

Tokyo's Kyōshō Jūtaku: Nature through the Inside, Outside and the In-Between

Cathryn Klasto

The University of Sheffield
United Kingdom

Abstract

Born out of conversations with Japanese architects, as well as intimate spatial encounters with small houses (kyōshō jūtaku) in Tokyo, this paper discusses the way in which nature emerges and functions within fourth generation small housing design. Japan's relationship with nature has generated many interconnecting architectural layers over centuries, arising out of culture, religion and the practicalities and consequences of the country's economy, climate and experiences of natural disasters. These layers have fostered a deep and complex connection to land, and as a result, there is still a high value placed on owning one's own plot, no matter how small. Despite how most city-based plots are often accompanied by high taxes and complicated building regulations; the lure of the land prevails.

Due to domestic plot sizes rapidly reducing after the burst of the Bubble Economy in 1992, kyōshō jūtaku became a reality for those wanting to remain within the greater Tokyo area. A consequence of this reduction was that Tokyoites had less domestic contact with nature, as gardens became a luxury that most could not afford. Therefore, architects designing kyōshō jūtaku began to creatively consider new and innovative ways nature could be reclaimed and experienced through design. Through discussing examples of Tokyo's kyōshō jūtaku in relation to inside, outside and the in-between, this paper traces how current connective and fluid manifestations of nature contribute to the destabilisation of the public-private boundary. It demonstrates how nature plays a fundamental role in building more open relationships with the city, relationships which in turn allow small houses to function as critical micro-spaces within Tokyo's thriving urban ecology.

Keywords: nature, housing, Tokyo, inside-outside, urban design, interiority

Kyōshō Jūtaku?

The direct anglophone translation of *kyōshō jūtaku*¹ is narrow house, although the term is often used flexibly, commonly referring to a small house. Typically, they sit on plots of 100 sqm² or less and, due to Japanese land regulations³, have an even smaller construction perimeter. While it is not considered essential for *kyōshō jūtaku* to be designed by an architect, it is more often than not the case as the majority of small plots which are occupied by these structures are difficult; having complex terrain, awkward angles or unique building restrictions. Therefore, many clients wanting a *kyōshō jūtaku* hire an architect to overcome these obstacles and secure the maximum potential from these spaces. Often, but not always, *kyōshō jūtaku* are visibly unique in their appearance; composed of innovative shapes and forms and constructed from a dynamic set of materials which usually include wood, concrete, steel and glass.

Although *kyōshō jūtaku* do now exist in some parts of rural Japan (Pollock, 2015), they first began to appear in Tokyo and Osaka in the post-war period and can be clearly seen within the 1960s and 70s, through works such as Azuma Takamitsu's *Tower House* (1966), Ando Tadao's *Row House in Sumiyoshi* (1976) and Shinohara Kazuyo's *House in Uehara* (1976).⁴ However, they did not become a significant architectural movement until after the burst of the Bubble economy in 1992, which saw rapid increases in land prices resulting in many people being forced to live outside of the dense inner city. Subsequently, small houses were needed to serve as solutions for this mass movement of suburbanization, as young urbanites desperately wanted to remain in the heart of the metropolis in order to ensure the continuation of their new founded technological lifestyles.

¹ For readers of Japanese, the kanji reading of *kyōshō jūtaku* is 狭小住宅.

² The size of *kyōshō jūtaku* came up within most of the interviews that took place with architects for the PhD research which this paper builds off, with all agreeing that 100m² is the maximum plot size for a *kyōshō jūtaku*. Seventeen fourth generation (established 2001 onwards) architectural studios practising within the Tokyo Metropolitan Region were interviewed during August – December 2018.

³ Japanese land regulations are complex and highly specific. Important to note for this paper is that the building coverage ratio (BCR) or *kenperitsu* [建蔽率] equals the maximum amount of land which can be built upon. The ratio is dependent on the zone where the land is situated and can be anywhere between 30%-80%. It is implemented in order to control building density, ensure fire safety and control light and air ventilation. There is also a floor area ratio (FAR) or *yousekiritsu* [容積率] which sets the maximum floor area across all floors within a house - this is considered a percentage of the total site area. This ratio is also dependent on zoning. Also to note, there is a road width coefficient regulation which ensures that plots are c.4-5m set back from the road which is something which can also decrease available land on which to build. These regulations demonstrate that even if a house has a plot of 100m², the total amount of space allowed to be lived in is significantly less.

⁴ Note to reader: Japanese names will be written in the Japanese order of family name, given name.

Along with increasing land prices, the late 90s saw the Tokyo Metropolitan Government place an increased levy on inheritance tax regarding land, something which is still in place today. This means that any land that generationally passes hands amasses roughly a 50% tax bill, which often leaves people no choice but to divide large plots of land into smaller sections which can then be sold in order to pay the tax bill (“Tax System,” n.d.). Hence in the early 2000s, Tokyo found itself left with a huge amount of small spaces scattered across its vast dense surface, coupled with an overwhelming amount of people who were searching for affordable ways of occupying these same spaces. Thus, in order for these spaces to fit this demand, *kyōshō jūtaku* began to be considered in new and experimental ways, both within the studios of existing architects and through emerging architectural education. According to architect Unemori Hiroyuki, recent years have seen a shift in the housing demand, largely as a result of the country’s declining birth rate and ageing population (personal communication, September 18, 2018). This has resulted in a significant number of empty houses throughout the city (c. 848, 800), something which has generated a trend towards renovation rather than new design (“Housing and Land Survey,” 2018). However, that being said, as Associate Professor of Architecture at Waseda University Fujii Yuri has noted, there still remains a premium on *kyōshō jūtaku* as a house of one’s own (personal communication, November 14, 2018).

According to the Japanese Ministry of Land, Infrastructure, Transport and Tourism, the average cost of buying a new-build mansion apartment (average floor area 64.48sqm) in the Tokyo Metropolitan Region in 2017 was ¥358,800 million (\$3,319,540) (“Jūtaku kensetsu,” n.d.). The average construction cost for a custom-built 50sqm (plot size) house in the Tokyo Metropolitan Region in 2017 was ¥12,280 million (\$110,000) (“Kyōshō jūtaku ttenani?,” 2018). Statistics on the average price of 50sqm piece of land are currently not in existence as it is incredibly difficult to locate an average, as prices are in constant flux and range drastically from ward to ward. However, that being said, even with a 50% inheritance land tax, custom build housing is likely a cheaper option for many. Even in cases where it is equally expensive, custom building comes with the acquisition of land whereas a mansion apartment does not. In the Japanese context, it is the land which holds social currency; it is not only something which can be passed along generations, but it is also one of the few physical constants which have prevailed in the aftermath of the many natural disasters the country has endured. It is perhaps for these reasons that architects remain invested in innovating the *kyōshō jūtaku* model in order to situate it within Japan’s urban future.

Context and Focus

This paper stems from a larger PhD project which is considering the spatial, social and cultural dimensions of the *kyōshō jūtaku*. The case studies and interviews discussed are taken from a six-month period of fieldwork undertaken in Tokyo during 2018. To contextualise the focus, it is important to note that Japanese housing is frequently divided into and discussed in relation to generations. Due to houses having an average life expectancy of 26 years,⁵ the architectural industry embedded, as Atelier Bow-Wow's co-founder Tsukamoto Yoshiharu (2012) states, "a 26-year regeneration frequency within the residential areas" (p. 80) which creates the opportunity for architects to "begin to observe a variety of building behaviours in Tokyo according to specific generations" (p. 80). This continuing cycle allows Tokyo to function as an "embodiment of the changing city" establishing it as an expansive playground for differing housing ideologies to co-exist (Kitayama, Tsukamoto & Nishizawa, 2018, p. 29).

The focus of the PhD research and subsequently this paper is on those studios and houses which were constructed during the current fourth generation, which began in 2001 and is due for approximate completion in 2025. Studios and projects were chosen out of foundational criteria (plot size, construction size, year built, location) as well as their connection to recurring themes generated out of the literature review. In order to produce original insights, qualitative creative methods were implemented including semi-structured architect interviews, site visits, sensory drawing and photography, and soundscape production. As these qualitative creative methods were inherently flexible, the generated data was analysed through the equally flexible framework of thematic analysis (Braun & Clarke, 2013) which does not place ontological, epistemological or methods related limitations. Further, the methods were selected to support a slow-down approach to architectural research, a necessary position for exploring the micro details of spatial relationships and boundary-making.

Atelier Bow-Wow has stated the importance for fourth generation houses to have the capacity to bring the outside in through exploring ways of blurring the previously rigid division of inside-outside present within the third generation (Kitayama et al., 2018). During interview conversations and site observations, nature was frequently discussed and recorded through this inside-outside framing. The examples discussed within this paper reveal how the

⁵ 26 is not a number which is unanimously agreed upon; some architects interviewed contested this and believed it to be closer to 30-35 years. However, it was unanimously established that it was between 26-35 years.

fourth generation are going beyond binary thinking by exploring the role of the in-between which is subsequently working to reframe inside-outside as a fluid spectrum of experience. This blurred tertiary structure of inside-outside and in-between, whereby slippage and movement are integral to its possibilities, can be concretely understood through the philosophy of interiority. Interiority can be defined as an “abstract presence rather than a relative location”, which as opposed to the interior, “moves between all boundaries and across terrain” (Perolini, 2013, p. 1). The work of scholars such as Christine McCarthy (2005) and Jacqueline Power (2018) posit interiority as a temporal phenomenon which invokes interior feelings such as intimacy and enclosure without “entrenching [the] binary opposition” of inside-outside (Power, 2018, p. 126). In other words, whereas the interior shies away from spatial complexity, interiority welcomes in-betweenness. In response to Jacqueline Power’s call for non-western readings of interiority, the following sections of the paper will demonstrate how Japanese spatial concepts reflect and expand our understanding of these intricacies.

To make clear, nature was considered by architects to operate on three levels: natural life (i.e. trees, greenery, flowers), natural spaces (i.e. parks, ponds) and natural processes (i.e. sunlight, wind flow, seasonal change). Further, at times it was spoken about from a symbolic, metaphorical and national perspective, usually in reference to monumental imagery such as Mount Fuji. While recent anglophone and Japanese scholarship on nature encompasses much more, including sustainability, cultural relationships, technology and climate change (Moore, 2016; Latour, 2015; Nagendra, Bai, Brondizio & Lwasa S., 2018; Shirai, 2016; Shiozaki, Takaaki & Shibata, 2015); for the purposes of this paper, the former expressions of the term will be focused on, as this is what dominated interview discussions. By doing this, the paper will demonstrate how these examples of nature contribute towards new perceptions of current themes within the field of interiority, specifically spatial poetics, relationships to scale, boundary-making and phenomenological experience.

With a focus on Tokyo, this paper begins by giving a brief overview of urban Japan’s multi-layered historical relationship to nature, as a way of establishing the ways in which contemporary *kyōshō jūtaku* design aligns and departs with this trajectory. To do this effectively, an interdisciplinary approach will be taken, drawing on the work of prominent scholars within both Japanese Studies and Architecture. From there, the paper delves into an exploration of specific *kyōshō jūtaku* which were encountered, considering the ways each have their own unique relationship to nature through re-framing the inside-outside binary. Finally, these examples will be used alongside

the opinions and practices of those architects interviewed, to access how *kyōshō jūtaku* are micro-spatial entities which, through nature, actively create new relationships with the city.

(A Brief) Natural History

Historian Julia Adeney Thomas (2001) explores Japan's long and complex history with nature by first establishing that the country has "repeatedly and consciously reconfigured the concept of nature" to suit the differing political and cultural needs of various historical periods (p. 3). Despite having taken multiple different ideological forms, there is a general opinion, as expressed by architect Maki Fumihiko (2018), that nature has remained important to the city within "virtually the entire course of urban history in Japan" (p. 21) – a statement supported by architectural historian Jinnai Hidenobu (1995) who writes that Japanese cities have from the outset contained, or been in close proximity to, both water and greenery.

Edo, now known as Tokyo, was established in 1603 and marked the beginning of the Edo period (1603-1868) in the history of Japan. Its formation is in line with Jinnai's statement, as both water and greenery were elements which "intimately linked to the formation of 'place'" (Jinnai, 1995, p. 68), particularly by helping to cement a socio-economic landscape, whereby the lowlands or *shitamachi* (marked by numerous canals) were spatially designated to the lower classes while the mountainous highlands of the *yamanote* region were occupied by the warrior class. Thus, both water and woodland became key markers of the radically different urban human experiences present in Tokyo during the first phase of the city's development.

Aside from operating as a tool to categorise and contain the human realm, nature also served as a way to mark the land of the gods and spirits, present within both formalised religions and folk traditions (Jinnai, 1995). This ranged in size, from the small shrines compactly scattered throughout the city and often built in conjunction with vegetation, to the larger national symbolic roles played by Mount Fuji and Mount Tsukuba. The small everyday relationships of memory and faith, alongside the traditionally unifying natural symbols, have led to the establishment of a philosophical approach to land underpinned with a foundational belief that nature is a complex force that cannot be controlled by humanity.

While slightly outdated now, there have been scholars such as Morris-Suzuki (1991), Yasuda (1989) and Kalland (1994) who have argued that this philosophical relationship with nature promotes

a singular harmonious connection which serves to undermine the control the Japanese have placed on nature (for example in regard to food production and disaster prevention). While these critiques are valid, when looking from an architectural perspective, this narrative of natural harmony has historically held a significant amount of weight. This is despite the controlled restrictions which often surround building in the Japanese context – such as strict regulations and complex plots, both of which contribute towards the reduction of domestic architecture’s engagement with nature.

Tange Kenzō, a hugely influential architect considered the father of Japanese modernism, cited in his 1956 essay *Gendai Kenchiku no Sozo to Nihon Kenchiku no Dento* (Contemporary Architectural Creation and Japanese Architectural Tradition) that it is important to lean toward or sink inwards to nature, in order to appreciate its transformative quality (1956). Similarly, in his own writings, Isozaki (2011) explores the philosophical aspect of nature in relation to architecture, drawing on the Shinto belief of renewal and impermanence; a notorious example of this is the Grand Ise Shrine which engages in the *sengu* (rebuilding) of the *Naikū* and *Gekū* structures every 20 years.

This attitude appears to have garnered a sense of contemporary relevance as during an interview with fourth generation Tokyo based architect Sugawara Daisuke, he described the Japanese relationship to nature as passive, one which allows natural narratives to be embedded into the landscape across time without dictating or controlling the force (personal communication, August 27, 2018). However, for Suemitsu Hirokazu and Suemitsu Yoko, who co-run the studio SUEP, a philosophy of nature built on connective human relationships with nature can be developed through technological means (personal communication, August 7, 2018). For them, this means specialised technology which seeks to direct wind and light flow to enhance both individual structures and collective neighbourhoods, which in turn generates positive narratives of place. This, therefore, counters Sugawara’s passive approach and reframes Tange’s conceptualization of natural transformation as possible only without human intervention. In the contemporary urban environment, harmony and technology do not have to be posited against each other in regard to nature; in reality, they can work to influence each other. Thomas (2001) suggests that nature is a “mark of necessity and freedom simultaneously” (p. 226). In other words, control of nature may be employed for good, which consequently has the potential to establish harmonious freedom between nature and humanity.

The possibilities which this relationship contains has encouraged architects across the generations to think about nature in relation to the physical and atmospheric elements of spatial frameworks, particularly through the *uchi-soto* (inside-outside) boundary. This dichotomy has had a long history in Japan⁶ and as revealed in interviews, it is one which the current fourth generation continues to explore through innovative design approaches to housing. It appears that *uchi-soto* is considered through a graduating scale, ranging from sacred inner privacy reserved for the family to the open exterior which publicly engages with the neighbourhood. Inside and outside are not considered to operate as two separate entities but rather as mutually supportive and interconnected ways of being within space. This perhaps aligns with anthropologist Sugiyama's belief that a boundary is merely "a construct of the observer" rather than "an attribute intrinsic to the object"—which in this context would be the house (Sugiyama, 2004, p. 257). In other words, there is a contemporary assumption that public-private space occupies outside and inside respectively, a rigid perspective which fails to account for spatial nuances and the ways in which nature in particular can leak and blur between the two. Architects, therefore, are deconstructing this idea of a boundary as something to mark two opposite spatial experiences and instead create ways for the subtle dynamics present within the scale to interact and complement each other, linking back to the flexible foundations which underpin the concept of interiority.

There are a number of physical and atmospheric terms which have been considered in relation to the *uchi-soto* scale, all of which lend themselves to the theorisation of interiority. These include *Oku* meaning both physical and psychological depth (Maki, 2008), *Ma*, which refers to the in-between silence between two objects (Isozaki, 2017), and *En* which encompasses the connections and relationships generated by boundaries (Yamana, Hishikawa & Uchino, 2016). Considering these in regard to the urban context of Tokyo, Mostafavi (2016) in writing about the concept of ecological urbanism, argues that "we must be aware of the dynamic relationships, both visible and invisible, that exist among the various domains of a larger terrain or (the) urban" (p. 29). The following section explores how the fourth generation is engaging with both the visibility and invisibility of these terms by consolidating nature into their architectural designs.

⁶ This can be traced explicitly within traditional temple design and Minka farm housing structures.

Nature through Tokyo's *Kyōshō Jūtaku*

Transustainable House

Transustainable House was designed and constructed by Sugawara Daisuke Architects in 2014 (Sugawara Daisuke Architects, n.d.). Sitting on a plot of 38sqm, the structure is composed of diverse inside and outside spaces which allow the residents to choose the ways they interact with the house. This diversity is a deliberate attempt to counter the short life cycle of Tokyo housing, by establishing a flexible spatial structure which can adapt with changes in family and environment, dissolving the need to tear down and rebuild. Speaking with lead architect, Sugawara, he frames this diversity as stemming from four levels of spatial openness; the first being the closed inner privacy of the bedroom, the second being the living room where one can choose how open to make the room using curtains and furniture, the third being the downstairs area which is closest to the outside and has large glass windows, and the fourth being the outside meshed covered area. Sugawara believes that without this graduating experience of inside and outside, people will remain closed off - failing to have a meaningful and beneficial relationship with the natural elements (personal communication, August 27, 2018).



Figure 1
Transustainable House external front facing facade (left) and street view (right) (Photographs by author)

Furuhata (2017) has explored the concept of atmospheric media through historical and contemporary Japanese architecture. She argues how architecture operates as part of a communication network; a mediating technology designed to enhance connections (Furuhata, 2017). *Transustainable House* is an active symbol of this theory, as the material aspects of each four spaces work as technological signifiers, communicating the differing levels of

inside-outside. Natural processes, as well as objects, play a key role in this performance; for example, the fourth space has large stepping stones placed along the gravel stone flooring which leads from the mesh door to the door marking the inside. Typically, in housing, the materiality of the outside and the inside are contrasting, to establish the transition between the public exterior and the private interior. In the Japanese context, this is often reinforced by the act of taking off one's shoes before entering the interior. However, here the stoned flooring and the steps continue inside the house into the third space, collapsing this material distinction and deconstructing our expectations (Figure 2). Architectural theorist Shinohara Masatake (2015) constructs *En* as an unexpected margin which works to "expand the site of relationships and encounters in unexpected directions" (p. 11). In this case, the stones are *En*, by the way in which they create an unexpected interaction between *uchi* and *soto*. The stones are supported in their interaction by natural processes. During the summer months, the door is often left open, allowing wind to circulate through and sunlight to enter the first floor. This deconstruction of boundaries by nature emulates the "trans" in *Transustainable House*; in the sense that transitions are constantly occurring between outside and inside.

Figure 2
Interior views
of the outside
stones and
steps within
the third space
(Photographs by
author)



In a similar vein, two trees grow: one in the mesh area that is visible from the public street and the other within an internal meshed area which physically represents both inside and out. Artist and scholar Pia Lindman encourages us to question how human, material and non-human lifeforms interact, by asking "what are the dynamics between all these elements and how do they feel, obstruct or activate energy and the sensory world around them?" (2014, p. 62).

The trees create natural green energy and their locations allow both the residents inside and those passing the house on the street to experience it. In the internal meshed area, there is a silver spherical sculpture placed directly underneath the tree, which when making

contact with sunlight, reflects the green leaves, lighting up the space (Figure 3). There is a small patio table and chair, and when sitting, one can feel immersed in nature; you can hear the sounds of the neighbourhood from the outside – notably children chattering and the ringing of tiny bells which adorn most Japanese porches. For Sugawara, the joy of *kyōshō jūtaku* living is the ability to customise an ambience, to curate one's own experience of nature (personal communication, August 27, 2018).



Figure 3
View of the
internal meshed
area (Photograph
by author)

Another visible curation of nature can be found within the details of the exterior material surface of the house; something Sugawara deems narrative documentation of the natural ecology (personal communication, August 27, 2018). Originally painted metallic black, the house has overtime rusted from the effects of wind, rain and sunlight, becoming living documentation of the micro-climate of the area (Figure 1). He states that “normally, rust is seen as a negative thing. But I think for my design, it is a record of the climate – it’s a way of having a relationship with the townscape” (personal communication, August 27, 2018). This is particularly interesting when considered in relation to the theoretical concept and physical

act of wrapping. Anthropologist Joy Hendry (1994) engages with the multiple ways one can interpret wrapping: the wrapping of an object (gift culture), the wrapping of the body, of space, of language and of social systems as a way of wrapping people. Here rust functions as an alive micro document for the climate, it wraps the house and actively situates the structure within its environmental context. From the perspective of wrapping, this house's rusted facade problematizes the way in which both 'wrapped' and 'unwrapped' are presented as not only oppositional but also as definite and fixed states. Rather, this example demonstrates that the act of wrapping can occupy a state of flux; in this case changing in response to the trajectory of the ecology. As the rust changes a new layer is built up on top of the previous, thus engaging the house in the process of constant re-wrapping. This emulates the idea that "the wrapping method itself becomes the reality of the present" (Aoki, 2011, p. 155). The writing of architect Maki Fumihiko can be used to extend this idea, as he explores the concept of *kukantai* or "spatial entity". He defines the term as a wrapped surface in transition - a definition which rests on the notion that the surface "has not yet crystallised into something definite" (Maki, 1994, p. 4). The rusted facade of *Transustainable House* appears to embody this conceptualisation, paying aesthetic homage to nature's traces, flows and passage.

E-House

E-House, built in 2006 by FT Architects, is situated in the highly sought-after residential district of Setagaya-ku (FT Architects, n.d.). As joint lead architects Fukushima and Tominaga explain in an interview, the design takes inspiration from ladies' fashion as the client is an established costume designer who wanted a house which could accommodate her work. Interestingly and in reference to the previous interpretation of rust, the house is modelled on the *furoshiki* technique of fabric wrapping which originated in the Edo period - the structure operating as a flexible wrap whereby folds of fabric stick out to create a unique shape. In the case of the house, the architects believe this concept is shown through the way the inside and outside are not neatly separated but stick out, interweaving and extending beyond the structure itself (Fukushima & Tominaga, personal communication, September 25, 2018).

The structure is such that the main house has an exterior angular mesh wall which is entirely covered by dense foliage (Figure 4). This green layer acts as a protective boundary, creating an interesting relationship between public and private. It is impossible to see beyond the natural barrier if you are situated on the public street, but according to the architects, it is entirely possible to see out if you are

situated inside (Fukushima & Tominaga, personal communication, September 25, 2018). From this private inner perspective, this greenery is the first visual image of the outside, which offers a very different view from the usual concrete and grey image which pervades Tokyo living. Fukushima argues that “*kyōshō jūtaku* have to have a dedicated privacy system. Just using walls and glass is too simple - we needed to create a more complex translucent system.” Nature thus functions as part of a carefully designed interface; it helps to provide a rich and diverse experience of space helping to cement a graduation between public and private. The mesh wall seems to establish a certain openness to the inner private space revealing that it is possible to simultaneously experience inner privacy and the publicness of the outside. Tominaga speaks of their need to create private spaces without partitions. When one is working with such a small area of land, rigid partitions are not usually a valid option as they reduce the space even further and in turn create in-between dead spaces which could otherwise have a use. While historically, this has been explored through *shōji* [sliding doors], the fourth generation appear to be acknowledging that nature is an even subtler and potentially more malleable way of creating partitions while simultaneously blurring understandings of the borderline.



Figure 4
E-House external
 mesh wall (left)
 and street
 view (right)
 (Photographs by
 author).

Beita and Fujii (2013), in their exploration of harmonization within Japanese architecture, state that “boundaries add a frame to the world, adding limits and cropping the exterior scenery to create a perfect view” (p. 32). This painterly framing through boundaries can be seen within the house through the design of the bathroom

(Figure 5). The shape of the house is such that this exterior corner may have typically been categorised as dead space, an unfortunate result of the complicated plot shape. However, Fukushima and Tominaga wanted to make use of it, and construct a micro garden-like space which would allow the bather to experience the green environment, the natural light during the day, and the stars at night. The white barrier of the exterior wall intuitively cuts off the view just above the window of the opposite neighbour, leaving only the picturesque image of the traditional Japanese roof. The doors are reinterpretations of the traditional sliding frame, incorporating glass which can be fully exposed, allowing the inside to be totally open to the elements of the outside. The vines hanging down the white surface remind the occupant that life exists outside this beautiful intricate space. Although from this setting, it feels like it would be easy to consider nature and the outside experience as one's own.



Figure 5
E-House
bathroom
(Image courtesy
of FT Architects
and Tomimura
Koichi)

Here *Ma*, operating as the in-between, can be said to be in play. Importantly, *Ma* is not something which occurs as a natural spatial by-product, but rather something which is controlled and deliberate in its instigation (Imamura & Shinohara, 2016). The bathroom design shows how the in-between space is highly controlled; the spaces between objects are carefully curated to produce a certain aesthetic relationship between *uchi* and *soto*. This again goes back to the relationship between harmony and technology; in this case, technical formations of space have been used to enhance a domestic relationship to nature.

Minna-no-ie

Minna-no-ie was designed in 2010 by Mamm Design, an architecture studio co-ran by husband and wife, Mada Akira and Mada Maya (Mamm Design, n.d.). They designed this house for themselves and wanted to find a way of experiencing nature and the outside just as they both did in their childhoods in the Japanese countryside. Mada Maya relays to me how they made numerous models and studies to try and find a way to have a garden on the small 69.7m² plot (2018), but in the end it just didn't work.

Urban scholar Paul Waley reminds us that "just about every aspect of Tokyo's daily-lived landscape has been shaped by the regulations that control the height of buildings, their setback from the street, the materials with which they are constructed, and a whole host of other considerations" (Waley, 2011, p. 91). *Minna-no-ie* is no exception to this and the pressure of these rules were heightened due to the fact that the plot itself is particularly complex; it is part of a small cul-de-sac set back off the main road, with the site jammed in a left-over space between two neighbours, resulting in a difficult angular piece of land on which to build. Mada and Mada's solution to the issue of the garden was to "just put it inside the house!" (personal communication, October 12, 2018). Thus, the architects planted a 6-metre-tall tree inside the central common area (Figure 6), which, according to the studio's website, creates a certain experience:

As soon as one enters the house, one may feel as if they are still outside. One may also feel as if they are in a small secluded urban park. At the same time, the space feels internal and homely. This coexistence of exterior space within this interior space gives the house its unique atmosphere. (Mamm Design, n.d.)

The tree functions as a way of uniting the different levels of the house; there are no internal doors and large glass panels form the roof above the tree, encouraging natural light to reflect down onto the leaves and spread throughout the space. Mada Akira mentioned that they do not consider this central common space as having a specific designated function, for example, he suggested that one could sleep in this area, next to the tree, so one could look up and see the stars (personal communication, October 12, 2018). Alongside the tree, the windows are carefully positioned so that they look out onto a green boundary on the right-hand side of the structure - instead of looking into other people's houses, the windows help to create an atmosphere that you are alone in the surrounding area. Despite the publicness of the complicated plot (its proximity to the neighbours and the busy main road) the feeling of privacy is deliberately and thoughtfully designed so one forgets that reality.

Figure 6
Model of
Minna-no-ie
(Photograph by
author)



According to the architects, the tree and the glass skylight which frames it, offer the occupants an escape from the smallness that surrounds them. Due to this, the tree symbolises *oku*, or depth, generating both a certain natural philosophy of inner space and a way of being transported beyond structural confines.

Reframing a Relationship to the City

These three projects, in their own unique ways, challenge any static conceptions of public and private. When dealing with such small pieces of land, the connection between these two spatial entities inevitably becomes intensified: private cannot escape from the public and vice versa. Many houses which were visited as part of the research would have doors or windows that opened directly onto the street and it could often be unclear which lines marked these two territories.

Tsukamoto Yoshiharu (1998) reminds us that Tokyo is a fluid urban environment, and because of this, there is no choice but to confront and often collapse this intimate boundary. However, due to restrictive building regulations, it can often be an extremely difficult task for architects to negotiate. Kuma Kengo (2012) suggests that “the ambiguous border between the public and private realms is neither designed by the private nor is it designed from the public side”; it is instead “a kind of collaboration between public, private and nature” (p. 20). Consequently, nature can be, and is being, used by fourth generation architects as a mediator between these two complex spatial states.

Unemori Hiroyuki, principal architect at Unemori Architects Office, spoke about how engaging with the philosophical concept of *Ma*, can be a way of thinking in more subtle ways about the space in-between public and private (personal communication, September 18, 2018). As noted previously, *Ma* considers the gap in-between two objects, two spaces, two times. Isozaki (2017) argues that between sound and sound, or in this case the sound of the public and the sound of the private, there is a silence between them, a pause. In a similar way to the graduating scale of *uchi-soto*, *Ma* can be considered, through the medium of nature, as a way of creating a graduating scale between public and private. Nature can occupy this pause and in turn encourage people to engage more directly with the in-between.

What these three architects have done within the three projects discussed in this paper, is successfully implement nature in the in-between. They have allowed the owners to experience spatial diversity; from inner private moments to direct encounters with the outside—all of which work together to collapse any possibility of rigid space. Mostafavi (2016) argues that “the blurring of boundaries—real and virtual ... implies a greater connection and complementarity between the various parts of a given territory” (p. 30). From the perspective of the real, nature, as shown within the beauty and comfortability of these housing examples, is a connective tool for architects. It flows between differing spatial components and offers a sense of unity. Kitayama Koh (2018) makes an interesting statement in relation to the virtual boundary by suggesting that residual spaces within plots, those that are designed to connect with the land, offers owners a perspective that their own territory extends much further than it does in reality (p. 23). If all you can see is nature extending from your house, as is the case in *E-House* for example, perhaps you lose sight of the reality of smallness. Harada Masahiro, of Mount Fuji Architects, supported this notion during an interview by stating that “something could be very small but we might think of it as much bigger—our spatial imagination can grow” (personal communication, October 12, 2018).

Perhaps the way in which nature can occupy the in-between and work towards creating movement and interaction between public and private through collapsed inside-outside manifestations offers a new kind of relationship to the city. Architect Ikeda Yukie of Ikeda Yukie Architects argues that traditionally Japan had much more open communication between people, using communal like spaces such as entranceways and laneways as an in-between (personal communication, September 28, 2018). However, she believes that now the majority of Japanese people really value their privacy to the

point where now there is a significant problem with loneliness and in extreme cases, *hikikomori*.⁷ She thus contends that it is the plight of the fourth generation to tackle this issue in design and actively look for ways to open up homes again by encouraging people to have positive relationships with the outside.

As these three projects show, nature could be one way of opening up the city and to each other. As well as fostering a more open relationship, nature could also function as a way of establishing a more intimate one. Nanashima Yukinobu from Atelier Hako Architects suggests that combining light and greenery can create beauty and warmth, both physically and conceptually (personal communication, October 4, 2018). Both light and greenery are indicators of time; they reflect not only the time of day but also the seasons. Nanashima argues that because of this, they can reflect different atmospheres through the house, subtly reminding the owners that they are not isolated but a part of the changing ecology of the city (personal communication, October 4, 2018).

This paper has, in a similar way to Jacqueline Power's exploration into the Australian indigenous skydome, expanded the concept of interiority by challenging its applicability to "a different cultural lens" (Power, 2018, p. 136). By exploring how nature can incite *Oku, Ma* and *En* within small housing design, processes which in turn destabilise the rigidity of inside-outside, the philosophy of interiority is shown to productively mobilize a connective and supportive urban network; one in which nature can enhance our public and private lives by encouraging us to reject isolation and take an active role in this new ecological era.

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⁷ *Hikikomori* is a Japanese social phenomenon whereby people withdraw physically and emotionally.

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