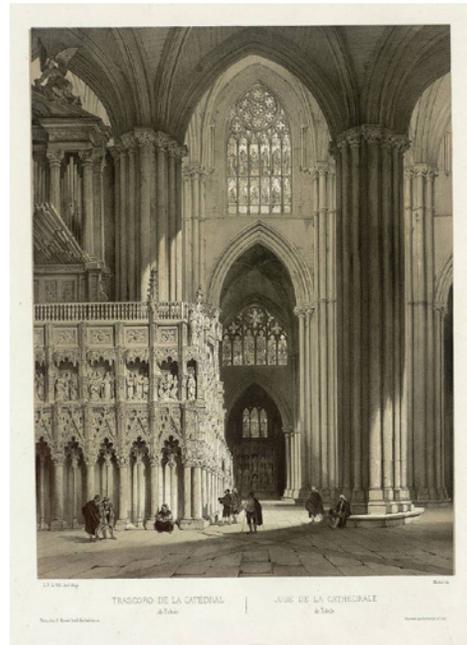
## 7 STILL A SACRED BUILDING?

The value of heritage radiates from its complete inheritance and its complexity. A Cathedral it is probably today the only place where works of art remain in their authentic and original environment (not in a museum). The altarpieces, the paintings, the tombs, the sarcophagus were made for that place and that religious objective. They were received from the donors or by the religious authorities themselves for that purpose, and they remain there after five, ten or fifteen centuries. The liturgical use, reformed in the last century, and the faith that produced it, also exists. The structure, the content and the use must be respected and maintained in its own state. Otherwise the space loses its significance and the architecture results empty.

Cathedrals are also part of an intangible heritage, which, from a secular or even atheist point of view, can be assimilating the religious beliefs. The purpose of the building, the one for which it was conceived, is the worship of God and the evangelization, as described by its owners. This use is incomprehensible when it is placed in a no man's land between a part-time consecrated building and a museum. The Church, as a collective, in its twenty centuries of history, has been open to all, according to its own beliefs. (Fig. 5). The separation between those who come to visit the building (under fee) and those who come to pray is therefore incongruous. The building has lost its authenticity, what is its own, this that it has been along millennia, to transform into the 21<sup>st</sup> century.



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FIG. 5 Romantic engravings of Cathedral of Toledo S. XIX. (source 1: Pho. El Digital Castilla la Mancha, source 2: Pérez Villaamil, Photograph by Todocolección)

Another topic for debate is whether a building stripped of its original purpose maintains its heritage value. A desacralized church, converted into a hostel or restaurant for private initiative (common case) becomes a shell whose architectural and stylistic value remains remarkable, however its cultural, symbolic and representative value for the community has diminished significantly. The symbolic value of the cathedrals for the city, for the people and their culture is maximum, hardly surmountable. Once this symbolic charge is diminished (or disappears), does it maintain its own value? Let's remember that the religious faith for which it was built still exists, but is being gradually expelled from the building.

This feeling is described by the writer Julio (Llamazares 2018 a,b) :

*The temples... allow to unravel the soul of the cities that created them.... They talk about the withdrawal of that soul from the cathedrals when the churches charge entrance and exchange the parishioners for tourists... when they charge to enter, the cathedrals lose their soul and become containers of stone and beauty, but without a beat of life. Cathedrals have been closed to the life of the city. The neighbors no longer consider them theirs because, when they charge you for entering a site, they no longer feel it as something of their own. They have killed life in cathedrals, not only religious life, but that of contemplation, of enjoyment. I used to visit the cathedral every time I went to León. Not now, not for not paying the euros they cost, but because inside you will only find an empty shell, full of people with audio guides, wandering around like automatons.*

Other parishioners address the debate on an ethical-moral dimension, which they describe directly: (Latorre, L. 2019).

*"Catholics who visit the Cathedral to attend mass or pray think this is now Disneyland."*

Architecture is an idea, not a mere construction, and the cathedral concentrates the maximum meaning. Its sustainability and at the same time the safeguarding of its authenticity becomes extremely difficult. How to find the right balance between updating and maintaining the authenticity of the building?

## 8 CONCLUSION

The use of a Cathedral as a museum is a controversial matter: Church-authorities and parishioners may have different views.

The Church in its capacity as owner on one hand may consider touristic use of its Cathedral as important, and even necessary to finance maintenance. The parishioners and the religiously inclined on the other hand could disagree because they may consider turning a Cathedral into a museum is inappropriate and in contradiction to the authenticity of the building as a sacred place. The respect of its original purpose should be paramount in any decision. The question is whether a Cathedral can be at the same time a museum.

A vicious circle looms: the more the owner is intent on preservation of the monument, the more this may be at the expense of its authenticity. Sustainability of a building, Cathedral or otherwise, should include respect for the purpose for which it was built originally.

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# SESSION 9

## Heritage, SDGs and the next Generation

**Jean-Paul Corten**

The integration of heritage in the sustainable development discourse takes time and faces many challenges. For the past three decades, professionals from different disciplines have been working toward understanding and spreading awareness of this topic, and with the SDGs the first international and interdisciplinary recognition has been achieved. In 2030 a new United Nations sustainability agenda will be adopted, and a new generation of heritage professionals will advance the heritage and sustainability cause. Intergenerational collaborations are essential to ensure continuity. This theme provides a platform for the new generations, to consider how they can think out of the box, how they can think the unthinkable. What are heritage organizations doing to ensure this continuity? What are the visions, utopias, scenarios of the new generations and how are they coping with the challenges they face?

# The Power of Ten: The KaDEr Project and the Influence of Education in Real Cases

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## Abstract

*The KaDEr research project is looking for possible changes in the policy to preserve built heritage in a sustainable way for the province of Gelderland. From 2017 to 2021, TU Delft conducts this research project. A lot of disciplines of TU Delft are involved from the Faculty of Architecture. The Heritage & Architecture (HA) is in the lead. Four themes are addressed for research: energetic sustainability, financial perspective, functional usability and securing knowledge. Theoretical and analytical research is worked out about the more general aspects of current and future policy and strategies. The perspective for the future is made by practice in four Living Labs on different scale levels. Various tools and methodologies are tested, analysed and improved through eight sub-studies. One of the related research questions for the Living-Labs is: How can student design projects for real cases change the solutions for these projects in practice? So, educational design projects from HA are integrated in the Living Labs. Around ten students (the next generation) work in teams on the subjects. In academic education projects this is not daily practice. The TU Delft HA group developed their own methodology to incorporate practice, technology, design and cultural value aspects in their education program (Clarke & Zijlstra & De Jonge, 2019). At this moment (half way the KaDEr project) some conclusions can be drawn from the results of the students. They can make a difference in practice when dealing with heritage. Buildings that were planned to be demolished will remain like in Zutphen and new insights are provided for preserving historically important aspects in the Reuversweerd estate. The province of Gelderland is enthusiast and in the lay-out for the policy framework in future this way of working will be incorporated in the strategy to safeguard a more sustainable approach on the preservation of built heritage including the ideas of the next generation of architects and researchers. For the TU Delft HA group it gives input to upgrade their education program for the next years as well.*

## Keywords

*Heritage, policy, education, design, Living Lab, estates, urban, KaDEr*

## 1 INTRODUCTION

This paper is about an initiative to anchor education more in research and the other way around. The importance of synergy between the two academic disciplines is emphasized with every review of research and education at the university. The KaDEr project that the Delft University of Technology (TU Delft) is carrying out for the province of Gelderland has proved to be a great opportunity. In addition to a positive influence on researchers and students, it appears that results from education can have an impact on research projects in reality but it shows a positive effect of addressing real cases as projects in education as well. This has been successfully used in Living Lab related cases, where education influences the final results (advice for new policy) of the research. The research project runs from 2017 to 2021<sup>1</sup>. So, a first prognosis of its conclusions is part of this paper. This paper will first discuss what the KaDEr project entails from the goal and the research approach. Within the framework of the KaDEr project, it was decided to link four Living Labs to a number of research questions and research cases. Here theory is linked to practice to arrive at

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For more information see (Zijlstra, 2018) and website TU Delft: and Four Living Labs help restore Gelderland's heritage <https://www.tudelft.nl/en/2017/bk/four-living-labs-help-restore-gelderlands-heritage/>

insights that can be included in future provincial policies. The educational projects are all linked to the Living Labs. Secondly the methodology of education at TU Delft and the Heritage & Architecture (HA) group in particular and the relationship with the research is described and placed in a wider theoretical framework. The basis for education is formed by the method developed by HA over time and will be improved based on the results of projects like KaDEr. This will be briefly discussed in order to understand the embedding of the projects in relation to the context of education at TU Delft. Finally, some of the concrete results of the linked education projects in KaDEr will be described and illustrated. The influence of the outcomes on the research results of the KaDEr project and the influence on the education methodology of HA is summarised in the final conclusions.

## 2 RESEARCH GOAL

In 2017 the KaDEr research project for the province of Gelderland started with a team of four main researchers from the section Heritage & Architecture / Faculty of Architecture and the Built Environment of the TU Delft. The aim of the collaboration between the TU Delft and the province of Gelderland is to define an adjusted framework based on the way in which the province of Gelderland acts up to the preservation of built monumental heritage in a sustainable way and asks to come up with new innovative policy ideas. Scientific research will be carried out into whether and if a paradigm shift will take place in the future. TU Delft investigate together with the province of Gelderland which changes are necessary to imbed sustainability in the preservation of heritage. The classic, object-oriented restoration mission will have to make place for sustainable and therefore future-proof management, in which the following sustainability themes will be leading: 1 energetic durability, 2 financially healthy perspective, 3 functional use and 4 knowledge safeguarding in the long term. In this process sustainability is placed in broad perspective and is looking for the right balance between monumental values and technological possibilities. In addition, the financing and the exploitation per object, in conjunction with the environment, must provide a healthy future perspective for the owners and users. For every building a future proof functional use is essential. The safeguarding of craftsmanship and the transfer of knowledge is needed to invest in future generations to preserve heritage. A conscious choice has been made to address some and not all of the Unesco Sustainable Development Goals (SDG): Affordable and clean Energy, Innovation, Sustainable Cities and communities, climate action, life on land, quality education and partnerships for the goals<sup>2</sup>.

## 3 RESEARCH APPROACH

The KaDEr project basically consists of four parts: framework, Living Labs, education and safeguarding of knowledge. For the framework the general policy of the province of Gelderland is analysed by theoretical and historical data research. After two years of investigating the general data, facts, figures, existing frameworks and general policy counterpoints have been investigated. This led to a set of findings and advice published in the midterm review report (Zijlstra, 2018).

Many disciplines at TU Delft are involved in the research: more researchers from the three Heritage & Architecture (HA) Chairs (Heritage & Design, Heritage & Technology and Heritage & Values) got

involved just like researchers from other departments: Technology - Building Physics, Climate Design and Sustainability, Management and Landscape Design. A team of fifteen researchers of TU Delft work together. Every Living Lab has a coordinator from the Heritage & Architecture section. After the two first years of research with a more general focus eight sub-studies were linked to the four Living Labs: 1. Energy scan 2.0 for churches, 2. Post-insulation of the architectural layer, 3. Design Atlas Baaksebeek & IJsselvallei, 4. Church vision Winterswijk, Aalten, Oost Gelre, 5. Assessment model for sustainability measures, 6. Energy transition 2030, 7. Design Atlas Geldersch Arcadia and 8. Financial feasibility of churches. Fig. 1.

Concerning the framework, conclusions are presented in a final report. The Living Labs each receive a digital accessible document in which experiences are shared. The education is shared with a wide audience through exhibitions and a final publication. The sub-studies, two by two linked at the Living Labs, will be summarized in a book or report. Others will be worked out in separate trade editions as well (Design Atlas Baaksebeek, IJsselvallei and Geldersch Arcadië and on Churches: The Eusebius church in Arnhem an evaluation of the restoration process). In September 2021 the entire project will be festively concluded with a manifestation as a closing event. Results are presented in a series of publications, various exhibitions and a conference. The basic characteristic of the KaDer project is that we are able to make interim adjustments to the approach of the research in order to remain up-to-date and to include interim findings in the next research phase. It is a cyclical and self-learning process instead of a linear process. Fig. 2. In this way we will provide a framework for the new policy for Gelderland in 2021 with regard to the sustainable preservation of built heritage and advise a working method to follow projects in practice and to steer policy accordingly.

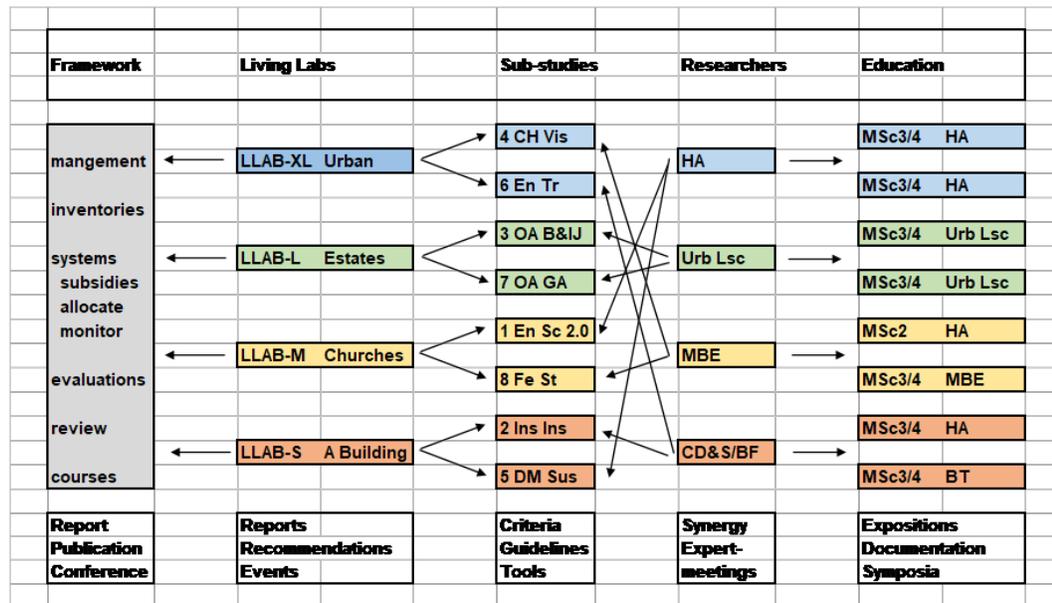


FIG. 1 Diagram of the KaDer research project: Living Labs, sub-studies and education projects. (source: Hielkje Zijlstra)

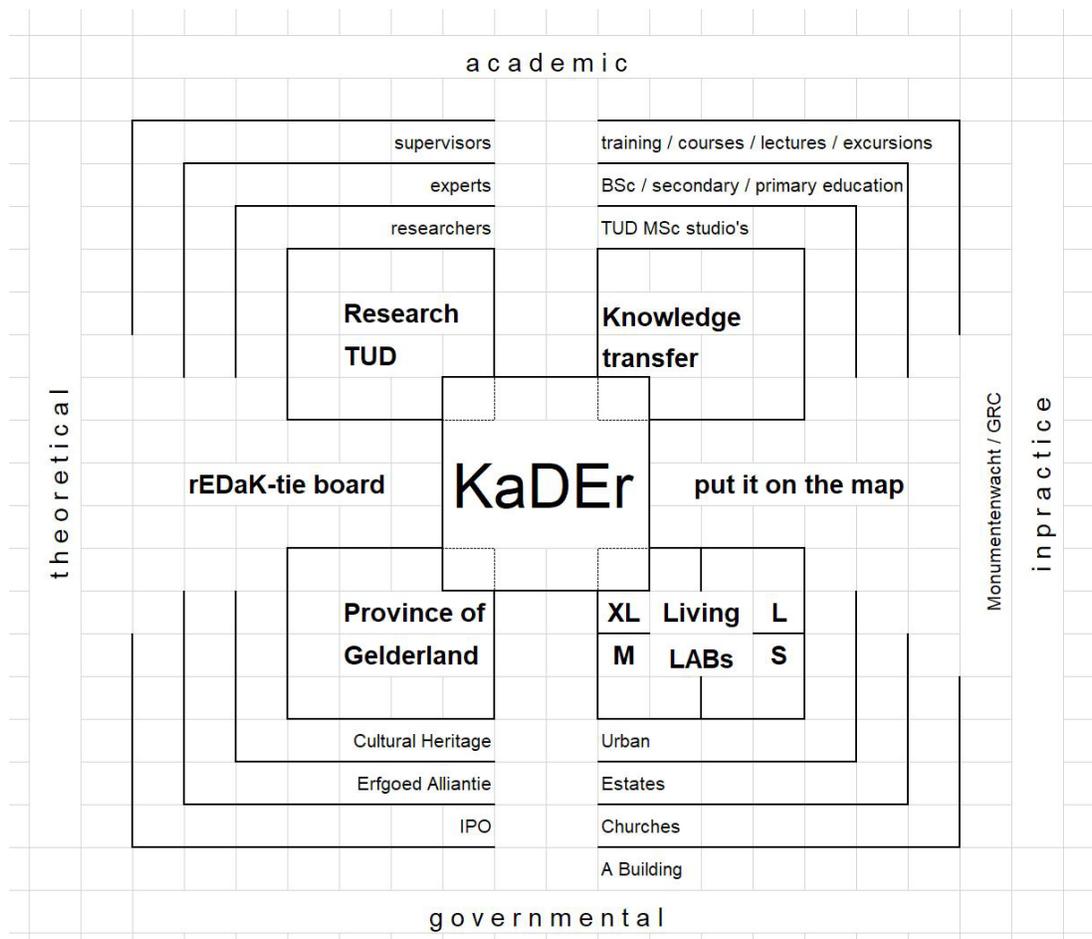


FIG. 2 Diagram of relations and circular system of the KaDER research project. (source: Hielkje Zijlstra)

#### 4 LIVING LABS KADER PROJECT

The four Living Labs form the backbone of the KaDER research. In the Living Labs, practice is linked to policy. At the province, policy has been translated into programs, subsidies and projects. So, conversely, following these projects is the way to test whether policy leads to what they had in mind. Within the KaDER Living Labs current policies are investigated, analysed and evaluated. Subsequently, recommendations are formulated for future policy in which sustainability is paramount in maintaining monumental built heritage. In Gelderland we see that sustainability is a guiding principle on a small and large scale. An important part of the provincial policy is the expansion of subsidies for the preservation of heritage (Provincie Gelderland, 2019). Evaluating cases in practice is important to discover the effects of providing provincial grants. To measure and assess this effect, analysis is needed. A choice was made, in close consultation with stakeholders and the province, which projects were eligible for this. This choice is based on the four research themes of this research in general and the locations of the projects. Depending on the scale area (XL-L-M-S), a case is being monitored in a Living Labs. Here we can follow "live" what has been or will be achieved in the projects. Because afterwards the process is difficult to fathom, walking along with an ongoing

(living) practical situation is essential. In addition to content, the process plays a major, determining role. To improve partnerships and incorporate young people in learning cases education is an important component in the Living Labs. The following activities are carried out in four Living Labs:

#### 4.1 4.1 LIVING LABS – XL – URBAN

- Zutphen
  - Redelvelopment of historical part of the inner city: Nieuwstad / Klein Vaticaan. The Catholic enclave with some buildings will be redevelop (schools, church, rectory, retirement home, etc)
  - Projects are monitored: schools quarter and Nieuwstads church
  - Education: Graduation studio MSc3/4 2017-2018 (20 students)
  - Education: MSc2 studio churches 2019 (28 students on 3 Churches)
  - Erfgoedwerkplaats (heritage workshops) GRC and clinics with monumentenwacht (monument watch) Gelderland<sup>3</sup>
- Winterswijk
  - Redevelopment of the Jacobus church, industrial area and culture cluster
  - Graduation studio MSc3/4 2019-2020 (12 students)
  - Collaboration on the Church Vison for three municipalities (RCE, 2019)
- Elburg
  - Monitoring plans for a sustainable heating plan for five monumental buildings in the historical centre
  - Design the roadmap for the Energy transition 2030 (Spring 2020)

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Monumentenwacht Gelderland (Monument Guard Gelderland) The foundation Monumentenwacht Gelderland is a private organization, supported by the province, for the preservation of cultural heritage. Monument Guard Gelderland is mainly concerned with independent architectural inspections of monuments. Emergency repairs are immediately carried out during the inspection. In addition, Monumentenwacht Gelderland increasingly provides additional advice to owners of monuments. As a partner of the province of Gelderland, the Monumentenwacht Gelderland is involved in projects in the field of quality assurance, historical building fragments and a restoration training. <https://www.monumentenwacht-gld.nl/>. Gelders Restauratie Centrum (GRC) is the Education institute of the province of Gelderland for craftsman in the building profession <https://geldersrestauratiecentrum.nl/>. GRC facilitates courses on site of Reuversweerd: <https://erfgoedwerkplaats.geldersrestauratiecentrum.nl/>

## 4.2 LIVING LABS – L – ESTATES

- Baaksebeek and IJssel vallei area + Gelders Arcadië
  - Participation in the Interreg project Innocastle with expert meetings, etc.<sup>4</sup>
  - Design Atlas Baaksebeek, IJssel vallei area and Gelders Arcadië
  - Education: MSc2 studio Baaksebeek 2018 (9 students)
  - Education: Graduation studio MSc3/4 2019-2020 (11 students) + workshops and exhibition with the University of Torino Italy.

## 4.3 LIVING LABS – M – CHURCHES

- Nieuwstads in Zutphen, St. Maartens in Tiel and Walburgis church in Arnhem
  - Monitoring and Education MSc2 studio churches 2019 (28 students)
  - Expert meetings and symposium (11 December 2019)<sup>5</sup>
  - Evaluating Energy plans for churches (subsidized by the province) and design a guideline for future use: Energy Scan 2.0
- Eusebiuskerk Arnhem
  - Monitoring en evaluating the restoration and sustainable redesign process
- Stevenskerk Nijmegen
  - Monitoring en evaluating the restoration and sustainable redesign process

## 4.4 LIVING LABS – S – BUILDING

- Reuversweerd
  - Monitoring en evaluating the restoration and sustainable redesign process
  - Erfgoedwerkplaats (heritage workshops) with GRC
  - Education: Graduation studio MSc3/4 2018-2019 (5 students)
  - Education: Msc2 building assessment exercise 2018 (26 students)
  - Advices on different technical aspects of the execution
- De Groote Noordijk Wilp (mirror project for Reuversweerd)

## 5 EDUCATION LINKED TO LIVING LABS

One of the objectives of the KaDEr project is to safeguard knowledge. This involves building up, collecting and sharing knowledge. The extra dimension that TU Delft can give to this is that, by linking educational projects to the case studies in the Living Labs, education is also part of conducting research. By giving ten free spirits of the next generation architects / researchers a concrete design assignment that is based on a practical case, possibilities are explored that can have far-reaching consequences and impact. The educational projects are therefore directly linked to Living Labs. The themes of the KaDEr research are also leading in education. The aspects 'energetic durability' and 'functional use' in particular are central to this. There is a synergy between research and education. A new generation of architects provides ideas that results in new insights. Students are involved in everyday practice and people from the KaDEr project participate in education. The researchers from the Living Labs are also involved as teachers. Teams of two or three teachers

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4 Interreg Innocastle project INNOvating policy instruments for historic CASTLEs, manors and estates see: <https://www.interregeurope.eu/innocastle/>

5 For programm and documents see website TU Delft: <http://homepage.tudelft.nl/20j9u/>

are always working from the three different domains of Heritage & Architecture (Design, Technology and Values). The teachers, researchers and other stakeholders from KaDEr are involved in education by participating in conversations, sharing knowledge, reflecting critically during (interim) presentations, giving workshops, organizing excursions, giving lectures, contributing to publications and facilitate exhibitions.

## 6 HERITAGE & ARCHITECTURE (HA) EDUCATION METHOD

In this chapter at the development of the HA education approach will be explained and secondly the current HA method. The TU Delft has a long history in education in Architecture (McNamara, 2014, 56-65). It retrieved the second position in Architecture Schools in the QS World University Ranking in 2020<sup>6</sup>. Most of the publications on the education at the faculty of Architecture at the TU Delft focusses on the Architecture that concerns new build project (Smienk & Niemeijer, 2000). Also, internationally the focus for now in Architecture is mostly on new built buildings (Staal ea, 2004, Himmelreich and Blätz 2005, Angéli and Hebel, 2008, De Bleeckere ea 2009, Ockmann and Williamson, 2012). Conservation is taught as disciplines for building technicians, like in Antwerp and Leuven<sup>7</sup>. The combination of architectural design at heritage buildings is taught exclusively at TU Delft. Over the years dealing with existing buildings integrated in architectural design projects becomes common sense. In the conclusions of this paper the influences of the lessons learned from the KaDEr project to improve the HA educational approach in future for the next / next generations is formulated.

### 6.1 THE HA EDUCATION APPROACH

The Heritage & Architecture (HA) approach on educational projects aims to increase in complexity over time and stimulate individual independent growth (Clarke & Zijlstra & De Jonge, 2019). Current conservation education at the TU Delft flows from long tradition. It evolved from addressing traditional architectural restoration practice (the maintenance of the status quo through the classical restoration and maintenance perspectives), to one of addressing conservation through adaptive reuse as a valid and proven method. An important milestone in this process was the creation of <sup>®</sup>MIT in 2006. <sup>®</sup>MIT continued to teach restoration, but addressed research and education in Modification, Intervention and Transformation of the built environment. These areas defined the field of enquiry of three chairs according to levels of scale: Modification focused on the use of materials and technology, Intervention on adaptive reuse and redesign of a building, and Transformation investigated the urban structure. These scale levels structured the design education: students were expected to undertake analyses of a building, its urban context and its technology. This analysis included the history of the design and the architect/s associated with the building, as well as changes that were made or occurred over time. The past and present served to inform the student's choice for a new program for the building, providing a springboard into the future. The investigation into values was implicit to this process, but experience soon highlighted the need to make values an explicit part of the both investigation and education. The transition from <sup>®</sup>MIT to HA in 2014 maintained the wide focus on scale levels, but restructured in three domains that together form HA: Heritage and Values,

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6 See: <https://www.topuniversities.com/node/294502/ranking-details/university-subject-rankings/--2018/architecture>

7 See: <https://www.uantwerpen.be/en/study/education-and-training/master-conservation-restoration/programme-info/> and [https://onderwijsaanbod.kuleuven.be/opleidingen/e/CQ\\_52688406.htm#activetab=diploma\\_omschrijving](https://onderwijsaanbod.kuleuven.be/opleidingen/e/CQ_52688406.htm#activetab=diploma_omschrijving)

Heritage and Technology and Heritage and Design. These three chairs collaborate both in education and research, forming an integral focus on both the tangible and intangible.

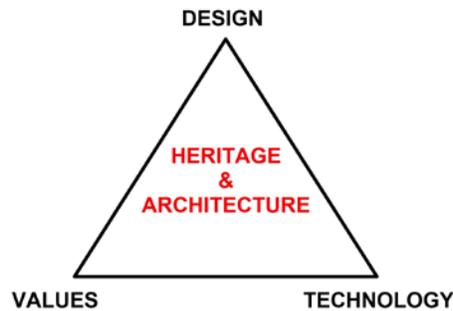


FIG. 3 The Heritage & Architecture triangle (source: Hielkje Zijlstra)

At HA we now expect our students to develop design proposals based in an understanding of the building, its technology and values. Further, the design should also result from the application of technology and present an active response to values. The HA approach is underpinned by the urgency of adaptive reuse, not only as an economically viable strategy, but as an essential strategy to limit environmental impact, nurture social resilience and contribute to the triple bottom line of sustainability. Education at HA is embedded in broader social thematic because "...architectural heritage education is essential to understanding sustainability, the social context and sense of place in building design" (UIA/UNESCO, 2011). HA does not shy away from demographic challenges presented by changing inhabitant profiles of for instance social housing in the Netherlands, and changing conceptions of value, space, time and reality. But the complexity of adaptive reuse within a real-world socio-economic and environmental scenario can prove to be too challenging for students. As educators we need to be able to guide students through their first and repeat adaptive reuse exercises that serve as basis of their architectural education. We have over time developed an educational program as well as a methodology to assist students, who are novices, to demystify the process of analyses for valuation and adaptive reuse design and guide them in their design decision-making. So, we can conclude with Ana Pereira (chairholder of Heritage & Values): *"Heritage is important for our personal and collective experiences, also for future generations. It is not sustainable to only keep the pearls and make those more sustainable,"* (TU Delft, 2020).

The HA educational process aims to increase in complexity over time and stimulate individual independent growth. With this in mind, an education matrix was developed collaboratively by the three HA chairs, progressing from group work to individual exploration. HA focuses on Masters-degree education. The Masters education spans two academic years, the first year dedicated to the MSc 1 and MSc 2 as distinct courses. The MSc 3 & MSc 4 together form the graduation project. In all these courses, HA presents students with a choice of at least two studios, of which one always focuses on the built legacy of the twentieth century. We always select sites for investigation where a real-world question exists, often in collaboration with outside institutions or property owners. In the MSc 1 many of our students are introduced to build heritage as theme for the first time. Many are international students for whom this is their first course at the TU Delft. We therefore select not overly complex buildings for them to study and modulate. They are also assisted by the presentation of a predefined brief and delimitations [20 weeks]. The MSc 2 is based on (group-) research. It focuses on specific topics and typologies, for instance obsolete churches, industrial heritage or ideas such as the mid-twentieth century Dutch Neighbourhood idea or the problem of depopulation,

for which individual designs are developed [10 weeks]. Cases selected for the foundation courses (MSc 1 and MSc 2) are chosen to include pre-existing valuation reports or building-archaeological reports to expose students to values as concept and form first responses as a designer that include values as an informant.

In the MSc 3/4 individual graduation project, more complex situation study sites are selected. This can take the form of a complex urban location or a more wicked adaptive reuse problem for which students need to develop a proposal that balances conservation with adaptive reuse. MSc 3/4 students are required to develop their own appropriate briefs, based in the analysis of the urban context, building and its values, as well as the social-cultural and economic and environmental context of the project. The education process develops from independent analysis on the basis of separate realms (Architecture, Building Technology and Values) to, at the MSc 3/4 level, integrating these into a single position on the inseparable values presented by the physical fabric, intangible qualities and associations of the case at hand (Kuipers & De Jonge 2017). The final aim is a design based in a defined transformation framework that in turn is supported by critical analysis, synthesis and reflection, often through scenario-based iterative testing of design ideas. Student proposals are often presented to owners/municipal authorities, monuments care officials and communities, who provide real-world feedback to their hypothetical proposals. Communication is essential, also to present the evidence-based choices and logical argumentation that led to the proposed reuse interventions.

A challenge we face in our educational practice is that the HA courses form part of the larger Architecture track of the Faculty of Architecture. Students are free to migrate between the various Master courses, which means that not all students participate in all the HA courses in sequence. Often students enter the HA MSc 3/4 without having undergone any of the HA MSc 1 or MSc 2 courses (or having participated in the BSc 5/minor course presented by HA in the faculty-wide bachelor). This freedom enriches our design studios because students bring with them knowledge from different disciplines, but conversely provides HA with a dilemma in terms of educational continuity. It mandates a back to basics position at the start of each of the MSc 1, MSc 2 and MSc 3/4 and challenges staff to assist students to develop defensible evidence-based positions and cohesive design proposal in, in for instance the MSc 3/4, a period of 40 weeks. Group work at the start of each course has proven to be especially useful to bridge this gap.

## 7 RESULTS FROM THE EDUCATIONAL PROJECTS ON THE KADER PROJECT

Various educational projects have now been carried out within the KaDER project: MSc1, MSc2 and MSc3/4 graduation projects. There has always been good cooperation between the requesting party (the province, the local government or owners) and the bidding party (students and teachers at TU Delft). Most of the time we as HA succeed in addressing actual projects but the interaction with the stakeholders is not so intense. It is always time consuming and not clear what the student's ideas could contribute to reality. At the KaDER project we turned it around. So, the interaction with owners, architects, municipality and the province was organised more frequently as part of the partnership in Living Labs. Two projects will be discussed in this paper and some of the concrete results of two projects will be explained in more detail. First the project, the location and the requested products are briefly described and then a number of results that have brought about a change in working method or perception.

## 7.1 LITTLE VATICAN ZUTPHEN

The Klein Vaticaan Education project is a graduation studio in MSc3/4 as part of The Living Lab - XL - Urban: Zutphen. Zutphen is a medium-sized city in the east of the Netherlands with 50,000 inhabitants and includes 43 km<sup>2</sup>. It has a historic centre with many monuments. It is traditionally a Hanzestad (Hanseatic City). Fig. 4. Around 1300 an extension to the city was planned: De Nieuwstad. Part of this was filled in by the Catholic community: a church, a rectory, three schools and a retirement home. Some of these buildings will be redeveloped (when vacant) or restored in future. A joint project team has been started by the municipality of Zutphen. The KaDEr project follows the processes for the redevelopments. The Klein Vaticaan in the Nieuwstad was chosen as an educational project to run from September 2017 till July 2018. 20 students investigated the district and choose a building as an individual design assignment. First, a thorough analysis took place from architectural, technical and values point of view. Fig. 5. This led to design principles and the determination of the position as an architect in relation to Heritage & Architecture. A new program was planned and the design worked out architectural and technological. So, technical and functional sustainability are carriers of the project. In particular, the functional sustainability, the reprogramming of the buildings, is central to this project and provokes discussion. The plans were presented to stakeholders at various times. At the end of the 40 weeks a symposium took place in Zutphen in which all parties and interested people participated. The plans were also exhibited in the town hall during the summer of 2018.



FIG. 4 View on the historical centre of the city of Zutphen (source: Hielkje Zijlstra)

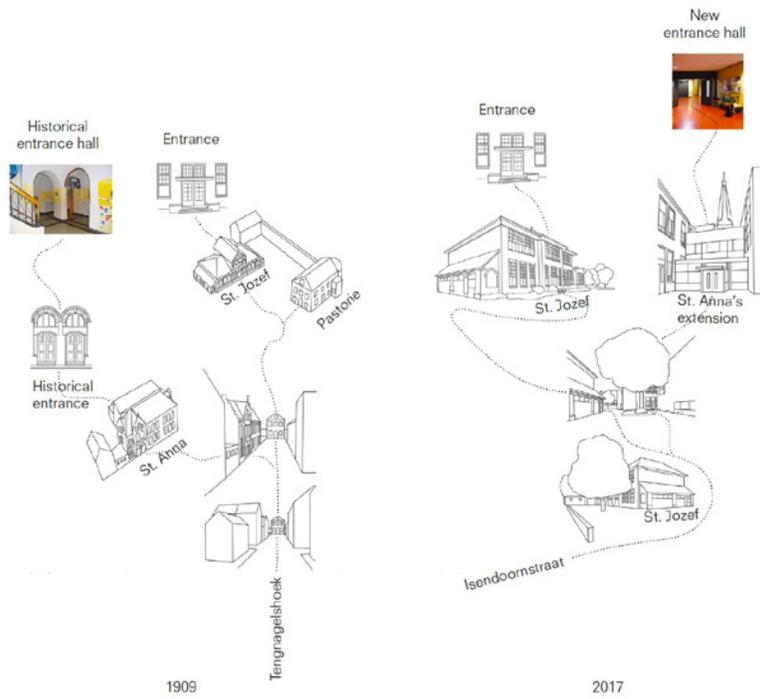


FIG. 5 Analyses of the schools district in the Nieuwstad in Zutphen by two students (source: Birda & Bakker, 2017)



FIG. 6 Baudartius college Zutphen, one of the vacant buildings in the near future (source: Hielkje Zijlstra)

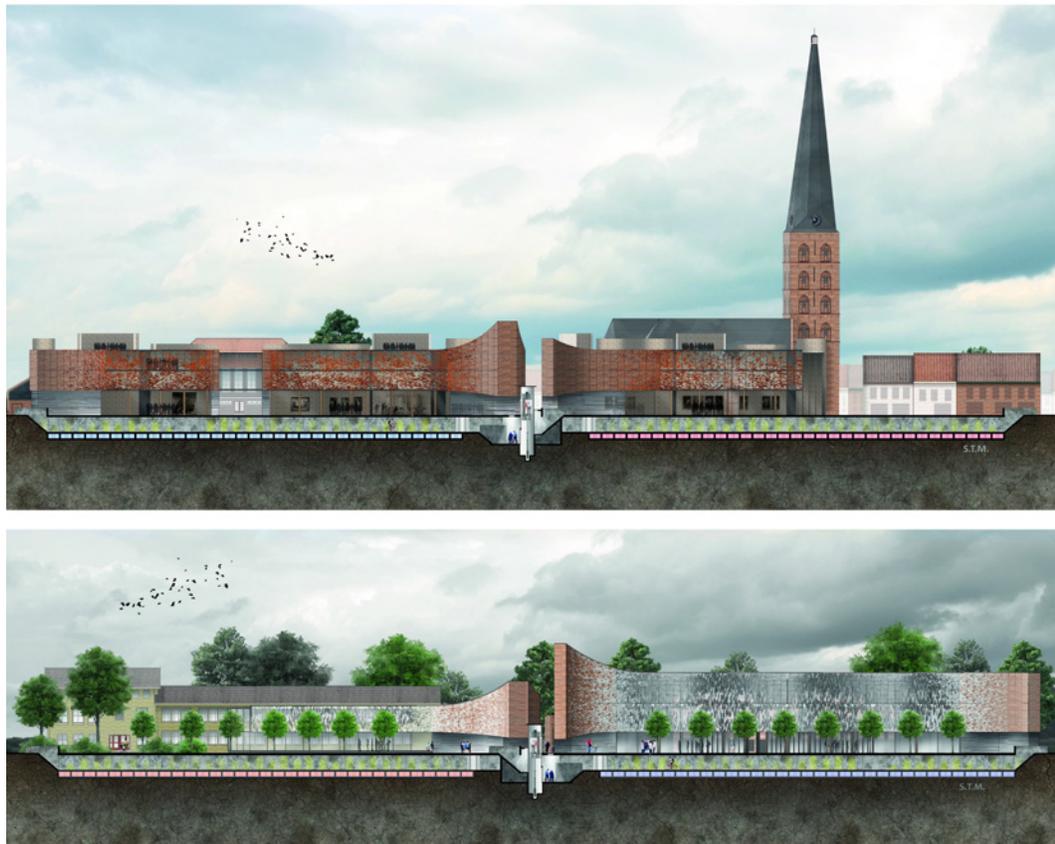


FIG. 7 MSc3/4 TU Delft education project Isendoornstraat Zutphen including Baudartius College (source: Marijnissen,2018)

Various students have chosen the vacant schools as the subject of their plan. It is particularly striking that the Baudartius College, a building from the fifties of the 20<sup>th</sup> century, was the chosen object of redesign by five of the twenty students. Fig. 6. During the exploratory excursion in 2017, the alderman indicated that this building would not be considered because it was nominated to be demolished Fig. 7. The valuation of post-war heritage was not yet up to date in Zutphen. In the meantime, the students' plans have become so inspirational that the building of the Baudartius College has been put on the list to be designated as a municipal monument from the post war period. There are also various initiatives to designate the building again as a school, a residence for artists and an art gallery or for heritage related activities.

## 7.2 REUVERSWEERD BRUMMEN

The Reuversweerd education project in Brummen is a graduation studio in MSc3/4 as part of the Living Lab - S - Building: Reuversweerd. The Reuversweerd manor was built around 1830 in a neo-classical style with stately and symmetrically decorated facades. It was expanded in 1921, creating an L-shaped floor plan. In the Second World War, the Germans confiscated the house and installed a radio monitoring station. The liberators bombed the house for that reason. The owner was shot by the Germans as a revenge action one month before the liberation in April 1945. From that time on, the house has been vacant and is, partly due to war damage, in a technically bad condition. Fig. 8 and 9. The associated farm has expanded and remained functional over time. Nevertheless, the main building still shows part of the original interior finish with richly decorated stucco ceilings, fireplaces, panelling and wall frames. Reuversweerd has a new owner since 2017. He is going

to restore the building to a residential and retreat centre. Students worked on this project from September 2018 – July 2019 as part of their graduation project. Five students examine the main building, outbuildings and gardens. Fig. 10. New programs were planned and further elaborated. The construction and interior design in particular require attention. Here too, presentations and discussions are organized during the design and at the end. Fig. 11. In December 2019 the plans were exhibited in the hall of the house of the province of Gelderland in Arnhem.

In particular, the owner and the architect of the Reuversweerd project were not sure how to deal with the war damages that are prominent in the building. Because it is one of the last buildings to show this, agencies such as the Cultural Heritage Agency and the Gelders Genootschap are concerned about the way in which this will be visible in the interior and exterior after the restoration. The students submitted a collection of ideas on how to deal with this. The owner will use their ideas. Based on the imagination of the students, a number of solutions are chosen that will be implemented over time: partly maintaining the impacts in white-finished walls in the stairwell, in a few places healing the damage whereby the cracks remain visible like a Japanese Kintsugi object and to frame the damage, creating a still image that requires appropriate attention. Fig. 12 & 13. Also ideas about a watch tower, linear connecting walking path and the entrance at the backside of the main house will be 'copied' in the real plan.



FIG. 8 Reuversweerd exterior in 2017 (source: Hielkje Zijlstra)



FIG. 9 Reuversweerd interior in 2017 (source: Hielkje Zijlstra)

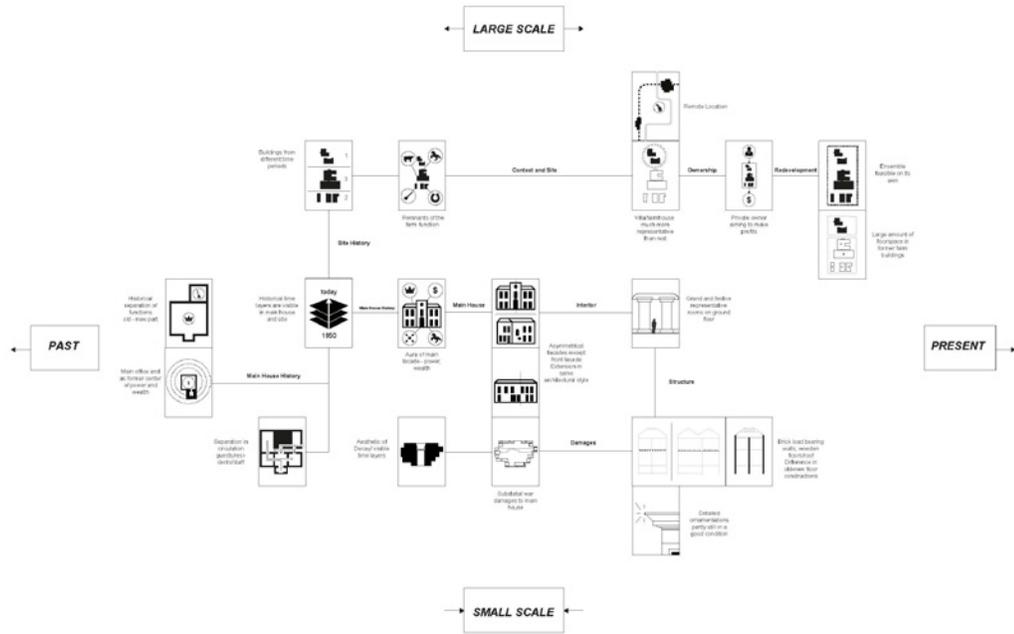


FIG. 10 Analyses by students Reuversweerd (source: Düber & Bianchi, 2018)



FIG. 11 Site visit with students at Reuversweerd (source: Hielkje Zijlstra)



FIG. 12 Plan Youri Slaghekke war damages repair in a Japanese Kintsugi way (source: Slaghekke, 2019)



FIG. 13 Plan Johannes Düber war damages framed like pieces of exposed art (source: Düber 2019)

## 8 CONCLUSIONS

The KaDER project has offered the TU Delft the opportunity to anchor education in research and to reconsider our education methods in relation to research and practice. In addition, research has not only generated subjects and interaction for education, but with their design's students contributed to new insights for institutions and owners. A substantial contribution was made to Living Labs of the KaDER research project. By engaging a next generation of architects and researchers in training on existing issues and current projects, insights were gained, opinions shifted and concrete solutions were outlined. By linking the research to the Living Labs, not only in a passive form of research (monitoring, analysis and evaluation), but in an active form (design, discussion and participation) worked well. The province of Gelderland embraces this approach. One of the conclusions of the KaDER project as a whole is that this method will be perpetuated by the province of Gelderland in their policy from now on. So, the teamwork will continue after 2021. For the development of the education method of HA it helped as well. The interaction with stakeholders in practice is very useful, but must be organised very well. there must be something to be gained for all parties. This needs to be organised very well on forehand to profit from this partnership. For the HA education method the research part will be addressed more seriously in the graduation studio brief. It will be more than analysing. Actual themes will be formulated to influence design and research from both ways. We started to work on that. From September 2020 on the HA MSc3/4 graduation studio's will be more research based, heritage related and design driven.

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# Built Heritage and Landscapes of the American West: Stewardship, Sustainability, and Approaches from the Netherlands

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## Abstract

*Modern cultural heritage management systems can benefit by considering and adapting international models, interdisciplinary practices, and options for non-government leadership. This paper presents sets of challenges and research problems facing the American West, and investigates issues and case studies in built heritage stewardship. Specifically, exploring contemporary approaches to heritage stewardship practices in the Netherlands, and drawing insight from a paradigm of preservation by development, and a combined stewardship-management network that includes a broad range of contributing experts, central and local government systems, as well as non-profit, "stichting" foundations. Dutch cultural perspectives, influences, and applied approaches to sustaining built heritage and landscape resources are also examined, further accompanying international perspectives and examples of current practices in organizational and applied heritage leadership, as well as comparative approaches to sustaining built heritage within the historically engineered landscape. The sample literature review and summary of field investigations highlight exemplary heritage sites, organizations, and Dutch approaches to heritage stewardship reflecting a comprehensive cultural network and understanding of historic built environments that have the potential to contribute to a more informed, holistic narrative, and dialogue on the biography of places. Such an intimate understanding should, in turn, support established Sustainable Development Goals, foster sustainable stewardship practices and models for others to follow.*

## Keywords

*Stewardship, American West, Sustainability, Heritage, Netherlands*

## 1 INTRODUCTION

As we face the middle decades of the 21<sup>st</sup> century, it is becoming increasingly more important to observe, record, and consider the complexities of historic built environments amid a changing global landscape, and apply an informed understanding of the ways in which these places are being transformed by human societies, and cultures over time (Antrop, 2004a, 2004b, 2006; Appadurai, 1986; Roders & van Oers 2011). As populations increase and landscape development intensifies, particularly in the western US, how built heritage is sustainably managed, and ultimately passed on becomes the responsibility of agencies, organizations, and individuals. These entities in turn exercise the roles of heritage managers, keepers, and experts, who ideally provide the best and most practical care as stewards of cultural and historic resources, within their respective place and time. This care may include a variety of applied arts and sciences, along with a network of heritage professionals and partners to best sustain the qualities and essential characteristics that define the heritage of peoples, places, and things for current, as well as future generations (Matero, 2007; Wells & Stiefel, 2014).

Here I present alternative examples to traditional forms of governance-based approaches to heritage resources, highlighting the need for modern approaches to heritage stewardship as a whole, and expanding roles of non-government (NGO) organizations in specialized management and oversight, particularly of local heritage. By identifying locally oriented, and sustainable approaches to heritage stewardship, I also consider how international approaches to heritage preservation by way of development might help to address challenges to sustaining built heritage at the grassroots and localized level in the American West. I argue that non-profit organizations with the ability to flexibly interface with heritage policies, practices, and educational platforms may present practical alternatives to the traditional roles of government-based heritage management, by offering adaptable, sustainable, and localized heritage stewardship systems (Choenni, 2015; Corten, 2017; Egberts, 2015).



FIG. 1 Bannack State Park NHL, Montana. Photo: by author.

## 2 METHODS

This research investigates the utility of exemplary case studies to guide heritage stewardship solutions for historic built environments, and acknowledges the importance of including a wide range of scholarly disciplines and professional expertise representing contemporary systems of built heritage management, planning and technical arts and sciences. Consequently, I sought out case studies via literature review of Dutch built heritage methods, systems, and researched scholars who could provide direction and statements on the functions and capacities of heritage sites and organizations within a greater heritage stewardship matrix (van der Valk, 2010; van Assche, et al 2015). Recognizing that sustained physical care of heritage resources, most critically depends upon both technical expertise, a sustained human connection to these resources, and the inclusion of future generations to maintain the relevance of heritage in the built environment in changing modern communities, research methods have also included evidence gathered from observations made during visits to several heritage sites, along with interactions and ethnographic interviews with heritage professionals, and discussion of model programs and examples discussed in this paper.

After synthesizing the results of these information-gathering endeavors, I observed four sets of common challenges that may be linked to the advancement of modern, practical and integrated systems of stewardship for built heritage and cultural landscapes in the American West. These are presented below as Research Problems, followed by suggestions for sustainable, long term, and multi-disciplinary approaches to the management and technical oversight of heritage resources in the western states.

### 3 RESEARCH PROBLEMS

#### 3.1 PROBLEM 1: MODERN HERITAGE MANAGEMENT CHALLENGES

In the US, individual states, their regions and local communities are largely tied to the top-down federal system of cultural resource management, archaeology, and historic preservation, which extends funding and regulation through the US Department of Interior to the various state and Tribal Historic Preservation Offices (THPO's), through the Certified Local Government (CLG) programs into the local communities. The states in turn manage and preserve cultural monuments and sites of significance to a region, state, or larger history, which may include the further support of federal, state, and local private and non-profit agencies. A combination of public, and private non-profit stewardship programs and partnerships additionally provides opportunities for collaboration on a wide variety of heritage related issues.

The interface between natural and historic built environments additionally appears as a modern hot zone issue, with the sustainability of both natural and built heritage resources increasingly weighed against those of land-use and development, and potential impacts to a range of cultural and natural resources. While it is reasonable to conclude an effective form of equalized governance should provide for essential oversight of resources associated with a common natural, or otherwise established heritage of places, the form and method of this oversight and ultimate stewardship should remain open to debate, and ideally tailored to suit the heritage resources of particular places (King, 2002; Verberg, 2004b).

Similar to the smaller countries of western Europe, US states are most connected to the culture, and built heritage of their respective regions and communities, and are arguably in the best position to offer knowledge and informed perspectives on local built heritage, and associated changes over time. However, the current broad-based federal model does not often provide the comprehensive framework of communication, services, and resources required to effectively incorporate the diversity or sensitivities of local heritage resources within preservation planning, or greater land use considerations, as the inevitable pathway of development continues into the 21<sup>st</sup> century. Acknowledging that changes to historic environments exacerbate stresses on the practical functions of existing models, new models are increasingly identified as necessary to best sustain the built heritage of places at the local level (Barthel-Bouchier, 2013; van der Valk, 2010; Verberg, 2004a).

#### 3.2 PROBLEM 2: CONSOLIDATED POWER: DATED GOVERNANCE MODELS AND MODERN ALTERNATIVES

Some argue that government-based heritage management systems are inherently problematic, in that expertise is often shifted toward a different control function of leadership, typically through bureaucratic and legal processes (Eagle, 2017; Tarlock, 1999, 2002). By shifting to a paradigm of heritage knowledge and expertise-based leadership systems, initiatives may be much more quickly mobilized, and goals realized, through the simple abandonment of unrequired bureaucracy. There can, and should be practical, modern alternatives to a traditional government-oriented paradigm in heritage and landscape stewardship, and particularly in cases of managing localized resources, where similarly localized and oriented grassroot and non-profit agencies may provide the most sensible and effective forms of local long-term and applied stewardship. In the examination of practical stewardship models for built heritage and landscape systems, it is becoming increasingly

more practical to consider the advantages and disadvantages of public, or governance-oriented systems, along with private, or non-profit systems for site-specific heritage management and future use scenarios (Cassar, 2009; Choenni, 2015; King, 1998).

### 3.3 PROBLEM 3: LAND USE AND THE WESTERN LANDSCAPE: LEGAL CHALLENGES TO HERITAGE SUSTAINABILITY

The western US is among the few remaining places in the nation, and the world to maintain traditional lifeways as ranching and agriculture. It is also among the few remaining places to retain traces of the pioneer era and the settling of the west, which may be found in historic ranch and homestead sites and historic communities. The western US also contains the largest portion of federal and tribal lands and resources, which include historic built environments, alongside ancient and recent archaeological remains (Campbell & Foor, 2004; Dixon, 2014).

Stewardship of built heritage resources is becoming more defined, and critically dependent upon systems of ownership and prescribed land use patterns, to ensure protection and adaptation to changes in context over time. However, these systems of ownership are especially under increasing political pressure and threat of changes in land use from one pattern to another, and transfer from public to private interest in the western US where the majority of public lands are located. Particularly in the western states, the debate over the potential transfer of public lands to state ownership, and subsequent further pathway to private ownership, may also be linked to overall increasing population, and ongoing debates over environmental management issues, particularly water rights and responsibility for public safety. As such, effective water conservation and management strategies are rapidly becoming partner considerations within the dynamics of greater heritage stewardship, particularly in the western US (Bryan, 2013, 2015; Janssen, 2009).

### 3.4 PROBLEM 4: SOCIAL CHALLENGES: HISTORICAL APATHY AND HISTORICAL EMPATHY

In the early 21<sup>st</sup> century, there has been a stagnant, if not decreasing trend of greater public interest in the historic built environment, often relegated to re-active rather than pro-active processes to local planning, or development undertakings. This trend overall reflects an alarming problem: a growing public sentiment of historic apathy, and ambivalence toward recognizing history, historic places, and historic built environments as a whole, along with waning public interest in sustaining the various forms of local built heritage that characterizes the environments of western states.

As human sensibilities, and emotions are also constantly challenged by the increasing unpredictability of a modern world, there is a common need to examine the places of our human heritage, and reconsider the role of built heritage in sustaining a sense of place, along with shaping human quality of life and well-being (Geslar, 2005; Sternberg, 2009). Consequently, to best confront the complex physical, as well as social and socio-political challenges to sustaining built heritage, multi-disciplinary approaches from anthropology and the heritage arts and sciences are most needed to present and best interpret contemporary data on built heritage for the scientific community, while engaging and inspiring the public at large, land use planners, and agencies representing local, regional, and national scales to further insure the seek paths guided by ingenuity, adaptive re-use and ethical and sustainable decision-making as relevant to the heritage of places. Moreover, the notion of historic apathy toward historic built environments may be best countered

with action, advocacy and education that collectively can foster an opposing sense of historic *empathy*, promoting a genuine, informed, and enduring connection to the people, places, and things of human history, and cultivated through a range of human emotions, and personal experiences (Brooks & Endacott, 2013; Colby, 2008).

#### 4 POTENTIAL SOLUTIONS: COOPERATION, COLLABORATION, AND THE DUTCH APPROACH

The Netherlands is among the global leaders in heritage and landscape stewardship, offering varieties of expertise, including traditions of effective integration of water resource management systems within greater landscape, and built heritage stewardship. Through centuries of comprehensive, and regionalized (i.e. localized) approaches the Dutch purposefully engage the archaeological-historical values of the landscape, and further present a holistic manner in which to view and respond to modern development challenges. The Netherlands also offers a core group of heritage scholars and professionals, who proficiently present the importance of integrated approaches to built heritage and landscape stewardship, by illustrating the value of aligning the fields of heritage education, policy and law, and applied arts and sciences, as part of a comprehensive, and contemporary model of sustainability and best practices (Bosma, 2010; Choenni, 2015; Kolen, 2005; Kolen et al 2015; van der Valk, 2010; Verburg, 2004a; 2004b).

Modern approaches to built heritage stewardship, and effectively sustaining built heritage forms in the context of the landscape requires increasingly greater interdisciplinary collaboration and support to meet the ever-changing dynamics of globalization, and general apathy toward the heritage of places. While the specific approach and guiding philosophies toward built heritage stewardship may vary across the globe, the academic disciplines most often involved in the study, care, and sustainability of built heritage resources typically include archaeology, anthropology, historic preservation, with an increasing host of specialized applied arts and sciences and innovative technological disciplines such as museum specialists, art historians, hydrologists, environmental historians, and cultural geographers (Colby, 2008; Roders & van Oers, 2011; Verburg, 2004a; 2004b).

However, the scope and scale of modern development is intensifying, and it is becoming more and more important to align and integrate the heritage disciplines to approach the study, and comprehensive care of heritage resources accordingly. This may be best addressed through an expanded system of best practices, across the heritage spectrum, though here with special emphasis upon the need to better connect the needs and potential of built heritage via improved communication, and the potential for dialogue and communication with the international heritage community to best inform issues and problems to sustaining built heritage at the local level.

In Europe, and the Netherlands in particular, built heritage stewardship considers resources at the national, provincial, and local scale. Barthel-Bouchier candidly links heritage stewardship to sustainability, acknowledging the innovative approaches toward cultural heritage and stewardship in the Netherlands, and including advancements in recent years. Barthel-Bouchier also illustrates the nation's lengthy history and relationship with water, and its traditional role in shaping the built environment, specifically noting the contributions of key non-profit *stichting* foundations and organizations such as MonumentWatch in shaping the modern system of greater heritage management in the Netherlands (Barthel-Bouchier, 2013:82).

The Stichting MonumentenWacht (Monument Watch) organization as a whole, presents a highly practical working model for sustaining built heritage resources, in western Europe as well as the western US. As characterized by Luijendijk, "MonumentenWacht offers the owners of monuments a very special and independent service" (2002:9). Further identifying, the services of the organization include routine inspections of monuments, or as in the case of American resources, historic places and sites. The Monument Watch model emphasizes routine inspections of monuments, or heritage sites, along with encouraging preventative maintenance of historic building materials. This approach is offered in a set of membership-based services, where owners, or other stewards of heritage monuments and sites receive expert guidance, referrals, and recommendations on how to best maintain and preserve the historic function and capabilities of the heritage example.

In summarizing modern stewardship approaches in the Netherlands, voluntary methods are increasingly important, "not only because regulations are believed to be crude tools for addressing the management of the land, but also because they save the costs of compensation often due from regulatory measures" (Janssen, 2009:38). Further, "in due course, provinces and municipalities within the National Landscapes have to encourage desirable action on the part of private landholders. This, however, is increasingly complex, since each of the major stakeholder groups – farmers, conservationists and tourists – holds different interpretations of landscape conservation" (Janssen, 2009:39). Combining the multiple rationalities and interdependencies of the stakeholders involved is therefore a complex process of social and institutional interaction.

Janssen is among a growing cadre of Dutch and international scholars observing that in theory, a promoted governance approach and administrative arrangements could support sustainable development; however, in practice drawbacks and challenges will occur (Cassar, 2009; van Assche, et al 2015). Within the European dimension, compounding reasons for this outcome include an absence of cohesive jurisdiction over agriculture, greater authority, and lack of clear criteria for socio-economic development (Janssen, 2009), and most importantly, addressing policy conflicts between the national government's deregulatory approach and effective protection of landscape heritage.

## 5 ANALYSIS AND CONCLUDING COMMENTS: A CASE FOR IMPROVED BUILT HERITAGE STEWARDSHIP SYSTEMS IN THE US

By examining integrated systems of stewardship applied in the Netherlands, I have argued that modern methods, and models in best practices in the 21<sup>st</sup> Century should include applied expertise and leadership of heritage professionals, inspired by models such as MonumentenWacht, in the practical management and routine maintenance of heritage resources. Within a foundation, or stichting management system, technical, social, economic, and neutral political platforms may readily combine to form the most effective forms of stewardship, through practical expertise and effective leadership. Consequently, a sustained social connection built upon personal connect and empathy for the history and heritage of our lives will remain a critically important, and necessary component to combine with applied heritage arts and sciences, and tailored governance systems, to form a model for modern heritage stewardship.

The American heritage system recently celebrated the 50<sup>th</sup> anniversary of the passing of one of the most important and guiding pieces of heritage legislation of the 20<sup>th</sup> century, the National Historic Preservation Act of 1966. While this guiding legal framework continues to provide the basic structure of heritage, and cultural resource management within the federal asset management system, it is

by nature of design, dated legislation, dated methodologies, and dated perspectives on how to best manage and advance the practical decision making regarding the future of built heritage resources within the American landscape (King, 2002; LaFever, 2012; Tarlock, 1997, 1999, 2002; Tilley, 2004; Wegener, 2017). With current and future generations in mind, the Western States in particular would greatly benefit from the advanced leadership and practical working models of heritage organizations such as MonumentenWacht, to develop similar systems of local expertise and stewardship. In addition, long term sustainability goals may also be more broadly supported by adopting land use and heritage education models in place in the Netherlands and throughout Europe, most notably inspired by directives outlined in the United Nations Sustainable Development Goals (SDGs). Supported by these comprehensive approaches, western states like Montana would most specifically and directly benefit from heritage investment and advancement at the local level, and expanded participation in common goals, including:

Goal 4: Quality Education that promotes lifelong learning opportunities for all, and considers sustainable development in the greater education matrix.

Goal 11: Sustainable Cities and Communities that design and implement land consumption and population growth controls to meet place-based considerations.

Goal 17: Partnerships for the Goals that connect communities, cultures, and nations to best address local and global concerns on the future of sustainable development.

Since heritage neither exists in a vacuum, nor is it practical to require institutionalized governance over all heritage and land use issues, a balance between sustainable built environment management and practical development must be achieved. To this end, effective modern heritage leadership must arguably include locally oriented, multi-disciplinary and integrated approaches, and recognize human connections to places over time. Following this investigation of working heritage site models, and approaches to built heritage stewardship in the Netherlands, examples revealed within the investigation indicate strong potential for the development of similarly integrated approaches to meeting challenges to heritage stewardship and sustainability in Montana and the American west. Particularly in the face of current impacts and future challenges to built heritage and the constantly changing landscape, this article seeks to highlight the increasing need for effective, and forward-thinking models to best integrate historic built environments in modern land use and sustainability planning.

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# Challenging Neglect and Indifference: The Case of Skopje

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## Abstract

*In 1963, Skopje suffered catastrophic earthquake that destroyed 75-80% of its built fund. The aftermath of the earthquake propelled unprecedented international solidarity. The process led by UN was high in ambition – to promote Skopje as an exemplary global city. The previously unknown, peripheral city became field of global cooperation and laboratory for testing latest urban and architectural paradigms. The process that in its highest intensity lasted less than 20 years, resulted with the most powerful segment of Skopje's recent architectural history. After the dissolution of Yugoslavia, Skopje entered long and highly uncertain process of "transition". Along with other challenges, linked to political, economic, social and cultural changes, this process launched dramatic and controversial spatial transformations. Already aged, to certain extent obsolete, systematically neglected, threatened with brutal alteration of their authentic appearance, many exemplary buildings of Skopje post-earthquake renewal could be considered "heritage in danger". This paper intends to demonstrate how something that usually firmly belongs in the realm of professional preservation could become an act of individual "architectural activism". By presenting several initiatives, we would like to show how one can act when the social and aesthetic values of the heritage are under attack. With a strong belief that the buildings are significant enough to be considered a heritage, we conducted "experimental preservation" - an extensive process of collecting archival material, research as a base for future valorization, series of public presentations, exhibitions and publications intended to initiate discussion within the profession itself as well to raise the public awareness about the values of Skopje's 20<sup>th</sup> Century Heritage.*

## Keywords

Preservation, values, 20<sup>th</sup> Century Heritage, documentation

## 1 INTRODUCTION

The City of Skopje, capital of the Republic of North Macedonia is an interesting architectural and urban case. Being positioned on an important historical trade routes, it has been part of various governances (Roman, Byzantine, Ottoman etc.), each leaving its specific imprint into the city tissue. In terms of historical presence, this presence speaks about historical continuity; in terms of architecture – about a valuable collection of various pieces, each carrying different ideas and architectural concepts. Among all the layers, the one belonging to the second half of the 20<sup>th</sup> century is the most superior one, both in terms of quantity and presence in the space, but also because its often exceptional architectural quality.

### 1.1 SKOPJE, THE CITY OF SOLIDARITY

One of the reasons for such a condition was the earthquake that struck Skopje on July 26<sup>th</sup>, 1963. The earthquake of catastrophic proportions demolished or damaged beyond repair approx. 70-80% of the total built fund, leaving the city literally reduced to rubble. Aware of the scope and the complexity of the new situation on one hand, and having in mind the local capacities on the other, the city as well

as the state authorities (Yugoslav at the time) asked for an international help. From 1964 on, Skopje reconstruction process was led by United Nations expert teams; the coordinator of the planning process was Ernest Weismann, chief executive of the UN's Housing and Town Planning Section, pre-war CIAM member and co-worker of Le Corbusier. The Polish urbanist Adolf Ciborowski was appointed by UN as project manager of the developing Master plan, joined by a team of local and international experts including Doxiadis Architects from Greece, Polservice from Poland etc.<sup>1</sup> In 1965, on an invited international competition jointly organized by the UN and the Yugoslav government, the Japanese architect Kenzo Tange won the majority of the prize for the reconstruction of the Skopje city center.<sup>2</sup>

Unprecedented international solidarity, manifested in many different forms<sup>3</sup> enabled the relatively short but highly intense process of city reconstruction.<sup>4</sup> The previously unknown, peripheral city suddenly became field of global cooperation and laboratory for testing novel urban and architectural paradigms. The trauma of the natural disaster became a trigger for a new, even more radical type of modernization, and Skopje became a global city - an environment in which some of the world's leading architects worked in parallel with authors from Macedonia and other parts of Yugoslavia, resulting in a valuable collection of architectural artefacts.



FIG. 1 Skopje master plan. 1966. Kenzō Tange (1913–2005). Competition model. Wood. Source: (Museum of the City of Skopje; photographer: Vase Amanito Petrowski)

The plans and visions for Skopje were never realized to their full extent, speaking quite clearly about the discrepancies between the utopian late-modern ambitions and the local conditions; however, they proved to have immense importance since they paved the way for the future urban and architectural development of Skopje. Numerous Macedonian and Yugoslav architects were up to the given task: Georgi Konstantinovski with his design for the student dormitory “Goce Delchev” and the City Archive, Marko Mushich with the design for the University campus, Boris Chipan with the building of the Macedonian Academy of Sciences and Arts (MANU), Janko Konstantinov with his high schools and the Telecommunications Center. This appropriation and adjustment of divergent late-Modern paradigms and their juxtaposition on a single, common ground become the main defining characteristic of the post-earthquake Skopje.

1 More information about the process of post-earthquake renewal of Skopje in Senior, Dereck. UN Development Programme. *Skopje Resurgent: The Story of a United Nations Special Fund Town Planning Project*. New York, 1970 and Tolic, Ines. *Dopo il terremoto, La politica della ricostruzione negli anni della Guerra Fredda a Skopje*. Parma: Diabasis, 2011

2 Ibid.

3 The news about the earthquake spread immediately and more than 80 countries worldwide gave their donations in many different forms – initially in the form of the most needed supplies: shelters, food, sanitary supplies, financial aid etc. Gradually, the international aid changed its character according to the changing needs of the city. Different countries (USA, Great Britain, Scandinavian countries, Poland and others) donated buildings as a symbol of solidarity, temporary or permanent in character, most of them still in use today.

4 In its highest intensity, the post-earthquake renewal lasted approx. 15 years and Skopje underwent through an intensive building process that changed both the appearance of the city and the quality of life.

## 1.2 SKOPJE, THE CITY OF POST-SOCIALIST TRANSITION

Since the 1990's, following the turbulent dissolution of socialist Yugoslavia, Skopje underwent yet another spatial transformation. The change in the political status (Skopje advanced from a republic to a national capital), became base for the future development of the city during the post-socialist period. Along with the challenges linked to the economic and social restructuring, this political change become catalyzer for dynamic and dramatic spatial transformation of this city.<sup>5</sup>

Having been captured in the post-socialist transition for nearly 30 years (a turbulent period of political changes, nationalist tensions, economic struggle and decline), Skopje found itself in a strange position, that can be best described as a time when the old dies/died and the new cannot be born. The city stepped back to a substantial level of deregulation;<sup>6</sup> the idea to develop the city for the public benefit was suppressed by the domination of the individual; the scale of interventions reduced dramatically<sup>7</sup>; the large construction companies fell apart together with their valuable archives of knowledge about the city and the buildings in it. Today, nearly 30 years from the beginning of the process, we can witness the changes and transformations and are able to understand how the social changes once again became the crucial instigator of the architectural (re)shaping of the city.

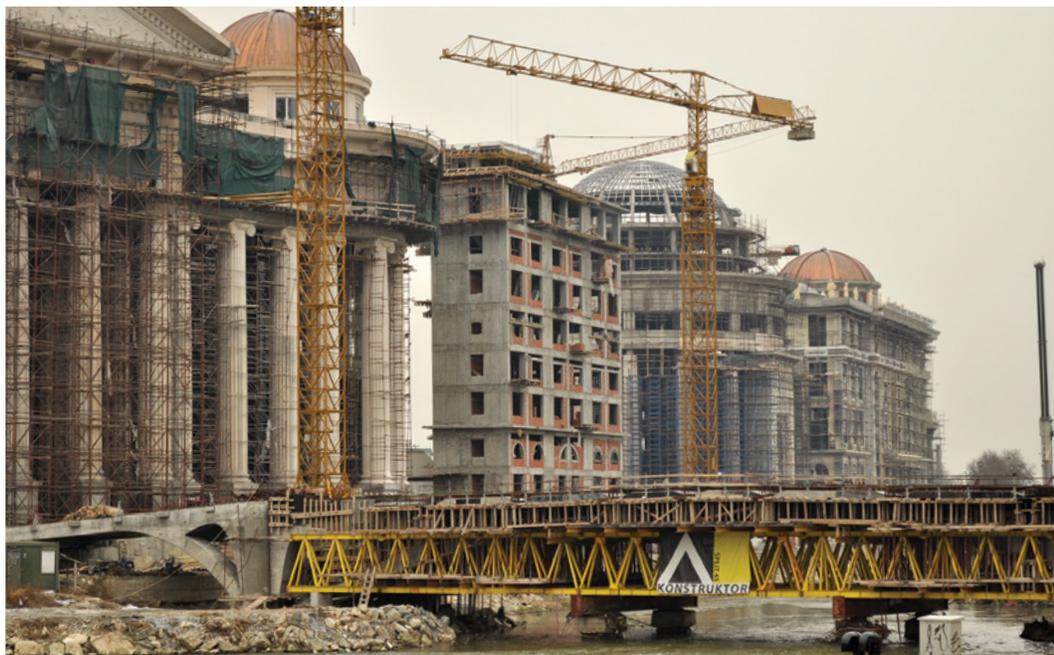


FIG. 2 Skopje city centre, project "Skopje 2014" in construction. Source: (authors archive)

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- 5 Not unlike many other cities from the region/Central and Eastern Europe (Belgrade, Zagreb, Sofia, Bratislava etc.), Skopje as well needed to respond to the new territorial, political and economic context and adjust to the new political role of a capital. The collapse of the socialist system led towards acceptance of the pluralist democracy and a model of market economy. Changes that were so sudden had disastrous consequences in many political, social and cultural segments; in the domain of the city and its planning they resulted with an entropy of the urban landscape.
- 6 Large part of what socialism one tried to erase (speculation with the land, lack of coordination, dominance of the private interest over the public) cruelly came back.
- 7 In the first decade after the dissolution of Yugoslavia the scale of the interventions dramatically decreased and the character changed. The state was no longer a powerful investor and the private capital was just emerging. Within this gap the public interest was nearly forgotten.

This changes in the political, economic and cultural context, on the one hand led towards general negligence of the heritage from the recent past, without any idea or attempt to evaluate its meaning; on the other hand, they led towards a process of dramatic remodeling – social, cultural and architectural re-traditionalization in the case of Skopje pushed to its limits. This project was government-led and obviously political in nature, with an idea to erase a certain “unfavorable” history and create a new, national capital. The change took place by inserting new eclectic, neoclassical buildings or with brutal disfigurement and alteration of the authentic appearance of the (originally) modernist buildings.

## 2 CHALLENGING NEGLECT AND INDIFFERENCE

Regardless the scope and importance of the Modern and late-Modern architectural layer for the city of Skopje, to this day this architecture is understudied, undervalued and underappreciated. Unlike the global architectural scene, which during the last 20-30 years has been intensively discussing about the meaning and the values of the 20<sup>th</sup> Century Architecture, in the case of Skopje (and the rest of the territory of Republic of North Macedonia as well), the question of the Modernist legacy was barely open. Mostly built within the specific, socialist context of the former Yugoslavia, these buildings suffer numerous causes that lead towards their accelerated degradation. Already aged, to certain extent obsolete, they are systematically neglected and left to decay.

Under such circumstances, when the buildings are under peril and the archives and knowledge about them are slowly disappearing, it was time to open the question: What can an individual do when a valuable architectural history has been threatened by neglect, or even worse, deliberately erased or altered beyond recognition? When the institutions that were supposed to safeguard this heritage are at least silent or at times were even in favor of this violent erasure of personal and collective history?

The aim of this paper is to illustrate how something that usually firmly belongs within the realm of professional preservation could become an act of “individual activism”, led by a small group of scholars and supported with the huge enthusiasm, knowledge, skills and personal involvement of more than dozen young colleagues, former students of architecture.

### 2.1 THE METHODOLOGY

With a strong belief that these (to this date unlisted) buildings are significant enough to be considered a heritage and following the basic steps within the process of preserving a site or a building, a process of “experimental preservation”<sup>8</sup> was initiated, as a critical method of examining

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“The words *experimental* and *preservation* have, until very recently, been kept at a safe distance from each other. Experiment suggests the dangerous possibility of failure, something to avoid when working on valuable historical and cultural objects. To experiment directly on these objects is a very risky endeavor because one can damage the qualities that make them so valuable...”. However, the experiment in this case is understood as “a necessary method for advancing knowledge about those very things (...) and need for protecting their future”.

“However precarious, experimental preservation has come to play an important role in contemporary culture. Experimental preservationists gently frustrate the illusory belief by choosing and introducing objects into heritage that are institutionally unrecognizable, that appear too imaginary, too fantastic, too subjective to appear as real heritage. But it is precisely by insisting on the illusory nature of heritage objects that experimental preservationists can legitimately open the question of the reality of heritage, as an open-ended process of social negotiation.”

architecture, a process that went beyond the institutionalized modes of practice. Lacking the opportunity to work directly on the buildings, we tried to describe them in data (text, drawings, photos etc.), in order to preserve at least certain amount of knowledge about them.

The extensive research process was conducted in several phases. The initial step was to identify and map the valuable modernist architecture on the territory of Skopje. This wide (and still uncompleted) phase started from the most obvious and spread to less known or recognized buildings.

The nominated buildings attracted our attention due to various inherent characteristics: the conceptual strength of the architectural design, the originality of form, their aesthetics, the specific materiality, the level of craftsmanship, their authorship etc.

The following step was to locate the historical material. The extensive research has shown that the available material (sketches, blueprints, plans, historical photographs, slides, relevant documents etc.) has been scattered among different institutions and individuals.<sup>9</sup> In most cases they exist physically but there hasn't been any previous attempt for systemic digitization, research and/or public presentation.

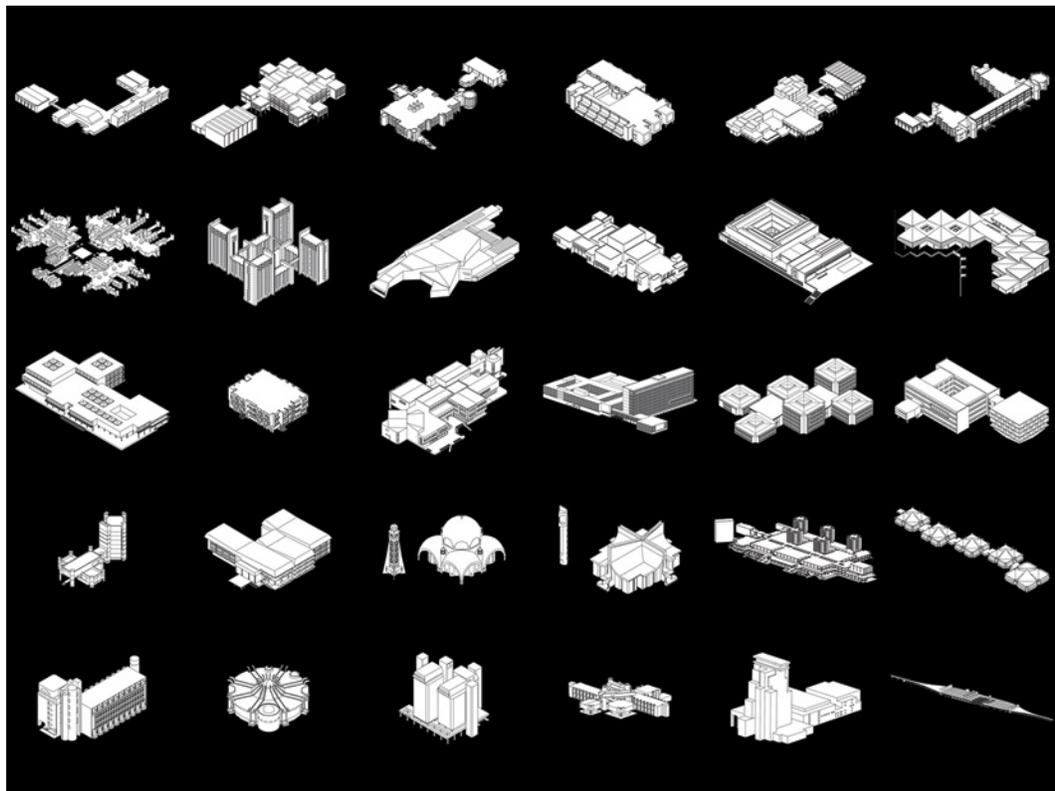


FIG. 3 The architecture of the post-earthquake renewal of Skopje, selection of buildings. Source: (authors archive)

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Jorge Otero-Pailos, Erik Langdalen Thordis Arrhenius, ed. *Experimental Preservation*. Lars Muller Publishers, Zurich: 2016.

9

In this phase many different archives were consulted: The National Archive, the Archive of the City of Skopje, the remaining archives of the large construction companies, various public institutions (in possession of the original designs of their buildings), private archives of the authors and their families etc.

In the next phase, large segment of the material was digitized and/or redrawn. The abundance of collected archival material (complemented with photos of the present condition of the buildings) would serve as an information base for future analyses and research. We believed it was of utmost importance first to build substantial knowledge base and then to pose and insist upon the question of values, in order to open, on a solid basis, a discussion about the future of these buildings.

Following the analytical processing of the collected material, for selected number of buildings (to this day over 30), models in 1:50 scale has been constructed. In the context of the documentary character of this segment of the work, the process of model making was a research and a feat for itself. Through the process of (re)construction of the buildings in reduced scale, in different material and technique, and by using the method of analytical abstraction, the architectural models proved to be far closer to the original authors intent than the current state of the building, burdened with all the transformations which came as a consequence of their existence. Another aspect was also important – the models were used as a representational and educational tool that brought the material much closer to the understanding of the general audience.

## 2.2 DISSEMINATION

One visible outcome of the long and extensive research phase were series of architectural exhibitions that took place within the premises of the local cultural institutions in Skopje<sup>10</sup> as well as outside the borders of the country<sup>11</sup>. These public events targeted wide audience: architects and professionals, students of Architecture, institutions, citizens. The exhibitions presented original drawings, facsimiles of drawings and important documents, photographs, together with models of selected buildings or building phases. Whenever possible, the exhibition was followed by an extensive, thematic publication. This effort was done due to our strong belief that the greater public visibility could lead towards greater professional and public acceptance and appreciation (both local and international). By far the most prestigious and internationally relevant was the substantial attention that Skopje and the process of its post-earthquake renewal received within the exhibition “Toward a Concrete Utopia: Architecture in Yugoslavia 1948-1980” which took place in MoMA, New York, from July 2018 until January 2019.<sup>12</sup>

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10 “The Architecture of the post-earthquake renewal of Skopje” – Museum of the City of Skopje, May, 2016; “Biography of an Architectural work: Telecommunications Center in Skopje, architect Janko Konstantinov” – Museum of the City of Skopje, November, 2016; “Skopje Verticals” – Museum of the City of Skopje, May, 2018; “Endangered Species” – Museum of Natural Sciences, December, 2018

11 “Findings” – Macedonian Pavilion on the 14<sup>th</sup> International Architecture Exhibition, La Biennale di Venezia 2014; “Skopje, Architektur im Mazedonischen Kontext” in Ringturm Gallery, Vienna, October, 2017; “Toward a Concrete Utopia – Architecture in Yugoslavia 1948-1980” in the Museum of Modern Art, New York, July, 2018; “The Future as a Project – Doxiadis in Skopje” in Benaki Museum, Athens, December, 2018

12 In the aftermath of the exhibition, several original drawings of Macedonian authors were acquired by MoMA to be part of the museum collection, probably the most important international appreciation these authors could get.



FIG. 4 Description: Photo from the exhibition "Future as a Project: Doxiadis in Skopje". Benaki Museum, Athens, December, 2018. Source: (Vase Amanito Petrovski)

### 3 CONCLUSION

The protection of Cultural Heritage is rarely a matter of individuals; on the contrary, it is deeply rooted within the institutions themselves. Individual efforts can hardly ever protect a building. However, they can lead towards creating knowledge and better understanding. Posing the question about the 20<sup>th</sup> century architecture in Skopje (although much belated compared to other countries), about its present condition, its values and its endangered future was an important initial step.

The past efforts proved to be a significant contribution to the field. Locally, they helped in raising (at times even creating) public awareness; at the same time, they revealed a huge gap of missing knowledge in the field, both in terms of historical research and in terms of protection. Such insight only further accentuates the necessity for future activities, for persistent and more systematic work.

On a local level, one possible advancement could be the initiative for establishing a permanent research capacity – an architecture center that would serve as a base for collecting, archiving, study and promotion of the 20<sup>th</sup> century architectural legacy<sup>13</sup>. Whereas this initiative is more of a long-term goal which demands substantial funding, another way to continue the research, to systemize the material and contribute to the research community is to make the knowledge publicly accessible by creating a digital database. In this way, the material presently scattered between various institutions and individuals could become accessible for local and international researchers.

Besides working locally, the efforts summed up in this paper raised a significant international interest for Skopje and its 20<sup>th</sup> century architectural legacy. Whereas the appreciation coming from abroad (from acknowledged institutions or individuals) validates and helps strengthening the local efforts, not less important are the networks that have been created and the possibility for collaborative work. The extensive research and the created database serve as a solid ground for

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The fact that at present in Skopje (and on the wider territory of North Macedonia) there is no specific institution dedicated solely to architecture (Architectural Centre, Architectural Archive or Architectural Museum) goes in line with this idea.

various joint projects both in the field of architectural history as well as in protection of Modern heritage. One recent example is the application for the Getty Keeping It Modern program (KIM) for a valuable post-earthquake building – the Museum of Contemporary Art in Skopje.<sup>14</sup>

The recent global interest in the postwar modernism in general, and the process of its re-evaluation are much in favor of Skopje's late-modern architecture. Putting light upon these buildings might be crucial for (re)investigating the role that this heritage can play in addressing different challenges to the contemporary city, for their spatial and symbolic re-definition, protection from devastation and sustainable use within the contemporary context.

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# ROUNDTABLES

The Roundtables mainly pursue strategic goals, and aim to identify current and future fields of action for heritage research and policies. They will discuss ongoing research themes and recently achieved results from distinct angles and stakeholders' perspective. By formulating and discussing hypotheses, the roundtables aim to explore new interdisciplinary alliances to further develop strategies on a national, European and international level.



# Roundtable I: Water and Heritage

**Kaiyi Zhu, Cheh-Shyh Ting, Szu-Ling Lin, Carola Hein, Tino Mager**

**Date: 27 November 2019, 11.00**

**Moderators: Prof. Carola Hein, Dr. Tino Mager (TU Delft, The Netherlands)**

## **Catalysts:**

Prof. Maaïke Berkel (Radboud University, The Netherlands)  
Giulio Boccaletti, PhD (The Nature Conservancy, UK)  
Prof. Cheh-Shyh Ting (National Pingtung University, Taiwan)  
Dr. Paul Hudson (Leiden University, The Netherlands)  
Dr. Szu-Ling Lin (National Pingtung University, Taiwan)  
Dr. Sabine Luning (Leiden University, The Netherlands)

## **Rapporteur:**

Kaiyi Zhu (TU Delft, The Netherlands)

## INTRODUCTION

The participants were scholars from different continents and with diverse academic and cultural backgrounds, including in areas such as hydraulic engineering, political studies, philosophy, economics, geography, architecture and urban planning, anthropology, and sociology. Since each participant had a different understanding of water and water heritage, the discussions and debates started by asking “what do we mean by water”? Taking the example of dams, participants mentioned the difficulty of striking a balance between protecting the natural water environment and preserving the cultural heritage of human beings. In this respect, it is essential to investigate the cosmology of water, which is regarded as one of the five primary elements.

The subsequent roundtable focused on the following three questions with the participants expressing opinions from multiple perspectives.

## HOW HAS WATER SHAPED SPACE, SOCIETY, AND CULTURE AROUND THE GLOBE?

Water is of fundamental importance to the existence of human beings and a key element of many heritage sites and landscapes in the world. The presence and location of water has always determined patterns of human occupation and the movement and settlement of populations. Patterns of settlement and development in communities, regions, and countries have been shaped by water bodies and watercourses. Water cultural heritage can be of historical, aesthetic, social, and/or technological significance.

For example, a lot of outstanding industrial cultural heritage was constructed in Taiwan during the Japanese colonial period (1895 -945). One example is the Erfeng irrigation canal system (EICS), which was used for the irrigation of sugarcane farms in the Pingtung Plain area of southern Taiwan. Taito

Co. Ltd., a Japanese sugarcane manufacture, hired Shinpei Torri, a Japanese hydraulic engineer, to construct an underground storage reservoir below the riverbed in the upstream section of the Linbian River in 1923. This outstanding irrigation system captured the interflow water from the dry riverbed during dry seasons and used it to irrigate the sugarcane and rice paddy fields at Wanlong Farm in the Pingtung Plain. This underground storage gallery for interflow water is a prime example of the sustainable ecological engineering works constructed during the Japanese colonial period. In 2008, therefore, the EICS was registered as a “cultural landscape” in Pingtung, Taiwan. The Erfeng irrigation system shaped the way in which water was supplied by the underground storage gallery below the riverbed. The Erfeng irrigation system shaped sugarcane cultivation and the sugar industry in Taiwan, and became a significant symbol of Taiwan society and culture internationally.

## WHAT GEOGRAPHICAL SPACES, METHODOLOGICAL APPROACHES, THEMES, AND CASE STUDIES OUGHT TO BE ADDED TO EXISTING RESEARCH?

A lot of water-related cultural heritage structures are in continuous use and face structural and equipment renewal issues. Renew and repair is consequently an important issue for maintaining the significance of water-related cultural heritage. However, when implementing renew and repair of that cultural heritage it is important to maintain a balance of authenticity between the original and new structures and facilities. This delicate balancing act will depend on good communication between the cultural conservator and the engineer.

For example, the EICS was constructed during the Japanese colonial period. In 2008, it was registered as a Cultural Landscape under the Cultural Heritage Preservation Act because it qualified as industrial heritage with scientific value. In light of the goals of preserving international cultural heritage and undertaking restoration work as per the Cultural Heritage Preservation Act of Taiwan, the 2017 EICS underground weir restoration was discussed, as well as the feasibility of its functional operation, including the preservation of water cultural heritage. To safeguard the heritage value of the EICS, the proposal to expand the EICS’s cultural landscape and register it as a historic structure was recorded and verified in accordance with the procedures stipulated by the Cultural Heritage Preservation Act. All demolition and alteration project planning units should first understand the EICS’s cultural heritage value, and the key goals of preservation and maintenance. All construction methods should be coordinated with the Pingtung County Cultural Heritage Protection Institute to ensure that the proposed methods meet international cultural heritage preservation standards.

Another important issue is to develop new functions for water cultural heritage structures that no longer perform their original functions. For example, a Taiwanese hydraulic engineering team tried to develop green micro-hydropower energy using obsolete channels in this ancient irrigation waterway where the water flow velocity and hydraulic gradient is sufficient for hydropower generation. The power could be supplied to local houses. This program has also developed Green Hydraulic Power learning material for the local primary school. This real-life case has been successfully demonstrated to the next generation.

## HOW CAN WATER HERITAGE RESEARCH HELP SHAPE THE EMERGENCE OF MORE SUSTAINABLE SOCIETIES?

The experimental reuse of waterways or irrigation systems that are part of industrial cultural heritage can be regarded as the link between culture and nature, creating value by uniting conservation of water cultural heritage and environmental sustainability.

Several of the UN Habitat's 17 Sustainable Development Goals (SDGs) can only be achieved through preservation of water cultural heritage. For example, the frequently quoted goal of SDG 11—"make cities and human settlements inclusive, safe, resilient and sustainable"—proposes a close relationship between cultural heritage and the living environment, while the benefits of heritage preservation, namely the promotion of tourism and economic activities, are implicit in SDG 8: "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all". In addition, the heritage preservation work at the Erfeng Irrigation Canal System (EICS) in Taiwan meets SDG 6: "ensure availability and sustainable management of water and sanitation for all." The preservation of water cultural heritage in the future will play an instrumental role in realizing the 2030 Sustainable Development Goals.

## CONCLUSION

Maintaining and using water as a resource has become a major focus of human activity. Systems of land reclamation, water supply, irrigation, subsidence, sewage, and hydro water help build, define, and sustain society. Water management has long been a strategic, social, and political consideration for communities. The discussion also referred to land use policy in different countries and water ownership problems when creating water-related landscapes in rural and urban areas. Given the time limitation, some crucial aspects are still missing from this discussion. In closing, Prof. Carola Hein pointed out that owing to the diversity of political geography, it is necessary to seek one overarching methodology to analyze cases from different perspectives. In addition, issues relating to migration and gender need to be elaborated in the further discussion.



# Roundtable II: Heritage and Environment

**Maurits Ertsen**

**Date: 28 November 2019, 13.30**

**Moderator: Dr. Maurits Ertsen (TU Delft, The Netherlands)**

## **Catalysts:**

Abeer Abu-Read (AURAK, UAE)

Sandra Fatorić (TU Delft, The Netherlands)

Paloma Guzman (Norwegian Institute for Cultural Heritage Research (NIKU), Norway)

Nadia Pintossi (TUEindhoven The Netherlands)

Christopher Polglase (Gray & Pape, USA)

Caitlin Southwick (SiC Amsterdam, The Netherlands)

## THEMES

- Need for longer-term change. Although detecting change on a long-term basis is easy, it is more difficult on a short-term basis.
- Need for behavioral change in society. Although society as such doesn't act, individuals, who constitute society, do.
- Need to foster change on a large and a small scale. If you want to enable change in a system you need to look at the infrastructure that defines relations among the parts.

## QUESTIONS

### **How can we discuss heritage at the level of society?**

CRISTOPHER: what is society? It is an almost meaningless term, so instead he talked about culture and community (anthropological perspective). When talking about how society behaves we have normative and non-normative behavior; it is non-normative behavior that drives change. The questions to ask are "How should we deal with normative behavior and non-normative behavior and how do they impact intangible heritage and material culture?" Heritage as a driver of cultural change is addressed by different disciplines—different "hats"—and therefore different scales, times, systems, and interpretations. For example, what is "Western society"? France vs Germany: different scales (national, regional, local), at different times, different cultures. What is meaningful from different perspectives (e.g. European, non-European, etc.).

## How do we explain stories about climate change?

How do we connect long-term sustainability with small, short-term catalysts of change which are closer and more relatable for people, and concern things that people value? Same thing goes for heritage: every time people encounter a heritage asset they develop new values and short-term needs which in turn affect its (re)use. In the future, tangible heritage will bear the signs of these short-term changes. For the first time, climate is changing how humanity takes decisions on tangible heritage, and that is because of the short-term impact (it's faster than before), whereas in the past humanity had longer adaptation phases.

NADIA: There are active vs re-active approaches to change. What is the relevance of heritage for individuals when talking about climate change? How do we activate the role of heritage in sustainable development? Can we be better 'sellers' to other fields? There is a time lag between scientific results and implementation in practices (see yesterday's panel discussion). There is a time lag between needed intervention and funding allocation (example of Belgium). Sometimes heritage is so powerful that people either want to keep it or destroy it (example in Croatia).

PALOMA: We are thinking of societal patterns that are not sustainable; maybe we don't focus enough on the great power that individuals have as catalysts of change, instead we focus on materials. We can change perspectives on how heritage contributes to the process of change. Resistance to change is another very important aspect to take into consideration, we need to take responsibility for processes of change, otherwise every time we address these issues everything seems like an attack and a threat. In daily practice it is important to consider this when we frame the cultural/heritage values in our society. We will inevitably fail in something, but when we are not afraid to fail, we also can acknowledge our power to redirect actions.

## DISCUSSION

- What is man-made and what is natural; when do you decide that something has changed (while it's happening it's difficult to be sure), we can just make projections (hiding the struggle that produces that change); conflict between normative and non-normative behaviors
- How can identifying the tipping point make a difference when behavior moves from normative to non-normative? It moves the conversation beyond definitions, e.g. what is heritage, what is climate change? Is it something good, is it something bad?
- One of the ways to achieve sustainability is not via independent expertise, but via transferable knowledge to individual behavior; this could help us to work together in finding solutions. Are these skills transferable?
- Climate in certain contexts is considered part of culture; are we talking about adaptive reuse of heritage or are we talking about climate change?
- How do we guide change toward sustainability? Sustainability is a Western/academic concept. Instead, how do you help an individual to develop a sense of empathy, ownership, etc. People's values and intangible heritage instigate change; how has traditional knowledge dealt with climate change in the past?
- Species can be considered as cultural heritage, e.g. buffalos and wild horses in US, rather than natural. But while we protect horses as culture, we kill birds, we protect industries (e.g. port cities) and we destroy temples. Contradictions! What if we were to change the scale of observation? e.g. quantum physics—then none of this would matter. All heritage is contested heritage.





# Roundtable III: Climate Change Adaptation of Cultural Heritage

**Gül Aktürk, Sandra Fatorić**

**Date: 26 November 2019, 11.00**

**Moderator: Sandra Fatorić (TU Delft, The Netherlands)**

## **Catalysts:**

Ana Carolina Brugnera (RWTH Aachen University, Germany)  
Erik de Maaker (Leiden University, The Netherlands)  
Barbara Lubelli (TU Delft, The Netherlands)  
Linda Shetabi (University of Glasgow, UK)  
Deniz Ikiz Kaya (Eindhoven University of Technology, The Netherlands)

## **Rapporteur:**

Gül Aktürk (TU Delft, The Netherlands)

## SUMMARY

A roundtable on Climate Change Adaptation of Cultural Heritage brought together scholars with diverse expertise, such as architecture, anthropology, cultural heritage, and policy, to identify current knowledge needs and gaps related to: (A) methodological approaches to assessing heritage values and significance for the climate-adaptation decision-making process; (B) climate change impacts, risks, and vulnerability of heritage; (C) management and preservation preparedness for climate change impacts; and (D) climate adaptation interventions for diverse cultural heritage types.

Catalysts highlighted the importance of using participatory methods and qualitative research methods to involve various stakeholders, including indigenous people and scholars, in assessing cultural heritage values and significance, as well as in climate change adaptation planning. Local and indigenous knowledge is needed for a more inclusive and bottom-up approach in assessing values and integrating them with climate change adaptation. Despite the growing body of research on how to preserve both tangible and intangible cultural heritage (e.g. traditional practices, oral histories) there is a lack of studies and policy developments focusing on how to protect heritage fabric and associated values and significance from the impacts of climate change. Catalysts also stressed the need for new methods for monitoring material decay and heritage loss. Industrial-technological and digital solutions were perceived as emerging approaches for documenting the loss of cultural heritage (e.g. it can preserve memories using audio-visual technology).

When asked about the climate change impacts, risks, and vulnerability, catalysts commonly stressed that climate-induced changes have become a serious challenge for management, particularly of impacts from sea level rise, coastal erosion, and fluvial flooding. Furthermore, aside from the direct impacts of climate change, such as physical degradation and damage, there are also indirect impacts such as loss of jobs, culture, and history. Catalysts stressed that there is a growing need for an increase in funding to assess and reduce climate change impacts.

Next, catalysts noted that existing heritage management is not prepared for changing climate conditions and associated impacts on the various forms of heritage. Interestingly, climate-associated relocation and migration were perceived as a particular challenge for historic preservation of tangible heritage. As some cultural heritage assets may be lost, power factors may influence decisions regarding which and whose heritage could be lost. Multidisciplinary methods, knowledge exchange, and financial resources were found to be crucial for increasing resilience and adaptation of heritage, especially in developing countries. Catalysts also remarked that transdisciplinary work between diverse disciplines can provide more integrated solutions by bringing more human-centered approaches to environmental science.

Lastly, climate adaptation interventions and post-disaster recovery plans focusing on developing transparent and robust models were considered crucial for advancing cultural heritage and climate adaptation discipline. Also mentioned were challenges related to the feasibility of climate adaptation strategies for various heritage types, and the mismatch with current preservation guidelines. As such, many catalysts noted that climate adaptation planning for cultural heritage has been reactive rather than proactive in most developed and developing countries. Catalysts concluded that climate-friendly interventions such as adaptive reuse of historic buildings can contribute to reducing greenhouse gas emissions (i.e. climate change mitigation).





# Roundtable IV: Heritage, Digitalization and Sustainability

**Nan Bai, Ana Pereira Roders, Jean Paul Corten**

**Date: 28 November 2019, 11.00**

**Moderators: Ana Pereira Roders (TU Delft, The Netherlands),  
Jean Paul Corten (RCE, The Netherlands)**

## **Catalysts:**

Ana Carolina Brugnera (RWTH Aachen University, Germany)

Jean Paul Corten (RCE, The Netherlands)

Prof. Frank Lohrberg (RWTH Aachen University, Germany)

Dr. Tino Mager (TU Delft, The Netherlands)

Koosje Spitz (UNESCO, The Netherlands)

## **Rapporteur:**

Nan Bai (TU Delft, The Netherlands)

## INTRODUCTION

Around 20 people participated in the roundtable session: experts from around the world with an interdisciplinary background in history, GIS, urban planning and design, architectural design, remote sensing, HUL, culture landscape, conservation, and water resources engineering. The roundtable started with participants introducing themselves and describing their background and experience in heritage and digitalization.

## INDIVIDUAL SHORT PRESENTATION

- How do we make sure heritage contributes to SDG?
- How do we integrate digitalization in heritage?

Help reaching the goal. Make use of GIS for younger generation. Technology can help researchers working together. Social media. Boost the sense of place to better manage heritage. Participation in Belt and Road initiative. Satellite high-resolution data to be, acquired, processed and shared. VR digital reconstruction rather than physical. Proper decision-making process, safeguarded by digitalization.

Thorough discussion of technology. Building a bridge, mixed style of research. AI application but always with the critical mindset of analogical pursuit. Documentation and digitalization for conservation. Developmental path of modern technology. Idea of digitalization of stories.

## RESEARCH: WHAT IS THE STATE-OF-ART? HOW TO MOVE FORWARD?

Challenge of data management over time: different format, vulnerable, hard to get access as technology keeps evolving?

- Time-consuming, differs from one institution to another. Sharing information difficult. Harder to achieve because of confidentiality (land-use plan).
- Historical map research in Brazil before Olympic Games in layers in GIS; however, public access to the research results difficult because of the platform. Easy software, workshops for community, licensing of tools, common society, even for children.
- When project is finished, the implementation is crucial.
- Everyone giving different input to GIS, not integrated enough, even conflicting with one other.
- Labels of different databases are hard to link. Losing reliability. Protocol of working file!
- Easy user interface and communication.
- Transparency and confidentiality issues make international cooperation difficult.
- Monument located in sensitive region would be problematical.
- Suitable resolution is an important consideration.
- Open-source like Q-GIS, probably better than ArchGIS. Address linking data layers.

## PRACTICE: WHAT IS THE STATE-OF-PRACTICE? HOW TO MOVE FORWARD?

Conservation challenge. By creating new data, you create new problems. How to conserve the data, how to preserve it for future generations, how to store the data?

- Data management center in university, but outside?
- Paying for data storage. Institutions have a problem with copyright issue. Ownership.
- Sharable data leads to problems.
- Share public property outcome. World heritage to be shared with public.
- Open-access data repository, ownership, extra work!
- Coding: collaborative platform.
  
- Archival issue, part public, part non-public.
- What is the boundary between public and private?
- Buddha Towers: share the data with the institute. Free satellite data. Digital laboratory. Weightless machine to measure the tower. Sharing the research outcome.
- How far to go when there is a border?
- Depending on the property owner it might be difficult to share the data.

## RESEARCH AND PRACTICE: HOW TO IMPROVE COOPERATION TO ACHIEVE COMMON GOALS

Practice appropriate to academia. A framework to address everything. Same coding system, structured. National/international tools appropriate to the different sectors.

- Digitalization making the world more complicated?
- Complexity helps you understand more, as an adult understands the world in a more complex way than a child.  
Information overload may be good. Combining talent and challenges.
- How to behave as researcher/practitioner. Sharing the process/everything rather than only sharing the outcome. Puzzles feeding the need for one other.
  
- How to define the framework?
- Help improve even if we disagree with one other.
- Borderless: everything should be open, with the exception of personal data.
  
- Necessity of stakeholders. Not only society and heritage, but also engineering companies. Getting technologists involved in preservation.
  
- Finding the common ground for stakeholders, dynamic.
- Powerful institute? Participatory activities?
  
- Who is the problem owner? Probably all.
- Everyone's interest. No one's interest.
- Analyze the stakeholders and indicators.

## CONCLUSION

Later, topics including digitalization research, practice, and the combination of research and practice were discussed. Issues of accessibility, continuity, and confidentiality were raised.

It was agreed during the roundtable that we need a better integrated framework to link research, practice, and different stakeholders, one that could be easily accessed by the researchers, public and future generations, and that we should not be afraid of complexity and the problems caused by digitalization but see it as a good opportunity.



# Roundtable V: Disaster, Rebuilding, Memorials and Heritage Narratives Related to Natural Disasters

**John Hanna, Lucija Ažman Momirski, Sabina Tanović**

**Date: 28 November 2019, 13.30**

**Moderators: Dr. Lucija Ažman Momirski (University of Ljubljana, Slovenia),  
Dr. Sabina Tanović (TU Delft, The Netherlands)**

## **Catalysts:**

Thomi Kordonouri (University of Patras, Greece)

Akane Mizushima (National Institute of Technology, Akashi College, Japan)

Bruna Nunes (TU Delft, The Netherlands)

## **PhD Rapporteur:**

John Hanna (TU Delft, The Netherlands)

## INTRODUCTION

The Roundtable on Disaster, Rebuilding, Memorials, and Heritage Narratives Related to Natural Disasters raised urgent questions about the relationship between disasters, heritage, and design and planning, with reference to case studies from, among others, Greece, China, Macedonia, Portugal, Japan, Bosnia, Finland, Italy, and Spain. The participants, who included a number of students from the TUDelft History Thesis master's course, highlighted and asked questions about the nature of post-disaster architectural interventions. The discussion on the causes and consequences of natural disasters and of disasters caused by political and military violence focused on the following topics:

## MEMORY, COMMEMORATION, COLLECTIVE AND PRIVATE IDENTITY

### **Memorials**

Depending on the context, private and official remembrance projects dealing with traumatic events can take many different forms, although architectural monuments and memorials are the most common materialization. In addition to their obvious purpose of defining a place for remembrance, contemporary memorial spaces are also created to aid the psychological recovery of the survivors and the reconstruction of communities affected by natural or man-made disasters.

In fact, the construction of architectural monuments to facilitate mourning and bereavement processes is advocated as a strategy for rebuilding societies. The processes of creating these

projects, however, are commonly geared toward the final goal (the memorial) without taking account of the fact that the process itself is of equal, and at times even greater importance. It is here that potential dangers, such as contradictory narratives and misinterpretations of historical facts, can be addressed. If the process of creating remembrance projects is interdisciplinary and inclusive, there is a greater chance that the final outcome will actually be meaningful to users. Architects need to recognize this and to re-examine their role in such highly sensitive projects and, possibly, act as coordinators and activists rather than simply providing the architectural solutions at the very end of memorial-making processes.

### **Rebuilding buildings and cities**

Since both personal and collective identity are formed in relation to the concept of “place memory”, attending to this is crucial in processes of recovery. Architects mainly focus on the physical restoration of memory (the pre-disaster situation) rather than the intangible (immaterial) aspects of identity (interdisciplinary field of research). Practice shows that it is not uncommon for architects to neglect essential aspects and values contained in specific aspects of recovery processes, such as the use of local materials and building techniques, the historical and documentary value of these techniques and, as mentioned in the case of memorial-making processes, the involvement of survivors and people affected by atrocities.

The roundtable discussions underlined the fact that there is a mismatch between theory and practice and that it is therefore important to develop an approach to rebuilding that is tailored to the specificities of a man-made or natural disaster. A number of participants argued for an architectural approach that puts the provision of (temporary) housing and basic services first, allowing heritage issues to be addressed in later stages of post-disaster restoration. This is important so that communities are supported in concrete, social, and psychological ways. While this was suggested as an imperative, roundtable participants also stressed that in certain contexts the community may regard its collective heritage as essential to its identity and thus a priority for reconstruction efforts.

## **PARTICIPATION AND REBUILDING**

### **1:1 Model (not always based on historical facts)**

A 1:1 model (a very realistic replica of a building, construction techniques [as in case of Paanukirkko church, Finland], materials and craftsmanship) of buildings or districts or entire cities can be constructed with or without the participation of the public. Professional decisions about the construction of replicas often do not involve the participation and opinions of ordinary people. Although the list of actors (architects/builders, laypeople) keen to influence and participate in the reconstruction decision-making process is long and varied, such buildings and areas are often rebuilt without any knowledge of how things were done in the past. Yet the main reason for building a 1:1 model is to meet the needs and requirements of the public, a practice that can be traced back to the 19<sup>th</sup> century.

## Simulation of space

Simulation is a process that recreates past architecture and space in more or less accurate representations of former buildings or areas. The main idea is to present the simulated article as genuine, thus illustrating examples of structural, environmental, and apparently analogous representations. People generally decide that they want to regain a place of community lost during a disaster. In the participatory decision-making process, they are faced with two options: either a simulation is built as a 1:1 model, or the lost structure is rebuilt very quickly and in a contemporary way (with contemporary materials, contemporary room layouts, etc.). In the example discussed (a church on Terceira Island, Azores, Portugal), people decided that they would rather have a simulation of the lost space, which enables them to continue their previous spatial behaviors, than a traditional/local reconstruction of the space.

## Innovation

Natural and man-made disasters destroy human lives, and they also destroy and reduce the chances of survival. The state of immediacy they create requires a reinvention of existence in places where disasters occur. They are therefore the starting point for innovation: to survive in the midst of carnage, people must invent new forms of life, production, construction, etc. Torn down urban structures, originally built to stand for centuries in designated places, give cities the opportunity to design and implement new strategies and often new large-scale urban interventions. Houses are rebuilt using different technologies to make them safer and more resistant to future events. In the presented case, people felt the need not only to restore normal life but also to “use” the disaster to make the buildings safer and more durable (as in the case of the ‘Gaiola Pombalina’, a three-dimensional wooden structure embedded in the masonry to ensure the structural safety of houses in Lisbon after the 1755 earthquake).

## DISASTER SITE BECOMES AN EDUCATIONAL TOOL

With regard to the theme of remembrance and commemoration, the didactic aspect of the sites and installations concerned can be examined in various ways. Here too, architects can play an important role, as we have seen in the case of the 2011 earthquake off the Pacific coast of Tōhoku. With the current availability of digital technology, disasters can now be mapped and explained, their effects preserved and used for educational and informative purposes. Immersive technologies, combined with the historical value of the site and architectural interventions, have enormous potential for processes of reconstruction, preservation, and storytelling after disasters. For survivors and other affected groups, participation in educational projects is beneficial because it can provide a framework for embedding their experiences for a meaningful purpose.



# Roundtable VI: Exploring Heritage as Culture: Disciplines, Theories, Method

**Ilaria Rosetti, Silvia Naldini, Erik de Maaker**

**Date: 28 November 2019, 11.00**

**Moderators: Erik de Maaker (Leiden University, The Netherlands),  
Silvia Naldini (TU Delft, The Netherlands)**

## **Catalysts:**

Prof. Pieter ter Keurs (Leiden University, The Netherlands)

Prof. Carola Hein (TU Delft, The Netherlands)

André van Deursen (TU Delft, The Netherlands)

## **Rapporteur:**

Ilaria Rosetti (University of Antwerp, Belgium)

## INTRODUCTION

Cultural heritage can be a key element in achieving sustainable development, UNESCO (2016) has argued. Heritage, and processes of heritage creation, are then assumed to be conducive to the development of sustainable and inclusive livelihoods and societies. But what constitutes tangible or intangible heritage for some people, may not be experienced as such by others. Understanding of "heritage" also changes over time: what at one time was deemed valuable may lose that appeal and significance a few decades later. Likewise, as cultural appreciation changes, new forms of heritage emerge. Academics, operating from different disciplinary perspectives, play an important role in exploring, identifying, and acknowledging what is deemed "heritage".

The aim of this roundtable was to explore how disciplinary perspectives can contribute to heritage creation and to sustainability. To what extent is there a need for an interdisciplinary or transdisciplinary approach to defining heritage? What kind of cooperative engagements might this require? And what new synergies might this produce? Roundtable moderators and catalysts were scholars in architecture and urban design as well as in the humanities and social sciences.

The roundtable was organized around three main questions, which were answered by all the participants:

- 1 How does your disciplinary perspective shape your approach to sustainable heritage, and align with or deviate from "institutionalized" understandings of sustainable heritage?
- 2 In your own research practice, what propels projects of 'heritage creation'? Why do people want to create heritage, or expect certain objects or practices to be acknowledged as heritage?
- 3 What is the relevance of transdisciplinary approaches for you? In what respects are these lacking, and what might they contribute?

The roundtable was attended by about 30 conference participants and triggered a lively discussion.

## QUESTIONS AND DISCUSSION

### *Q: How do disciplinary perspectives shape our approach to sustainable heritage?*

Thanks to the fact that the speakers belonged to different disciplines, such as anthropology, materials studies, and architecture, the question was answered from different perspectives, which was very interesting and stimulating. It showed that what we perceive as sustainable and what we value as heritage can vary according to one's point of view. More confronting was the realization that those values are related to places and cultural contexts, people's habits and time, and that they are the object of continuous negotiation.

- Pieter - Anthropological point of view (museum) → return of artifacts in order to foster their impact at a local level, their relevance for the (descendants of) people from whom they were 'collected'.
- Silvia - Materials point of view → sustainability should not only be related to saving energy (e.g. insulation). Think of circularity and vernacular architecture.
- Andre - architectural point of view from a heritage perspective, multidisciplinary approach → heritage as well as different stakeholders need to be integrated from the beginning to foster sustainability of practices and of heritage values (preaching comes from research and experience comes from practice). We should use heritage values to bring people together.
- Carola - values are dynamic, how do we construct preferences? Maybe what we don't value much today will be the heritage of tomorrow. We need a critical approach to how heritage is constructed, and the same applies to sustainability, the definition of which is mostly based on environmental conditions, although evolving social customs are also fundamental. Now we talk about "green by design" which is different from saying that green is our only choice.
- Erik - anthropological point of view → different people have different perspectives on the same thing, e.g. in a village where there is a proposal to make part of the land a protected area, locals can have different reactions to the idea, as they relate/interact differently with the land.

### *Discussion:*

Social sustainability is sometimes neglected in places of memory. The process of giving meanings to places can be complex, discordant, and conflicting. In some cases, places need to be appropriated by local people in order to avoid becoming empty icons.

- There are no problems in life, only challenges.
- What we design/strategize today will be the heritage of tomorrow.
- Heritage is a process, it changes, evolves, in a continuous negotiation of values.

### *Q: What propels "heritage creation"?*

Being aware of diversity allows us to see the complexity of customs and traditions, change our idea of what heritage is and how to present it, transmit it and "offer" it as such. Choices should be based on cultural mapping (mapping resources). In this process, it is crucial to develop cultural strategies, values assessment and significance assessment frameworks in an inclusive way, in order to take account of all the different stakeholders' perspectives.

- Silvia – does heritage creation lead to a permanent status and does it guarantee protection? Example of an abandoned monument, which loses its status and is demolished.
- Carola - who are the people in charge of defining heritage?
- Andre - Hi studio doesn't create heritage, but only makes buildings. Hi studio documents landscape elements to preserve the knowledge and only then do they proceed with new constructions.

### *Discussion:*

- Amar - Minimalization of stakeholders is a co-optation process.
- Making choices should be based on cultural mapping (mapping resources) on cultural strategy
- values assessment, significance assessment (significance frameworks).
- A participant from the Reinwardt Academie in Amsterdam talked about a case in Malawi where the government pushed for a traditional healing dance for spirit possession to be included in the Intangible Heritage list, but the people who perform this dance didn't want this recognition
- Concept of LOCAL and GLOBAL [see A Sustainist Lexicon Michiel Schwarz] case from Indonesia, where listing is guided by willingness to join the global discourse on heritage (via listing post-colonial heritage), but maybe local values are invested elsewhere. The government wants to listen to locals, but is also dealing with these global trends.

### *Q: What is the importance of transdisciplinary approaches?*

We speak different languages and yet we should work as a community to achieve a more global assessment of values. Therefore, we should start looking for common ground among disciplines, to enable common understanding and cooperation, because interdisciplinary work is needed. People-centered approaches have been mentioned many times this week. In aiming to foster complementary collaborations, the strengths and limitations of different approaches should be better understood, as well as the potential, and the role of stakeholders, (e.g. NGOs' potential to foster education).

- Andre - we speak different "languages" and should look for common ground to address different points of view.
- The importance of education (multigenerational, inclusive) --> in Montana the Native American culture (genocide, etc.) is mandatory in school.
- We train according to disciplines at university, should we change that? --> what if we could train based on systems? I would say there should be more multidisciplinary in our education programs at university
- NGOs play different roles in fostering interdisciplinarity (the University of Cyprus works with NGOs; every year they select a number of students and train them in an interdisciplinary way via NGOs in collaboration with the Ministry of Culture).
- Need to work more intensively with other disciplines (e.g. change management)
- People are ever-present, they are central: people-centered approaches were addressed many times during the conference.
- In existing legislation it is difficult to perceive the different emotional values that people attribute to heritage.
- How do we acknowledge the inherent biases of different disciplines so that in future people will understand who took decisions in heritage creation?

## CONCLUSIONS

Heritage creation and sustainability are strongly connected. The acknowledged material and immaterial heritage should be protected, and its future use is a means of making it sustainable. The meaning of heritage and the values attributed to it are related to places and cultural contexts, people's customs and time, and they are the object of continuous negotiation. It is important to share the tasks and responsibilities of creating heritage with different stakeholders, to include a variety of perspectives and the concept of diversity in the final assessment.



# Roundtable VII: Time and Unlisted Heritage

**Hedieh Arfa, Uta Pottgiesser**

**Date: 28 November 2019, 11.00**

**Moderator: Uta Pottgiesser (TU Delft, The Netherlands)**

## **Catalysts:**

Prof. Wessel de Jonge (TU Delft, The Netherlands)  
Susan Macdonald (Getty Conservation Institute, USA)  
Kurt C. Reinhardt (Stiftung Zeche Zollverein, Germany)  
Prof. Ana Tostoes (Tecnico/Docomomo International, Portugal)

## **Rapporteur:**

Hedieh Arfa (TU Delft, The Netherlands)

## INTRODUCTION

The roundtable wanted to look at specific developments in the built heritage of the last 100 years in order to compare the recent past with heritage from former periods. Its aim was to identify aspects and particularities that need further attention. The participants were asked to discuss how public awareness and responsibility can be increased as part of building culture and stakeholder involvement.

The 18 participants were experts with different disciplinary backgrounds ranging from preservation and conservation, urban planning, architecture, and design, to philosophy, from the following countries: Brazil, Dubai, Germany, Iran, Japan, the Netherlands, Portugal, Singapore, Turkey, UK, and USA. Four catalysts were invited to present their case study contributions, which were further explored in the roundtable format based on questions that the moderator had prepared:

- 1 What are the peculiarities of modern heritage compared with older heritage?
- 2 Should modern heritage be listed and if so, which criteria should be applied in listing it?
- 3 With more than 1,000 inscriptions, the World Heritage List is perceived as a success. Since the 1970s the definition of cultural heritage has been extended. What is the role of modern heritage in the current discussion about World Heritage?
- 4 How could more everyday heritage profit from listed (World) heritage?

## CONTRIBUTIONS AND DISCUSSIONS

The contributions of the catalysts focused on modern built heritage from different professional perspectives, and different geographic and political contexts.

Ana Tostoes believes that the differences between older heritage and modern heritage are not so great except when we talk about materiality (concrete, steel, plastic) and the influence of mass production. There is a need for very specific, scientific research concerning how to preserve constructions, materials, and technologies. The conceptual approach to both older and modern heritage is similar. So there is not such a big difference. She argued that modern heritage should be listed as well, because it's very important to increase public awareness of the value of modern buildings and sites.

Wessel de Jonge believes that there are some differences between modern heritage and older heritage. He explained his ideas using the example of the Van Nelle Factory as one of the few buildings on the World Heritage List that also has an economic life. Because it is privately owned and has a specific use, it is not a tourist destination. He then referred to larger groups of buildings such as social housing estates, which are accorded value due to their enormous volume and social relevance. But dealing with them is very delicate and challenging. Educating the community has a significant role to play in their maintenance and reuse. Wessel added that as an architect and teacher he tries to teach architecture students to learn to make decisions: "We very much deal with what to keep and with value assessment. I try to teach my students to also look at those things that can go. Because the things that can go without destroying the essential values of the building can open up opportunities for new developments". However, as a heritage conservationist, it is not easy to follow that path. Wessel also thinks that it is very important for businesses to be involved with heritage buildings, since it is not possible—not affordable—to turn all such buildings into museums. The pragmatic approach to the economic and social values of the building should be considered.

Susan Macdonald stated that the approach to preservation of modern heritage may be the same, but the solutions are different. She explained that one of the things that listing does is to focus attention on places that are unappreciated. In order to identify which places are important enough to preserve, it is important to have a framework of common 20<sup>th</sup>-century-themes. Such a framework would enable governments and organizations to start from a certain point of knowledge about modern heritage.

Kurt C. Reinhardt used the example of the World Heritage Site Zollverein in the Ruhr area in Germany to illustrate goal 11 of the Sustainable Development Goals (sustainable cities and communities). He explained the mindset behind the project: the masterplan of this industrial site applies the idea of reframing, reusing, rethinking, recycling, re-evaluating, restructuring, and reducing. The extensive reuse of the former coalmine site has transformed it from an area without tourists into the second most visited tourist destination in Germany. Like Wessel, he believes that heritage buildings can only be preserved by reusing them, otherwise it would not be economically feasible to preserve them.

During the roundtable the discussion highlighted the following points:

- Different countries have different definitions of modern heritage and the Modern Movement, and some still have to define the criteria. Instead of looking only at the international level it is important to define a methodology that can be adapted to different countries according to their cultures.
- Non-appreciation and demolition of modern buildings are common concerns in many countries.
- Adaptive Reuse can be very challenging and contradictory when deciding between novelty and integrity value in the intervention in the modern buildings.
- The justification for the importance of a site being listed was discussed. It was explained that different places have different legislation, and it is very important to consider that. That is why it is important to look at heritage impact assessments, which are not used in all countries.

- The use of social media and other tools is very important in raising general appreciation and awareness of modern heritage. Places that are not listed are usually left to themselves.
- Research and rethinking of modern heritage will reveal the other aspects of modernism. A machine for living: the Modern Movement's treatment of human beings as elements of machinery.
- Migration and mobility change the preservation of modern heritage because the different nationalities in a neighborhood may not value a building or an area in the same way.

## CONCLUSIONS

Peculiarities of modern heritage compared with older heritage are: typology, functionality, materiality, context, etc. A summary of those aspects has been developed within the thematic framework of ICOMOS 20C (Developing a Historic Thematic Framework to Assess the Significance of Twentieth-Century Cultural Heritage 2011) and will be updated and published soon.

Modern heritage should be listed. The conceptual approach may be the same as for older heritage, but the impact of listing should also be explored. It should help to raise awareness and recognition among ordinary people and experts in a bottom-up approach. Context is very important and building and context should always be considered as a whole.

Modern heritage nominated for World Heritage listing often becomes iconic and self-focused instead of serving as a role model for more everyday modern heritage.



# Roundtable VIII: Changing Religious Built Heritage

**Joana Goncalvez, Nicholas Clarke, Alexander de Ridder**

**Date: 27 November 2019, 11.00**

**Moderators: Nicholas Clarke, Alexander de Ridder (TU Delft, The Netherlands)**

## **Catalysts:**

Miktha Alkadi (TU Delft, The Netherlands)  
Dr. Maria Jesus Gonzalez Diaz (Madrid, Spain)  
Dr. Liza Kam (University of Göttingen, Germany)

## **Rapporteur:**

Joana Goncalvez (TU Delft, The Netherlands)

## INTRODUCTION

Religious buildings form a distinct and unique heritage category.

Religious built heritage by its very nature contains high levels of community values.

As communities change, the values associated with the built fabric of their places of worship also change. The generally slow evolution of religious practice, ritual, and symbolism linked to a broad community of worshippers, means that historically, religious buildings have been more resilient in the face of change than many other building typologies. However, this resilience has recently been challenged by the unprecedentedly rapid transformation of society, especially in Europe, leading to a dilemma as to the continued use and conservation of these often significant buildings.

Religious buildings also present high aesthetic and spatial qualities that transcend their immediate communities of practice. These may be appreciated by larger communities for whom these often visually dominant buildings serve as landmarks, defining urban or rural identity. As these buildings age, they bear witness to the passage of time and become important and relatively constant markers in the historic narrative. Even when the religious practice for which they were built has long disappeared, their sacred nature still inspires reflection and contemplation.

The 'Changing Religious Built Heritage' title reflects the constant evolution of our religious built heritages. The roundtable aimed to explore the challenges of societal appropriation through changing use and changing religious practice, and the (architectural, technical, and economic) challenges of developing viable interventions to sustainably maintain valorized religious heritage.

To this end, catalysts were presented with set quotations to explore in roundtable format after the presentation of their case study contributions:

- 1 What is the difference between various European countries today regarding vacancy alteration of religious buildings?
- 2 Should all religious buildings be formally protected? Which criteria should be applied for listing a religious building?
- 3 What are the common significant issues for the adaptive reuse of vacant religious buildings?
- 4 In the Netherlands, the problem of vacant churches is in the suburbs, not in the historical centers. What are the specific constraints concerning the redevelopment of these churches?

## CONTRIBUTIONS AND DISCUSSIONS

The contributions focused on built heritage associated with different religions (Shinto, Christianity, and Judaism), different geographic contexts (from Spain to Taiwan) and different scales (from landmark buildings to building details).

Dr Gonzalez Diaz presented the challenges faced in the conservation of religious buildings in Spain, which includes no fewer than 68 Cathedrals (18 of which are listed as World Heritage), in relation to the social, environmental, economic, and cultural dimensions of sustainability, specifically related to the increasing pressure of tourism, which can hamper the use of the buildings for their original purpose.

Dr Kam's analysis of the Shinto shrines built in Taiwan during Japanese colonization between 1895 and 1945 showed how these shrines, often acknowledged as representing the former colonizers, today serve the public in various forms and often for various religious groupings. Dr Kam questioned the often-held assumption that eradicating colonial constructions equals decolonization, asking in turn if subsuming these through adaptive reuse is not the ultimate expression of power.

The potential of technologies in additive manufacturing development—specifically 3D scanning and printing—was the focus of the contribution of Mr. Alkadi. His case-study research presentation showed that the application of additive manufacturing in the preservation of architectural heritage offers new opportunities for exploration, experimentation, and interpretations of future heritage practice, by involving a wider set of stakeholders in a broader context.

The roundtable discussion highlighted the following points:

- Change in religious buildings lags behind the evolution of society. However this historically gradual process is now speeding up because of growing secularization among other things.
- The historical, spiritual, and aesthetic meanings and values change over time, including through daily appropriation. However, these meanings can be molded strategically and built form is often subjugated to their modulation or eradication, which can be utilized (subversively) as a political tool.
- Change can happen through use or changes in our attribution of meaning. As such, the question is whether such change affects the perception of the authenticity of this built heritage.
- Transformation can happen in the material and physical appearance of the building, but also in its character and identity. Tangible and intangible values have an important role in the transformation of religious buildings.

- Maintenance and operation costs raise questions about the economic viability of this heritage when facing the dilemma of reuse or destruction, but the ownership of religious buildings—private, public, or institutional—affects the possibilities for maintenance and transformation.
- Functional, social, historical, and artistic values can be identified in religious built heritage in both religious and non-religious communities. This is why it is essential to put the vacancy of churches and other religious buildings on the public agenda.
- Maintenance and operational costs raise questions about the economic viability of this heritage when facing the dilemma of reuse or destruction.
- Tourism can be a danger as much an opportunity for religious buildings.
- New additive technologies, such as 3D printing and laser scanning, can make a great contribution to collection of data and replication of attributes to safeguard this heritage, but these methods raise questions about the relationship between material and craft authenticity and meaning.
- A question raised: is economics value the new faith?

## CONCLUSIONS

The Changing Religious Built Heritage roundtable concluded that the expression “religious buildings” may not define the essence of this built heritage in contemporary society, since its value and recognition for society goes beyond this label. Our tools and techniques for understanding, recording, and intervening in religious buildings are also constantly evolving, providing new perspectives on conservation. Because of the potential wide scope of values associated with this important built legacy, a clear case-specific hierarchy of values is an essential ingredient for prioritizing decisions about changing religious built heritage.

Mechanisms should be established to ensure democratic participation in negotiation and decision-making processes related to religious built heritage. Listing has a key role to play in ensuring the maintenance of values. However, listing is generally a static tool. A dynamic assessment of values based on contemporary communities of practice, use, and association (right-holders, stakeholders, and interested and affected parties) is key for maintenance of values in Changing Religious Built Heritage.



# WORKSHOPS

The workshops aim to discuss the transfer of academic knowledge into practice and to explore the needs of heritage practitioners in their daily work. In bringing academics, institutions, and practitioners together, the workshops aim to inform participants about the current development of methodologies, tools, modules, and policies and to contrast them with practical daily challenges and needs, and their impact on heritage conservation. It is hoped that the workshops will increase the implementation of new support tools and practices in professional practice.

# Workshop I: Heritage Impact Assessment (HIA)

**Chairs: Mara de Groot, Ana Pereira Roders**

In 2000 ICOMOS signaled a significant increase in the number of potential threats to World Heritage Sites, due mainly to the explosive growth in large-scale construction and infrastructure works. Until then, heritage had been only marginally protected from development projects by Environmental Impact Assessments (EIA), which were mostly carried out by soil engineers. It was against this background that the Heritage Impact Assessment (HIA) was developed. HIA is a tool for predicting both positive and negative impacts of a policy or infrastructural development and it also provides advice on how to enhance the positive effects and to avoid, limit, or compensate the negative effects for the heritage resources.

The HIA was born out of a conservation discourse (“a culture of loss”), focusing on the protection of static monuments and sites and their intrinsic value. During the past two decades a new paradigm or discourse of heritage planning (“a culture of profit”), which sees heritage values as dynamic and argues that utility is the most important justification for heritage, has become more and more mainstream in heritage management. HIAs could be used as a tool for achieving a balance between heritage protection and spatial development rather than simply attempting to protect heritage from all spatial development. HIAs consider the potential negative implications of an intervention early on in the process, allowing any potential positive impacts on the heritage to be enhanced as much as possible.

Besides being open to change and in principle pro-development, HIAs also work toward another global development goal. The HIA methodology requires multi-stakeholder participation and gives people a say about what they consider important to maintain. Even though the assessment requires finding a balance between sometimes conflicting interests, if the assessment has been properly conducted this means representation of all. HIA therefore benefits inclusiveness and the universal right to cultural heritage.

# Workshop II: Rising damp in buildings: a digital tool support for diagnosis and decision-making

**Chair: Barbara Lubelli**

Rising damp from groundwater is a recurrent hazard for buildings and its relevance is expected to increase in the future due to climate change. A scientifically based approach to both diagnosis and intervention is therefore necessary. The international project EMERISDA has developed an interactive digital tool that supports the user in interpreting the results of simple measurements for diagnosing the presence of rising damp. Moreover, it provides insight into the feasibility and risks of existing methods against rising damp and thereby assists the user in the selection of the most suitable intervention in the specific situation. The tool provides an approach that makes it possible to consider different aspects in a decision process, thereby making it easier to reach a shared decision.



# Workshop III: Monument Diagnosis and Conservation System (MDCS): An interactive Support Tool

**Chairs: Silvia Naldini, Wido Quist**

MDCS is an interactive platform for the inventorying and evaluation of damage to heritage buildings (<https://mdcs.monumentenkenis.nl/>). Its aim is to help practitioners identify types of materials and types of damage during visual inspections. Based on the damage types found, hypotheses about possible causes are suggested. Once these have been checked, a diagnosis can be made, and a conservation strategy planned. The system was developed for practicing conservation specialists, architects, and engineers. Its use can be extended to laymen and private owners wanting to monitor their building's status. This workshop included interaction and discussion and aimed to improve the platform based on practitioners' feedback.



# Workshop IV: Historic Concrete and Conservation Approaches

**Chairs: Wido Quist, Gabriel Pardo Redondo**

Conservation of historic concrete is becoming more and more a general practice. The perception of concrete as a potentially valuable material in historic buildings is changing, and the importance of concrete in the course of architectural history is being addressed. Guidelines on how to assess, repair, and maintain concrete buildings and structures have been developed over the past decades and we have now arrived at the point of establishing future ambitions in practice and research. The recognition of historic concrete, the interpretation of damage processes, as well as procedures for damage and risk assessment and monitoring over time, together with repair and intervention, are still balanced between a pure engineering approach and an extreme conservationist approach.

During this workshop several aspects of historic concrete were addressed and the components of an integrated conservation approach were identified, all centered around the Aula and Physics buildings at TUDelft. The workshop began with a presentation, followed by discussion and a site visit.



# Workshop V: Landscape Biography

**Chairs: Karin Stadhouders, Edwin Raap**

A landscape biography tells the layered life story of a landscape: how it has developed in the course of continuous interaction between humans and nature. It comprises an in-depth exploration of the genesis of a landscape over time, involving both physical and immaterial dimensions and integrating knowledge from a variety of disciplines. The concept was developed by, among others, Jan Kolen, now Dean of the Faculty of Archaeology and Professor in Landscape Archaeology and Cultural Heritage. From an academic viewpoint, the landscape biography may be regarded as an answer to reductionism and the growing gap between objectivist and constructivist approaches in landscape research. Furthermore, the landscape biography responds to the societal need to better integrate knowledge of landscape and heritage with the practice of planning and design, and to allow more scope for civic participation in local and regional planning policy.

Since the 1990s the concept has been further developed in various NWO projects and European research programs in the realm of heritage, landscape, planning, and design studies. As to current practice, in the Netherlands the landscape biography is now increasingly employed as a multidisciplinary and participative approach for vision development at a local and regional level. In the coming years all Dutch municipalities will be working on integrated local visions for their physical environment, in compliance with the new Environmental Law. The landscape biography offers opportunities to combine a multidimensional and interdisciplinary approach with bottom-up civic participation. However, there is also a danger of the original concept losing its depth and being reduced to a mere policy tool.

The workshop started with a concise introduction to the theory of landscape biography, illustrated by examples of its application in both policy and academic practice. Participants then analyzed exemplary cases in subgroups, in order to define distinctive characteristics and to formulate possible principles for the future development of these landscapes.

# Workshop VI: From Living Labs to Community of Practice

**Chairs: Goncalo Canto Moniz, Américo Mateus**

Urban regeneration processes are usually run by municipalities and government institutions far removed from the needs of citizens and stakeholders and from their knowledge and experience. Today, interventions in public space regarded as a democratic and inclusive territory provide an opportunity to engage communities in the co-creation of solutions, empowering their role in decisions affecting the city.

A major goal of the URBiNAT project, a consortium of 28 partners based in seven European cities (Porto, Nantes, Sofia, Brussels, Hoje-Taastrup, Siena, and Nova Gorica) is to promote social cohesion through the activation of Living Labs and the engagement of Community of Practices (COPs). A COP is a group of people who share a concern (or a set of problems); it seeks to enhance their knowledge, understanding, and practices through ongoing interaction. The purpose of URBiNAT Living Labs is to bring laboratory experimentation to real life environments through a Participatory Design Approach.

Our hope is that this will bring enriched insights, enhanced product and service usability and usefulness, as well as increased understanding of new and unexpected user group patterns. A prerequisite in Living Lab activities is that they be located in the real-world context of URBiNAT's social housing neighborhoods, built in the post-war period (1950-70s). The Living Lab ecosystem is built on features of openness, multiculturalism and multidisciplinary and as such it conveys diversity and facilitates the realization of breakthrough ideas, concepts, and scenarios. This process will result in adoptable innovative Nature-Based Solutions in co-developed Healthy Corridors, which are paths that will connect the public spaces in social housing neighborhoods with the aim of promoting their integration into the urban structure.

This workshop presented the methodology developed by URBiNAT whereby citizens and stakeholders activate the Community of Practice that will co-create the solutions for an inclusive urban regeneration.



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