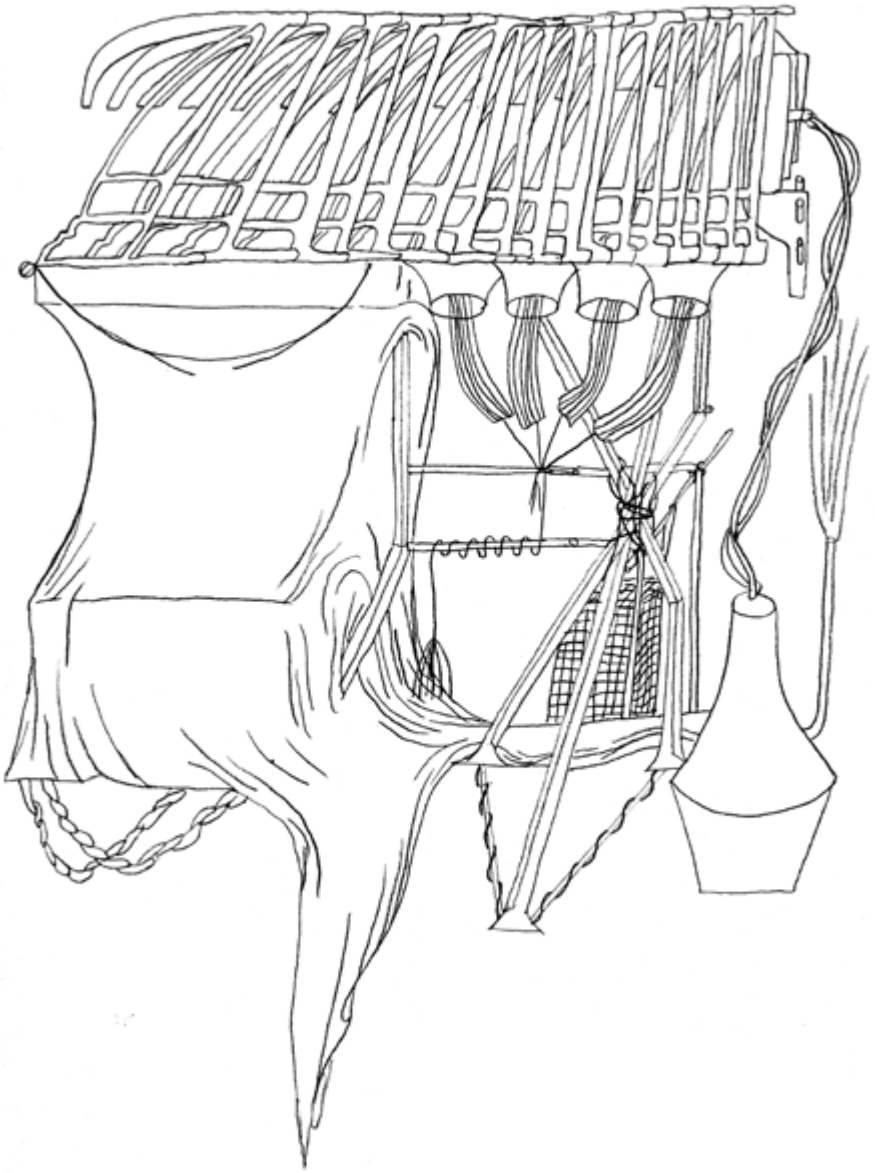
The Impact of Le Corbusier's Theories on Japanese Architectural Culture

From Towards an Architecture to the Metabolism Manifesto. Paris–Tokyo 1923–1960

Ana Tostões, Kengo Hayashi

doi 10.31577/archandurb.2025.59.3-4.7



Le Corbusier's *Vers une architecture* stands as a key modern manifesto whose influence extended to Japan and the emergence of the Metabolism movement in the late 1950s. Admired by Japanese architects trained in Le Corbusier's Paris atelier, his ideas resonated strongly in postwar Tokyo, notably with the National Museum of Western Art (1959). In 1960, Metabolism was articulated by Kikutake, Kurokawa, Maki, and Kawazoe as a vision of architecture capable of growth and change. This paper argues that *Vers une architecture* constitutes a latent theoretical basis of the Metabolism Manifesto, analysing both texts through shared concerns with technology, poetics, organic growth, and the cultural transfer between East and West.

Le Corbusier's *Vers une architecture* (Towards an Architecture)[1] remains the predominant architectural manifesto of modernity, a prodigious achievement that sparked a worldwide change. Its influence stretched far beyond Europe or North America; in Asia, it has a significant impact on the Metabolist movement of the 1960s in Japan.

Returning to the views first presented in the magazine *l'Esprit Nouveau* (1918–1925), *Vers une architecture* provides reinforcement to the provocative architectural action of Charles-Édouard Jeanneret, here assuming for the first time the name or pseudonym of Le Corbusier.

It is important to emphasise the importance that Le Corbusier attached to this publication which became a manifesto, leading him to use a pseudonym for his first public appearance as an activist for modern life and modern architecture. He took on the role individually, leaving behind his two companions from the magazine *l'Esprit Nouveau*, the painter Amédee Ozenfant (1886–1966) and the poet Paul Dermée (1886–1951), with whom he had shared the promotion of modern aesthetics based on rationality, industry and standardisation.

It was under this name that he became deeply admired throughout the world, including the young Japanese architects who went to Paris in the 1920s and 1930s to work in his studio on Rue de Sèvres: Kunio Maekawa was the first to arrive in 1928 and stayed for two years, Mamoru Yamada met Le Corbusier in 1929, while Junzo Sakakura stayed there between 1931 and 1936, even assuming the atelier's leadership.

In turn, during the reconstruction of Tokyo after the Second World War, Le Corbusier was invited to design the National Museum of Western Art, which opened in 1959 in Ueno Park, home to Japan's most important museums. There, he had the opportunity to experiment with natural lighting devices with his *Musée à croissance illimitée* theory and work with local architects Maekawa, Sakakura, and Takamasa Yoshizaka. During his first visit to Tokyo in November 1955, he had the opportunity to admire the International House of Japan (I-House,1952–1955), designed by his students Maekawa, Sakakura and Junzo Yoshimura, built as a centre for cultural and intellectual cooperation linking Japan to the world, representing a landmark of modern architecture. The three architects applied their skills to relating the theories of the Modern Movement to Japanese aesthetics, creating a beautiful Japanese garden that surrounds the entire complex located in the heart of the Tokyo megalopolis, in Roppongi.[2] Moreover, the "I-House" emerged as one of the most important locations for architecture in rebuilt Tokyo, the site of the Metabolist group's meetings, after its first presentation to the participants at the World Design Conference (WODECO), which took place in Tokyo in May 1960.

A year earlier, in 1959, when architects, designers and urban planners from around the world gathered at the last CIAM conference in Otterlo, Netherlands, the leading Japanese architect of the time, Kenzo Tange (1913–2005), presented his Hiroshima Peace Memorial and campaigned for Japan to host WODECO, convincing a large group of international participants.

WODECO not only became the major architectural event of the year, bringing the leading names of the profession to Tokyo: it was here that the Metabolist

Manifesto was presented, bringing to public attention the movement conducted by four young architects and one architectural journalist from the immediate generation after Kenzo Tange – Kiyonori Kikutake, Kisho Kurokawa, Fumihiko Maki, Masato Otaka, and the critic Noboru Kawazoe – all heavily influenced by Tange. The main idea proposed by the Metabolists was to rethink society using architecture as a tool for potential change, speculating on how buildings could change, grow, and evolve.

This work hypothesizes that *Vers une architecture* is the hidden basis of the Metabolist Manifesto. It aims to analyse both texts in their context by examining the affinities between Le Corbusier's technological and poetic influences and the Japanese group's biological metaphors. The paper will consider the dichotomies of poetics versus technology, tradition versus modernity, and landscape versus construction. The link between these two manifestos is envisaged as the shared proposal for a New City, based on a theoretical scheme for a form of architecture and urbanism capable of transforming the territory in a progressive commitment and answer to the historical moment. Le Corbusier's speech in 1923 was motivated by the demands of the Western world undergoing rapid industrial transformation five years after the end of the First World War; similarly, the Metabolist group was inspired by new scientific achievements and the need to reconstruct the Japanese nation after the physical and social damage of WWII.

Le Corbusier's Struggle for la Ville Contemporaine

On its publication in 1923, the impact of *Vers une architecture* was enormous, leading Le Corbusier to launch a second edition the following year. In its introduction, he acknowledges the significant interest in modern architecture and discussions about it, noting that "when, less than a year ago, the first edition of this work appeared, interest in matters of architecture was awakening everywhere. The essence of these chapters, previously published as articles in *l'Esprit Nouveau*, had provoked a sudden census: people were talking, enjoyed talking, and wished to be able to talk about Architecture; representing in this respect, a consequence of a profound social movement. Likewise, in the eighteenth century, a general passion for architecture had awakened; bourgeois citizens drew architecture, as well as high officials, Blondel, Claude Perrault, the Porte Saint-Denis, the Colonnade of the Louvre. And the country had become entirely covered with works bearing witness to that spirit."[3]

After adopting the name Le Corbusier,[4] Charles-Édouard Jeanneret published a compilation of articles previously printed in *l'Esprit Nouveau*, a multidisciplinary journal which served as the major platform for Le Corbusier's theories, allowing the art and architectural critic, provocateur to be introduced to the world through the 28 issues published between 1920 and 1925.

L'Esprit Nouveau displayed a keen sense of history, balanced against its perceptive attention to technological products; equally as interest in Greek temples as in the machines entering ever more prominently into contemporary everyday life. As an "illustrated review of contemporary activity", Le Corbusier published a series of controversial essays reminding "*Monsieurs les architects*" to open their eyes to ships, cars, and airplanes – which were then included as chapters of *Vers une architecture* to encapsulate the "lesson of Rome".

Le Corbusier's writings had a significant impact, further reinforced by the power of his visionary projects focused mainly on the future of cities reflected on the organization of society. In his "Contemporary City for Three Million Inhabitants"[5] presented at the *Salon d'Automne* (1922), as much as his *Plan Voisin*[6] displayed at the *Exposition Internationale des Arts Décoratifs et Industriels Modernes* (1925), he described a new metropolitan organism divided by highways, crossed by aircraft, and dominated by glass towers.[7] The 1925 exhibition provided Le Corbusier with an opportunity to present his theories to a large audience through dioramas and the construction of the pavilion as a house itself. In fact, he also featured his "house cell" concept in the *l'Esprit Nouveau* pavilion, realized as a structure raised at the edge of the exhibition.

Two years after the publication of *Vers une architecture*, Le Corbusier could appreciate the impact of the book as a transformative process among the public: "The way this book has resonated, not so much among professionals, but with the public, confirms the coming of a new architectural cycle. The public, disinterested in studio questions, clings only to the idea of a new architecture capable of bringing it a comfort already glimpsed elsewhere (automobile tourism, sea cruises, etc.), but above all the satisfaction of a new feeling. Where does this new feeling come from? It is the blossoming, after a long germination, of the architectural sense of an era. A new era – a spiritual land lying fallow – and the necessity of building one's house. A house that shall be this human boundary, surrounding us, separating us from the antagonistic natural phenomenon, giving us our human environment, we who are men. The necessity of fulfilling an instinctive aspiration, of realizing a natural function. *To architect!* This is not merely the technical work of professionals. At characteristic turning points, it is the impulsive movement of the common idea, revealing in what mode it intends to order its actions."[8] In essence, his approach embraced the concept of the *Zeitgeist*: times were changing and "thus architecture becomes the mirror of the times." The ordinary, the answer to the basic needs, drives "contemporary architecture concerns itself with the house, the ordinary and everyday house for normal, everyday men. It lets go of palaces. That is a sign of the times."[9] Thus, the new era welcomed contemporary life, in which housing and urban planning became pivotal topics: "To study the house for the average man, the 'ordinary fellow', is to rediscover human foundations, the human scale, the *typical need*, the *typical function*, the *typical emotion*. And there it is! It is crucial, it is everything. A worthy period is announcing itself, one in which man has abandoned pomp."[10]

From West to East: The First and the Last Modern Architectural Manifestos

In 1960 the Metabolism programme was formed in Tokyo, providing the final example of a modern architectural movement that issued its specific and deliberate manifesto. As Arata Isozaki (1931–2022) argues, the historical role of the *avant-garde* movement in a large sense ended in the failure of the global cultural revolution in 1968.[11] Yet within Japan, it arose out of the optimistic spirit of reconstruction in a devastated country.

In fact, if one looks back at the Metabolist movement that took place in Tokyo half a century ago, two contexts should be considered. The first is the global development of the Modern Movement in architecture, which by the 1960s had finally spread all over the world. The other is Japan's unique position as an island nation on the edge of the Far East, fervently embracing modernization and industry since the Meiji era. In these circumstances, Metabolism was the last such modern art and architecture movement to seek utopia and raise an *avant-garde* manifesto. The movement provided a foothold connecting Japanese modern architecture to the global development of modern architecture yet equally promoting a kind of new urbanism vision involving a biologically conceived capacity for growth and change.[12]

In fact, the Metabolists' revolutionary idea was that architecture, and cities should be organic, growing through literally metabolic processes of change and renewal.[13] Some of the principal keywords in accordance with futuristic connections and *avant-garde* visions are megastructures, artificial ground, capsules, infrastructure, and the built environment. Prefabricated construction systems and robotic transportation devices form the basis of small-scale modules that are then multiplied on a colossal scale – resulting in the megastructure. In this respect, their proposal closely follows Le Corbusier's ideas while adapting them to immediate Japanese reality, considering the trauma of war and the atomic bomb as undeniable forces of the moment.

Together, buildings form a city, understood is a visible form of society that gives shape to the way we live. Thus, architecture and cities are the largest embodiment of our way of life and the largest form of art. Metabolism's giant cities based on faith in science and technology preserve Le Corbusier's optimistic Modernism and its linear vision of cities-as-architecture, here created through megastructures that function as much as infrastructures as buildings. By establishing the cultural transfer lines between interwar Europe and postwar Japan, the study aims to identify the guiding principles of creation, knowledge and thinking relating both manifestos.

Unlike Le Corbusier, who seemed to fix the idea of the future in an individual drawing that later became a visual icon – for example, the aerial views of the urban landscape of the city of Rio de Janeiro in Brazil from 1929, with the aerial motorways placed over the undulating bands of buildings – the Metabolists' approach was based on the idea of the physical transformation of built structures.

As Lin argues, at the root of the Metabolist urban utopias was a particular notion of "city as process".[14] Standing in diametric opposition to the modernist paradigm of city design, the Metabolist urban utopias reached toward radical design concepts such as artificial land, urban structuring, marine civilization, and metabolic cycles. These concepts embodied the Metabolists' ideals of social change, as they approached the city as a living organism consisting of elements with different metabolic cycles, considering some to be persistent while others tend to be ephemeral.

At this point, the radicality of the difference from Le Corbusier's theories on the city becomes evident: his fixed concept can be translated into an image, resulting from a plan and design preserved as permanent. In contrast, the Metabolists, in keeping with the pervasive influence of nature in Japanese culture and spirituality, recognised the transient and ephemeral nature of things.

Tange played a particularly significant role in the Metabolist movement while mentoring the younger architect's group, indeed virtually creating the group by chairing the programme committee at the 1960 WODECO. Furthermore, Tange's 1960 Plan for Tokyo, also known as the Tokyo Bay Plan, as presented at WODECO represented a sophisticated synthesis of the Metabolists' urban concepts, expanding their utopian themes to an unprecedented scale, reaching over the sea and across empty land. These urban visions followed a longstanding tradition of utopian planning, in which speculations about the future environment were combined with ideals of social progress.

The Metabolism Manifesto: Its Context and Impact

The Metabolism Manifesto was presented at the WODECO held in Tokyo from 11–16 May 1960. Assuming an important role in Japan's postwar history, as the country recovered from the war and sought to re-join the international architectural community, the conference represented a huge success with approximately 250 architects participated representing 27 countries. Among the participants were several of the era's stellar architects: Paul Rudolph, Peter Smithson, Jaap Bakema, Ralph Erskine, Jean Prouvé, Balkrishna Doshi, Ralph Soriano, Louis Kahn and a delegation of the most prominent designers including the Italian automotive designer Battista Pininfarina, as well as architectural historians like Françoise Choay.[15]

The Japanese delegation consisted of Le Corbusier's prominent pupils Kunio Maekawa and Junzo Sakakura, the prominent Kenzo Tange and the young Metabolist generation.

Interestingly, the Metabolists emerged from the preparations for WODECO, mainly through the organizational work of the Japan Institute of Architects. This institution had been formed in 1958 under an executive committee led by Sakakura (the chair), Maekawa, and Tange, who recommended his assistant at the University of Tokyo, Takashi Asada, to oversee the preparation programmes. Asada called on Noburu Kawazoe, an architectural critic

and chief editor of *Shinkenchiku* [The New Architecture Journal] who was sympathetic to Tange's Corbusian modernism. He also approached Kisho Kurokawa, a former student of Tange's at the University of Tokyo.

Together, they engaged Masato Otaka, then chief architect at Maekawa's office, and had collaborated in the design of the Harumi apartment building, a mass housing project located on a reclaimed site in Tokyo Bay; and Kiyonori Kikutake, known for his Sky House and a series of futuristic urban projects such as the "Tower-Shaped City" and "Marine City", both published in *Kokusai Kenchiku* [The International Architecture Journal] in 1959. They were the rising stars among the young Japanese architects.

Subsequently appointed the Secretary General of the conference committee, Asada was enthusiastic about modern science and concerned about human civilisation in general. He often invited people from other fields to open up discussions on broader issues of history, technology and philosophy, including the Marxist dialectical approach, which was introduced by the atomic physicist Mitsuo Taketani.[16]

Evidently, it was new knowledge in biology and bioengineering that inspired the Metabolists when they chose the term. "Metabolism" simultaneously expresses the origins of their proposals from Japanese thinking, since impermanence was considered a Japanese characteristic.[17] The 1950s were a significant time for discoveries in life sciences, earning it the title of the "decade of genetic molecular biology", starting with the mapping of the DNA molecule in 1953. Driven by the optimistic intellectual atmosphere of the time, the young architects employed a biological term to express their vision of cities and human societies.

Metabolism, in their views, best described the nature of urban evolution and transformation; the application of modern technology and design could stimulate wide-ranging social transformations on the scale of Le Corbusier's somewhat simplistic formulation: "Architecture or Revolution". In another sense, this belief confirmed the influence of the Marxist ideology on their architectural philosophy along with a somewhat naive technocratic optimism as characteristic of all their urban proposals as those of Le Corbusier.

This vague connection between the city and the principle of life was reflected in the Manifesto entitled *METABOLISM/1960: The Proposals for New Urbanism*, published at the Conference and sold at the entrance to the WODECO venue.[18] Printed in two thousand copies, the book included in its 90 pages projects by each of the Metabolist group's members, organized into 4 themes: Kikutake presented essays and illustrations on his concept of the "Ocean City"; Kurokawa contributed with his "Space City"; Kawazoe presented "Material and Man"; Otaka and Maki jointly wrote "Towards the Group Form".[19]

In their argumentation, "*Metabolism* is the name of the group, in which each member proposes future designs of our coming world through his concrete designs and illustrations. We regard human society as a vital process – a continuous development from the atom to nebula. The reason why we use such a biological word, metabolism, is that we believe design and technology should be a denotation of human society. We are not going to accept metabolism as a natural historical process but try to encourage active metabolic development of our society through our proposals. This volume mainly consists of the designs for our future cities proposed only by architects. From the next issue, however, the people in other fields such as designers, artists, engineers, scientists and politicians will participate in it, and already some of them are preparing for the next one. In future, more will come to join 'Metabolism' and some will go that means a metabolic process will also take place in its membership."[20]

First in the volume starts is Kiyonori Kikutake's essay entitled "Ocean City", introducing the Metabolists' idea of "artificial land" in response to the scarcity of land in large cities. Such artificial land would be composed of concrete slabs, oceans or walls following his previous "Marine City" idea. Floating freely in the ocean, the city would remain free of ties to any particular nation and therefore unburdened by the contingency of war.[21] The artificial land of the city would house agriculture, industry, entertainment, while the residential towers would be submerged below ocean level to a depth of 200 metres. As it floated across the ocean, the city could furthermore grow organically like an organism, recovering and expanding on the idea of the ocean liner serving as the origin of Le Corbusier's housing unit. Kikutake had become famous through the design of his own house, known as Sky House (1958), an iconic work where he first explored the idea of a building capable of responding organically to cycles of growth and decay. During the conference participants' stay in Tokyo, a select group of attendees, including Louis Kahn, were invited to an evening gathering at the house.

Next was Kurokawa's essay entitled "Space City", accompanied by four projects. First, the Neo-Tokyo plan proposed a decentralised city organized into cruciform patterns. For the Wall City, he assumed a zoning position directly opposed to the principles of the Athens Charter, working to reverse the ever-expanding distance between the home and the workplace through proposing a wall-shaped city integrating dwellings on one side of the wall and workplaces in the other, with infrastructures like transportation and services inserted into the middle of the wall.[22] The Agricultural City project, in turn, consisted of a grid system supported on four-meter stilts above the ground, "allowing agriculture and communal life to exist, safely and unimpeded in two separate modes".[23] Finally, he presented the Mushroom House: a project sprouting from the ground, elevated above the spreading rice fields of the Agricultural City like a mushroom cap; Kurokawa's suspended house included not only living space but also a tearoom.[24]

Next was the proposal launched by Maki and Otaka's essay on the idea of "Group Form"; focused on the

prospect of flexible urban planning grounded in research examining the grouping and form of vernacular buildings. Its urban design concept would allow the city as a whole to generate and grow like a biological life form: "while individual buildings are completed with their own individual characteristics, through the process of their birth and extinction, it is possible to see an overall image of society in the group as a whole".[25] Praising the maintenance of the community's unique characteristics, the 'group form' approach seeks to define the unified form on top of the relationship between the constantly changing whole and its individual parts."

Finally, the last essay was presented by Kawazoe, the group's main theorist,[26] as a more theoretical conclusion. Entitled "Material and Man", its proposal was the full renewal of the unity of human and nature: "I want to be a shell, I want to be a mold, I want to be a spirit."[27]

The radical projects in the Metabolist Manifesto immediately attracted worldwide attention and international acclaim. As a result, Kikutake and Kurokawa were invited to participate the following year in the MoMA exhibition "Visionary Architecture". For the first time, the designs of Japanese architects were displayed alongside those of Western masters, such as Le Corbusier or Wright. This project gave rise to the idea of "shell architecture", which connects buildings, habitats, and housing in equal measure to the biological metaphor.[28]

Utopian Ideas Linked to Manifestos

Since ancient times, conceptions of a good life or a perfect commonwealth have been firmly anchored to the form of the city. It was in this sense that the term "utopia" was coined by Thomas More in 1516, ambiguously mixing the semantics of "*eu-topia*" [good place] and "*ou-topia*" [no place]. The word has been used to describe both the pursuit of an ideal state and criticism of extant reality.[29]

Following these utopian patterns, including those of the *città ideale* from the Italian Renaissance Le Corbusier's *Vers une architecture* called for a precisely designed city with a strictly conceived layout.[30] This rational view of the city was most evident in his planning schemes, most notably the Plan for Algiers and the bird's-eye views of Rio de Janeiro, which feature megastructures containing housing and highways on the top. His 1922 *Ville Contemporaine*, a city of office towers, represented the ideal form of the Industrial Age with its emphasis on efficiency, centralization, and uncompromising geometric order.[31]

In fact, Le Corbusier's manifesto aimed toward a city designed as a single object, a highly evident revelation of the rational view of urban form. Following the ideals of previous social utopias, a concern for equality and democracy could also be found in his ideal cities, yet nonetheless subordinate to the need for planning and thus resulting in urban forms strikingly different from earlier utopian concepts. His ambition was to create a single society united in belief and action while accommodating democratic and populist needs.[32]

An analogous combination of rational planning and social democracy is no less evident in the urban utopias of the Metabolist Manifesto. Influenced by rational and democratic impulses, these Japanese architects were particularly inspired by Le Corbusier's grand visions. Like the master, the Japanese Metabolists considered that future society should represent an assertion of human rationality over impersonal forces of the physical world, with architects assuming responsibility as mediators of urban reconciliation and construction, translating core values into workable plans.[33]

Le Corbusier's slogan "Architecture or Revolution", in fact, attracted a significant following in Japanese architectural culture. Placed within the historic context of Japan, such rationalism can be read as running counter to both the wartime destruction and the disorder of postwar reconstruction.

The Metabolists contributed a radical notion of technology unique to the 1960s, linked to the tradition of utopian thinking. Architects and urbanists were inspired by dramatic technological advances, such as new developments in genetics and life sciences, explorations on the moon or in outer space, the emergence of robotics and computing alongside the spread of communication technologies, which in this era seemed to herald an optimistic progressive urban future.

The tree of life from the Tower of the Sun at the Osaka 1970 World Exhibition offers in equal part a confirmation and a culmination of this enthusiastic belief in a transformative future. In fact, the Osaka 1970 World Exhibition stands as the end and limit of the manifesto's theories. Soon after, the oil crises struck and the consequences of all the students' contestations of 1968, symbolically condensed in Paris May 68, would bring the world away from the Cold War power balance toward the increasing liberalism and wild capitalism of the next decades, followed by the fall of the Iron Curtain in 1989.

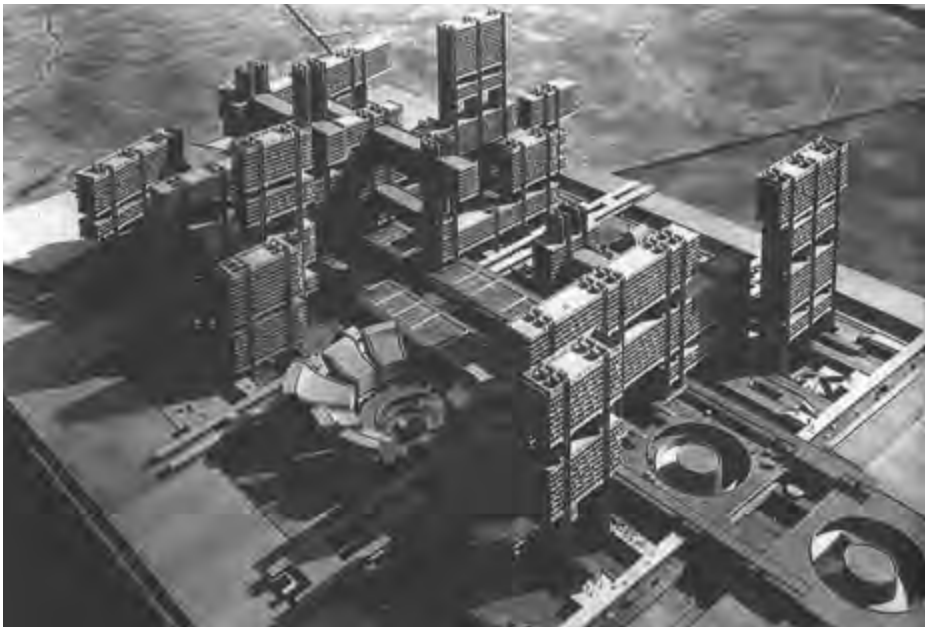
And if, in turn, the Metabolism manifesto marks the end of the modernist architectural manifestos, reaching their last embodiment in Osaka 1970, it draws equally on the ideological awareness that is erased from that moment on. The 1971 destruction of the Pruitt-Igoe mass housing towers in St. Louis (USA) and the interpretation of these concomitant events as shaping a diverging, now genuinely post-modern situation can be read as the assumption of unmistakable change, specifically regarding the housing question.

Within the Metabolist group, the concept of megastructure was subject to a constant debate, as in the publication *Investigations on Collective Form,* where Maki contrasts the rigid and monumental planning method of earlier modernism with the concept of group form.[34] Instead of a static physical structure, Maki called here for a more subtle internal order, one already present and underlying the natural evolution of cities, arguing that a real urban order should accommodate certain degrees of disorder and encourage spontaneity, providing

Osaka Expo'70 in full swing
Source: IZUMI, Shinya and TERAZAWA, Tsutomu, 1992.
Display designs in Japan: 1980-1990 vol.3.
Kyoto: Rikuyo-sha, p. 17.

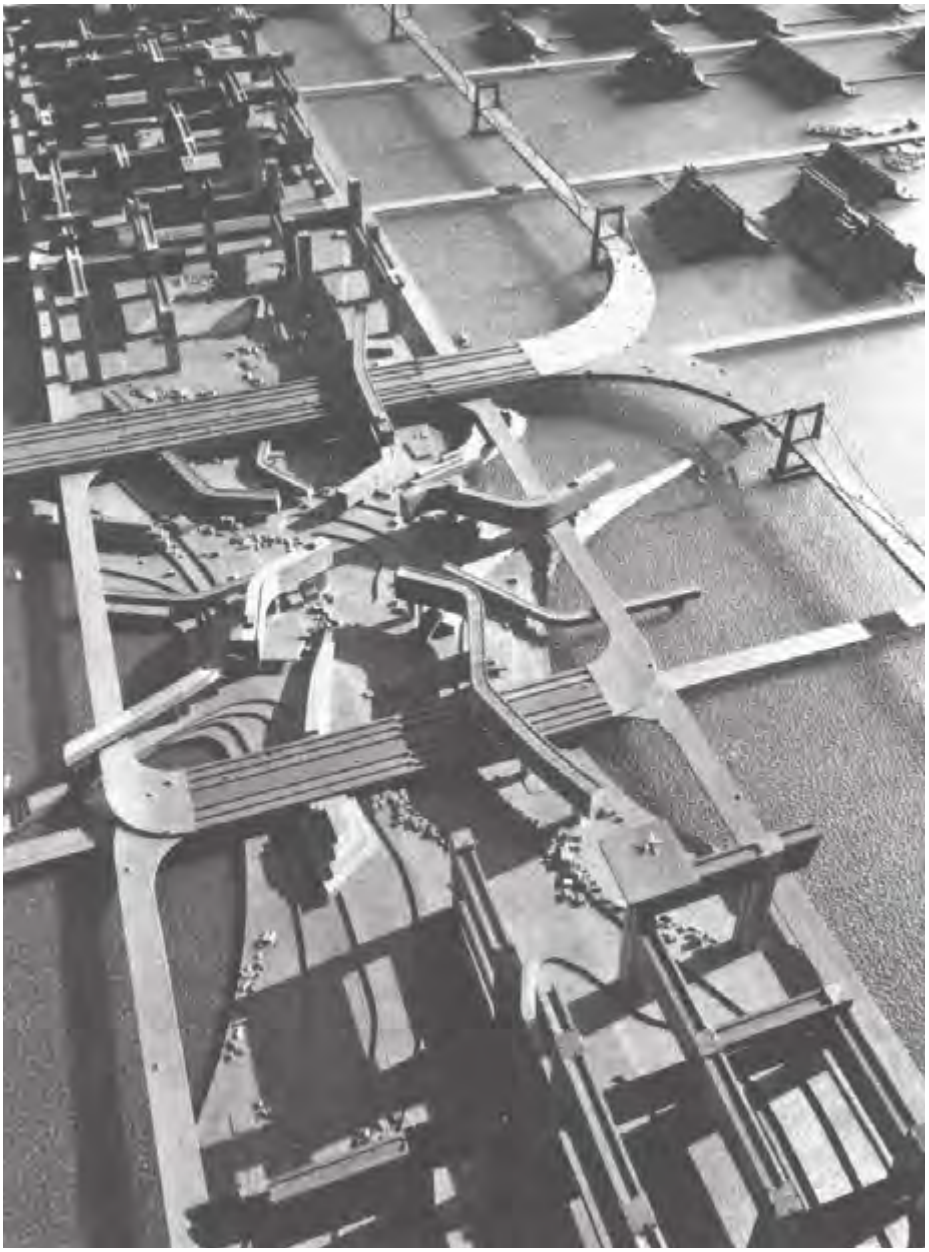
Tange's Big Roof for Osaka Expo'70 forms
a vast plaza below and a framework
that allows capsules to be attached above
Source: Obayashi Corporation History Editorial Committee, 1993.
The Centennial History of Obayashi Corporation (1892-1991).
Tokyo: Obayashi Corporation, p. 189

1953, Tange's home synthesizes tradition
and modernity, drawing on Katsura Detached Palace,
Corbusian geometry and his own home Hiroshima Peace
Memorial Museum (designed at the same time)
Source: Courtesy of Herbert Ortner



1964, Tange's Tsukiji Plan proposed for the Dentsu
advertising firm: a network of expandable structures,
interconnected on multiple levels; designed to approach the
idea of "urbanization of a building." The plan is meant as
a realization of the Tokyo Plan's office megastructures (1960)
Source: 21st Century Japan Research Group, 1971.
Japan in the 21st Century: Designing the Future
of the Nation and the Lives of Its People.
Tokyo: Secretariat Cabinet Deliberation Office, p. 294.

1960, Kenzo Tange standing in front of
a presentation board of the Plan for Tokyo
Photo: Akio Kawasumi



1960, Tange's central spine of the Plan for Tokyo
Source: 21st Century Japan Research Group, 1971.
Japan in the 21st Century: Designing the Future of the Nation and the Lives of Its People.
Tokyo: Secretariat Cabinet Deliberation Office, p. 225.

1965, Kurokawa's Nakagin Capsule Tower, composed from two cores with 144 capsules, prefabricated in a factory normally producing shipping containers. With the capsules plugged in and conceived as bolt-holes for homo moven bachelors/commuters, Kurokawa created the dominant icon of Metabolism
Source: KUROKAWA, Kisho, 1975.
The World of Kisho Kurokawa.
Tokyo: Mainichi Newspapers, p. 3.

1973, Metabolism in Singapore – the local architects Design Partnership (Gan Eng Oon, William Lim and Tay Kheng Soon) design the half A-frame of the Golden Mile complex
Source: Collection of DP Architects

an alternative interpretation of the "city as a process" to the megastructure approach.

Nonetheless, Japan remained for several years able to draw simultaneously on the influences of Metabolism and Le Corbusier, retained in a twofold contribution arising from the methods of the architects with the Metabolist Manifesto. On one hand, the results provided Kisho Kurokawa's Nakagin capsule tower (1972) and on the other Fumihiko Maki's Hillside Terrace (1967–1992) following his theories on group form.

Two different approaches to the Megastructure concept are coined by Maki in his 1964 *Investigations in Collective Form*, embodied in the terms "megastructure" and "metabolism". The megastructure refers to a strategy in urban design that tends to house the programs of a whole city in a single structure, in other words, extending Le Corbusier's *Unité d'Habitation* beyond its original scope in a way that, in the 1960s, was "made possible by present technology".[35] Around a decade later, Reyner Banham's identified hundreds of projects built or unbuilt in his *Megastructure, Urban Futures of the Recent Past*, which at this point he felt safe in calling "the dinosaurs of the modern movement."[36]

Metabolism, on the other hand, was essentially inspired by a biomorphic model of growth and transformation. The idea of organic expansion and replacement of elements had its roots in a "traditional understanding of the cyclical movement of death, decay and rebirth, one that is decidedly Japanese".[37]

Like Le Corbusier in 1923, these Japanese architects shared with their Western colleagues an enthusiasm for shaping a total environment with contemporary technology. Yet no less, certain links with the master Tange can also be seen in the subtle yet essential differences in design philosophies and social attitudes regarding the individual concerns, both regional and local, embodied in their diverse urban visions. In this respect, they also followed Le Corbusier's deep connection to the local, the vernacular, the poetry of the Mediterranean, North Africa, and even the Middle and Far East. Or, more succinctly, his ability to integrate a broad cultural vision into his theoretical positions and subsequently his works.

Another aspect within the Metabolist movement that shifted over time, and became increasingly evident at the end of the 1960s, was the Metabolists' gradual acceptance of technological expansion and marketplace dynamics over utopian proposals for social concerns. This change toward a capitalist-accepting pragmatism was strongly manifested in their projects for the 1970 World Exposition in Osaka.

For another perspective, a comparison of the Metabolists' manifesto with the texts of a similar group, Archigram also suggests their different approaches towards technology and social utopianism. While Archigram published a series of magazines (nine Archigram newsletters between 1961 and 1970) and continued to develop their ideas by introducing new themes like zoom, plug-in and living pod, the Metabolists published only one manifesto, but continuously elaborated on those concepts with numerous urban and building projects.

Les objets trouvés and the Japanese Debate on Tradition

At the same time, one further quest is worth discussing to stress the position of the Metabolists in a non-European context: the effort to recapture tradition, which acquired a broader cultural background in postwar Japanese society. As Noboru Kawazoe wrote in his "Toward the discovery of tradition and people", printed in the magazine *Shinkenchiku* in 1956, two aesthetic strands can be identified in Japanese cultural history: *Jomon* and *Yayoi*.[38] *Jomon*, in his view, was dynamic and plebeian, representing the spontaneous creative energy of the people; in contrast, *Yayoi* was passive and ordered, indicating the highly sophisticated aesthetics of aristocracy. Kawazoe criticized Tange's Tokyo City Hall (1953–1957) and Kagawa Prefectural Office (1955–1958) as excessively *Yayoi*-like in their design, failing to present the power of the people. Tange replied that *Jomon* and *Yayoi*, though originating from different stages in the history of Japanese architecture, had a dialectical relationship with each other, with no clear boundary between these forms. Nevertheless, as Lin states, when Tange worked on his next project, the Kurashiki City Hall (1958–1960) he consciously moved away from his previous inclination to a serene and transparent expression to employ the Brutalist elements of design, such as dynamic massing and a rough-cast concrete envelope as seen in Le Corbusier's late works of *béton brut*: a gesture that can be termed unmistakably Jomonsque.[39]

When Metabolism was founded, the debate over tradition was still active and able to influence the Metabolists. In fact, in terms of design language, they became fascinated by pre-modern arts and crafts, which encouraged the use of less refined materials and local building techniques.

The Harumi Apartment building by Maekawa brought Otaka to the debate. With a structural system composed of massive reinforced pillars that elevated the multi-levels flats above the ground, the flats were grouped on all three levels, in the manner of Le Corbusier's *Unité d'Habitation*. The gigantic structural elements and concrete building envelope are evidence of Brutalism's influence, as well as the architect's inclination toward *Jomon* aesthetics. Its massive scale and structural hierarchy provided a prototype for ensuing megastructure designs in Japan.

At this point, we can note once again the link to vernacular culture, as a vitally important force in Le Corbusier's creative output. In fact, Le Corbusier's *objets trouvés* or "found objects" were natural or manufactured objects collected during his survey journeys and promenades. Named "objects of poetic reaction", these objects, such as seashells, pebbles, tree branches, or bones, were a major source of inspiration for his architectural work, notably influencing the forms of projects like the Palace of the Soviets or the Ronchamp Chapel.

Following this line of aesthetic observation of the natural world, Kikutake approached Japanese tradition from a different perspective. He researched traditional wood structures and developed a systems-based approach to design that could be applied with modern materials and techniques. Improving the addition, modification, and relocation capacity of traditional wooden structures, he learned to differentiate structural from non-structural elements and to assemble them into a "replaceable system". This principle of "replacing ability" was applied to the urban scale, manifest in the architect's Tower-shaped City and Marine City schemes, and continued to appear as an important theme in many Metabolist designs.

Beyond the attempts to identify modern design with pre-modern Japanese architecture, the debate on tradition served as a springboard, propelling Japanese artists and architects into a search for new cultural identity in architecture and design. Additionally, it formed a major stimulus for the Metabolists, who took up its quest and deliberately worked toward an architectural movement that would "send a message to the West". The re-examination of Japanese tradition provided the Metabolists with a philosophical foundation: drawing upon the fundamental relationship between architecture and nature, they began to pursue a new paradigm of architecture and city.[40] The Metabolist image of a city in constant mutation was explicit in this statement. Or, as Isozaki argued, designers must try to foresee from the present moment to the ultimate form, but the ultimate form is not the end. Instead, it is the "the point of origin to which all things return".[41]

Tange's lesson de Rome and his Passion for Le Corbusier

Tange's who stands behind the Metabolist group as a master and a driving force, made his first public statement in 1939. It was a ten-page article published in the journal *Gendai Kenchiku* [Modern Architecture], entitled "Ode to Michelangelo: as an introduction of the study of Le Corbusier", to explain Le Corbusier's principles by examining Michelangelo's creations. This manifestation of Le Corbusier's influence on Tange persisted throughout his career.

For Tange, Le Corbusier was the only modern Western architect taking a revolutionary approach towards architecture, yet no less one full of poetic inspiration. Tange was fascinated not only by his capacity as a sculptural form-giver in architecture, but also by his grand visions for the modern city.[42] What Tange saw in the scheme of the Palace of the Soviets was a powerful architectural image that combined technological progress and urban continuity while representing a harmonious balance between the social order and democracy.[43]

Mt. Fuji had long been seen as the symbol of Japanese culture and the Japanese spirit, represented across a wide array of artistic works. In 1942, Tange's scheme for the Greater East Asia Co-Prosperity Sphere complex echoed this nationalist sentiment by situating the memorial in a sacred, idyllic setting, incorporating the image of Mt. Fuji. The combination of "the pure image of the Ise Shrine" with the Western classical layout of a monument,[44] was followed in 1949 in the Hiroshima Peace Memorial Park competition proposal, realized in 1955. The building's extensive horizontality and the lattice pattern on the façade captured the proportions of Japanese traditional architecture with a sense of New Monumentality[45] launching the combination of Modernism and tradition while providing the city with a new sense of order, out of the immediate postwar year's chaotic urban scene.

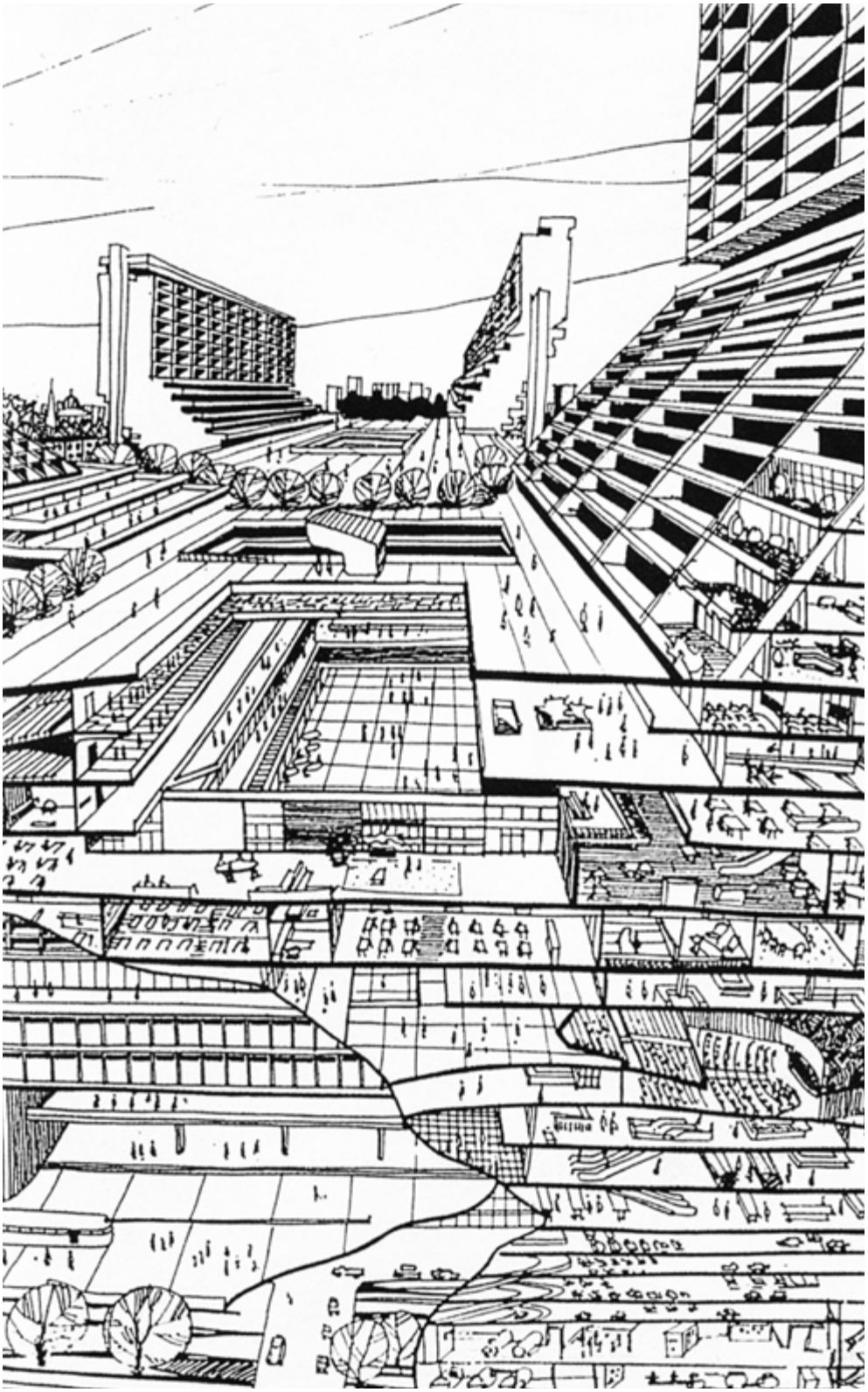
Tange called for a new tradition that could shift the character of Japanese architecture away from its emphasis on traditional vocabulary in the prewar period, in the direction of a search for more abstract aesthetics of "spirit", a word repeatedly used in different occasions after the war. At the Otterlo CIAM meeting, for instance, he insisted that architects should "inherit spirit, not specific idioms".[46] Indeed, he presented the Ise Shrine as a prototype for traditional Japanese architecture and described in detail the relationship between Shinto architecture and nature. In his *Ise: Prototype of Japanese Architecture,* he declared: "The entire later course of Japanese architecture starts at Ise. The use of natural materials in a natural way, the sensitivity to structural proportion, the feeling for space arrangement, especially the tradition of harmony between architecture and nature, all originated here."[47] Hence the emphasis of Japanese architecture shifted from the architectural concrete form to the concern of "natural process" embodied in *Ise*.

Kawazoe articulates this natural process, considering *Ise* as the prime example of perpetuation of architectural form without strictly preserving the actual building, while in parallel appreciating the mutability of its nature and the recognition that the practice of building should be attuned to such natural process: "the design has its metabolism, which allowed it to keep pace with the cycles of life in nature and society. To paste new paper in the *Skoji*, which set the basic tone of the Japanese room, was enough to create a starting effect of freshness and light. In the same way, to have the tatami re-covered would fill the room with the faint, clean smell of rice straw…the custom might even be described as an echo of the regular rebuilding of the Ise Shrine."[48]

Finally, Tange used the concept of metabolism to interpret Ise and Japanese building tradition by linking them to the natural process focused on the most remarkable feature of Ise: a historic continuity paradoxically achieved through the unusual practice of rebuilding the structure completely over the course of 1,300 years. Every 20 years the main shrine of Ise is torn down and a new one is built on an immediately adjacent site in an identical form. This symbolic rebuilding, known as *shikinen sengu*, expresses the deepest ideas of Shintoism, the belief in the necessity of periodic ritual renewal. Regarded as obeying the laws

1949, Tange's Hiroshima Peace Memorial Museum, a long glass- covered slab on pilotis, is the centerpiece of the Hiroshima Peace Memorial Park
Source: Ana Tostões

1974, Tange's Yamanashi Press and Broadcasting Center after the growth that the architect envisioned in the original project (1964)
Source: Ana Tostões



1969, Metabolism in Singapore:
Design Partnership's sketch for the half
A-frame of the Golden Mile complex
Source: Collection of DP Architects

of nature, this natural rebuilding became regarded as representing the cultural essence of Japan.

Aware of this unique process, Kawazoe and his Metabolist colleagues attempted to establish it as the core principle of the Metabolist theory. By equating Japanese architectural practice with natural processes, the Metabolists hoped to rediscover a true Japanese tradition that would not only transcend the naïve imitation of form in the pre-war period but also surmount the mechanical and unnatural methods that predominated in the West.

Tange's influence on the Metabolists was evident in three aspects. First was the definition of a new tradition, followed by their comprehensive approach to city planning and finally the expressive use of technology. Tange and the Metabolists equally believed that thoughtful architectural forms embodied cultural meaning and national spirit, therefore the surest defence against the erosion of time. With emphasis on transformation and renewal, such radical thought returned to the ancient concept of the universe incorporated in traditional Japanese doctrines.

Both Tange and the Metabolists similarly based their urban visions upon the promise of technology. In the primary scheme for the Hiroshima Peace Memorial, Tange proposed a gigantic arch resembling the suspension structure of the auditorium in Le Corbusier's proposed Palace of the Soviets, which had inspired Tange since the very beginning of his career. Tange's Boston project indicated the influence of Le Corbusier's 1931 plan for Algiers, featuring a bookshelf-like megastructure alongside the seashore housing the infrastructure and residences of an entire city. In fact, the *Plan Voisin* and a substantial influence on the Metabolist concept of housing came from Le Corbusier's *Unité d'Habitation*. Conceived as a self-contained mini city situated in a park-lined setting, the *Unité* was described by Le Corbusier as a vertical garden city. When Tange, a lifetime follower of Le Corbusier, attended the 8th CIAM meeting in Hoddesdon, England, in 1951, he managed to visit Marseille's completed *Unité d'Habitation,* which greatly impressed him.[49]

The Modernist Utopian Faith in the Architect's Omnipotence

The Modernist utopian faith in architects' omnipotence significantly influenced the Metabolists, and Tange in particular, who regarded themselves as social architects.[50] Believing that architects alone held the talent to combine the imaginative sensibility of artists with the logical clarity of engineers, Tange claimed in his WODECO address:

"Architects and designers are the only people who stand in the middle ground between technology and humanity, and it is therefore essential that with the advance of science, they manifest more and more creativity." Like Le Corbusier, Tange and the Metabolists believed that acceptance of responsibility for the future of cities presupposed total planning, which was conceivable without a master planner with impartial wisdom and supreme power.

Artificial land first appeared in Le Corbusier's sketches for Rio de Janeiro, São Paulo and Montevideo from the late 1920s. This concept was then articulated in his 1931 plan for Algiers, the *Plan Obus*, which served as a direct model for several Metabolists projects.

Le Corbusier pronounced his doctrine, or as they can equally be termed, his reflections, some of them quite naïve, while unequivocally embracing the future, a future envisaged under the sign of progress. Yet equally, it presents its own tribute to the past, regarding beauty, an eternal beauty condensed in the classic civilisation, through a tribute to his surveys while traveling. And so, as well to medieval times and the envisaging of Christian monastic practice as a collective organization of the humanity, or the lessons of Rome finding their place alongside the Ise Shrine in postwar Japan.[51]

This paper was partially supported by
Science and Technology's funding UIDB/05703/2022
from the research unit CiTUA

Ana Tostões
orcid: 0000-0001-9751-9017
Full Professor
CiTUA, Técnico
University of Lisbon
Av. Rovisco Pais, 1
1049-001 Lisboa
Portugal
ana.tostoes@tecnico.ulisboa.pt

Kengo Hayashi
Associate Professor
Institute of Industrial Science
The University of Tokyo
Bw701, 4-6-1, Komaba, Meguro-ku,
Tokyo, 153-8505,
Japan
kengo884@iis.u-tokyo.ac.jp

1 LE CORBUSIER. 1924. *Vers une architecture*. 2nd edn. Paris: Éd. Arthaud, p. I.

2 Three Architects: *A Documentary short film commemorating I-House's 70th Anniversary,* Channel International House Japan, 2025.

3 Le Corbusier. 1924. Introduction à la seconde édition. In: *Vers une architecture*, p. I. All translations into English are taken from LE CORBUSIER. 2007. *Towards an Architecture.* Los Angeles: Getty Research Institute.

4 On this topic see: CHASLIN, François. 2014. *Le Corbusier.* Paris: Editions du Seuil.

5 The Contemporary City for Three Million Inhabitants (*Ville Contemporaine*) is a theoretical urban planning concept developed by Le Corbusier in 1922. Designed to address the chaos and congestion of modern industrial cities, the plan is famous for its rigid symmetry and its "towers in the park" approach, featuring twenty-four cruciform skyscrapers at the center surrounded by vast green spaces, aiming to increase urban density while simultaneously improving living conditions through sunlight, fresh air, and a multi-level transport system that separated pedestrians from high-speed traffic. See: LE CORBUSIER. 1925. *Urbanisme*. Collection de "l'Esprit Nouveau". Paris: Les Éditions G. Crès & Cie, pp. 157–234.

6 The Plan Voisin is urban redevelopment scheme proposed by Le Corbusier for the center of Paris in 1925. Sponsored by the Gabriel Voisin car and aircraft company, the plan suggested the radical demolition of a large area on the Right Bank – the Marais district – to make room for eighteen massive cruciform skyscrapers. These towers were intended to serve as a business center, surrounded by open green parks and separated from high-speed traffic arteries. It was Le Corbusier's attempt to apply the principles of his "Contemporary City" to a real historical location, prioritizing hygiene, efficiency, and modern technology over the traditional, cramped medieval street layout. Le Corbusier, 1925, pp. 272–274.

7 COHEN, Jean-Louis. 2012. *The Future of Architecture since 1889.* London: Phaidon, p. 124.

8 Le Corbusier, 1924, p. I.

9 Le Corbusier, 1924, p. 69.

10 Le Corbusier, 1924, p. 72.

11 ISOZAKI, Arata. 2010. Foreword. In: LIN, Zh. *Kenzo Tange and the Metabolist movement. Urban Utopias of Modern Japan*. London: Routledge.

12 LIN, Zhongie. 2010. *Kenzo Tange and the Metabolist movement. Urban Utopias of Modern Japan*. London: Routledge.

13 MAMI, Hirose, HITOMI, Sasaki et al. (eds.). 2011. *Metabolism, the City of the Future dreams and visions of reconstruction in postwar and present-day Japan*. Tokyo: Shinkenchiku-sha Co, Mori Art Museum.

14 Lin, Z., 2010.

15 Mami, H., Hitomi, S. et al. (eds.), 2011; KOOLHAAS, Rem and OBRIST, Hans Ulrich. 2011. *Project Japan. Metabolism Talks…* Cologne: Taschen.

16 Lin, Z., 2010, p. 23.

17 KAWAZOE, Noboru. 1985. Around the time the Metabolism Group was formed [in Japanese]. In: *Reliving the 60s and Tokyo Designers Space*. Tokyo: Seibundo Shinkosha, p. 109.

18 Koolhaas, R. and Obrist, H. U., 2011, p. 185.

19 Mami, H., Hitomi, S. et al. (eds.), 2011.

20 Mami, H., Hitomi, S. et al. (eds.), 2011, p. 47. Excerpted from the *METABOLISM/1960: The Proposals for New Urbanism*.

21 Lin, Z., 2010, p. 27.

22 Lin, Zh., 2010, p. 30.

23 Koolhaas, R. and Obrist, H. U., 2011, p. 341; Lin, Zh., 2010, p. 30.

24 Mami, H., Hitomi, S. et al. (eds.), 2011, p. 58; Koolhaas, R. and Obrist, H. U., 2011, p. 341.

25 Mami, H., Hitomi, S. et al. (eds.), 2011, p. 54.

26 WENDELKEN, Cherie. 2000. Putting Metabolism Back in Place: the Making of a Radically Decontextualized Architecture in Japan. In: Williams Goldhagen, S. and Legault, R. (eds.). *Anxious Modernisms.* Montreal: CCA/MIT Press, p. 286.

27 NAKAMORI, Yasufumi. 2011. Kawazoe Noboru: Architecture Journal Shinkenchiku and dento ronso. In: Mami, H., Hitomi, S. et al. (eds.), 2011, p. 242; Lin, Zh., 2010, p. 242.

28 Lin, Zh., 2010, p. 34.

29 Lin, Zh., 2010, p. 34.

30 Lin, Zh., 2010, p. 34.

31 Lin, Zh., 2010, p. 34.

32 See ORTEGA Y GASSET, Jorgé. 1929. *La Rebelión de las masas.* Madrid: Revista de Occidente. 322 p.

33 Lin, Zh., 2010, pp. 6–7.

34 MAKI, Fumihiko. 1964. *Investigations in Collective Form*. St. Louis: Washington University.

35 Maki, F., 1964.

36 BANHAM, Reyner. 1976. *Megastructure, Urban Futures of the Recent Past*. New York: Monacelli Press, p. 7.

37 TAYLOR, Jennifer. 2003. *The Architecture of Fumihiko Maki: Space, City, Order and Making*. Basel: Birkhäuser, p. 42.

38 Using the pseudonym Tomoo Iwata, cf. Lin, Z., 2010, pp. 37–40.

39 Lin, Z., 2010, p. 52.

40 Their ambition was manifested in Tange's book on *Katsura* and in Tange, Kawazoe and Yoshio Watanabe's book on *Ise*, both moving beyond the general aesthetic discussion to explore the philosophical roots and symbolism of architecture. Kurokawa often recalled the inspiration that Buddhism had provided him since his early years, echoing Noburu Kawazoe's claim that East and West held different worldviews. On this subject see: Nakamori, Y., 2011, p. 242; Lin, Z., 2010, p. 37.

41 Lin, Z., 2010.

42 Upon his graduation in 1938, Tange chose to join Maekawa's atelier, where he could remain in contact with Le Corbusier's work. In 1941 there was no work due to the war, and he returned to the Imperial University as a post-graduate student where he stayed till the end of the war. These additional school years proved to be crucial for Tange's career as he later recalled: "this was the time when I began considering the importance of urban design, not in the sense of mere city planning involving land-use and street network composition, but three-dimensional urban design." There, he studied with enthusiasm the folios containing Greek and Roman marketplaces he found in the library. Preoccupied by his romantic ideas, Tange translated the concepts of *Agora* and *Forum* into spatial orders that integrated architectural elements derived from Buddhist temples, Shinto shrines and the Heian-period Shinden residences.

43 To understand this process, it is necessary to realise that Tange benefited from his relationships and work with Sakakura and Maekawa. As Lin refers, Sakakura's Nanko project for Manchuria followed Le Corbusier's idea of planning and envisioned a modern city, resembling a fragment of Le Corbusier's *Ville Radieuse,* organizing a large scale buildings and open greenery in a way that drastically contrasted with the dated urban framework of Shinkyo's historic centre. Lin, Z., 2010, p. 53.

44 The complex was organised in a strictly hierarchical manner along a central axis that linked to the memorial structures. Two trapezoidal colonnades were placed along the axis, with the second one enclosing the main memorial hall, reminiscent of the plaza at Capitoline Hill in Rome, betraying the architect's familiarity with monumental architecture of Italian Renaissance and particularly Michelangelo's works.

45 SERT, José Luis, LÉGER, Fernand and GIEDION, Sigfried. 1993. Nine Points on Monumentality. In: Ockman, J. (ed.) with Eigen, E. *Architecture Culture 1943–1968: A Documentary Anthology*, New York: Colombia Books of Architecture/Rizzoli International Publications, pp. 29–30; On this topic see: GIEDION, Sigfried. 1958. *Architecture You and Me: The Diary of a Development.* Cambridge, MA: Harvard University Press, p. 25; GIEDION, Sigfried, 1941. *Space, Time and Architecture: The Growth of a New Tradition*. Cambridge, MA: Harvard University Press, pp. xlvii, 868; GIEDION, Sigfried. 1957. *The Eternal Present: The Beginning of Art. A Contribution on Constancy and Change.* Washington, DC: The National Gallery of Art.

46 This attitude towards using a new tradition to present Japan's national identity was demonstrated in his two monographs, one on Katsura the other on Ise. *Katsura: Tradition and Creation in Japanese Architecture* with photographs by Yasuhiro Ishimoto and an introduction by Walter Gropius who visited Japan on a Rockefeller grant from 1954 and made a pilgrimage to Katsura Villa. The other monograph *Ise: Prototype of Japanese Architecture* was co-written with Kawazoe, with photographs by Yoshio Watanabe published in 1962. Tange's dialectic understanding of Katsura as inspiration of both *Jomon* and *Yayoi* traditions for the modern was mentioned previously. More significant in his notion of tradition was the renewed tribute he paid to Ise and a subtle transition in interpreting legacies. In his 1942 competition for the Memorial for the Greater East Asia Co-Prosperity Sphere, Tange appropriated the form of the main sanctuary of Ise Shrine (as well as later in the Plan for Tokyo Bay) and hybridized it with a Western composition of monument. See Lin, Z., 2010, pp. 51–54.

47 Lin, Z., 2010, p. 54.

48 Lin, Z., 2010, p. 54.

49 Lin, Z., 2010, p. 78.

50 Lin, Z., 2010, p. 94.

51 Lin, Z., 2010, p. 94.

51 The followed books were fundamental for this article: LIN, Zhongie, 2010. *Kenzo Tange and the Metabolist movement. Urban Utopias of Modern Japan*. London: Routledge; MAMI, Hirose; HITOMI, Sasaki et al.(ed.), 2011. *Metabolism, the City of the Future dreams and visions of reconstruction in postwar and present-day Japan*. Tokyo: Shinkenchiku-sha Co; Mori Art Museum; KOOLHAAS, Rem; OBRIST, Hans Ulrich, 2011. *Project Japan. Metabolism Talks…,* Köln,: Taschen.