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Architectural Education for the Design of Affordable Housing in the Global South

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Dwelling with the Other Half: Architectural Education for the Design of Affordable Housing in the Global South.

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ABSTRACT This essay reviews critical design pedagogies developed recently to explore the complexities of designing affordable housing in the global South. The essay examines in particular the pedagogical approach and the student work produced for the Global Housing design studios, offered by the Faculty of Architecture and the Built Environment at the TU Delft (The Netherlands). The essay discusses the extent to which TU Delft's Global Housing studios contributed to build up an alternative approach to the methodological protocols inherited from the 'techno-social' moment that dominated architectural education in the post-war period. The essay concludes that the Global Housing studios' combination of critical accounts of vernacular social and spatial patterns of inhabitation with disciplinary methods and positions inspired by cross-cultural practices plays a key role in the student's projective methodology, avoiding the pitfalls of paternalist 'social models' of design education.

KEYWORDS Affordable Housing, Architectural Education, Global Urban South, Vernacular, Cross-cultural Practices

In 1890, recalling an old saying, the Danish-American journalist Jacob A. Riis wrote that 'one half of the world does not know how the other half lives.'[1] With his *How the Other Half Lives,* Riis attempted to shed some light on the invisible lives of the urban poor living in the bustling New York of the late nineteenth-century. In this seminal book, Riis asserts that the 'old ignorance' in which the upper half lived was challenged 'when the discomfort and crowding below were so great, and the consequent upheavals so violent, that [holding the lower half in their place and keeping their own seat] was no longer an easy thing to do.'[2]

More than seven decades after Riis's book, and with two devastating World Wars in between, Charles Abrams's *Man's Struggle for Shelter* would follow up on the steps of *How the Other Half Lives,* also attempting to expose dwelling practices that remain invisible to the eyes of the privileged minority. In this case, however, the 'other half' was not the urban poor living in the cities of the industrialized world, but the ambiguous geography described then as 'the less developed nations.'[3] Abrams' book would play a key role in highlighting the importance of education to solve the housing problems affecting the developing world.[4]

In his book, Abrams emphasized the lack of critical mass to address the challenges of a world urbanizing at a fast pace. The need for international experience was urgent, he claimed. However, Abrams wrote, 'seventeen years after World War II there was not a single comprehensive university course in the problems of international urbanization, housing, or international urban land economics.'[5] This sort of training was required, according to Abrams, to expand the pool of visiting experts on the one hand, but more importantly to create an extensive number of qualified nationals within the developing countries themselves, individuals that he called 'inperts'.

Abrams recommendation was clear. He argued that investing in the education of these 'inperts' should be part and parcel of policies to tackle the housing shortage in the developing world. However, with the economic crisis of the 1970s and the swift rise of liberal economic policies in the 1980s, the focus on housing as part of the social contract between a government and its population almost disappeared. In sub-Saharan Africa, for example, the situation in the 1990s was appalling. Writing in 1994, the British housing expert Graham Tipple noted that to cope with the housing shortage in sub-Saharan Africa an overwhelming effort was needed. To solve the problem, more than ten dwellings per year per thousand population should be built for decades.[6] 'This is', Tipple concluded, 'a considerable challenge requiring significant proportions of the [African] continent's resources.'[7]

Today, more than five decades after the publication of Abrams's book, the geopolitics of development aid, which frequently included affordable housing, changed significantly. The massive housing backlog and the problem of

capacity building in the developing world remains, though.[8] While the circulation of knowledge and experts is now much easier, most of the world's developing nations have a manifest shortage of design expertise in general, and housing 'inperts' in particular.[9]

This state of affairs has stimulated the emergence of design education programmes focused on housing issues in the global urban south. Most of these programmes, however, are not organized by educational institutions situated in the regions where the problem is located. Instead, they come from elite institutions based in wealthy countries of the northern hemisphere. These elite institutions often establish partnerships and collaboration protocols with local organizations, attempting to negotiate and reconcile their blatant social, economic, and cultural differences.

Cross-Cultural Pedagogical Experiences

In the post-colonial period, the interest in issues related with affordable housing in the developing world entered slowly in the research and educational programmes of elite institutions in the global north. The Department of Development and Tropical Studies of the Architectural Association, whose first course opened in September 1954, is a case in point. For many years, students coming from developing nations, especially countries that belonged to the British Commonwealth, represented the majority of the students in the AA Tropical Department (as it was known). In 1972, the Department created an 'Extension Service', whose goal was, according to Patrick Wakely, to 'run short project-based courses in universities and professional training establishments in the Third World.'[10] While the most popular course taught by the Department's Extension Service was 'Climate and the Design of Buildings', it also included a six-week course on 'Housing in Urban Development'.[11]

The AA Tropical Department's interest in knowledge transfer and capacity building in the developing world was shared by other elite institutions dedicated to research and education, such as the Minimum Cost Housing Group (MCHG) of Montreal's McGill University School of Architecture. Established in the early 1970s, MCHG research interests was mainly focused on housing studies, participating in international cooperation projects with the support of Canadian and International aid agencies. MCHG collaborated

with local experts in many of their action-research projects, most of which conducted in developing countries. The post-occupancy study of the Aranya township project, developed with the B. V. Doshi's Vastu-Shilpa Foundation in India was one of their most visible research outputs, which would became well known with the publication in the mid-1980s of the first volume of the series *How the Other Half Builds*, a title noticeably inspired by Riis's book.[12]

In the introduction to the first volume of *How the Other Half Builds*, dedicated to the theme 'Space', Witold Rybczynski, then the director of the Centre for Minimum Cost Housing (as the research centre was called then) emphasized that dealing with the design and provision of 'basic housing' was all but simple. Rybczynski asserted that current day 'standards' offered little help in making sense of the complexity of designing housing for the urban poor. Actually, he argued, 'they reflect a view of optimal solutions that is not only culturally inappropriate but also inadequate.'[13] The importance of engaging in cross-cultural knowledge exchange was further highlighted in his plea for the development of a new set of standards that should be more focused in accommodating local practices than attempting to reorganise them. Rybczynski stressed that architects and planners should be able to develop standards that 'reflect the (sometimes harsh) reality of the urban poor, and they should respond to their special needs, not to an idealised set of criteria.'[14]

Fast forward to the first decade of the twenty-first century. The discussion on rethinking design and planning standards that accommodate the vernacular social and spatial practices in fast urbanising cities of the global south reappears in the research and teaching portfolio of many elite schools of architecture and planning. One of the most visible actors in this process is the Department of Architecture of the Swiss Federal Institute of Technology in Zurich (ETH-Zurich). Under the auspices of an official agreement on 'Capacity Building and Research Partnership' made by the Swiss Federal Council and the Federal Democratic Republic of Ethiopia, the ETH-Zurich collaborated with the Ethiopian Engineering Capacity Building Program to create the Ethiopian Institute of Architecture, Building Construction and City Development (EiABC), which was founded in 2009.[15]

The research and educational activities developed by ETH-Zurich in collaboration with EiABC illustrate the new approach to the knowledge transfer in design education emerging in the first decade of the twentieth-first century. Among the several outputs that resulted from this collaboration, *Cities of Change: Addis Ababa,* an edited book published in 2009 with essays and student work from an urban laboratory led by Marc Angélil and Dirk Hebel deserves a special mention.[16] In their description of the 'Urban Laboratory – Addis Ababa', Angélil and Hebel highlight the importance of cross-cultural approaches and transdisciplinary research. They assign to the design research studio a vital role to achieve this goal, for it is 'understood as a platform for the mining of knowledge, its synthesis, and its production through design.'[17] The pedagogical approach developed by Angélil and his team in the Urban Laboratory – Addis Ababa would eventually serve as framework for other instalments of his Master of Advanced Studies (MAS) at the ETH-Zurich, focused on investigations on phenomena related with social and spatial developments of large metropolitan regions worldwide.[18]

The work produced by the students enrolled in ETH-Zurich's MAS in Urban Design is often provocative and speculative. It is deliberately not driven by a problem-solving approach. While the social, political and economic context is highly regarded as a key factor for the design research studios, the design solutions are not hindered by budgetary, logistical or technological constraints. In many cases, they are not even meant to be realistically buildable in the context of the project's site. In contrast to this critical and speculative approach, many schools of architecture have been promoting Design-Build studios as part of their curriculum. In most cases, these studios aim at stimulating the students to get hands on with the 'real deal', meaning actually building something that they design collectively. Typically, the programme explores solutions to solve issues that are vital for 'the other half', the economically weaker sections of society.

The Rural Studio of the School of Architecture, Planning and Landscape Architecture at Auburn University is arguably the most celebrated example of this educational approach. The studio was established in 1993 by D.K. Ruth and the late Samuel Mockbee. According to their website,

it 'gives architecture students a more hands-on educational experience while assisting an underserved population in West Alabama's Black Belt region.'[19] Over the last two decades the Rural Studio has built many projects and created 'citizen-architects', keeping always a strong engagement with a tight knit community living in a particular *locus,* Hale County, Alabama.[20]

While Rural Studio's educational approach is focused on the social challenges in their own native context, the rural south-eastern region of the United States, many central and north-European schools of architecture choose locations that contrast sharply with their native socio-economic and cultural background. In the exhibition *Afritecture: Building Social Change,* curated by Andres Lepik and held from September 2013 until January 2014 at the Architekturmuseum der TU München, there were many illustrations of this phenomenon. The exhibition featured works by teachers and students from Germany, Austria, and Norway developing design-build projects in Cameroon, Kenya, Zambia and South Africa to name but a few examples.[21] In the cases featured in the exhibition there is a deliberate ambition to use this pedagogical as an instrument to activate knowledge and technology transfer in the axis North-South and overcome the challenges of intercultural communication.[22]

Most of the projects developed using the design-build approach belong to one of two categories: small collective amenities (e.g. Community Centre, Day Care) or prototypes for affordable and/or sustainable housing. The projects developed for either of these categories usually demonstrate a keen interest in understanding the vernacular social and spatial practices. They try to promote alternative approaches to the local models of architectural production, while respecting the native building *ethos* and material culture. The projects show buildings carefully designed and built, that were influenced – but also influence - the everyday life of a situated community or social group.

The drawbacks of using the design-build approach were recently highlighted by Viviana D'Auria's review of the design pedagogy of KU Leuven's action-learning initiative 'Modern Living in Contested Territories', developed between 2008 and 2014.[23] In this programme, D'Auria argues, 'student work is intentionally refrained from culminating in actually built projects or definitive

recommendations'.[24] Instead, the pedagogical approach focused more on exploring urban and architectural spaces where conflicts, dichotomies, and inconsistencies could activate the students' critical thinking and their positionality in architecture's disciplinary practice.

Despite the altruistic goals of the design-build approach and the potential to enhance criticality in KU-Leuven's action learning initiative, these pedagogical approaches pay little attention to issues such as seriality, mass production, and replicability in the production and reproduction of residential spaces. These issues are particularly relevant in projects dealing with affordable housing. Thus, while some design-build projects show inventive solutions for a one-off situation and action-learning initiatives such as KU Leuven's show the pedagogical potential of mapping the re-signification over time of urban and architectural artefacts, both approaches fail to address the intricacies inherent in design solutions for the 'great number'. The motivation to research and accommodate the vernacular social and spatial practices is not paired with the development of alternative housing solutions designed to become part of a bigger system or network. Considering the ever-present affordable housing crisis (which will be a major social issue in the rapid urbanization undergoing in the global South), there is an urgent need for critical pedagogies that are able to reconcile the spatial practices of a particular cultural setting with the performative potential of mass housing design.

Reconciling Mass Housing and the Vernacular Tradition

In the aftermath of the Second World War, there were visible attempts to reconcile mass housing with vernacular patterns of inhabitation. Curiously enough, the meetings of the architecture and planning avant-garde – the CIAM – became one of the venues where this renewed interest on the architecture of the everyday surfaced. The attention to living patterns in slums and *bidonvilles* that some members of CIAM (and afterwards, Team 10) showed throughout the 1950s and 1960s testifies to this. For many young architects, Tom Avermaete argues, the *biddonville* represented 'an urban environment that was remarkable because of the persistence and symbolic power of its dwelling and building practices.'[25] This attention to the vernacular would be instrumental in shifting design

methods and attitudes. 'If in the pre-war period the studio had been the point of departure for the 'master-architect,'' Avermaete asserts, 'in the postwar period the everyday reality of the terrain was the field of initial action for the 'architect-ethnologist'.'[26]

This paradigm shift would produce important changes in design education. In the mid-1950s, Aldo van Eyck, a member of CIAM and afterwards also a core member of Team 10, would integrate ethnographic research in his educational approach. From the mid-1950s on, Van Eyck's pedagogical approach explored regularly the relation between spatial organisation and the patterns of culture of the Dogon in Sudan, or the *pueblos* in New Mexico. The student work of Piet Blom, one of Van Eyck's most notable pupils at the Amsterdam Academy of Architecture, testifies to this approach. In his project entitled 'the towns will be inhabited like villages', Blom's design 'unmistakably suggests […] the image of a North African desert settlement: a *ksar* or *kasbah*.'[27] Later on, the principles explored in this academic project would resurface in many housing projects designed by Blom in the Netherlands.

In the 1960s and 1970s, the figure of the 'architect-ethnologist,' as Tom Avermaete called it, would gain momentum and pervade into architectural education. The work and writings of John Turner, a British architect who graduated from the Architectural Association in 1954 is a case in point. Turner started working in Peru in 1957 and remained there for eight years, mainly advising on the design of affordable housing, community participation and self-help programmes in urban squatter settlements and villages. His work in this context would underpin influential publications such as a themed issued of *Architectural Design* dedicated to 'Dwelling Resources in South America', published in August 1963, *Freedom to Build,* co-edited with Robert Fichter and published in 1972, and *Housing by People,* published in 1976.[28] Turner, Richard Harris suggests, changed the way scholars in the late 1960s thought about low-cost housing. He 'added the squatter experience to the inventory of research about low-income urban settlement in the developed and developing world.'[29]

Turner's contributions to the *Architectural Design* issue of 1963 would be instrumental for his invitation to collaborate as a Research Associate in the MIT-Harvard Joint Center for Urban Studies.[30] His ideas about the emancipatory qualities of squatter settlements would influence the MIT faculty and students. In an article published in 1968 in *Architectural Design* Rolf Goetze, another Joint Center associate, illustrated Turner's influence giving a detailed account of the squatting practices of MIT's architecture students in their own studio spaces.[31]

The growing criticism of 'master-planning' in the 1960s would pervade architectural education in the 1970s and influence academic and professional approaches to housing design. The role of the architect as a design expert was contested and, instead, the agency of the inhabitant was praised and promoted. Both in architectural education as well as in practice, housing design became tightly associated with the idea of 'social architecture'.[32] The shockwaves of this movement would prevail until the mid-1980s, fuelled by the widespread debate on citizens' participation in urban renewal processes.

For about two decades since the mid-1980s, the interest in housing design in academic and educational circles waned, following the decline in the status of housing as a social good. The United Nations Human Settlements Programme (UN-Habitat), established in 1978, was one of the few institutions that continued researching and documenting strategies to provide adequate shelter for all. With the publication in 2007 of Mike Davis's celebrated *Planet of Slums,* the appalling problems afflicting a great deal of the urban poor gained visibility in scholarly debates and in design education.[33] Drawing extensively on reports produced by UN-Habitat and combining it with a Marxist perspective, Davis, an urban geographer, would produce a severe critique of the slums as one of the off-springs of global capitalism.

In academia, Davis's critique of the slums would be disputed by other accounts that recognized the 'hidden' qualities of the slums and the spatial agency of the slum dweller. 'Urban informality' was reconceptualised and presented as a new way of life.[34] In architectural education as well as in exhibitions organized by prestigious galleries and museums, design approaches to housing for the urban poor became part of the mainstream. The exhibition 'Uneven Growth: Tactical Urbanisms for Expanding Megacities', organised by the MoMA in 2014 testifies to this.[35] The studios organized by the

MAS in Urban Studies of the ETH-Zurich, discussed above, are another compelling example.

Over the last decade, with the help of books such as *Planet of Slums,* or exhibitions such as *Uneven Growth,* discussions on the design of affordable housing for the global urban South gained momentum in architecture scholarship and education. Important questions came about with this renewed interest in housing solutions for the urban poor. What is the role of the architect in the politics of affordable housing? To what extent can travelling experts become instrumental to activate design solutions that accommodate vernacular social and spatial practices? How can design expertise be used to enable citizen's participation in design decision-making processes? Which design solutions can be implemented to stimulate capacity building and enhance job opportunities in the construction sector? In short, how can architecture participate in alternative housing solutions to promote inclusive, sustainable development in the developing world?

To answer some of these questions, in this article we will examine an educational programme that has been exploring the design of affordable housing in the global urban South. This programme, the Global Housing graduation studio, was launched in 2014 in the Faculty of Architecture at the TU Delft, an institution with a respected tradition on housing studies, by the chair of Architecture and Dwelling.

Re-thinking the Habitat for the Great Number

Before the Global Housing graduation studio started in 2014, there were some previous experiences dealing with global housing developed at TU Delft's Department of Architecture. The first one came about in the Spring semester of 2010. This was the year when, for the first time, students from the TU Delft were invited to participate in the Habitat Studio organized in Ahmedabad by Balkrishna Doshi and his Vastu-Shilpa Foundation in collaboration with CEPT University.[36] Writing about this studio, Dirk van den Heuvel asserts that it stimulated the students to engage in cross-cultural transfers, which he describes as processes of 'cross-pollination'. In Doshi's Habitat studio, Van den Heuvel argues, 'cross-pollination is the key concept at all levels, between the cultures of the East and the West, Europe and India; between the disciplines of architecture, planning and sociology; between the universities involved and among the students.'[37]

The experience with the Habitat studio would continue until the Spring semester of 2015. However, it also inspired the creation in the academic year 2011-2012 of another elective course called 'Global Housing Today', available for first year master students.[38] The course description highlighted that the studio's 'challenge is to develop tools, methods and strategies to deal with scarcity of money and materials and yet to provide decent, sustainable and architecturally sound housing schemes.'[39] The emphasis on the knowledge transfer was clear. 'Seen from a Dutch or Western European perspective,' the description continues, 'these global developments are extremely interesting. Having a strong tradition in social housing of our own, and having a considerable array of projects to reflect upon, we could generate ideas on how to deal with the aforementioned issues.'[40] The site chosen for the first instalment of the course was Addis Ababa, the capital city of Ethiopia.[41]

In the academic year of 2012-13, next to the elective course 'Global Housing Today', the chair of Architecture and Dwelling expanded its course portfolio with a new MSc1 design studio, called 'Dwelling Design Studio: Global Housing'.[42] Chandigarh was chosen as the site for the first assignment, and the course was organized in partnership with the International New Town Institute (INTI).[43] The studio

'Charging Chandigarh,' was offered twice. In the second and last edition, offered in the Spring of 2014, it was focused on the theme 'Dwelling in the Interstices of the City', and it was organized in partnership with TU Delft's chair of Methods and Analysis.[44]

The course description of the studio held in 2014 highlighted the challenges of rapid urbanization in the Global South, and stimulated design methods and strategies to 'support incremental expansion of the dwellings combined with functional and cultural adequacy and environmental appropriateness.' The course proposed reflective design approaches to deal with the spatial consequences of social and physical segregation fostered by the increasing economic inequalities resulting from the uneven growth undergoing in the Global South. The canonical modern plan for Chandigarh, designed by Le Corbusier in the early 1950s, created a challenging background for the assignment, urging the students to explore the loopholes of the city's master plan and building typologies.[45] *(Figure 1)*
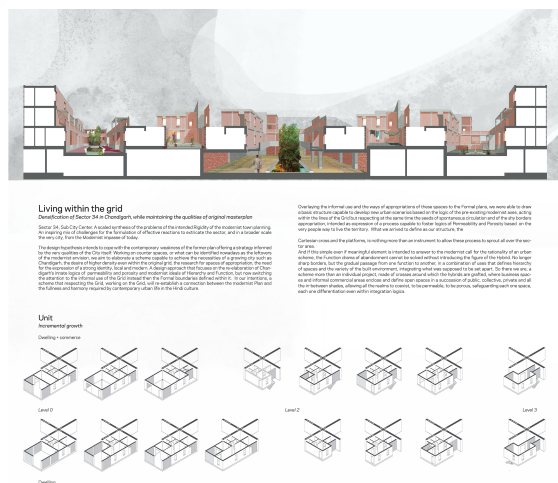

Figure 1: Living Within the Grid. Project by Agnieszka Batkiewicz and Simone Costa in the MSc1 design studio 'Charging Chandigarh', 2014. (Agnieszka Batkiewicz and Simone Costa)

Cross-cultural Methods and Positions in Addis Ababa

Following the experience gained with the studio 'Charging Chandigarh', the first edition of the Global Housing graduation studio was also co-organized with the recently created chair of Methods and Analysis, also part of TU Delft's Department of Architecture.[46] The site chosen for the graduation studio was, once again, Addis Ababa. The graduation studio was dedicated to the theme 'Cross-cultural Methods and Positions' and organized in collaboration with the Ethiopian Institute of Architecture, Building Construction and City Development (EiABC). The studio's course description emphasized an interest in engaging 'with pressing dwelling issues in developing territories, as well as with the increasing cross-cultural character of contemporary architectural practice.' The studio's focus on cross-cultural exchanges and knowledge transfer was highlighted from the beginning. One of its key goals was challenging students 'to find appropriate methods for the analysis and design in cultural contexts that are not their own.' The course description invited the students to 'develop other positions, approaches and techniques as a response to particular cultural, social, environmental, political and economic conditions.'

This cross-cultural perspective was enhanced by the diverse geographical origins of the first cohort of students.[47] A group of students coming from seven different countries developed for eight weeks a preliminary research on Addis Ababa's most relevant housing types. Furnished with this information, the students and the instructors travelled to Addis Ababa for the course's field trip. One of the key components in the field trip was the development of a site survey, where the students visited housing settlements with different socio-spatial characteristics.

In these visits, the students interviewed residents, produced measured drawings, took photos and recorded video clips of different people, elements, and situations that defined the challenges and opportunities in the current housing situation in Addis Ababa. The outcome of this projective research (as it was called in the course description) was edited and presented in four panels and four short movies. Each group worked on a part of Addis Ababa's urban fabric undergoing swift transformation
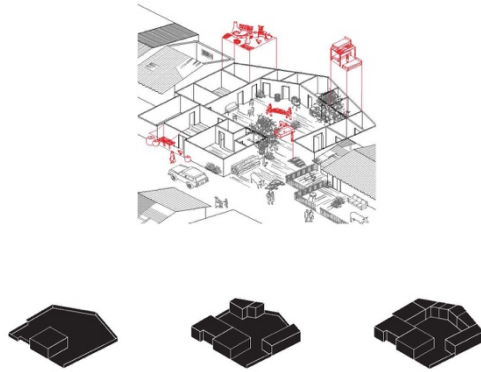
Figure 2: Forms of Dwelling: Housing Compound. Page from the graduation report of Andrea Migotto. Graduation Studio Global Housing 2014-2015. (Andrea Migotto)

or on the verge of going through it. The analytical work presented by the students comprised a detailed cross section through the area, complemented with axonometric perspectives depicting the site's main typological figures, patterns of inhabitation, and materials and techniques. The short movies were dedicated to four specific aspects related with the urbanization of Addis Ababa: Rural-urban migration, Housing for the Urban Poor, The Inclusive City, Urban Infrastructure. The results of the projective research would be instrumental to frame the students' approach to the last assignment of the first semester, the formulation of the individual design hypothesis, which would eventually led to the project developed in the second and final semester of the graduation studio.

Promoting a strong relation between research and design has been a key didactic aspect of TU Delft's educational ethos. The Global Housing shares the same principle. In the work of the Italian student Andrea Migotto, for example, the earlier research on the topic of 'The Inclusive City', and the survey of a fragmented area in the centre of the city around the abandoned railway station (Kirkos and La Gare), would underpin his critical approach to the condominium housing type, which became the predominant housing figure promoted by the government's housing policy in Addis Ababa.[48] *(Figures 2, 3)* Instead of the condominium's random collection of mid-rise slabs spread over an urban fragment, Migotto's project proposes a reconceptualization of the vernacular figure of the housing compound. The scale, however, is amplified to the extent

Figure 3: A Bigger Wall: Frames of Addis Ababa. Project designed by Andrea Migotto. Graduation Studio Global Housing 2014-2015. (Andrea Migotto)

of creating a mega-urban block that regulates the definition of the public space, on the one side, and accommodates, on the other side, the remnants of the city's collective memory, expressed in the coexistence of the informal settlements with other urban figures. Migotto's project explores the notion of temporality as a key component of the design strategy. The transformation through time becomes part and parcel of a project that integrates the vernacular tradition in a novel morphological and typological approach.

Next to the project discussed above, the students were also sensible to other pressing challenges and, specially, to explore the latent potential of Addis Ababa's imminent urban growth and transformation. There were proposals for alternative solutions to the condominium scheme, for inner-city urban renewal, and for the co-existence of the domestic and the productive.[49] The sites chosen by the students for their project were dispersed in the urban fabric of Addis Ababa.

Public Realm

Walking Salesman

The walking salesman is about **selling goods on the streets while walking.** This pattern has **no fixed place to sell.** The walking salesman is usually found in busy, crowded areas. This pattern is about **selling small variation of goods in small amounts.** The opportunity here lies in the **quick adaptation.** It is easy to move to places where a lot of people are and merchandise is profitable.

This pattern of income generation is found in the more informal settlements and other busy places like public transport hubs and marketplaces.

Types of Income Generation

Trading   Producing   Transport   Providing Service   Subletting

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Building techniques

10. Recycled materials in low-rise house

Type of housing: Private houses.
Materials: Recycled materials such as plastic bottles, textile materials, plastic sheets.
Advantages: Readily available materials, possibility to assemble on site, low initial price, suitable for low income groups, flexible structure, offers the possibility to customize each specific dwelling unit.
Disadvantages: Low durability, low quality of the materials.

Most of the materials in Ethiopia are recycled and turn into completely new uses and shapes. It is common, especially among low income group, to collect plastic bottles or textile material to convert them into cladding or extra covering elements. These are realize by the inhabitants themselves, driven by their actual needs. Even if these interventions could be seen as temporary solutions, often they become essential part of the dwellings and they sometimes produce smart and original results. For instance, in order to let natural light to enter inside the house, one of the solutions that have been adopted is to replace part of the corrugated metal steel of the roofing with a plastic one. In this way the plastic sheet performs both as roofing and skylight at the same time.

COMPOUND COURTYARD

| A COMMUNITY WITHIN THE COMMUNITY |

The residential compound layout derives from an organization of a group of informal houses around the same common space. Such community spaces are accessible from gates generally roughly built with corrugated metal sheets.

The courtyard is shared by an average of 15 households: it is the place where both the everyday life activities (as drying spices, washing clothes, drinking coffee and cooking meals) as well as the social interaction among the members of the different families take place, strengthening their sense of community belonging.

In the case of Dejach Wube sefer, the peculiarity is that inhabitants tend to remain closer to their specific compound, creating a community within the bigger community of the Sefer, rather than share the same interests with closer ones.

The Potted Plant Limit

The Potted Plant Limit is a psychological border. People appropriate of the public space in front of their dwellings because there is not enough space for a fence. They put potted plants creating a buffering zone between the private property and the road. Here, the inhabitants work and gather protecting the entrances of their houses.
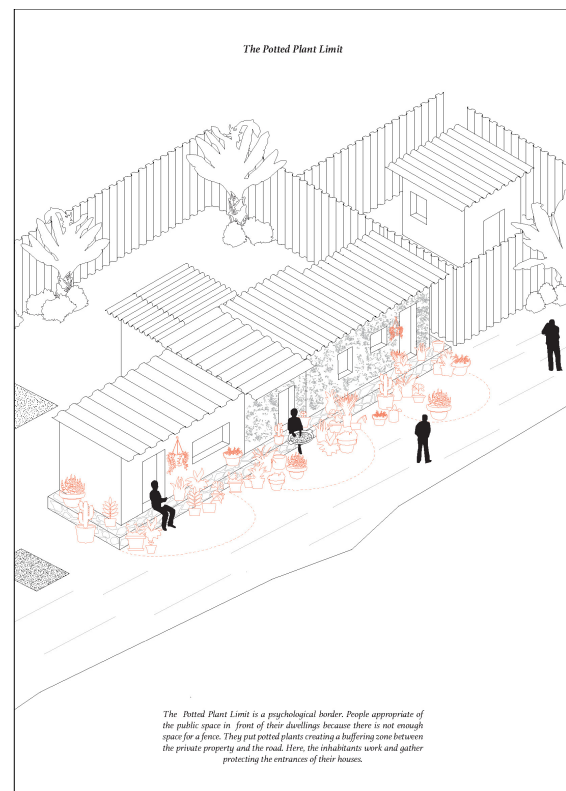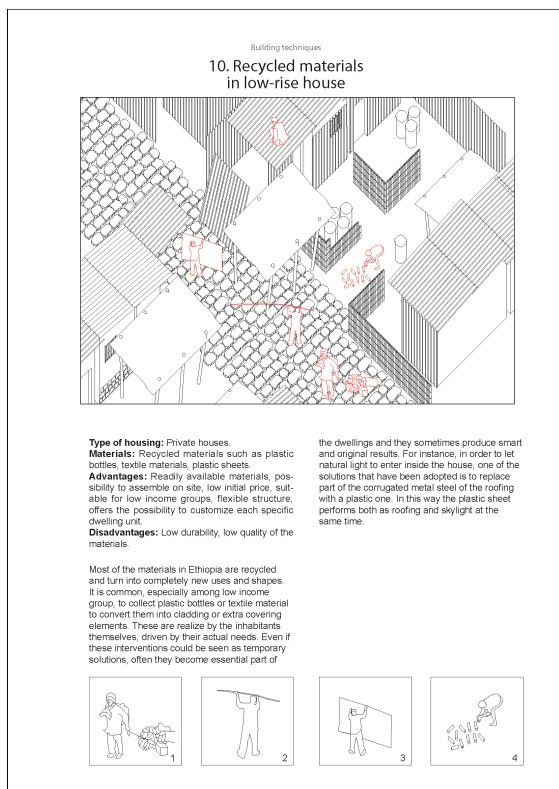

Figure 4: Extracts from the Addis Ababa Book of Patterns. Clockwise from above-left: Income Generation, Social Spaces, Borders, Building Techniques.

In the second edition of the Global Housing graduation studio, organized in the academic year 2015-1016, while the basic structure of the course remained, there were some conspicuous changes in the phases dedicated to the research and site survey.[50] In the first phase (Design Research / Projective Mapping) the students were asked to produce a booklet with a synthesis of the main aspects of Addis Ababa's urban transformation and main housing types. Organized in small teams (3-4 students), each group investigated a key historical moment in the evolution of the city, since it was founded by emperor Menelik II in 1886, until its contemporary situation.[51] The chronologic sequence in which the research outcome was presented produced a clear account of Addis Ababa's (and Ethiopia's) ability to stay in tune (or not) with the urban transformation and typological innovations that happened in other geopolitical contexts. The influence of cross-cultural exchanges in different moments of Ethiopia's recent history became noticeable in the student's analytical work, and would be influential to the definition of their design hypothesis, in the last weeks of the semester.

In the meantime, instead of using short movies and cross-sections, as in the first edition of the course, the new cohort of students was invited to present the results of the site survey in Addis Ababa compiled in a booklet containing a selection of significant social and spatial practices. The booklet, named 'Addis Ababa Book of Patterns', followed on the intellectual framework of Christopher Alexander's seminal *A Pattern Language* and *The Timeless Way of Building*.[52] The patterns were divided in four categories: Income Generation, Building Techniques, Social Spaces, and Boundaries.[53] *(Figure 4)*

The project developed by Yasuko Tarumi, a Japanese student, shows an unexpected attitude to the translation of Addis Ababa's patterns of inhabitation into an alternative housing figure.[54] Tarumi's graduation project 'Bridging the Communities for the Better Future' is focused on the eastern part of the Merkato area, a dense urban fabric created during the Italian occupation of Ethiopia in the late 1930s. The gridiron system implemented by the Italians has been able to cope with the increasing densification of the area. One of the consequences, however, is the growing separation of the private realm of the families

Exterior eye level view

Ground entrance and public space

Figure 5: Bridging the Communities for the Better Future. Project designed by Yasuko Tarumi. Graduation Studio Global Housing 2015-2016. (Yasuko Tarumi)

and communities of practice living in the compounds from the public and collective spaces. Next to this, Tarumi has identified another boundary, a small river located on the eastern part of Merkato that is currently clogged with garbage, polluted, and dangerous for the human activities that take place on its surroundings. Furthermore, the river is also a physical obstacle to the integration of the communities living on each of its banks. Her answer to solve these challenges is a project based on the concept of building-qua-infrastructure.

Challenging conventional approaches, Tarumi designed a complex of multi-storey slabs located over the river, creating a continuous bridge of sorts, interrupted at times with landscape features designed to stimulate conviviality. *(Figure 5)* The contact of the buildings with the ground accommodates spaces for income generation (shops and workshops) and a continuous arcade that works as a physical and visual connector between communities hitherto separated. The housing units are stacked in three or four floors above the ground and connected by generous galleries that also perform as extensions of the dwellings. The structure of the building was

designed to allow the creation of flexible layouts that can be re-arranged in several combinations. While the new housing figure designed by Tarumi is conspicuously different from any other building surveyed in Addis Ababa, it accommodates important aspects of the vernacular tradition and offers a thoughtful, yet provocative, alternative to Addis Ababa's current housing, ecologic, and infrastructural challenges.

In the third edition of the Global Housing graduation studio, the theme changed to a more straightforward 'Affordable Housing for Sustainable Development in the Global Urban South – Addis Ababa'. In tune with the very many initiatives promoted around the organization of the Habitat III conference held in Quito in October 2016, the studio aimed to discuss and address the possible contributions of housing design to cope with the challenges of rapid urbanization.[55] In Quito, many studies, expert reports and policy recommendations included issues related with housing as a key component for the development of inclusive, safe, resilient and sustainable urban spaces. However, in most cases, housing meant housing *policies,* and addressed mainly aspects related with governance and planning. It remained unclear, however, what was the role of architects and architecture in the New Urban Agenda. In this context, the studio attempted to explore the extent to which design decisions could play an important role to accomplish the United Nations' Sustainable Development Goals?[56]

The introduction to the 2016-2017 version of the course manual highlighted the importance of 'rethinking the current systems of affordable housing production'. Furthermore, it called for a critical evaluation of the current processes, methods and strategies employed by the stakeholders involved in housing production, in general, and the architecture discipline, in particular. According to projections published by the UN, the rate of urbanization is increasing at a fast pace in the global South, adding two and a half billion new dwellers to the current urban population until 2050. Considering this, the studio aimed at answering some pressing questions: 'Where will all these new urban dwellers live? […] how will these new urbanites dwell? What will be the role of architects and urban planners in this process?' The expected urban growth of
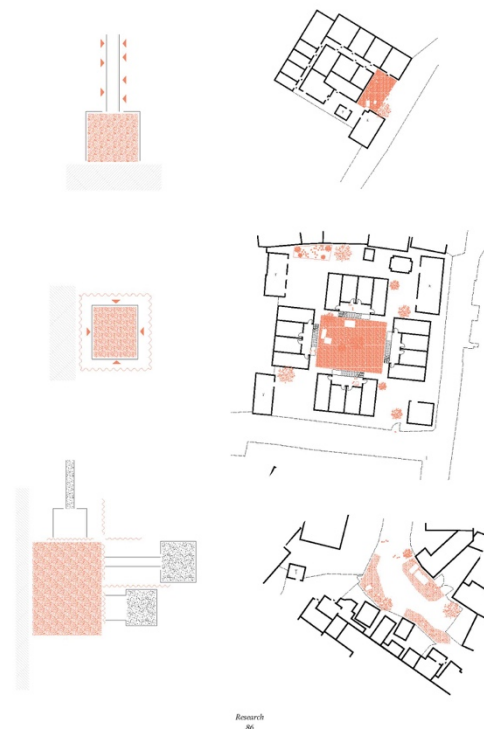

Figure 6: Menem: Comparative Analysis of Dwelling Compounds. Extract from the research report produced by a group of students from the Graduation Studio Global Housing 2016-2017. (Arianna Fornasiero and Paolo Turconi)

Addis Ababa offered a fitting scenario to find some possible answers to these questions. In particular, Addis Ababa offered a unique opportunity to discuss the current strategies for the so-called 'slum rehabilitation' strategies.

While in the first and second editions of the graduation studio the territorial scope of the student's work covered both the urban fringes of Addis Ababa as well as its historical nucleus, in the third edition the studio's focus was directed to Addis Ababa's traditional *sefers* (neighbourhoods).[57] The choice was justified by an imminent threat of demolition that hovers over these neighbourhoods, which are mainly made of dwelling units and compounds developed incrementally through time. The challenge was to search alternative possibilities to the inevitable destruction of significant parts of Addis Ababa's collective memory.

In this context, both the site survey as well as the collection of 'patterns of inhabitation' harvested material and knowledge in four

Figure 7: Rhizome. Project designed by Arianna Fornasiero and Paolo Turconi. Above: The dwelling cluster shortly after completion; Below: Growth and change in the dwelling cluster. Graduation Studio Global Housing 2016-2017. (Arianna Fornasiero and Paolo Turconi)

inner-city *sefers.*[58] Eventually, the projects developed by the students showed different possibilities of combining the need to accommodate a bigger density in these neighbourhoods with the preservation of vernacular social and spatial practices. The project developed by a team of two Italian students, Arianna Fornasiero and Paolo Turconi, illustrates this approach. In their project entitled 'Rhyzome', Fornasiero and Turconi researched thoroughly the patterns of association of dwelling units in the compounds of the Menen area. In particular, they observed how the definition of borders between public and community spaces was related with the morphological characteristics of the existing clusters. *(Figure 6)*

Using the outcome of this research, Fornasiero and Turconi designed a project for a new housing cluster that enhanced the creation of well-defined communities, articulated with the fabric of the whole neighbourhood through a carefully planned structure of public spaces. *(Figure 7)* In their project, these students demonstrated how design decisions could be instrumental to increase the density of the present inner-city residential neighbourhoods

while preserving the vernacular social and spatial practices of the communities living there. Similar approaches were pursued by other participants in the course, concurring in the belief that the design of affordable housing in urban renewal operations needs to promote a meaningful integration of the social and physical fabric of the city.

Conclusion: A 'Social Model' of Design Education

In his preface to the celebrated *Design for the Real World,* published in the US in 1971, Victor Papanek designated advertising design as a profession openly detached from the real world. 'In persuading people to buy things they don't need, with money they don't have, in order to impress others who don't care, [advertising design] is probably the phoniest field in existence today.'[59] This was his provocative way of calling for a design ethos more concerned with people than with markets. Papanek advocated a cross-disciplinary approach to design, which he called Integrated Design, less specialized and more focused on placing the problem in its social perspective. This approach should start with design education. For Papanek, 'part of the philosophical and moral bankruptcy of many design schools and universities lies in the ever-increasing trend to train students to become narrowly vertical specialists, whereas the real need is for broad, horizontal generalists or synthesists.'[60]

The need to create a 'social model' of design practice and education was further stressed at the turn of the twenty-first century in Victor Margolin and Sylvia Margolin's article 'A Social Model of Design: Issues of Practice and Research'.[61] In their support for an agenda for Social Design, these authors acknowledged that design is commonly perceived by the public as an artistic practice detached from reality. Something only accessible by the privileged few and destined to be presented in the media and exhibited in museums. They argued that 'one reason why there is not more support for social design services is the lack of research to demonstrate what a designer can contribute to human welfare.'[62]

More recently, in 2012, Paola Antonelli cautioned about the very fine line where the so-called 'social design' walks. Antonelli asserts that 'it has often gone hand in hand with moralism and sweeping declarations.'[63] While there are designers genuinely engaged

in contributing to human welfare, there are contributions labelled as 'social design' that are nothing but instances of an imperialistic or post-colonial agenda disguised as humanitarian support and relief.

Since its inception in the academic year 2014-2015, the graduation studio Global Housing has navigated on this fine line. While indisputably being part of an elite institution located in one of the richest countries in the world, the studio's didactic approaches were designed to avoid a moralistic approach to the challenges of designing affordable housing for the global urban South. The research methods proposed to the students aimed at raising consciousness and stimulating an acknowledgement of the vernacular social and spatial practices of the communities living and working on the sites selected for the assignments. The importance of cross-cultural approaches was persistently highlighted as a fundamental component for the definition of design decisions able to cope with the global challenge to promote solutions for inclusive, safe, resilient and sustainable urban spaces.

The projects developed by the students showed critical approaches to the role of the designer as a 'specialist', as Papadek called it. Exploring disciplinary approaches borrowed from sociology and ethnology, the students demonstrated a keen interest in understanding the social needs of the people living in the context of the assignment. However, they used tools for the disciplinary field of design to process the outcome of their social studies. Notably, design expertise was employed to develop projects that could accommodate the agency of the inhabitants in shaping their own habitat though time. *(Figure 8)*

The studio's didactic approach produced two important contributions to discuss a 'social model' for design education. On the one hand, the methodological protocols disseminated by the 'techno social' moment that characterized design education in the post-war period were reconceptualised to integrate contingency and informality.[64] On the other hand, the research produced and the projects developed by the students demonstrated the vital role played by meaningful design decisions based on a critical

Figure 8: An Urban Transit Zone: A Permanent Structure for Temporary Inhabitation. Project designed by Monica Lelieveld. From left above, clockwise: The elevations of a housing block during its transformation from a 'transition camp' to a group of permanent dwelling units. (Monica Lelieveld)

mapping of vernacular social and spatial practices.

The students that have graduated from this course have developed design skills, explored analytical tools, and employed research methods that can demonstrate how a designer can contribute to human welfare. The threat of moralism and paternalism in the didactic approach is always looming, though. To activate a more fruitful cross-pollination in design education programmes concerned with the housing issues in the global South, the elite institutions of the global North should pursue strategies to include more students with an educational background in the global South. This is an essential condition to activate the dissemination of knowledge in both directions: north-south and south-north. Furthermore, a 'social model' of design education can only thrive with more robust policies to promote exchange programs between elite institutions in the global North and their counter-parts in the global South. This is an essential condition to expand the much-needed pool of housing 'inperts', as Charles Abrams would put it.

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38 The course coordinator was Dirk van den Heuvel, a scholar and architecture critic working in the chair of Dwelling and Architecture. Actually, the course Global Housing Today had been already created in the academic year 2009-2010, but at that time it was more focused on issues of 'green sustainability' (the first two studios were called 'The Green House Effect studio' and 'Urban Farming'). Further information on the courses offered by the TU Delft were gathered from the institutions' online study guide, available at http://www.studiegids.tudelft.nl/

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40 *ibid.*

41 The choice of Addis Ababa as the site for the first assignment was related to the professional activity of Dick van Gameren, Professor of TU Delft's Chair of Architecture. Together with Bjarne Mastenbroek, Van Gameren designed the embassy of the Netherlands in Addis Ababa. They won the competition in 1998 and the building was completed in 2005. The building was awarded the Aga-Kahn Award 2007.

42 In 2013-14, the site of assignment for the elective course 'Global Housing Today' was still Addis Ababa (the studio was called 'Addis Additions'). This would be the last time this course was organized.

43 INTI is a Dutch platform for research, education and knowledge exchange for New Towns. Linda Vlassenrood was INTI's staff member in the tutorial team. Tom Avermaete was also part of the team, coordinated by Dick van Gameren and Harald Mooij.

44 The tutorial team of the second edition of the studio (Spring 2014) was composed by Dick van Gameren, Tom Avermaete (who had been recently appointed Professor of TU Delft's Chair of Methods and Analysis) and Nelson Mota.

45 One of the members of the tutorial team Tom Avermaete, had been involved in the research and curatorial work for the exhibition *How architects, experts, politicians, international agencies and citizens negotiate modern planning: Casablanca Chandigarh*, held at the Canadian Centre for Architecture in 2013. The book that resulted from this research was published in 2014:

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47 The 2014-2015 cohort included 16 students from seven different countries (seven from The Netherlands, three from China, two from Italy, one from Colombia, one from France, one from Turkey and one from Romania).

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