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Maekawa Kunio: prefabricación y modernismo de madera, 1945-1951

Maekawa Kunio: pré-fabricação e modernismo de madeira, 1945-1951

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Resumen: Este artículo analiza las obras y prácticas del arquitecto japonés Maekawa Kunio durante los años posteriores al final de la Segunda Guerra Mundial. Como aclamado defensor del modernismo y de cara a la devastación consecuencia de la Guerra, Maekawa se embarcó en una serie de proyectos arquitectónicos notables que traducían su conocimiento del modernismo europeo a los contextos sociales de su tierra natal. Explorando recursos materiales escasos y respondiendo a la grave escasez de viviendas después de la guerra, su intervención produjo varios edificios de madera con estética modernista de vanguardia y casas prefabricadas innovadoras, inspirados en su estudio con el arquitecto francés Le Corbusier.

Palabras clave: Maekawa Kunio, modernismo de madera, construcción prefabricada, PREMOS, Segunda Guerra Mundial, arquitectura japonesa.

Abstract: This paper examines the Japanese architect Maekawa Kunio’s works and practices during the years immediately after the end of WWII. As an acclaimed advocate of modernism and in the face of the devastation in the wake of the war, Maekawa embarked on a series of noteworthy architectural projects creatively translating his knowledge of European modernism into the social contexts of his native soil. Exploring scarce material resources and responding to the severe housing shortage after the war, Maekawa’s intervention included the production of various wooden buildings with cutting-edge modernist aesthetics as well as innovative prefabricated houses: both were inspired by his study with the French architect Le Corbusier (1887-1965).

Keywords: Maekawa Kunio, Wooden Modernism, Prefabricated Construction, PREMOS, WWII, Japanese Architecture.

Resumo: Este artigo examina as obras e prácticas do arquiteto japonês Maekawa Kunio durante os anos posteriores à Segunda Guerra Mundial. Como um aclamado defensor do modernismo e diante da devastação depois da guerra, Maekawa embarcou em uma série de projetos arquitectónicos notáveis que traduziam seu conhecimento do modernismo europeu aos contextos sociais da sua terra natal. Explorando recursos materiais escassos e respondendo ao déficit habitacional pós-guerra, a intervenção de Maekawa produz vários prédios em madeira com estética modernista de ponta e casas pré-fabricadas inovadoras: ambos inspirados por seu estudo com o arquiteto francês Le Corbusier.

Palavras-chave: Maekawa Kunio, modernismo de madeira, construção pré-fabricada, PREMOS, Segunda Guerra Mundial, arquitetura japonesa.

Maekawa Kunio: An Architect as an Artist

Maekawa Kunio was born in the city of Niigata in 1905. After graduating from high school in Tokyo, he entered Tokyo University’s Architecture
Department in 1925. In Tokyo University, unlike most of his classmates who admired the German Bauhaus movement, Maekawa was drawn to the somewhat irrational quality of French architecture. In the 1920s, the Tokyo University Architecture Department was dominated by the so-called Structure School, led by Sano Toshikata (1880-1956). The Structure School, which stressed the technological functionality of architecture over its artistic quality, came to be powerful during the late Taisho period (1912-1926), especially after the Great Kanto Earthquake hit Tokyo in 1923. This situation must have been disappointing to Maekawa, who, through his passion for literature and art, had already developed a well-founded idea of architecture as art.

Even worse still, the Japanese architectural world at the time was entirely controlled by the government bureaucrats, and architects had no choice but to conform to the official ideologies that exalted conservative aesthetics. Amidst this disappointment, Maekawa encountered Le Corbusier’s (1887-1965) books that had been brought by his advisor Kishida Hideto (1899-1966) who had just returned from Europe. Maekawa was especially impressed by Le Corbusier’s artistic and somewhat anarchist persona that was expressed in the “Confession” chapter of Decorative Art of Today (1925).

From 1928 to 1930, Maekawa worked in Le Corbusier’s office in Paris. While in Paris, Maekawa took part in several projects that were crucial to his career. Particularly of interest was the minimal housing project Maisons Loucheur (1929), which Le Corbusier presented at the CIAM (Congrès International d’Architecture Moderne) conference in Frankfurt in 1929. The design of Maisons Loucheur was developed from Le Corbusier’s original conception of the Dom-ino system in 1914. In this system, Le Corbusier proposed the use of reinforced concrete: a material that is more flexible than traditional brick and stone. He conceived three concrete slabs, six steel columns, and connecting stairs as the minimal unit. At this time, Maekawa’s participation in the minimal housing project must have inspired his later prefabricated PREMOS homes.

During his two years in France, Maekawa involved himself to the ongoing debates in the European architectural world. During 1920s Europe, the implication of modernist architecture was being radically questioned, especially in light of its relation with regionalist aesthetics. In the 1920s, Le Corbusier started to leave behind his Purist aesthetics by utilizing more and more vernacular materials in his projects such as Villa de Mandrot (1930-1931) and Maison Errazuriz (1930). This led Le Corbusier to be caught in the crossfire of both the modernist and the regionalist factions. Maekawa was probably strongly inspired by Le Corbusier’s independent posture as an artist with regards to the role of tradition and innovation in architecture. After his return to Japan, Maekawa embarked on several remarkable architectural projects which strove to translate his modernist sensibilities into the specific social circumstances of 1930s and 1940s Japan.
Maekawa Kunio and Wooden Modernism

The 1940s has generally been regarded by scholars as a lost period in the history of Japanese architecture. In 1937, as Japan plunged into the full-scale war with China, the government started to limit the use of steel materials, thus, only small wooden constructions were possible, in order to improve the balance of international trade. In order to restrict the use of steel as construction material except for strategically important sites such as military factories and electric plants, the government enacted a new law called The Rules Regarding the Permission of Steel Constructions (1937). In other cases, architects were required to limit the use of steel to below fifty tons, which meant that their buildings needed to be built predominantly with wood. The restriction significantly altered the Japanese urban landscape. Many wooden public offices emerged in the central Marunouchi district of Tokyo, and wooden-additions were made to existing steel architecture everywhere. This situation led to the coining of the term the “aesthetic of poverty;” however, there was even more serious criticism after the Aviation Bureau’s office in Marunouchi was struck by lightning in 1940 and all the wooden buildings in its compound burned down. As I will discuss in the next section, the material shortage continued into the post-1945 period after the majority of Japanese cities were destroyed by U.S. aerial bombing.

During the years between 1937 and 1950, most of Maekawa’s noteworthy projects in Japan used wood, and he strove to imbue his wooden constructions with cutting-edge modernist designs. Maekawa’s major wooden works in the 1940s include Kishi Memorial Hall (1940), Maekawa’s Residence (1940), Kinokuniya Bookstore (1947; Fig. 1), and Keio University Hospital (1947; Figs. 2 and 3). For the purpose of this paper, I limit my focus to the work completed after the end of WWII: Kinokuniya Bookstore. Kinokuniya Bookstore was particularly monumental among Maekawa’s wooden works, partly because it was received by the general public in distinctive social circumstances after distressing wartime years.
Figure 1

Figure 2
Maekawa Kunio, Keiō University Hospital, 1947. Provided By, Mayekawa Associates, Architects & Engineers.

Figure 3
Maekawa Kunio, Keiō University Hospital, Interior, 1947. Provided by, Mayekawa Associates, Architects & Engineers.
Kinokuniya Bookstore in Shinjuku was the first of Maekawa’s major projects in the postwar period. By the 1920s, Shinjuku had become one of the principal shopping and entertainment districts in Tokyo, but after mass destruction during the war, it became a hotbed of black market activities. As several critics point out, in the midst of the numerous makeshift barracks, Maekawa’s building with an impressive glass-filled façade was welcomed as a symbol of a new postwar era. One factor that contributed to this positive representation was the illustration of the building (Fig. 1) that was widely circulated by Maekawa’s office in 1947. As Hanada Yoshiaki points out, this illustration was partially different from the building’s actual configuration. In the illustration, the building appears at the end of a long-paved approach sided by an Ōya-stone wall with several sculptural designs. However, in reality, the front area of the building was crowded by impoverished barracks through which the bookstore was only accessible via a narrow path from the front street.

Kinokuniya Bookstore was a two-story wooden-frame building. While Maekawa’s use of the backwardly-tilted roof as a means of creating the immaculate modernist façade was reminiscent of the prewar Kishi Memorial Hall, Kinokuniya’s façade was more predominantly occupied by glass windows, which effectively made the interior space a sort of sunlight-filled pavilion. The interior of the building was characterized by the almost lavish use of space: The shelves and platforms were loosely placed under an airy opencelling structure. There was a loft-like gallery space in the upper area that was accessible by the interior staircase. Furthermore, one somewhat bizarre element in the building’s overall light-weight modernist design was the use of Japanese Ōya stone in the entrance area and at the base of the internal staircase. While this is an immediate reminder of Le Corbusier’s interest in vernacular materials, including locally-hewn stones, Hanada deems that Maekawa might have aimed to give some sense of stateliness appropriate to a store belonging to the major bookseller.

Although the original Kinokuniya building was lost due to a U.S. aerial bomb in May 1945, the company reopened for business in December the same year in an improvised building until Maekawa’s new building was completed. According to Miyauchi, the store became a sort of oasis for people starved of new knowledge as they found many newly published journals such as Tenbo (1946-1951, 1964-1978) and Sekai (1945-). The early works of postwar novelists such as Noma Hiroshi (1915-1991) and Hanada Kiyoteru (1909-1974) were also available. In fact, despite the serious shortage of paper materials, publishing was one of the fast-growing industries in the early postwar period. The number of publishing companies grew from three hundred to two thousand in the first eight months after August 1945, and it is said that when books written by popular authors were released people would often form long lines in front of bookstores several days in advance. While Maekawa’s Kinokuniya was generally well-received by contemporary critics, the architect Ikebe Kiyoshi (1920-1979) criticizes Maekawa’s
overt prioritization of aesthetic interests over the considerations of commercial efficiency. Ikebe argues that the placement of the front plaza pushed the building back from the street, and in contrast to the large sales area, the employees were crammed into a narrow working space. Ikebe’s criticism reveals the slippage between Maekawa’s vision of architecture and its practicality in the real world; this same issue also surfaced in his PREMOS project.

PREMOS Prefabricated Housing Project

This section discusses PREMOS: Maekawa’s prefabricated housing project in early postwar Japan. When Japan acknowledged defeat in August 1945, approximately 65 percent of houses in Tokyo, 57 percent in Osaka, and 89 percent in Nagoya had been destroyed. It is said that 2.7 million Japanese people lost their lives, and more than four million houses were burned down. During the years following the defeat, many Japanese people had no choice but to live in various forms of makeshift constructions made of whatever junk was available such as ruined vehicles and factories. Despite such unprecedented destruction of urban environments, some scholars argue that this situation led to new possibilities for Japanese architects. Funo Shūji states:

But [after the WWII] the fact that what survived the wartime fire were concrete buildings, steel bridges and towers was decisive. The chiasm between prewar and postwar periods was unprecedented in terms of its continuity/discontinuity of urban landscape. The continuity of the urban landscape was reduced to the ruins of burnt field. Or we may say that it prepared a stage most suitable for the principle of modern architecture that was predicated upon the elimination of the contexts of [specific] places and landscapes. It is certainly the cause of anxiety for idealistic urban planners and architects that this blank field soon became humanized through being filled by the sea of barracks. However, the ideal of modern architecture about be drawn in this blank was already present clearly. Now, they only need to step forward to the reality without recalling their past.

The highly experimental nature of Maekawa’s PREMOS might be understood in light of this specific context of postwar devastation, which, according to Funo, enabled architects to expand their almost futuristic imagination without returning to the past.

Prefabricated houses had been produced by European modernist architects since the 1910s, but their attempts were never successful for many reasons. PREMOS provided Maekawa with an opportunity to realize the long-term interest in low-cost housing that he first developed in Le Corbusier’s office. Le Corbusier continued his experimentation with affordable housing for common citizens based on new materials and efficient designs. These projects were the result of the aforementioned Dom-ino System: Le Corbusier’s low-cost housing projects that were never widely produced due to their unexpectedly high production cost. However, Maekawa recalls that he was greatly impressed by Le
Corbusier’s concept of the Free Plan and the Free Façade that was embodied in the Dom-in System. He viewed this to be usable in a variety of ways in the context of wider urban planning.\hspace{1em}^{16}

While PREMOS was a reflection of Maekawa’s concern with the postwar housing shortage in Japan, it also embodied his aspiration to be a modernist architect. Following Le Corbusier, in planning PREMOS, Maekawa insisted that the housing industry should emulate the automobile industry, and that mass-production is the first step in this direction.\hspace{1em}^{17} Within a context of the specific social circumstances of early postwar Japan, his aspirations were realized. During the war, Maekawa’s office had worked for the entrepreneur and prominent politician Ayukawa Yoshisuke (1880-1967). He owned an aircraft factory in Tottori where three thousand workers were to lose their jobs at the end of WWII. As Tanaka Makoto recalls, the company that owned the factory San-in Kōgyō consulted Maekawa regarding its alternative use, and Maekawa decided to start the production of prefabricated houses. The planning process was a collaboration between Maekawa, architectural engineer Ono Kaoru (1903-1957), and the San-in Kōgyō company. The project was named thus: PRE (prefabrication) M (Maekawa) O (Ono) S (Sanin Kogyo). Despite severe shortage of materials and its almost exclusive use of wood, PREMOS lasted for five years and produced approximately one thousand units, most of which were used as coal mine workers’ apartments in rural Japan.

PREMOS was based on the production of same-sized wooden panels that were bolted together in the on-site construction process (Fig. 4). The unit’s structure had no columns and was sustained by L shaped walls that were installed in the four corners of the house. There were several partition walls upon which the ceiling and roof panels were placed. The necessary components were manufactured whole before being shipped from the factory (Fig. 5). For instance, thirty-five floor panels, seventeen partition panels, and twenty-six roof panels were needed for the earliest PREMOS Type 7.\hspace{1em}^{18} Those panels were transported by trucks to the construction sites where each house was installed on a concrete foundation. According to Tanaka, because PREMOS did not require wood to be cut or nailed, the constructions were completed by factory workers who were not experienced carpenters. If weather permitted, houses could be built in a single day; after this, additional interior work would take approximately one week.\hspace{1em}^{19}
The first PREMOS house, called Model 7, was built for a club for occupational soldiers in Tottori in 1946. Although none of the PREMOS houses survive today, the photograph of the early PREMOS Model 7 shows Maekawa’s consistent interest in modernist designs and the effective use of sunlight (Fig. 6). This is particularly clear in his abundant use of extra-large and intricately designed wood-framed windows. According to the floor plan of the later Model 71, the interior space is divided into three rooms in addition to other functional areas including the kitchen and bathroom. The kitchen that is equipped with a large window that occupies a space almost identical in size to the smallest room. Later, several changes, including the removal of the trussing structure in the wooden panels, were made to the original Model 7 in order to simplify the production process. After this, Model 71, and the
low-temperature region Model 73 became the most widely circulated types.  

Figure 6  
Maekawa Kunio. PREMOS Model 7, First Trial House, 1947.  
Provided by, Mayekawa Associates, Architects & Engineers.

In addition to its high cost of production, PREMOS faced many other obstacles. Tanaka recalled that the factory in Tottori was far from a modern factory with an organized labor force. In addition, due to Maekawa’s lack of marketing strategy, it was difficult to constantly receive orders, which made maintenance of the production facilities difficult. PREMOS ended in 1951 after producing approximately one thousand units. As already mentioned, when planning PREMOS, Maekawa drew parallels between the housing and automobile industries. Tanaka mentions that the eventual “failure” of PREMOS was a great lesson in some decisive differences between two above industries. These differences include: Unlike automobiles, houses are placed in specific places, and great deal of work must be undertaken at the construction site; also, Japanese people at that time expected their houses to last thirty to forty years, and, thus, they prefer custom-made houses.

PREMOS as Coal Mine Workers Apartments

In early postwar Japan, during the U.S. occupation, coal mining was a highly prioritized industry, mainly because coal was an indispensable material to operate national industry including steel production. Although coal mines were in fact the largest PREMOS purchaser, Tanaka recalls that the marketing process was by no means easy. While Tanaka visited coal mines in person to advertise PREMOS on the concepts of efficient “modern living” without old-fashioned entrances and reception halls, it was often difficult to convince the residents because of the high price. The largest PREMOS project (1946-1947) was located in Kayanuma mine in Tomari village, western Hokkaidō (Fig. 7). Kayanuma mine was first discovered in 1856, and, during the heyday of its operation, five thousand workers lived in the village. As part of the project, Maekawa’s office committed to planning the whole
residential community, including two-hundred units of PREMOS Model 73, athletic facilities, a public bath, a hospital, and a school. Although PREMOS houses were well-received by mine worker’s families, especially because they were better insulated than conventional apartments, the high cost led to the project being cancelled, and only the half of the originally planned four hundreds houses were constructed.

Figure 7

PREMOS as Urban Private Houses

Although far fewer in number than mine workers’ apartments, PREMOS houses were also used as urban private homes on several occasions. A few known examples include houses belonging to the Ayukawa family (1950; Fig. 8) and the Hamaguchi family (1950). The entrepreneur Ayukawa Yoshisuke’s large Japanese style mansion in Tokyo was confiscated by the U.S. occupational Force after 1945, and his family was crammed into a small annex in the mansion. Because of his personal connection with Maekawa, Ayukawa ordered a PREMOS house for his son. Ayukawa’s PREMOS house was an experimentally-produced Model 7, which had larger dimensions than previous PREMOS houses.

Architectural historian Fujimori, Terunobu who examined one of Ayukawa’s PREMOS houses in the 1990s before it was finally dismantled, describes it as a “large storage container abandoned in a corner of the garden.” Nevertheless, existing photographs reveal that its interior must have appeared extremely modern at the time (Fig. 9). Unlike traditional Japanese houses, these houses were designed to accommodate a Western lifestyle with chairs and tables, and the functional kitchen was equipped with a large window.
Another PREMOS house was ordered by architect and Maekawa’s friend Hamaguchi Miho. Hamaguchi recalls that PREMOS represented a somewhat elite idea of “modern living.” For Hamaguchi, who returned to Tokyo from Hokkaidō after the war, PREMOS was a convenient choice because the factory would transport all the necessary materials to the construction site by truck. As previously described by Funo, in August 1945, a large part of Tokyo was entirely ruined to the extent that people could not even identify the original location of their homes. According to Hamaguchi, their PREMOS were completed within a month: a period
significantly shorter than when ordinary construction methods were used due to delays from lack of materials. In the interview conducted by Fujimori, Hamaguchi says:

*It (PREMOS) was much better than neighboring makeshift barracks. It was good for us, because PREMOS basically follows the concept of modern living with dining-kitchen and one-room where the dwellers use chairs rather than sitting on tatami mats. But I suspect if it was equally good to common people. The concept of modern living at the time was supported by elitist attitude [...] modern living is a house where the dwellers were proud of being distinctive from the rest of population.*

In fact, Hamaguchi’s PREMOS were painted in blue and grey, and when built, they outstood in the debris so that her neighbors thought it was a house of “Only” or a mistress of U.S. soldier. This shows that, while the PREMOS project was indeed intended to provide low-cost houses, it was eventually for the people who were familiar with Maekawa’s modernist concepts. In other words, most people in Tokyo were too economically depressed to afford PREMOS, and, also, they must have been in in a too desperate condition to benefit from Maekawa’s modernist theories.

Considering that PREMOS failed to live up to Maekawa’s original plans to alleviate the serious housing shortage, we might argue that the wartime destruction of the urban environment was too far-reaching to be dealt with single-handedly by a young architect. As we have seen previously, while the deletion of the original urban landscape inspired the imagination of modernist architects, it also seems to have invalidated the fundamental distinction between architecture and environment within which many postwar Japanese architects envisioned the celebrated notion of “people’s architecture.”

**Conclusion**

Today, most architects and critics see PREMOS as an unsuccessful attempt to rationalize housing production; however, it certainly paved the way for later prefabrication industries that used more advanced technologies. Moreover, what seems more important is the fact that such an attempt to introduce a completely new living device based on a strong modernist thesis seems to have been possible only in the somewhat chaotic yet highly mobile period of postwar social transition. Undoubtedly the design of Maekawa’s PREMOS owed much to his previous experiences with wooden modernism. In this sense, just like Kinokuniya, PREMOS was Maekawa’s other attempt to creatively negotiate contemporary political and physical constraints in order to crystallize his modernist aesthetics. The period of postwar experimentation did not last long as the rapid economic recovery prompted Japanese architects to engage in full-scale projects that were mostly commissioned by larger corporate entities. From this period onwards, housing production in Japan gradually became the realm of
corporate industry rather than that of individual architects. Late 1940s Japan provides a great insight not only into the dynamic dialectics between architecture and its social environment, but also into the transnational concept of modernism as practiced in the specific East Asian cultural context.

**Bibliografia.**


Notes

1 Yoshihisa, Maekawa Kunio, zokugun no shō, 26. Also see Corbusier, The Decorative Art of Today.
2 Corbusier conceived this system as a measure against the housing shortage in the post-WWI era. Unlike Maekawa’s PREMOS, which I discuss later, Corbusier’s Dom-ino System used an on-site construction system.
3 Purism in architecture and painting was championed in 1918 by Corbusier and French painter Amedee Ozenfant (1886-1966), who challenged Cubist aesthetics by conceiving forms that were more analogous to the contemporary machine age. Corbusier’s Purist designs were closely tied to the use of reinforced concrete: a more flexible material than traditional bricks and stones.
4 Most survey text books on Japanese art history and Japanese architecture only briefly explain this period. For example, Botond Bognar’s book mentions none of Maekawa’s wooden works in the 1940s. See Bognar, Contemporary Japanese Architecture, 84.
5 Shōichi, Senjika Nihon no kenchikuka, 104-9.
6 Ibid., 104-9.
7 Reynolds, Maekawa Kunio and the Emergence, 150-3.
8 Yoshiaki, "Kinokuniya shoten no imisuru mono", 106-8.
9 Hanada, Kinokuniya shoten no imisuru mono, 106-8.
10 Maekawa’s building was used until 1961 after which the bookstore was moved to a larger concrete building. Because of this early personal connection, Maekawa’s office eventually designed thirty of Kinokuniya branches in Japan and abroad.
11 Hanada, Kinokuniya shoten no imisuru mono, 66-8.
12 Dower, Haiboku o dakebitome, vol. 1, 227-35.
13 Ikebe, “Gendai kenchiku no erabu michi”, 40.
15 Shūji, Sengo kenchikuron nōto, 68.
16 Yoshiyuki, "Corbusier no atorie ni okeru dōryōtachi", 54-5.
17 Fujimori, Shiōwa jūtaku monogatari, 259-75.
18 Tanaka, "Jūtaku ryōsanka-no shippai to kyōkun", 29. 19 Ibid., 29.
19 Ibid., 29.
20 Reynolds, Maekawa Kunio and the Emergence, 146.
22 Takashi, Yoshiyuki, and Daisuke, "Maekawa Kunio sekkai no PREMOS", 313-4.
24 Tanaka, "Jūtaku ryōsanka-no shippai to kyōkun: PREMOS zengo", 34.
25 Fujimori’s interview with Tanaka Makoto. See Fujimori, Shiōwa jūtaku monogatari, 270-1.
26 Reynolds, Maekawa Kunio and the Emergence, 146.
27 Tanaka, Shiōwa jūtaku monogatari, 34.
29 Fujimori, Shiōwa jūtaku monogatari, 266-9. 30 Ibid., 260-1. 31 Ibid., 262-5. 32 Ibid., 262-5. 33 Ibid., 262-5. 34 Ibid., 262-5.
30 Ibid., 260-1.
31 Ibid., 262-5.
32 Ibid., 262-5.
33 Ibid., 262-5.
34 Ibid., 262-5.