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# HERITAGE, HISTORY AND DESIGN BETWEEN EAST AND WEST

## A Close-Up on Kyoto's Urban Fabric

**Marie-Thérèse van Thoor & Sara Stroux** [eds]

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# Culture is in the Details

*Hielkje Zijlstra*

FIG. 1 Seen through Western eyes: a house, plants and contained character, but through Eastern eyes, the noren - the welcoming curtain at the entrance - indicates this is a shop or restaurant

During earlier stays in Japan, in 2012 and 2014, I was struck by the great attention to detail, in the scale of the buildings, the streetscape, as well as in the clothing and the presentation of food. Life seems to be an accumulation of independent details that sometimes contrast considerably with one another. A city is made up of buildings, and they in turn are made up of details that have come about as a result of a combination of materials and their interrelations. Tradition, craftsmanship and the choice of materials play an important part in all this.

When I visited Kyoto in December 2015 for the KYOTO Design Lab, I recorded details and their contexts in photos [FIG. 1]. I sought to explain those details in the context of the culture of Japan. To what extent can culture be determined by details? Accordingly, it is important for me to tie Japanese culture in with the appreciation of detail. When we analyse an object we usually begin with the context and arrive at the detail. When we mentor students, attention to detail is not necessarily the focal point, certainly not at the start of the design process. Generally speaking, details are only addressed at a later stage. However, if we pursue the reverse course—from detail to building and its surroundings—we can consider concepts like tradition, craftsmanship and materiality differently, and relate them to culture. Moreover, if we base our thinking on a cyclically organized society and thus better understand the small elements and materials, we can get a better grip and grasp—and thus achieve a more aware and sustainable society, both in the East and in the West (Pendergast 2011). It is interesting to see how Japan presents itself in this respect. When dealing with existing heritage buildings and modern technological developments, can we revert to culturally-embedded traditions? It is important to consider craftsmanship based on experience, passed down from father to son; objects possessing a soul, such as the trees, of which only a few have been felled to be used as posts and beams in a temple (Brown 2012).

The following text is an 'exploration' based on observations, references, conversations and working visits. Theory and practice have been applied to find ties with architecture, built heritage, craftsmanship and tradition, with five building elements at the centre. They form the basic components of a building: floor, post, roof, closed wall and shelter.

## Details as regards use of materials

How do we know how buildings are put together, in detail? We can consult the relevant literature, study drawings and photos, or we can observe buildings and their details. But to better understand how something is really put together, it is worth adding an explanation to those methods. For example, with Japanese wood jointing, the actual construction is often not immediately apparent on the exterior (Seike 1977). The German journal *Detail* has set the standard (since 1961). It always depicts and describes buildings by way of materials and details. In 2006, in my PhD thesis, I concluded that in the 20th century more and more had been written about architecture, but ever less by the architect him/herself, and far less about architecture how is made (Zijlstra 2006). Things are changing, slowly but surely. These days, *Detail* has an English version (*A+T*) and anyone interested can now access various reference works via the *Detail* website or YouTube.

When I was researching my thesis I made use of Kenneth Frampton's descriptions of the use of materials in work by several distinguished architects in terms of tectonic (Frampton 2001) and Edward Ford's documenting of a number of architectural masterpieces in his series *The Details of Modern Architecture* (Ford 1997). Ford deploys three-dimensional drawings of details and Frampton seeks to explain in text the essence of a building based on the tectonic. One of the first Dutch textbooks focusing on details is Ed Melet's *Het architectonische detail* (2002). He calls details 'architectural details' and makes sure they are always 'traced in the same way in all his publications, thus explaining how a building is made up, and what it means for architectural expression. Melet describes which materials go to make up the building and how they converge in a detail (Melet 2002).

The way Atelier Bow-Wow presents its architecture projects in its own publications is popular with architecture students (Tsukamoto 2011 and 2014). The title of the *Graphic Anatomy* publications (1 and 2) indicates that they address the explanation (anatomy) of architecture. Everything is recorded meticulously. In sectional diagrams in particular, texts are provided with all the elements, so nothing is left to chance or personal interpretation. Accordingly, here the sectional drawing is an accumulation of details. That method is not new. It is part of the Japanese culture to supply architectural drawings with a publication about a building. That is confirmed in *The Japan Architect*, for instance, and in monographs as written on Toyo Ito's Mediatheque in Sendai (Sakamoto 2003). Atelier Bow-Wow's anatomy lessons contain only the drawings. In the Sendai library publication a wealth of photos complements the drawings. They were taken during construction of the building and after completion. This provides a more complete picture, especially for those who want to know how the building and the detail are actually put together. In *Materials and Meaning in Contemporary Japanese Architecture*, Buntrock goes a step further and presents all this documentation theme-wise (Buntrock 2002). However, the most educative is a combination of all available methods, including one's own observation.

## East and West

In talks I had with Paddy Thomesen about his experience working as an architect in Japan, I have discovered that it is very difficult for a Dutch person to be deployed in a Japanese architectural firm on an equal footing with a Japanese architect. There is great resistance to the inclusion of Westerners who actually contribute to products of Japanese culture. Experience is the best teacher and responsibilities are only granted after one has proved one's proficiency. That makes the fact that

FIG. 2 Sagawa Art Museum with, in the background, the tea pavilion designed by Raku Kichizaemon

since 2000 Frank la Rivière, an architect hailing from the Netherlands, has had his own practice and clientele in Tokyo all the more remarkable. He is also a lecturer at the Tokyo Institute of Technology, thus himself training students to become architects in Japan. He successfully passed the exams to become a 'first-class architect' in Japan (La Rivière 2017). When we were in Japan he and his colleagues told us that initially Japanese architects have a poor opinion of colleagues who work a great deal in the West, like Kengo Kuma, Toyo Ito, and later Tadao Ando and Sanaa. In their view they have become too Westernized, are money-driven and are therefore losing their focus on material and detail. They believe that such architects no longer meet Japanese standards and the buildings are not representative of Japanese architecture and culture. In her book, Buntrock also varies in her assessment of Kengo Kuma's work from positive to negative (Buntrock 2010). According to the Japanese architects with whom I spoke, Taniguchi Yosio of the Gallery of Horyuji Treasures in Tokyo and Raku Kichizaemon (in fact a ceramicist) of the Tea Pavilion at Sagawa Art Museum are better representatives of modern Japanese architecture [FIG. 2].

FIG. 3 The Gae machiya, a dwelling in Kyoto renovated by Toshi Kawai as a second home with a tea ceremony room

FIG. 4 Yoshiaki Nakamura from Sotoji and the stock of ancient timber

The Westerner's perception of Japanese architecture differs substantially from that of the Japanese themselves. Mention has already been made in that context of the comments on Japanese architecture by Frank Lloyd Wright at the start of the 20th century and, a little later, Bruno Taut (Nute 1993 and Taut 1936). At the TU Delft, in the framework of our research for the KYOTO Design Lab, we too look at Japan through Western eyes. Our opinions on Japanese architecture, details and culture are based on our own cultural background.

During my working visits I was able to confirm that architecture in Japan traditionally begins with the love of and attention to the material, and that they converge in the details. Also, when I talked to Moriko Kira, who works in the Netherlands and Japan, it emerged that the use of materials is part and parcel of architectural design: 'When the concept is clear, the materials are naturally extracted from it' (Kira 2013). She personally believes that her work in Japan is without a doubt of better quality than what she does in the Netherlands. However, she also notes a change taking place in Japan. It is affected by globalization, with major brands (like Prada) boastfully deploying Western architects in Tokyo. Think of the impressive architectural structures by Herzog de Meuron and OMA / Rem Koolhaas found in all the world's metropolises. She considers it unfortunate that this is setting a new standard, also in Japan, and thus detracting from the traditional qualities of landscape-specific architecture and culture (Brinkmeier 2013).

The influence of the West on Eastern, Japanese architecture is not a new phenomenon. It has been apparent since the end of the 19th century, as Carola Hein has described (Hein 2008). In December 2015, the Takanaka Carpentry Museum in Kobe mounted an exhibition *Modern Japanese Architecture* featuring photos, drawings and models of architecture built in Tokyo primarily in steel and brick, along Western lines. Since the Second World War there has been a shift in the use of materials in architecture in Japan. With American examples, and fires and earthquakes in mind, attempts were made to find alternatives for wood. According to the architect and professor Toshi Kawai, new regulations and a great shortage of wood were the

reason (Kawai 2015). Architecture faculties focused on brick, concrete and steel as the new building materials. By then, for traditional restoration, timber was being imported from neighbouring countries.

## Rediscovery of wood

Building tradition in Japan is again shifting. Legislation has changed, and wood is once more permitted. Partly because trees have grown further and are now suitable for use as building material. Wood is, and continues to be, highly prized. In my student accommodation in Kyoto everything was covered with a layer of wallpaper or PVC film with wood-print. I felt surrounded, from floor to ceiling, with wood, but in fact it was a wafer-thin illusion, with the exception of the cover fillet. The Sagawa Art Museum is built entirely in concrete with an 'imprinted' wood-relief, a left-over from the formwork [FIG. 2]. In sustainability terms, the Japanese economy can also consider reintroducing home-grown timber as a building material. However, there is still too much focus on contemporary Western examples using timber from Finland and Switzerland, although Japan itself has a huge tradition of building with wood. It is found in particular in the temples, tea houses and old dwellings like machiya. The latter are disappearing more and more from Kyoto's streetscape, for a variety of reasons, one of which being the problems building with wood has entailed (Kawai 2015). New legislation could change that and have a positive effect on future restorations or makeovers of machiya. The conversion of an old machiya into a modern dwelling, with a space in the attic for tea ceremonies, Toshiaki Kawai's Gae machiya, illustrates this well (*ja+u* 2014) [FIG. 3].

Moriko Kira put me in touch with the architect Fumihiko Sano. He started out as a carpenter and that has determined his working method completely. He personally selects every piece of timber. Before showing me his own work, he first took me to his mentor, Yoshiaki Nakamura, from Sotoji. It was to be one of the most impressive experiences of my stay in Kyoto. Nakamura showed me various types of timber, the timber joints, the workshop, the storage area and several finished projects. The pride, the love for the material and the craftsmanship were all-pervasive. To his mind, the fact that wooden floors are made from harder timber these days—because people keep their shoes on when walking on them—greatly detracts from the quality. The wood that was originally used for flooring is much softer and finer to the touch. He showed me his stocks of wood, including part of an ancient tree that his father had once procured, 10 metres long and 105 cm wide. However, he is dubious about begrudging a Chinese client its use in his home [FIG. 4]. Each piece of timber in his store is marked and, when necessary, protected with a blanket. All the precise carpentry is carried out in his own workshop and only assembled on-site. The carpenters work their way through the wood with a hammer and chisel, in that way making the joints that are not visible on the outside (see fig. 11). In fact, Nakamura believes that wood is only suitable for use when it is 200 years old: storage facilities filled with splendid panels, beams and sawn logs await an appropriate use. A thin, parallel grain is important for posts. Large-sized, thin panels are used for ceilings and must be of high quality since they are very much in evidence. Substantially-sized beams and panels, and a regular grain course in the wood are considered to enhance the building. Nakamura works mainly on restoring buildings for tea ceremonies, pavilions at temples (as at the Ise Shrine), new, luxurious residences and guest accommodation in traditional style. That does not include the restoration of the relatively simple machiya, nor is that necessary in his view. The restoration of temples and the use of wood entail a very specific culture and tradition. The life cycle of a tree is consistent with that of a temple. A thousand-year old tree is suitable for use as a component in a temple, with the timber being used 200 to 300 years after the tree was felled. The position of the trees in the forest corresponds with the position of the posts in the temple. It is a considerable logistical undertaking and requires great precision. It involves a specialism and culture that are unique to Japan (Brown 1989; 2013).

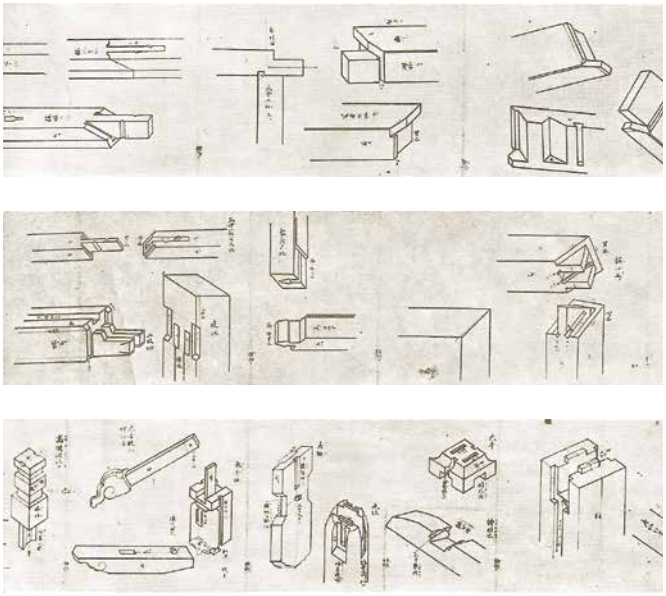

FIG. 5 Drawings of details on a traditional carpenter's scroll (date unknown) from which a dwelling was built

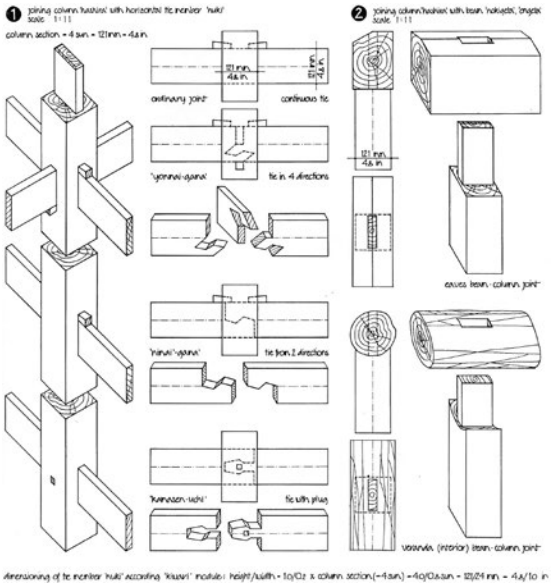

FIG. 6 Drawings of details as represented by Engel, sourced directly from the details on the carpenter's scroll

However, as yet there is no such tradition for the restoration and maintenance of machiya in the centre of Kyoto. The fact that their conservation also has an impact on the culture and perception of the city, and that, in addition, these buildings can be attractive for tourists, is only gradually sinking in (Bruma 2013). Sano also bears that out in his own work: for instance, the MTRL Kyoto machiya, which has been converted into a hip, flexible office space while retaining the old construction features and interior elements, as well as introducing new features like climate control and a wooden staircase.

## Details as part of tradition and craftsmanship

Initially the research at the KYOTO Design Lab focused mainly on machiya in Kyoto. However, the visits to traditional artisans revealed that they deploy their materials more for the restoration of temples and teahouses. Nevertheless, the discussion of the five previously-mentioned building elements and the concomitant details relates, if possible, to the machiya. Those elements—floor, post, roof, closed wall and shelter—are tied in with the day-to-day work of the *tatami*-maker, the carpenter, the roof tiler, the plasterer and the producer of roller blinds and screens. These crafts have been handed down from father to son and daughter, who in turn will pass them on to future generations. In all cases, that family connection accompanied a love for the trade and craftsmanship. This too is an ingrained cultural phenomenon that is mentioned with pride, but is also felt to be a matter of course. Sudare blinds, for instance, entail craftsmanship than can only be learnt in practice, whereas the son-in-law of the *tatami*-maker learnt his trade by way of a university degree. With his degree he represents the seventh generation of practitioners in this company. In the Netherlands, that is an exception, in Japan it is a rule based on tradition.

FIG. 7 Tatami-maker Hajima Shinoda

FIG. 8 Hajima Shinoda at work

FIG. 9 Tatami floor in the Shin-Ryu-kyo machiya in Kyoto

The following section describes in more detail the five construction elements. It focuses on the outer form and the production process, with a view ultimately to unveiling the underlying culture in the details seen from the perspective of tradition and craftsmanship. For each element there is a photo of a location in Kyoto alongside some photos I took during my visits also presenting the work atmosphere and conditions. For drawings of details see Engel 1985, and Nishi et al. 1983. These are standard details that are generic for the applications [FIG. 5/6].

## Wooden floor covered with a tatami

Sukiya is headed by Setsuo Takamura, he represents the sixth generation of the family business. Hajima Shinoda, the son-in-law, is the seventh in the line of succession. The trade is one you learn in practice, but Shinoda did so at university. According to Takamura he himself is learning something new each day. The traditional *tatami* is made from straw, compressed from 50 to 45 mm, and then covered with rush. The type of rush determines the quality and price. It comes from Okinawa or Hiroshima (the best quality). Only the middle part of the stalk is strong enough. The best *tatami* have a seam in the middle made from the stalks of rushes [FIG. 7], though these days that is not often the case. Modern *tatami*, which are suitable for export, have a synthetic foam core and an underside of synthetic foil. The edges are hemmed [FIG. 8] and finished off with a strip of cotton or hemp. *Tatami* have standard measurements (varying from region to region), but are tailor-made to fit precisely the size of the room [FIG. 9]. The smell and colour of the rushes are indicative of the *tatami*'s age. In Shin-Ryu-kyo we sat on *tatami* during lectures.

FIG. 10 Detail of post and beam

FIG. 11 The carpenter at work

FIG. 12 The Tsuruyayoshinobu (sweet shop), by Yoshiaki Nakamura of Sotoji

FIG. 13 Mr and Mrs Takamura explain about new and old tiles

FIG. 14 The personal archive of roof tiles of the family Takamura

FIG. 15 Old and new roof tile

## The supporting structure of wooden post and beam

I visited Yoshiaki Nakamura's Sotiji company and Yamamoto Kogyo's workshop. According to a former employee, Fumihiko Sano, Nakamura is a unique craftsman. He gave a detailed explanation of the types of wood, the ideal course of the grain and the complex joints in the wood that are not visible. In the workshop and warehouses Nakamura showed how the artisans work, his stocks of costly timber and the sizes, and which timber is used for what [FIG. 4/10/11]. Both he and Yamamoto deal primarily with exclusive buildings, such as the restoration and new-build of structural elements of temple complexes, rooms for tea ceremonies, traditionally-inspired hotels, shops and dwellings [FIG. 12]. As yet there is no focus on the repair and maintenance of machiya. That is the preserve of architects like Fumihiko Sano and Toshi Kawai, as found in the conversion of the Gae machiya mentioned earlier.

## The roof, made from wood with ceramic-tiled cladding

The Kawai Shokai company is another family business. Mrs. Takamura studied the history of architecture and runs the company with her husband. It was founded in 1951 by Takamura's father [FIG. 13/14]. They related the history of roof tiles in Japan using the computer, also showing a number of restorations of temple complexes, such as the Daitoku-Ji [FIG. 19]. Old tiles are generally cleaned and re-used as far as possible. If there is no alternative, new tiles can be installed. There is a great difference between old (originally from Korea and later China) and new tiles (from Japan) [FIG. 15/16/17]. The Japanese tile derives from the Dutch with an overlap and drip edge. The tiler marks his tiles, which makes it possible to date stages of construction. Temple restorations are documented in books with drawings and notes on pre- and post-intervention stages. Old tiles were held in place on the roof decking with wooden pins and later with iron or copper (steel can break). Tile weight plays an important part in earthquakes. The garage houses the archives with old components that have been collected during restorations [FIG. 16].

FIG. 16 Takamura's storage in the garage

FIG. 17 Tile production in the past, with two pieces folded round a mould

FIG. 18 Roof tiles in a display case at the Museum of Ethnology in Leiden. A tile from the Nagasaki region (1825-1829). It consists of two parts. Patterns in the end tile were applied in the clay with a wooden stamp

FIG. 19 Daitoku-Ji temple restored by Takamura with old and new tiles

FIG. 20 Hiroyuki Sato explains the seven layers of plaster work

FIG. 21 Different trowels for different surfaces of plaster. The smaller the trowel, the smoother the surface becomes

FIG. 22 Perfection in plasterwork in the buildings surrounding Katsura Imperial Villa

FIG. 23 Roller blinds being made by Kubato Birendo

FIG. 24 Kubato Birendo shows thin strips of bamboo

## The closed plaster wall

Hiroyuki Sato is the fourth-generation owner of Izutsuya Sato, which was founded in1850. He is a plasterer and a professor at the Kyoto Institute of Technology, at the Future Applied Conventional Technology Centre. He wrote a book about his father and obtained his doctorate with research into damage to plasterwork caused by bacterial growth in the admixtures. In theory, plasterwork, he explained, comprises seven layers, including reinforcement [FIG. 20] (Lubelli pp. 57-62). A different trowel is used for each layer, the finer the surface the smaller the trowel. Plastering is not done with one hand but with the entire body, in a smooth movement. The layers of plaster are thin and dry quickly, so they must be applied swiftly and precisely. This method is used primarily for tearooms [FIG. 21/22]. The top layer contains seaweed since it is smooth and sticky. For machiya the top layer does not have so fine a structure, as was the case in other buildings until the 16th century. After that the procedure became more refined when used in rooms for the tea ceremony. Manganese rather than iron in the clay produces surface discolorations due to oxidation, something that can be prevented by using seaweed.

## A bamboo blind partitioning off wall openings

Kubota Birendo of Sudare Blinds produces (roller) blinds. Kubota belongs to the sixth generation in the family business. His son and daughter-in-law also work with him. In addition to blinds, the company makes screens from thin plaited slats for use as ceilings in tea ceremony pavilions. The roller screens are made from reeds, bamboo or thin sticks (the weft threads), the warp threads are from cotton. A loom is used, fitted with weights [FIG. 23]. It is becoming increasingly difficult and expensive to source the right reeds, and the twigs or sticks are also costly. Bamboo is cut into very thin strips. The growth buds form irregularities, which, if arranged properly, form a pattern. Imperfection is deployed to achieve a decorative function [FIG. 24]. Finer material makes for greater transparency, but less protection from the sun. The screens keep out insects, light and sun, enhance privacy while permitting ventilation. That is important in summer. Outdoor sound can penetrate the interior; contact with the natural surroundings is essential, as in the courtyard of a machiya [FIG. 25]. Blinds need quite frequent renovation: bamboo lasts 50 years, reeds 10. The warp threads and the upper rail wear out sooner.

FIG. 25 Roller blinds at Ninigi machiya in Kyoto

## Details as part of culture

The foregoing examples demonstrate that details are key characteristics in defining Japanese culture. Toshi Kawai told me that there is no word in Japanese for 'beautiful', but that in Japan you can just make things 'beautiful' and consider them to be so, without further explanation. Beautiful sells well, it relates to emotion and to the spirit. Beautiful is part of Japanese culture. Functional serves a practical purpose (and is very Western), beautiful is a higher goal. But there are differences within one country. According to Kawai, the dimensional tolerances are 3 mm, in Tokyo 30 mm and in Hokaido 300 mm. That remark is also of cultural significance.

FIG. 26 Model of a bamboo screen that looks simple and regular on the front

FIG. 27 The back reveals the cuts and adjustments necessary to give the front its regular appearance. In the office of Yoshiaki Namakura of Sotoji construction

Before we visited Kyoto, we read *In Praise of Shadows* (Tanizaki 1977) with our students. The elements it addresses, such as shadows, the accessibility of the toilet space via the outdoor veranda, the feel of the wind and the sound of the rain, the use of paper instead of glass, all made an indelible impression. They were also very identifiable in machiya we visited. The penchant and longing for tradition is greater in Japan than in the Netherlands. The presence of a traditional *tatami* space in almost every contemporary home confirms that. The way apparent contradictions can exist side by side in Japan is of great cultural significance [FIG. 26/27].

# Colophon

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