9 TSUBO HOUSES

THE EVOLUTION OF THE MINIMUM HOUSE

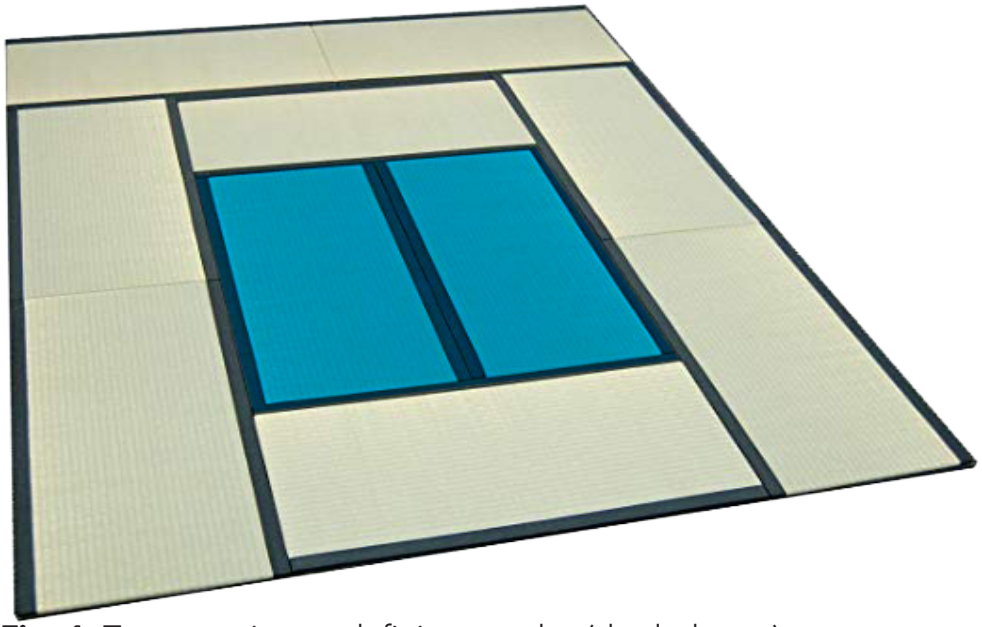


Fig. 1: Two tatami mats defining a tsubo (shaded cyan)

Anthropometric Minimalism

To distill the Japaneseness of Japan's aesthetics – as with any custom and tradition - into single words would be too reductive. Then again, a few words come to mind when describing this sensibility, one of which is the word "minimalism". From a simple sukiya teahouse to a palace like the famous Katsura, the traditional architecture in Japan has been known to cherish the clarity of forms and the delineation of building components by eliminating redundant parts. Japanese minimalism perhaps stemmed from a Zen Buddhist tradition to live frugally and to not produce any waste as a way to respect the spirits of the natural world. This sense of minimalism in architecture is achieved through maintaining a consistency in scale from which things can be modularized, using as reference a simple residential building component: the tatami mat. Daily-life activities can be mentally mapped to the size and layout of the mats; for example: two mats define the most essential task a body must perform every day, which is sleep. (Fig. 1) Such space measuring system disregards the units and metrics (such as shaku) and focuses instead on what and how the body can perform in that space. Many see this anthropometric scale system as the ultimate search for the harmonious relationship between human and their environment, which Leonardo da Vinci sought after with his Vitruvian Man, and later Le Corbusier with the Modulor Man, to name a few. Tatami, being not only a flooring material but also a measuring unit, has evolved through many years with its use in a wide variety of building types, from farm storehouse to imperial palaces, to be one of the most significant factors in defining Japanese architecture. That many components in a building can trace back to the scale of the tatami helps bind them together to form a coherent whole.

Take the celebrated *Miyuki no Ma* (Miyuki's Room) by Horiguchi Sutemi for example. (Fig. 2) The room, while showing evidence of Western influence, particularly inspiration from the Bauhaus, is of high sukiya-zukuri style. This style is also considered the culmination of Japanese architecture in the modern world of 20th century.[1] In fact, it is so great a piece of architecture that it was

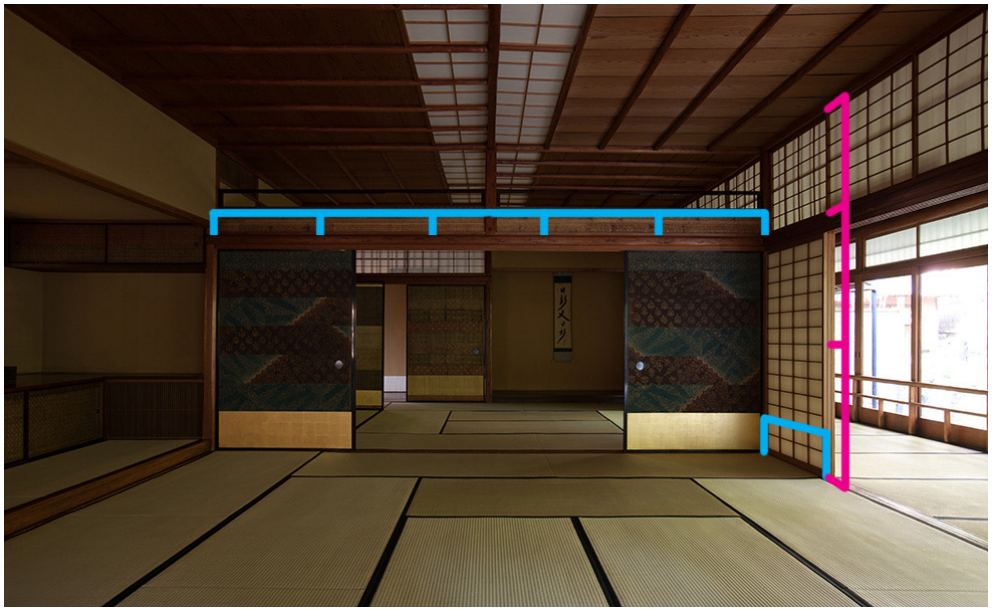


Fig. 2: Miyuki no Ma (御幸の間)
Image: Hasshoukan. Additional illustration: Daniel Vu

awarded the Japanese Architecture Congress Prize in 1951, one year after its completion, despite being only a room rather than a full building.[2] Building on a traditional tea house layout, Horiguchi used the width of the tatami mats as a scale, a unit of measurement, to create a relationship between not just horizontal, but also vertical components.

As can be seen in the illustration, the main space at Miyuki no Ma has five tatami widths, with the addition of two more in the alcove. Each shoji panel is also at the same width as a tatami, which carries upward to influence the horizontal rhythm of the transom above. The height of the transom corresponds with the height of the sliding door, which is approximately twice the door's width. And of course, the alcove on the left is at the same height as the *shoji* and at the same width as the outside veranda, showing the visual balance between left and right as well as the contrast between dark and bright. The tatami, albeit varied between regions, has been a standard dimension in Japanese architecture. The orientation of tatami mats is also very important,[3] and in the case of the Miyuki room, the lines of the tatami mats, along with the ceiling and wall panels, clearly direct the eyes towards a vanishing point in the middle. The result is a clear, easy to read, layout of building components from floor to walls and ceiling, emphasizing on the notion of minimalism with strong rectilinear forms and less redundancy of formal elements. It is important to note that this minimalism is not antithetical to ornamentation in the way Adolf Loos criticized (and criminalized) it. In a Japanese room, ornamentations such as wall paintings and scrolls occur in a mindful and orderly fashion. Even elements like *kumimono* (組物) - roof bracketing system - while ornamental still stemmed from a functional starting point.

Whatever the case, Japanese Minimalism before the end of World War II was developed around the understanding of the human body, its performance in space, and the spatial relationship of the body and the space. Even though this Minimalism emerged from philosophy and religious belief, it is as aesthetic as it is anthropometric.

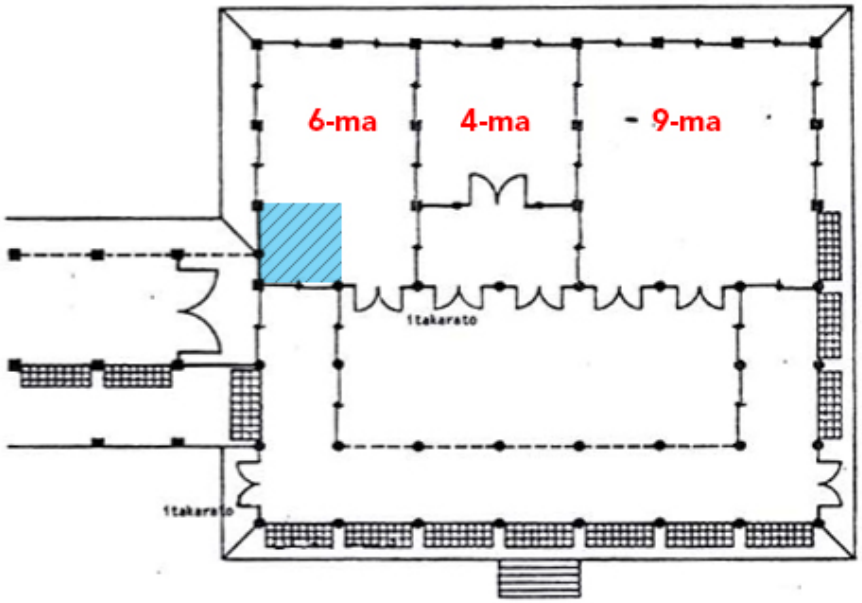


Fig. 2: Muromachi house. Cyan shaded area showing 1-ma space. Image: Itou Teiji. Additional illustration: Daniel Vu

Economic Minimalism

The word "Ma" does not simply refer to the room or the space, but also the **spacing** of structure. This spacing then became also a unit of measurement for area, emphasizing on the number of structural intervals. An illustration from "The Development of Shoin-Style Architecture" by Itou Teiji shows that the concept of Ma is rather implied by the structure at the boundary, similar to the concept of "Bay". (Fig. 3)

Of course, the use of standard dimension is not unique to Japan. Baked brick, ashlar, granite blocks etc. are some ubiquitous and long-lasting examples of using a standard module in building, which can be read by the coursing style as well as the number of courses. However, one can argue that tatami is less subtle, more tactile, and easier to count, and therefore is a clearer material manifestation of the modular unit. From tatami, other dimensions derive, one of which is *Tsubo*, which is an area that is the size of two tatami mats and usually a square space - the essential size of space to sleep. One Tsubo is a square *Ken*, which coincidentally has the same Kanji character as Ma (間). As an area unit, tsubo is also used to appraise the cost of construction (money per tsubo).

In 1952, using tsubo as the basis of measurement, Japanese architect Masuzawa Makoto devised a minimalist house plan of 9 tsubos (also known as Kutsubo, about 30m^2), named "Minimum House", out of the necessity for frugality in postwar economy. This is another reason for minimalism to be in practice, as opposed to the minimalism born out of aesthetics and religious belief. For proof of concept, the architect built a prototype that he himself moved in and wished that it could be replicated with minor modifications to suit anyone's lifestyle as a form of universal housing solution.[4] His 1952 creation of a pre-designed home could be seen as a counterpart to the Eames House of 1949 that was built using ready-to-order catalog parts. Both were prototypes aimed at solving the shortage of resources after the war and creating a design that could be reused over and over.[5] 9 Tsubo House exemplifies not just minimalism, proportions achieved through modular articulation,

but also convertible components to facilitate flexibility in living. The floor plan of this house, as the name indicates, covers the footprint of 9 tsubo. This is a square plan with each side at 3 ken or 18 *shaku*, making a strong 3x3 proportion which is easy to read and replicate.

Masuzawa Makoto's design has inspired several generations of architects who seek to improve upon the basis of his work, one of whom was architect Koizumi Makoto (another Makoto) who re-popularized Masukawa's design with his own interpretation in early 2000's. Koizumi's 9 Tsubo house is not a replica, but rather a modern adaptation of the original in response to yet another issue in the housing market: the exorbitant cost of land and construction in modern Japan. This design by Koizumi would then inspire business-minded former architect Okazaki Yasuyuki to start a partnership with Koizumi to host a "design fair" with several architects in Japan to create a series of pre-designed homes in 2005.[6] An architect that was involved in this project was Abe Hitoshi, who had at the time become an emerging figure in contemporary Japanese architecture, having made a rather dramatic debut in 1992 with a winning design for the Miyagi Stadium.[7] His 9-tsubo house pays homage to the original by Masuzawa, but is three-story high with checkered façade on all sides and a monotonal choice of color to embed the house into its neighborhood.

Fig. 3: Original 9-tsubo house and contemporary variations
Image: Thomas Daniell

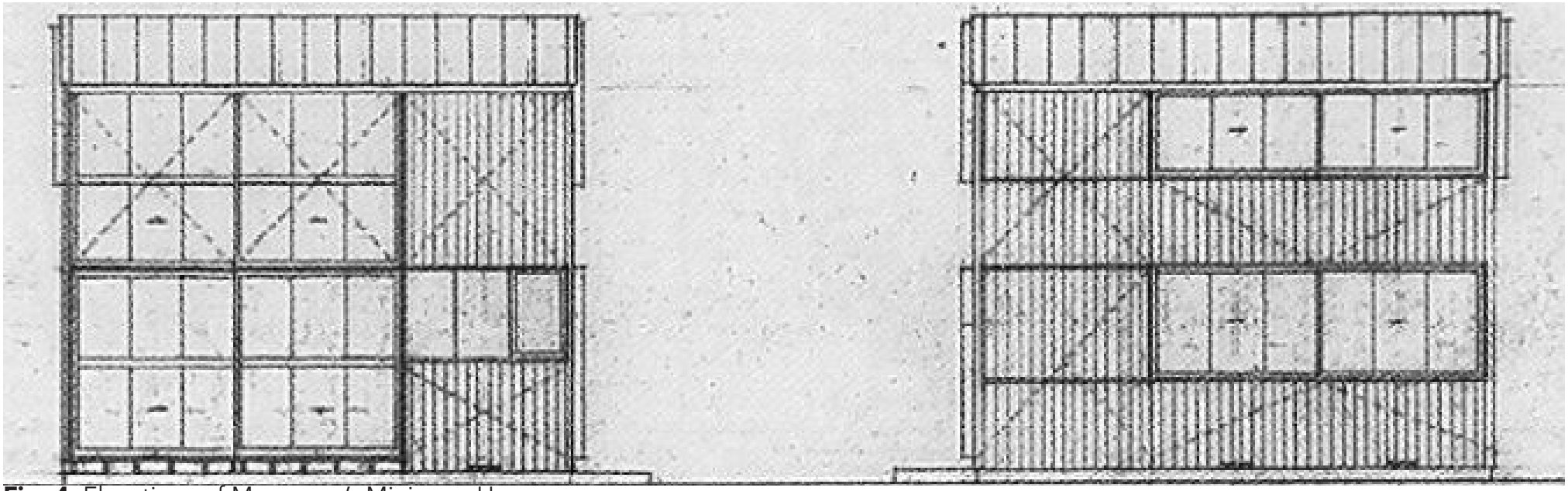


Fig. 4: Elevations of Masuzawa's Minimum House
Image: The Japanese House pp 045

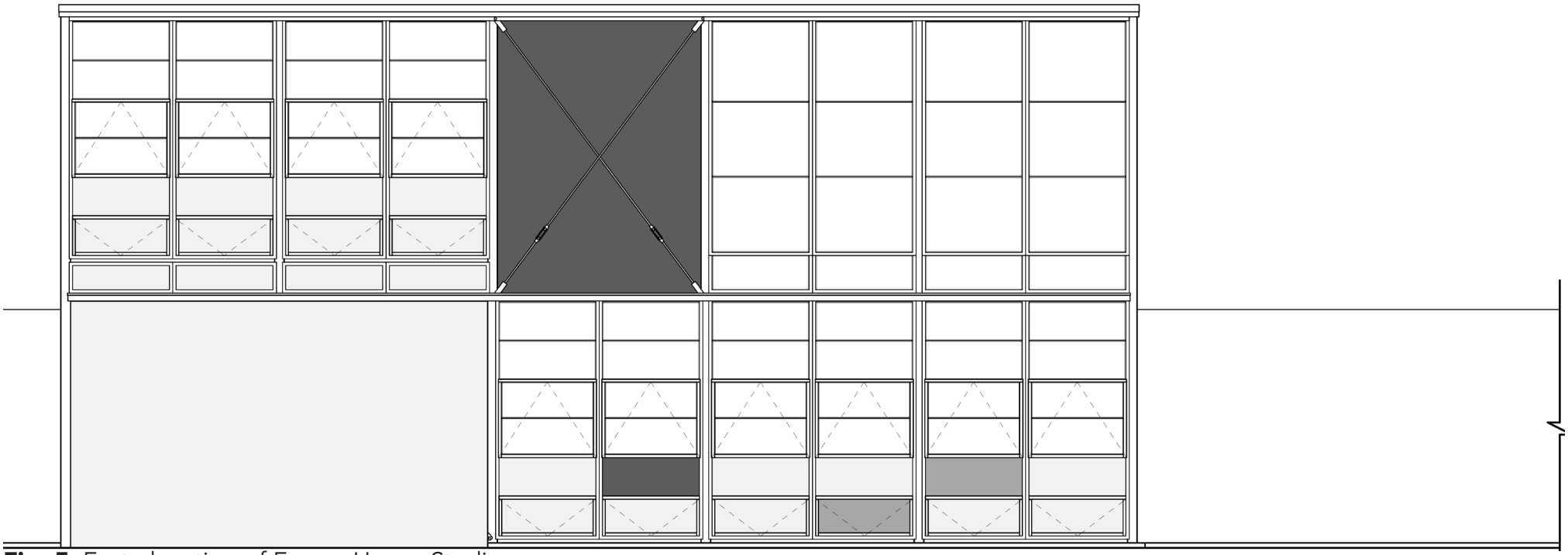


Fig. 5: East elevation of Eames House Studio
Image: Library of Congress

Country	Floor space per person (m2)	Floor space per house		
		total	owner	rental
U.S.A	**62.5 ('84)	*151.9 ('85)	*159.0 ('85)	*115.7 ('85)
U. K.	*30.0 ('86)	75.1 ('86)	81.5 ('86)	69.7 ('86)
W. Germany	32.0 ('82)	79 ('78)	102 ('78)	67 ('78)
France	30.5 ('84)	82.3 ('84)	96.1 ('84)	67.9 ('84)
Japan	27.9 ('88)	89.3 ('88)	116.8 ('88)	44.3 ('88)
Tokyo	23.3 ('88)	69.5 ('88)	97.2 ('88)	38.0 ('88)

Fig. 6: Average floor space per person per house in different markets. Data collected using various sources from 1988 to 1991
Image: The Housing Question in Japan. Kanemoto Yoshitsugu.

$$D(165 - F) \geq 0 \qquad \text{(quantity constraints)}$$

$$\xi = 0.055 \text{ for } 50 \leq F \leq 110 \qquad \text{(space-linked interest rates)}$$

$$0.065 \text{ for } 110 < F \leq 135$$

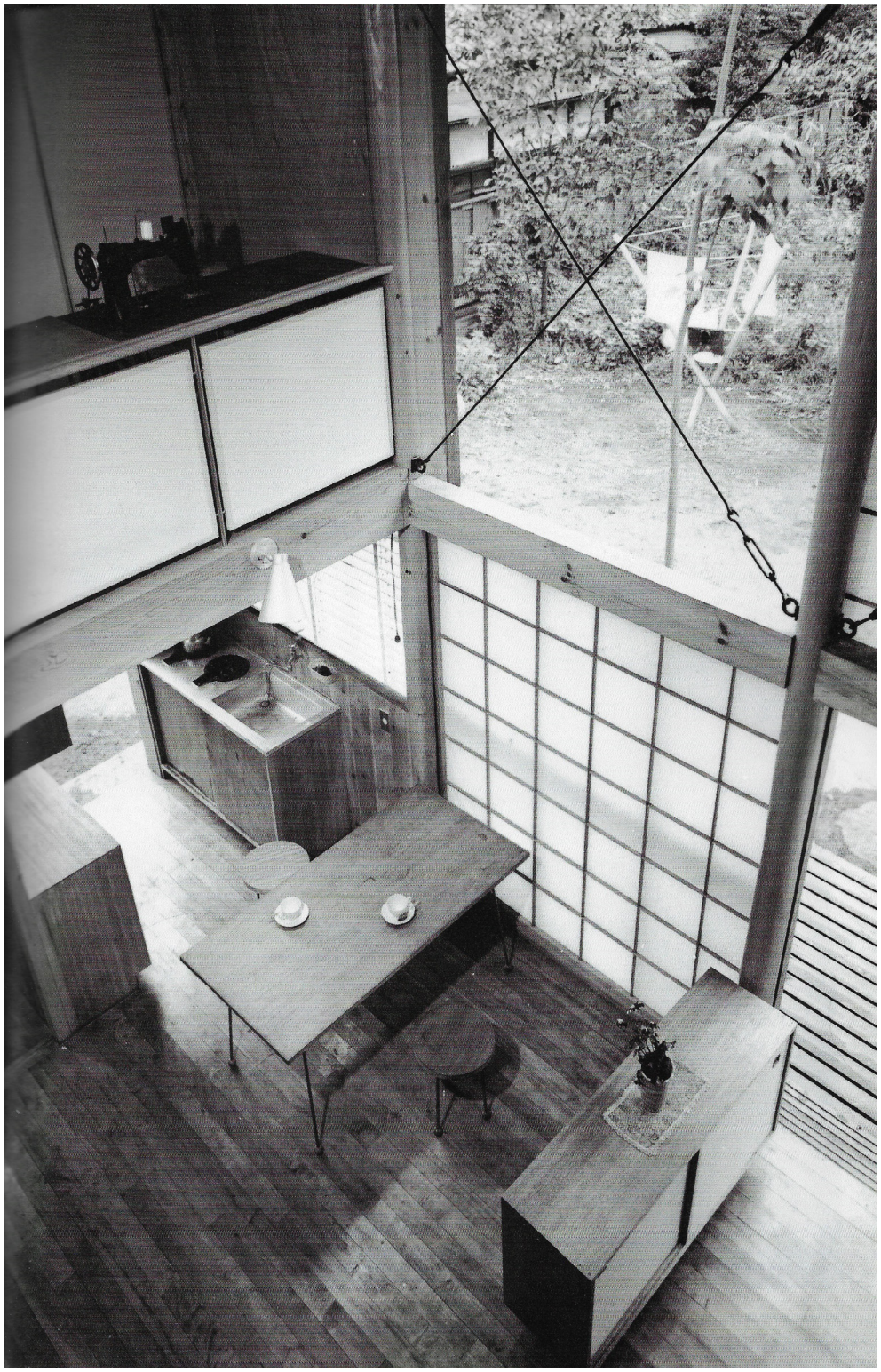
$$0.072 \text{ for } 135 < F \leq 165 \qquad \text{if } D > 0 \text{ and } y_o < 10^7$$

Fig. 7: Space-linked interest rates per home size brackets
Image: The Effects of Subsidized Home Loans [...] . Seko Miki.

Figures 4 and 5 show a to-scale comparison between the Minimum House by Masuzawa and Eames House that was built 3 years prior by the Eames couple. The Eames House was exemplary of industrial home design in post-war economy in America, demonstrating that the construction of residence could be done by non-architects and using off-the-shelf parts. Both the design and its execution reflect a conscious choice to conserve materials and stay frugal in an unpredictable climate of politics and economy. Apart from showing the Cold War mentality, the market uncertainly after the war, the Eames House was also a promotion of mass production of ready-to-order catalog components.

In terms of dimensions, Masuzawa's Minimum House (18 shaku on all sides) is less than half the short side of Eames House (20 feet). The story height in Eames House is also taller than each story at Minimum House. Though built in a conscious manner to save on material and cost, Eames House still boasts a much higher space area standard than Minimum House. Not counting the patios and studio, Eames House was built with a footprint of about 1036 sf, or 30 tsubo. It is worth noting that this is a comparison of two extreme markets in post-war housing. As shown in Figure 6, space standard per person in USA is almost double other global markets, while Japan's space standard is much closer to the rest of the world.

The size of Minimum House also seems to reflect the home loan policy in Japan after the war, enforced by the Government Housing Loan Corporation (GHLC), and was also influenced by the 1947 Tax Reform and the 1951 Housing Act.



Kobayashi Masahiro (2016 : 15) cites Kanemoto Yoshitsugu (1997) on the subsidized loans by GHLC that were only available to homes up to 125 m^2. However, Kanemoto (1997 : 36) only explains that houses around 120 m^2 and below were popular because HLC interest rate would be much higher otherwise. In turn, Kanemoto cites Seko Miki (1993) for this argument. In both 1993 (p 7) paper and 2019 (p 47) book, Seko shows that home loans were only available for homes between 50 m^2 and 165 m^2.[8]

This line of researches negates a false claim that Masuzawa's Minimum House was developed **because** home loans were only available to projects under 50 m^2 (or 100 m^2 by other claims). That Minimum House was built in 1952, immediately after the Public Housing Act of 1951, makes it plausible that Masuzawa used the prototype house to respond to the changing structure of housing in Japan. Provided Masuzawa took the GHLC policy into considerations, his Kutsubo scheme, if anything, shows the intention to be loan-free. Albeit speculative, it might be that at around 30 m^2, the 9-tsubo house would be affordable enough to build unassisted by any government loan schemes, while the size would be adequate to live comfortably, which Masuzawa tested himself by living in it.

Fig. 8: Interior of Minimum House from second level
Image: The Japanese House pp 043

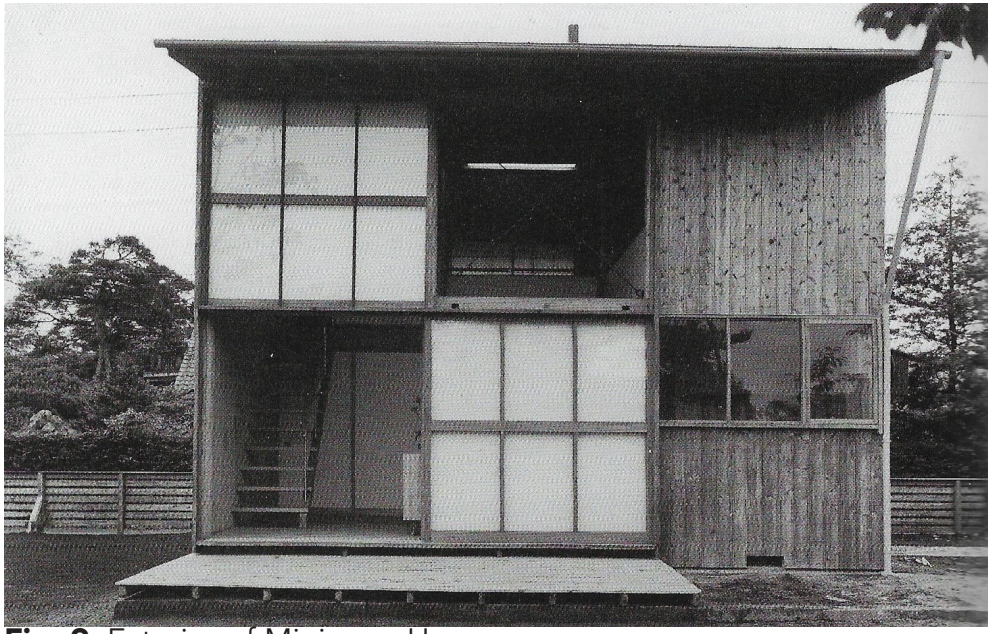


Fig. 9: Exterior of Minimum House
Image: The Japanese House p 040

Fig. 10: Exterior of TALL
Image: Atelier Hitoshi Abe

Architectural Language

Though built within the same footprint of 9 tsubo, Masuzawa's Minimum House and Abe's TALL are vastly different. Besides the lot size, the only commonality the two houses share is perhaps the concept of minimalism. This concept, however, varies between their times. Compared to other variations from the Koizumi-Okazaki-hosted series, Abe's design also deviated the most from the original.

While Masuzawa's design shows enough departure from a traditional Japanese dwelling, it still retains lots of vernacular details, such as movable screen walls reminiscent of the *shoji* doors, wood slats as cladding for exterior, above-grade decking system, veranda, and wood construction that evokes the hand-produced quality even though the house was built to be fabricated in large quantity. In short, looking at Masuzawa's creation, one can still discern that the house was done in a Japanese manner, with great reference to the *sukiya* style.

Abe's TALL, on the other hand, is a completely modern building. Besides the addition of a story, Abe also slightly elongated each floor to stretch the height of the house. Material is more monotonal with only bright-gray metal siding in vertical orientation. As an homage to the original 9-tsubo house, TALL's fenestration shows a checker layout, similar to Minimum House's screen walls in open configuration. This fenestration is a fixed element, as opposed to the screen walls in Minimum House which are convertible.

Together with a ground level that is more solid than fluid, TALL shows a certain level of concern for privacy in modern life.

Regarding the lack of "punchline" in the façade, the architect said, "*I wanted to diminish the dominance of the façade and build a strong connection between inside and out*,"[9] noting that he did not want the façade to turn into the icon of its building.[10] The "inside and out" element recalls the inside-outside relationship that the original Kutsubo created. What's interesting about Abe's modification of the building height is that he did not just add another floor on top but seems to have lifted the most important mass of the original house - the double-height living room and the attached kitchen - off the ground. Shown in the adjacent graphic is Masuzawa's double-height space in magenta. The living room is no longer on the ground floor, in touch with the garden full of trees and grass as conceived by Masuzawa. This is perhaps Abe's take on what the word "landscape" means in urban life in modern Japan. With the scarcity of land, having a garden becomes a luxury, so the view of the neighborhood full of rooflines is now considered a respite and a replacement for the garden. The double-height space from the living room and kitchen up to the loft is then shifted upward. The ground floor still has its significance to house the entryway (genkan), a workspace, a Japanese (tatami) room, and bathroom. It means that the ground level becomes a utility space, while the space for living and enjoyment is upstairs.

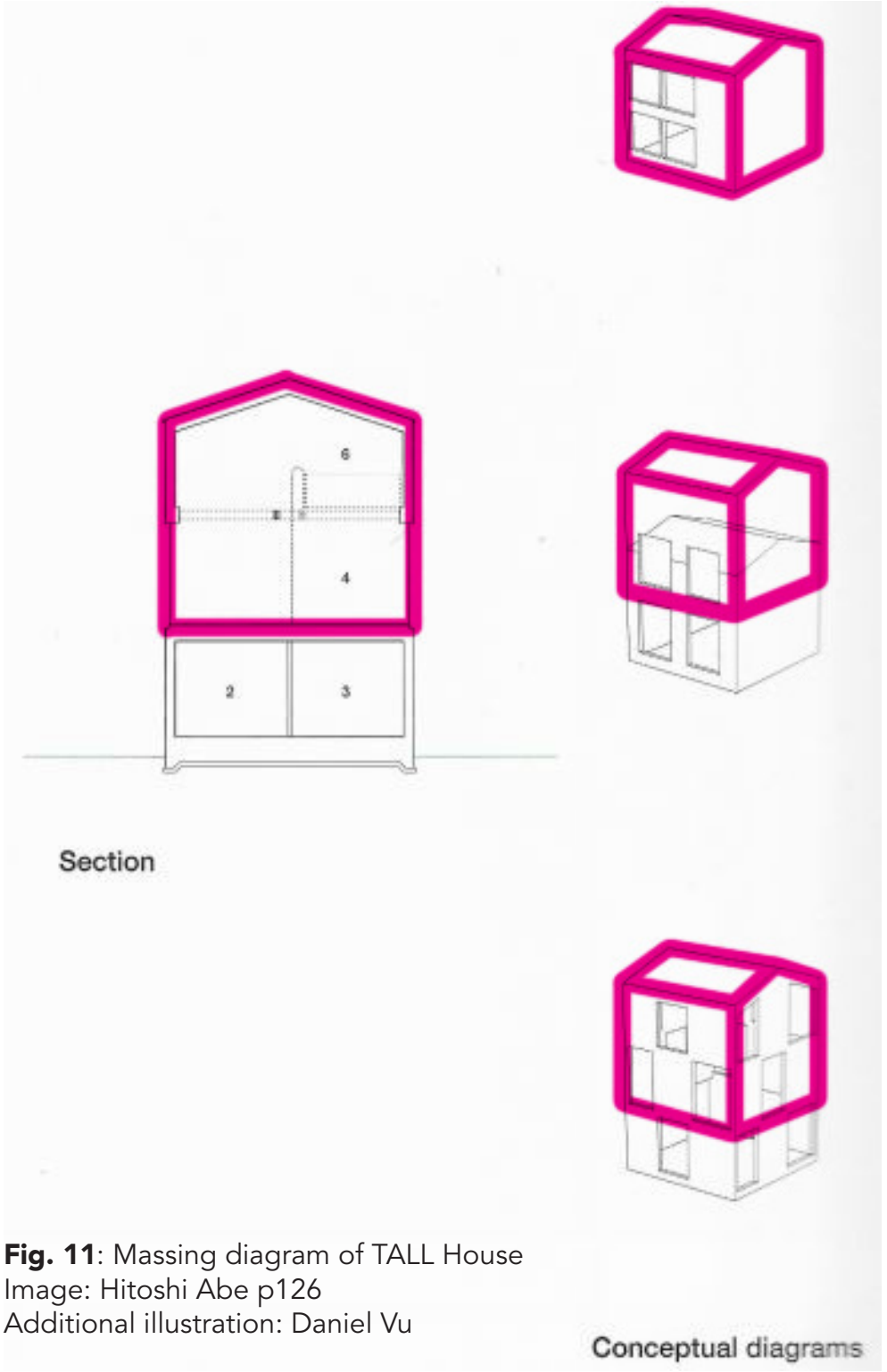


Fig. 11: Massing diagram of TALL House
Image: Hitoshi Abe p126
Additional illustration: Daniel Vu

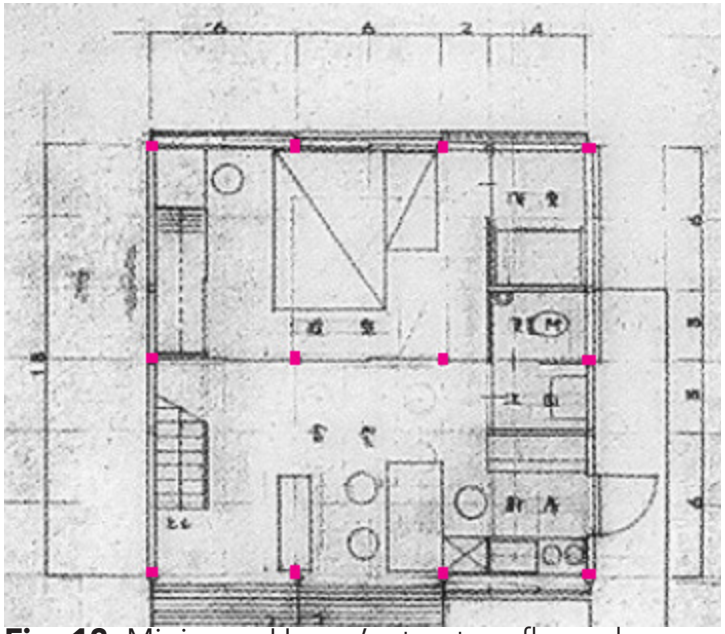


Fig. 12: Minimum House's structure floor plan
Image: The Japanese House p 044. Additional illustration: Daniel Vu

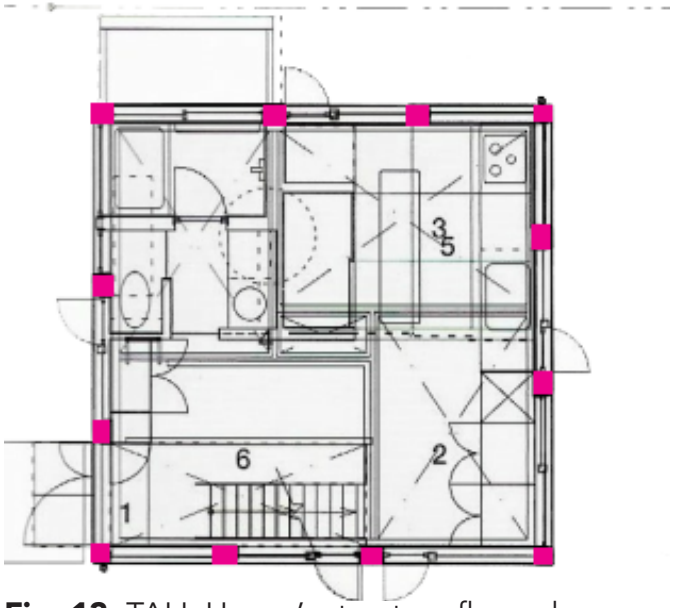


Fig. 13: TALL House's structure floor plan
Image: Hitoshi Abe p 126. Additional illustration: Daniel Vu

Structural Expression

In Masuzawa Makoto's Minimum House, at 1-ken interval, pillars were made of cedar logs to support a two-story house about 2 ken high, while ridgepole and purlins are full length (3 ken / 18 shaku). With a 3 ken x 3 ken floor plan, logically the system tends to follow the rule of thirds. However, in the Minimum House, there is also a structural rhythm of halves, as dictated by the ridgeline at the exact midpoint of the house. Therefore, the grid system is in fact 3 bays x 2 bays, defined by 4 pillars x 3 pillars respectively. (Fig. 12) By having a structural gridline in the middle, Masuzawa could then use it as the line of crossing for an in-wall bracing system, adding structural integrity to the house. (Fig. 15) As seen in the sectional drawing, within each half of the house, the rule of thirds still applies on secondary joists and rafters. An interior photo (Fig. 8) reveals that besides the in-wall braced frame, the perimeter walls also have tension rods for additional bracing. Elevation drawings also show locations of other instances of this tension bracing system. This detail is similar to the one in Eames House, thus showing still more commonalities between the two buildings.

While Masuzawa's Minimum House celebrates the exposed structure of posts and beams, Abe's TALL House has a rather subversive structural system. Apart from column-free spaces, TALL House conveys a clear attempt to hide its columns inside the walls. The architectural floor plans do not show visible locations of these

columns either, and only by overlapping all three floors can one ascertain the structural layout that lies between the openings. (Fig. 13)

Unlike Masuzawa's structural layout that is straightforward, Abe's scheme not only tucks the structural system away but also plays tricks on the eyes by slightly offsetting the grid in all four walls. This could be done by treating each column as a free-standing element which are then connected horizontally by the lintels. The house in this case is built like a box with no inner support. This in turn gives even more significance to the pinwheel structure that supports the loft. In this pinwheel structure, horizontal bars stem spontaneously from the walls, some right above openings. That is because these bars are connected to the lintels that are also hidden behind the walls; the only hint of this is the bumped-out area at each wall. Yet another trick to the eyes, the pinwheel bars are made of wood and kept thin, but are reinforced using double steel channels.

The off-grid columns also inform the exterior wall panels as they have subtle differences in width, making for a non-uniform system of fenestration. In an interview with Naomi Pollock, Abe confirmed that the off-grid system's intention is to reveal the different layers going on inside the house.[11]

Fig. 14: Interior of TALL House from living room
Image: Atelier Hitoshi Abe. Additional illustration: Daniel Vu

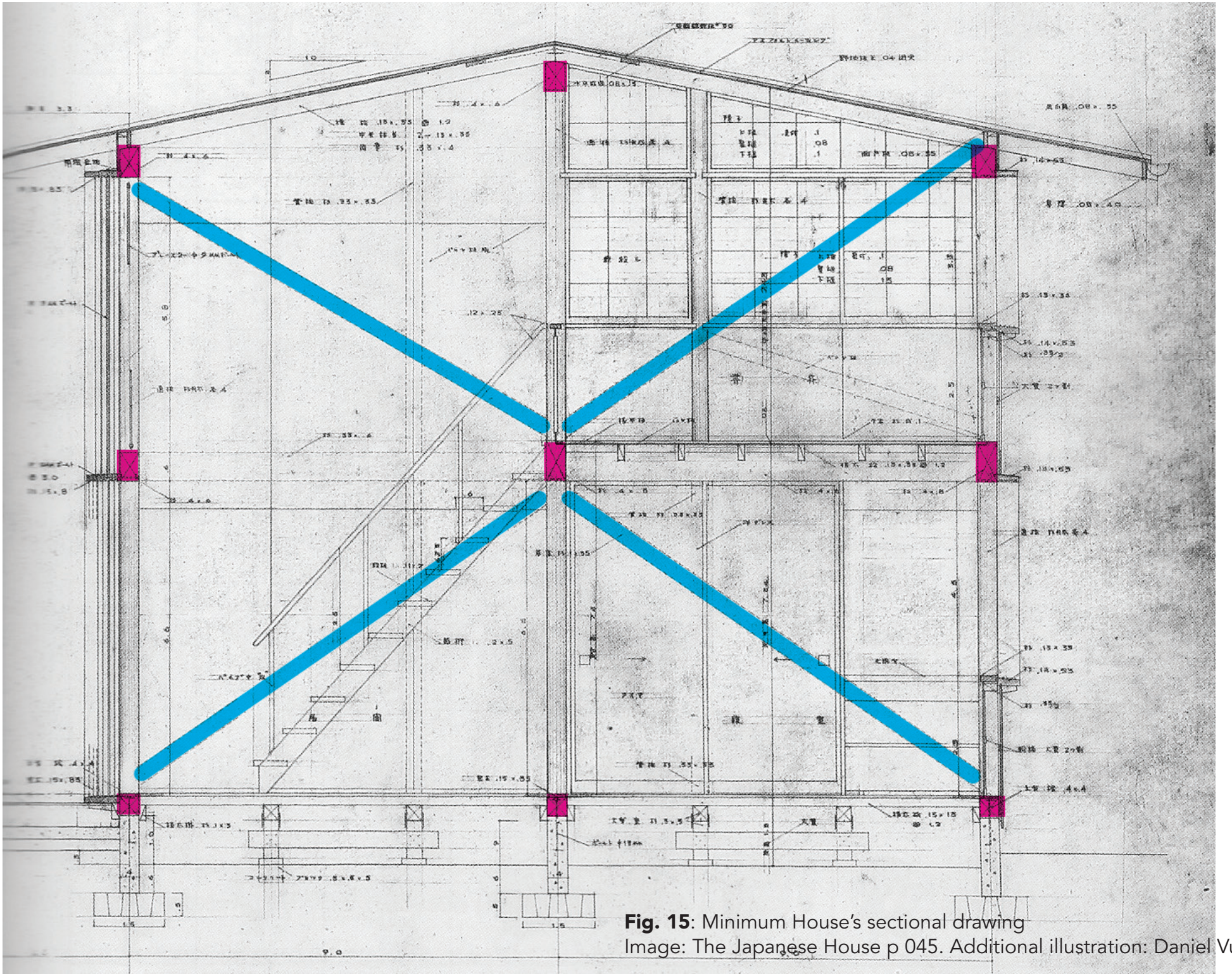


Fig. 15: Minimum House's sectional drawing
Image: The Japanese House p 045. Additional illustration: Daniel Vu

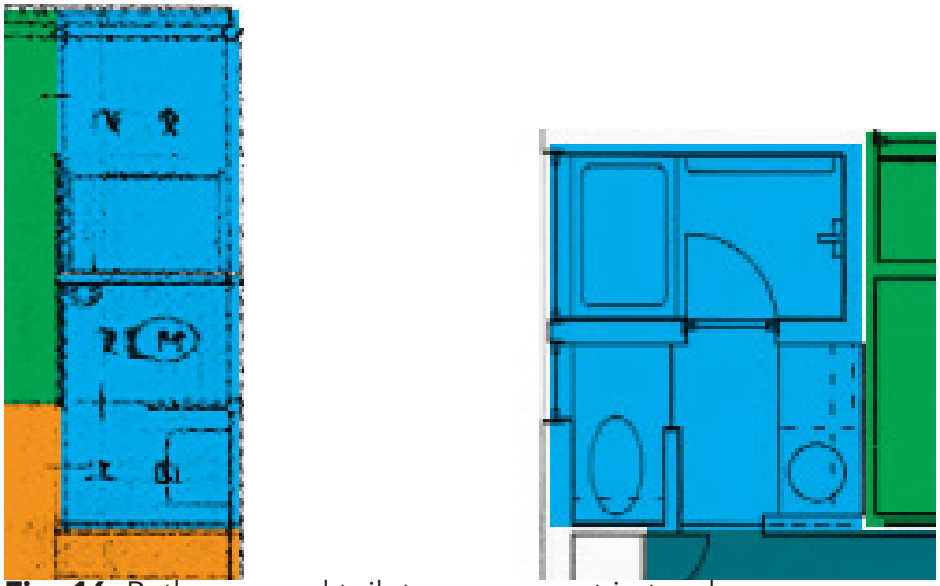


Fig. 16: Bathroom and toilet arrangement in two houses
Image: The Japanese House p 044 & Hitoshi Abe p 126
Additional illustration: Daniel Vu

Spatial Organization

In Masuzawa's Minimum House, the floor plate on the second floor leaves out an opening of 3 tsubo or 1/3 the building footprint, creating rather a mezzanine than a floor by itself. This is a sacrifice on floor area but opens up the living room and turns it into a double-height space; the stair only helps to emphasize the verticality of this space. The height at the bottom of either eave is 13 shaku, slightly more than 2 ken, while the top of the ridge is at about 16 shaku. These are probably the only two odd dimensions that do not follow the 3-shaku multiple in this house.

Looking at the floor plans of both Minimum House and TALL House (fig. 17 & 18), it is visible that all 6 spaces that Masuzawa deemed essential to living (namely: living room, kitchen, tatami/bed room, bathroom & toilet, work space, and utility space) are retained in Abe's scheme. The tatami room used for bedding maintains its location on the first floor, as well as bathroom and toilet. The former probably has to do with the tradition to have tatami room as accessible to all family members, including and especially the elderly, as possible. The latter is more practical, as having plumbing on ground level is much easier. Also, having plumbing service on the ground floor would allow for guests to also use it. In this regard, Masuzawa's design is very clever because the bathroom and the toilet are separated, one accessible to only the owners through the bedroom, the other accessible to anyone. Such separation also lets two people use the plumbing service at once. In Abe's scheme, it is unclear if there is a sliding door to close the toilet. Provided that there is, his layout also has a similar separation of bathroom and toilet and even lets another person use the sink while the other two spaces are occupied.

Beyond the tatami room and the bathroom, all other spaces in Masuzawa's original 9-tsubo house are shuffled: living room and kitchen are located upstairs while the work room is now downstairs. Abe also added a loft to the top floor, which is close in architectural expression as the workspace mezzanine in Masuzawa's scheme. This loft space accounts for one quadrant in a pinwheel layout

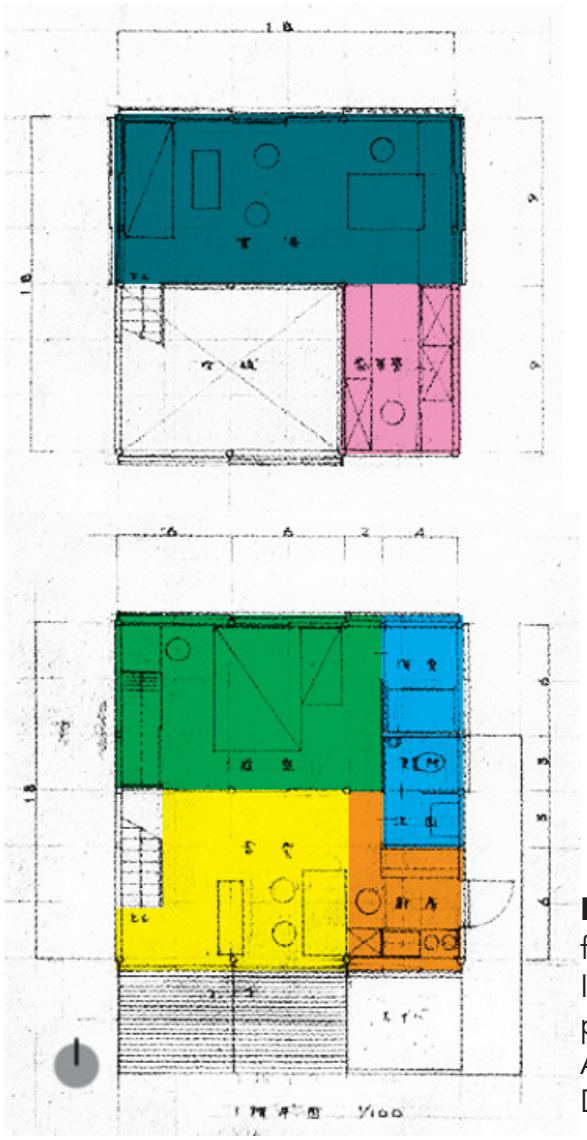


Fig. 17: Minimum House floor plans (left)
Image: The Japanese House p 044
Additional illustration: Daniel Vu

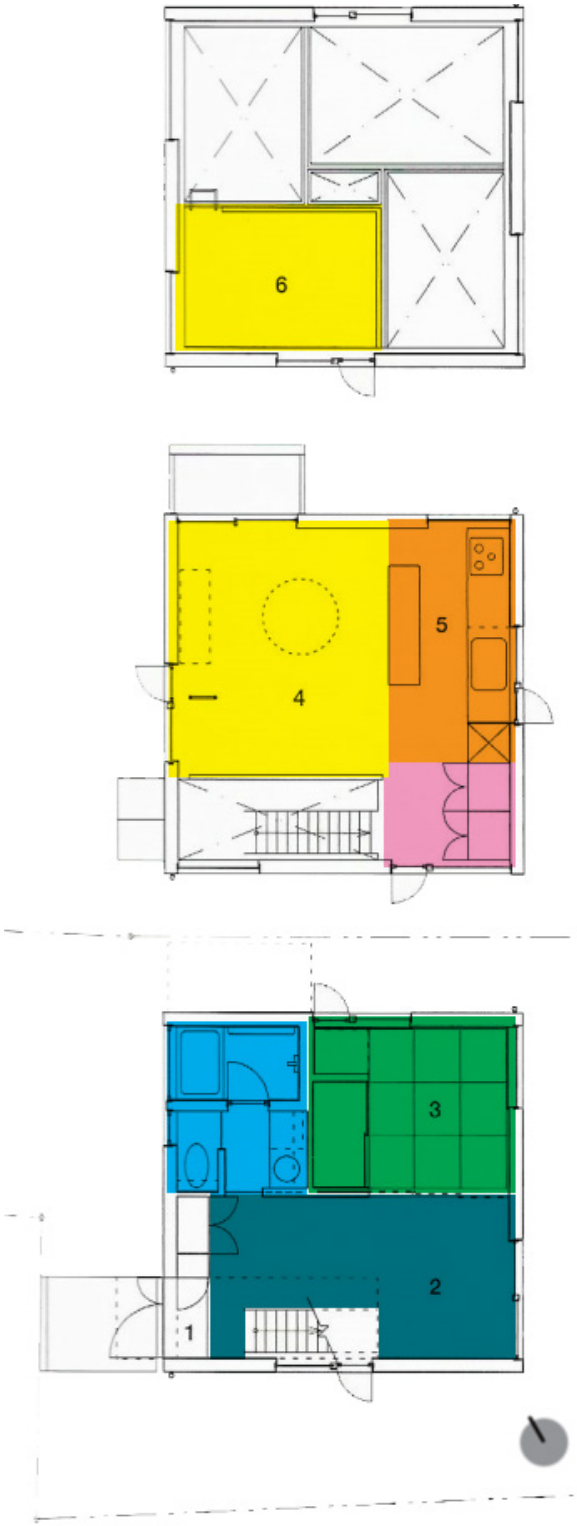


Fig. 18: TALL House floor plans (right)
Image: Hitoshi Abe p 126
Additional illustration: Daniel Vu

of supporting structure. This pinwheel layout is also an abstract reminder of the tatami arrangement in a traditional room. It is important to note that Abe Hitoshi sacrificed the floor space quite a bit more than Masuzawa with this loft. Regarding space economy, it is hard to justify adding another floor just for this loft. However, it clearly was done intentionally to maximize the double-height area in the living room and the kitchen. The double-height area makes Abe's experimentation on solid and void, as seen in the façade, more pronounced. This effect is especially visible at night when the lights are on. (Fig. 19)

The sitting platform in Masuzawa's original 9-tsubo house connects the inside to the garden. In Abe's design, it is replaced by a modest balcony on a second level about 1/4 the size of Masuzawa's front porch. Again, this confirms Abe's interpretation of the indoor-outdoor relationship and human's interaction with the outdoors in an urban environment of modern-day Japan. Even though the depth of the balcony is determined by the property line, that it only spans one structural bay and not more is Abe's personal preference.

Though arranged differently, spaces in Abe's scheme still hold the principles in Masuzawa's design in terms of both number of spaces and their relative sizing. The cross-level open plan is also maintained. In the winter, the size of a compact home makes it easier to have only a small heating device that works for the entire house, therefore maintaining a free flow of space could save energy cost. In the summer, this free flow of space becomes an important factor to utilize natural ventilation – also a cost-saving strategy. Abe's design reflects this understanding of the economy in Masuzawa's scheme, and not just mere formal layout of the house.

The free flow of space means that family members constantly see each other, which adheres to a traditional layout of a Japanese house and differs from the postwar paradigm of nLDK typology with dedicated spaces. nLDK is a common formula of living room (L) + dining room (D) + kitchen (K), and how many bedrooms there are for the family members (n). This is a system largely used by real estate industry in Japan. In writing about FOB Homes, Thomas Daniell cites this type of individually divided spaces as the reason behind contemporary psychological phenomena such as social withdrawal (the *hikikomori* culture) and juvenile delinquency in modern Japanese society.[12]

Fig. 19: TALL's exterior at night
Image: Atelier Hitoshi Abe

Fig. 20: Masuzawa Makoto
Image: act.eshizuoka.jp
https://act.eshizuoka.jp/e407086.html

Fig. 21: Abe Hitoshi
Image: UCLA
https://www.international.ucla.edu/institute/person/653

Dialogue of Generations

Post-war economy in Japan turned the country's traditional minimalism - one of anthropometrics and aesthetics - into a economic minimalism of necessity. It was also a minimalism born out of new building technology that could afford mass production and prefabrication in an unprecedented scale and pace. From immediate postbellum relief plans like Maekawa Kunio's **PREMOS House** and Sakakura Junzo's **A-Ridge House** to later projects such as Ono Katsuhiko & Sekisui Chemical's **Sekisui Heim M1** and Namba Kazuhiko & KAI Workshop's **Box House Series**, the factory-manufactured houses made for an active market and research field in Japan not only in the few years following WWII but also in the present. The balance between efficiency and quality is always a challenge and an opportunity to problem solvers in architecture. By revisiting a prototype developed half a century ago, Koizumi and Okazaki tested the validity of Masuzawa's solution for frugality, for maximum use in minimum space, for the essential requirements of life, and used it as the ground to offer the solution to a completely different housing landscape in a Japan scarce of urban land.

Masuzawa Makoto was working for Antonin Raymond during the time he designed the first Kutsubo House. Raymond, having worked under Cass Gilbert and Frank Lloyd Wright and assisted Wright in overseeing the Imperial Hotel, had a prolific career in Japan to pave the way for modern architecture in this country. Trained in such an international context, Masuzawa applied an innovative response in structure to a traditional expression in architecture in the design of the Minimum House. He must also have been well aware of his contemporaries like Ikebe Kiyoshi with Residence No. 3 built in 1950. Following his years at Raymond's office and the success of Minimum House, he established his own firm in 1956 and later went on to be the director of Japan Institute of Architects and a university lecturer.

Abe Hitoshi has an even more international training and career, having studied in the US and worked across the continents. He also has had a prolific academic life as a professor and chair of the Department of Architecture and Urban Design at UCLA, giving lectures in many countries. Keeping the practicality of the 9 Tsubo plan, his is a playful design in which the vertical dimension is stretched and the directionality is diminished with four equal façades. His subversive structure plays a few tricks on the eyes, and the small loft with exposed support structure conveys the anticipation for future expansion. The playfulness also shows through an unverified anecdote of why he named the house TALL: it is a reference to the sizing system of a certain coffee chain in which *short* is too small, *grande* is too big, but *tall* is just right. TALL House is perhaps Abe's answer to Masuzawa: "Yes, sensei, your solution is still very relevant. But let's make it even more fun."

Appendix

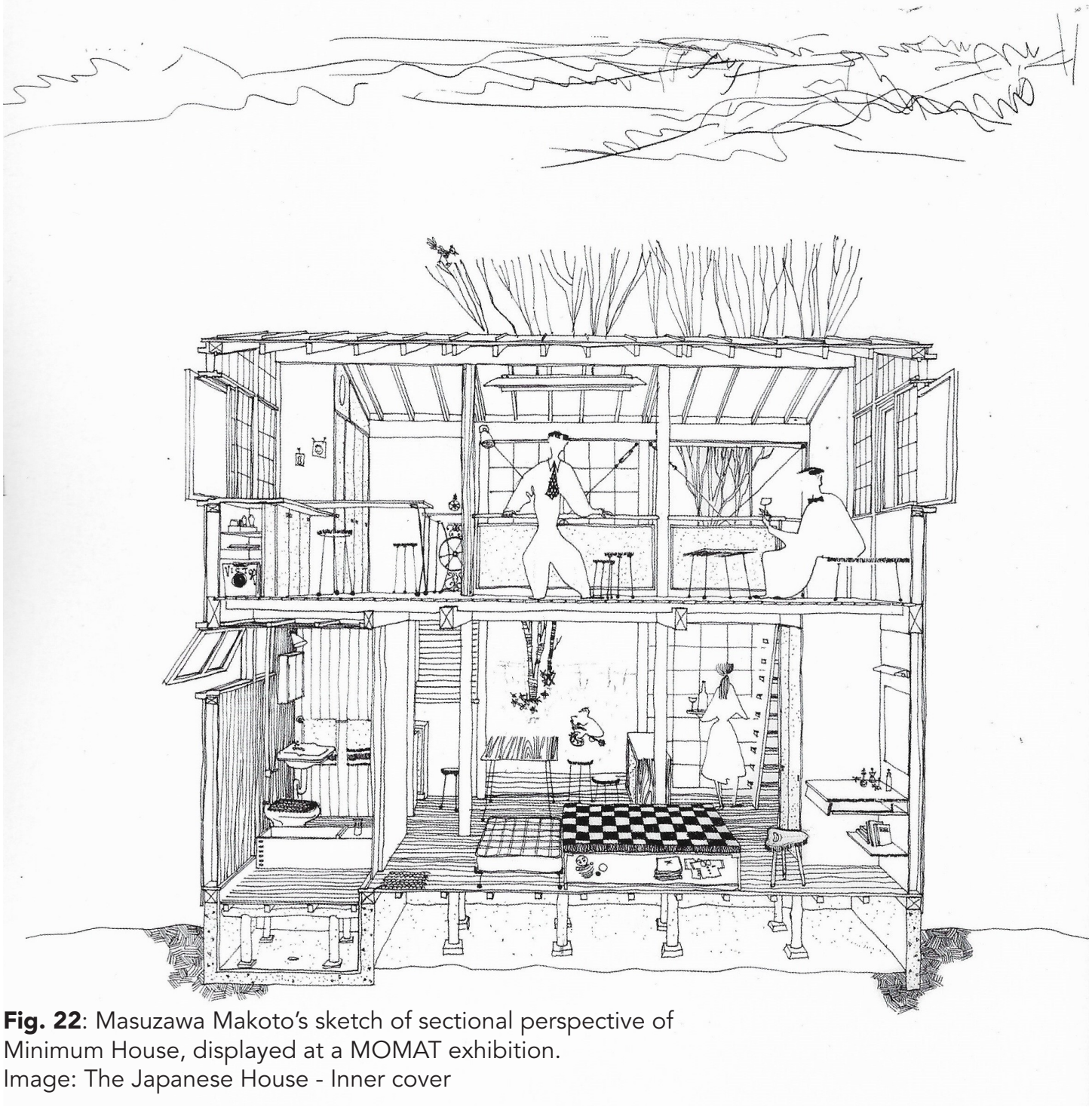


Fig. 22: Masuzawa Makoto's sketch of sectional perspective of Minimum House, displayed at a MOMAT exhibition.
Image: The Japanese House - Inner cover

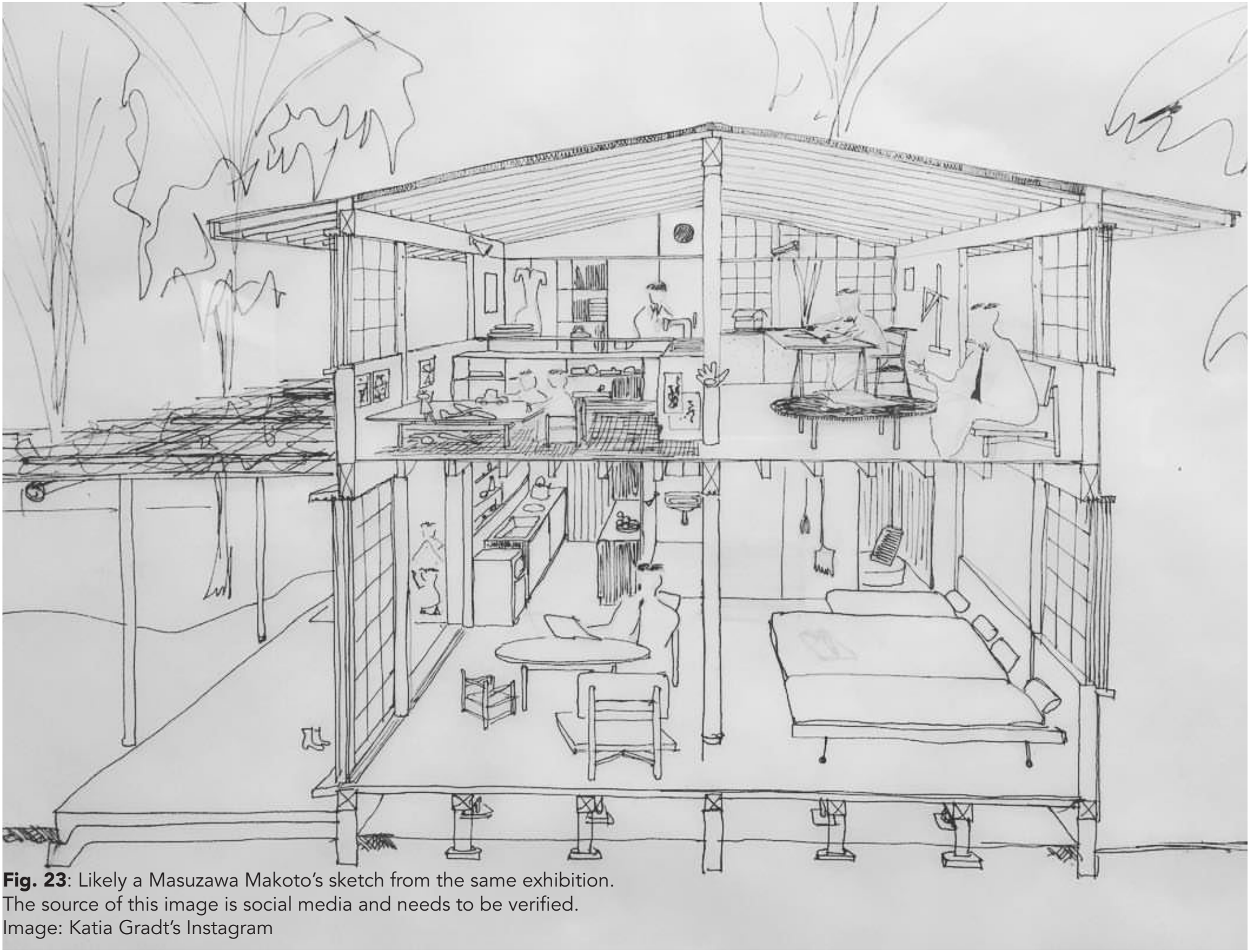


Fig. 23: Likely a Masuzawa Makoto's sketch from the same exhibition.
The source of this image is social media and needs to be verified.
Image: Katia Gradt's Instagram

In-text references

1 Fujimori, Terunobu. “A Journey in Japanese Architecture.” The Japan Journal, Mar. 2008. pp 34-36

2 “Room-2.” Hasshoukan, Hasshoukan, 13 Jan. 2020, www.hasshoukan.com/room-2/

3 Depending on regional standards and eras, tatami layout may vary. However, a configuration may be classified as either auspicious or unlucky and is used only for a specific function/occasion.

4 Pollock, Naomi. “Hitoshi Abe.” Phaidon Press Limited, 2008. pp 124

5 Interestingly, the typology of 30m^2 floor plan enjoys more and more popularity in modern-day Japan as the land premium has kept going up. A few listings of various Kutsubo homes can be found here on a real estate database: https://www.hng.ne.jp/theme_list23.html

6 “9-Tsubo House Project.” Nikkei TV, Japan. Accessed 02/16/2020. https://www.youtube.com/watch?v=1sg1C4mCCT4

Yi, C., & Kang, In-ae. (2015). Japan House Mini: Less than 100 sqm (Jpeak). Seoul: Equal Books. Print.
Abe Hitoshi worked with Okazaki Yasuyuki in another design fair later in which Chiba Manabu and Aterlier Bow Wow also participated.

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12 Daniell, Thomas. (2008) After the Crash : Architecture in Post-bubble Japan. 1st ed. New York: Princeton Architectural. Print. p 72

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