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# The Addressed City Issues in Metabolism

Tomoko Kuroda

## The Background to the Organic City in Japan in the 1960s

### Introduction

Metabolism was the first and only avant-garde movement in Japan after World War II, which presented the proposal of urbanism in the 1960s. In this movement, as its name suggested, a city was considered as changing and growing in analogy of living things or organic features. Such an analogy can often be found in modern urbanism. Likewise the concept of Organic Architecture can easily be made out in the theory of modern architecture. Compared to these previous ideas, however, the uniqueness of metabolism is that a gigantic urban structure and an architecture themselves change, grow and metabolize their own shape, according to the urban requirements which are changing rapidly and extensively, and then this process also accelerates the city metabolism. The purpose of this paper is to clarify the content and the background of this Organic City of Metabolism.

Organic City is the Metabolists' concept, which they shared when they named their group "Metabolism" and presented their first proposal for a city. This concept was wholly inclusive, open to a variety of directions and outlooks, in a sense which young Metabolists with strong personalities and ambitions as architects, could share. Besides, Organic City was used as basis for creating utopia and methodology to realize an ideal. Thus, Organic City had the character of an ideal city model.

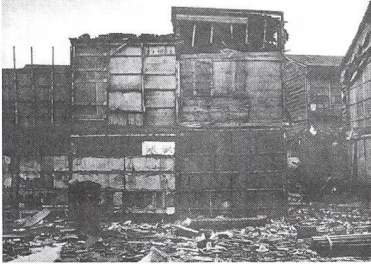
The model's inclusiveness is, first of all, featured as its grand concept. At the same time, the model places great value on immediate realization. The conceptual grandness and practicality seem attributable to the Metabolists' position as architects as well as their ideal. Therefore, in this paper, I will examine which city issues the Metabolists dealt with and how, considering also relevant social and cultural backgrounds.

### Conditions in Tokyo in the 1960s

The Metabolists shared the view that the city condition of Tokyo was an issue. Tokyo was facing complex and urgent urban demands, without any prospect for a fundamental solution. The city had a disorderly and vast landscape (picture 1). Such city conditions emerged in Japan in unprecedented manner, as a result of change in the process of nation rebuilding world transition, from the end of World War II. The change involved rapid economic growth and population flow to the cities. During the Korean War (early 1950s), Japan acted as a U.S. supply base, and this gave the Japanese economy the opportunity to grow rapidly. In 1955, Japan surpassed its pre-war productivity levels. In 1956, the Economic Planning Agency announced that Japan was no longer in the post-war state. The high growth of the Japanese economy was decisive for the



Picture 2: Wooden houses before the slum clearance near the Shinjuku station



Picture 3: Wooden houses before the slum clearance near the Shinjuku station seen from the streets



Picture 4: Increasing traffic in the late 1950s



Picture 5: Garbage withdrawal for a 10,000,000-population city.

new, long-term economic planning in 1957, and the further cabinet decision for national income-doubling plan in 1960. In this period, obsolete machines and equipment were instantly replaced by the latest equipment in Japanese heavy industry. As a result, Japan's gross national product of 1955-1960 and 1960-1965 achieved 8.7% and 9.7%<sup>1</sup> growth, respectively. In addition, large city areas experienced intensive population migration. Between 1955 and 1965, the population of the Tokyo metropolitan area increased from 13.28 million to 18.86 million, a gain of 5.58 million, or 42.0%. Both rapid economic growth and population inflow towards cities were unprecedented in other industrialized nations.

However, in the decade between 1955-1965, these factors intensified urban issues: typical of that were the emergence of poor living standards, overcrowded and disaster-prone areas with wooden apartments (Picture 2, 3), sprawling erosion in suburban agricultural areas, and commuter problems as a result. Traffic accidents were the result of increase in motorization, the drastic increase of the car-owning population, air and water pollution caused by accumulation of industries, and refuse-related issues due to mass consumption and a throwaway life style<sup>2</sup>.

#### Metabolists' recognition of the city issues

Living in Tokyo in 1960, all the Metabolists faced these issues more or less on a daily basis. Both Kenzo Tange and Kiyonori Kikutake use the words confusion and paralysis when they describe city conditions. For Kikutake, the city appeared as begging for help and shouting with grief. He states this motive for presenting a proposal for a new city: "It is not our initiative to make a proposal. Rather city confusion and paralysis, and contradiction and stagnation in the light of construction make us present the proposal."<sup>3</sup> Further, Kikutake emphasizes that a such reality forces people to live patiently under these conditions: "Tokyo, a vast scale city is ill and exhausted. Not only just losing control of the city, but also relying on the adaptability of its 8 million resident, hiding the reality of her illness, and even attempting to legitimize it."<sup>4</sup>

Later, Tange in reflection on people's living conditions in Tokyo at the time when he presented his proposal, Plan for Tokyo 1960 said: "For example, depressing rush hours in the mornings and evenings. If we reject them, we must accept a large expense or poor living conditions, instead. In addition, there are chronic traffic jams and overpopulation during the daytime in the city area."<sup>5</sup>

Specifically, as an example of poor living condition, Arata Isozaki commented on an apartment in which he himself lived in the later half of 1950s: "It is better described as a slum. Later I decided to call it a topological labyrinth, however, at that time I did not have room to see it in such a way. Paths were disorderly and if you would go beyond the area, there was Koishikawa where you could

1 Miyaji Masato, *Kokusaiseiji ka no kindai Nippon*, Yamakawa Shuppansha, 1987, pp. 336, 355-56; also Ishida Yorifusa, *Nihon Kindaitoshikeikaku no Hyakunen*, Jichitai Kenkyusha, 1987, p. 251; and Atsuo Masato compiled.

*Nihon Kindaishi Kenkyu Jiten*, Tokyodo Shuppan, 1999, p. 369.

2 Ishida Yorifusa, *Nihon Kindai Toshikeikaku no Hyakunen*, Jichitai Kenkyusha, 1987, p. 253. Calculated population results are varied depending on which part of metropolitan area was examined. In 1960, Kikutake applied the figure of 8 million to Tokyo population; however, Tange did 9.67 million.

3 *Metabolism—Proposal for new Urbanism*, pp. 10-11.

4 *Metabolism—Proposal for new Urbanism*, p. 12, 1.5-17.

5 Tange Kenzo, *Ippon no Enpitsukara*, Nihon Keizai Shimbunsha, 1980, p. 77, 1.11-78, 1.4.

6 Isozaki Arata, *Kukan he, Kashima Shuppansha*, Bijyutu shuppansha 1972, 1997, p. 479, 1.18-480, 1.1-5, 1.9.

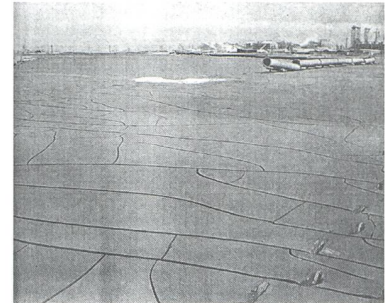
not see the sun. Probably in Koishikawa cats, which walked through houses, had a better understanding of its space than humans... Luckily and probably because there was no big fire or earthquake, I am still alive now."<sup>6</sup>

Noboru Kawazoe summarizes these conditions as follows: "Mega cities are suffering from housing and traffic difficulties (Picture 4), water shortage, various sources of pollution, garbage and sewage disposal (Picture 5), city crime, etc. Mega cities, for example, Tokyo and Osaka, have a lot of difficult issues to deal with, and it is hard to tell where we should start dealing with these issues.<sup>7</sup> In terms of land for industrial use, although it was concentrated on reclamation of foreshores at the end of the 1950s, there already existed the issues of environmental destruction (Picture 6, 7) and land subsidence (Picture 8) caused by drawing up underground water. It was around 1970 when large numbers of people started becoming aware of the pollution issues, and civil movements were activated. Already in 1960, it was common that such urban issues sometimes brought up in journalism. Kawazoe, who was the only critic of the Metabolists also pointed to and criticized these issues."<sup>8</sup>

#### The Metabolists' way of addressing urban issues

City issues are fundamentally entangled with each other and it is impossible to simply taken out one issue in order to solve it. Here issues are from which part of issues we undertake tackling the issues and whether we have a method to tackle the issues inclusively. In the Metabolists' proposal of their early days, each of them focused on a different topic as if they tried to avoid putting their efforts into an overlapping context. Kikutake claimed that the issue was to create a living space in which urban facilities, service and houses were harmonized and located as one body and people could feel a joy<sup>9</sup>. Tange focused on the population inflow toward Tokyo, and searched for a logical reason in the arrival of the information society as a replacement of production. Tange argued in form of the necessity for massive and smooth implementation of traffic concepts, to begin with the information highway, and communication for politics, economy and information.<sup>10</sup> Both Masato Otake and Fumihiko Maki acknowledged the necessity of the methodology, in which, although citizens had to put up with poor standards of urban environment, vitalities which people released for their activities would surely reflect directly on environmental formation. His concrete proposals included new demands on city life such as office work, consume, and entertainment in a period of economic growth.<sup>11</sup> Kisho Kurokawa focused on city issues including also depopulation in villages, and argued that both cities and villages were not satisfying people's living requirements from the present to the future as a living environment.

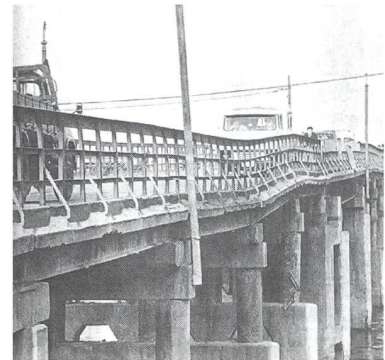
Shared among the Metabolists was their idea of trying to create an entire city gradually, through implementing their proposals as the solution for these issues. Thus the Metabolists considered the process of solving city issues as part of the process of forming cities. In some cases, their proposals covered all



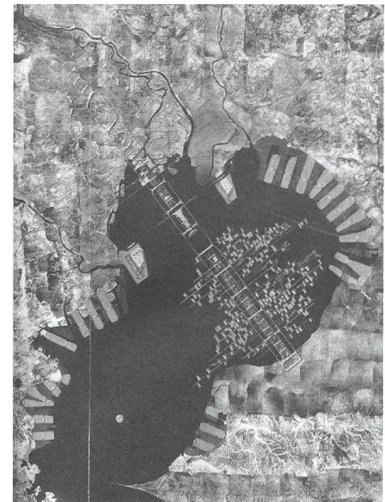
Picture 6: The land reclamation of the Tokyo Bay and the growth of the chemical industry



Picture 7: The sea area planned to reclaim was a traditional fishing ground



Picture 8: The bridges network was insufficient



Picture 9: Kenzo Tange; *A plan for Tokyo*, 1960

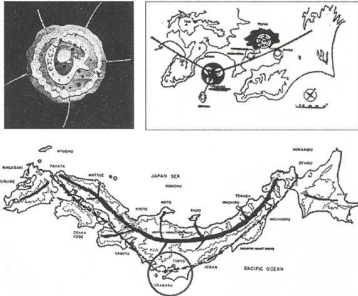
<sup>7</sup> Kawazoe Noboru, *Miraitoshi no Otoshiana*, *Asahi Journal*, 1963.3.3/Gendai Toshito Kenchiku, Sanitsu Shobo, 1965, p. 59, 1.1-3.

<sup>8</sup> Kawazoe Noboru, *Metabolism—Proposal for new Urbanism*, *Design* 1960.9, / Gendaitoshi to Kenchiku, Sanitsu Shobo, 1965, pp. 26-28, 104-105.

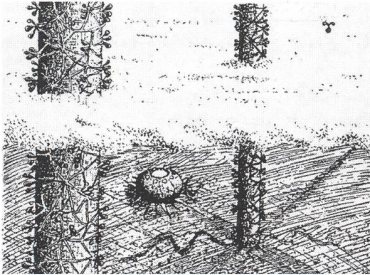
<sup>9</sup> *Metabolism—Proposal for new Urbanism*, pp. 16, 1.31-31

<sup>10</sup> Tange Kenzo, *Tokyo Keikaku* 1960, p. 82.

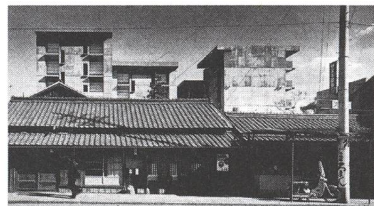
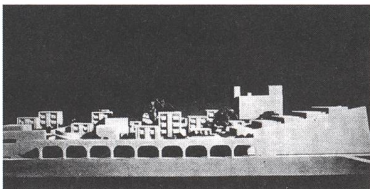
<sup>11</sup> *Metabolism—Proposal for new Urbanism*, pp 56-61.



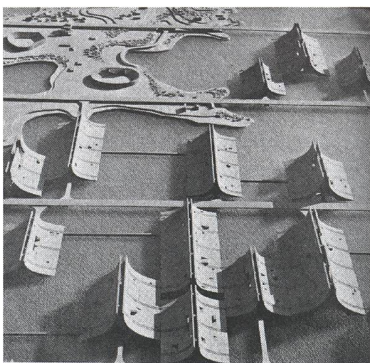
Picture 10: Kiyonori Kikutake, *Ocean City*, 1960



Picture 11: Yasuhiro Kawazoe; *The Image of the Space City*, 1960



Picture 12: Masato Otaka; *Sakaide Artificial Land*, 1960-1968



Picture 13: Kenzo Tange; *A Plan for Tokyo*, 1960

aspects from a simple architectural substance to mega city Tokyo (Picture 9), and the Japanese archipelago (Picture 10), or even the entire globe (Picture 11). This also meant that to solve complex related city issues it was necessary to include solutions of human issues. Here we can see the Metabolists' comprehensive position.

These Metabolists' ideas on city issues are particularly apparent in a proposal concerning artificial land. The idea of artificial land is derived from their understanding that in order to solve housing, traffic and other issues, one must first of all ensure that the necessary land is available and solve the problem of land shortages. They presented a proposal to solve land shortages in the sea and land by proposing artificially reclaimed gigantic land areas, through civil engineering on a scale as building structure. At the same time, they planned the land to facilitate the living environments not only of city functions but also as superb city landscapes. Thus the problem of disorder and confusion of city landscapes was solved.

#### The problem of land shortages and artificial land

The problem of land shortages was the largest issue, in addition to rapid population and capital concentration. It was an issue of complex entitlements concerning land ownership. Residents' protests against rezoning projects did not start under the policy of the high growth of economy. Protests had persistently taken place against the recovery and rezoning in the disaster-hit areas as a result of the Kanto Earthquake before World War II, and in war-devastated areas after the war. Even in 1973, or twenty-eight years after the war, areas in which replanning had not been completed occupied 58.4% of the entire zoning area. This was attributable not only to persistent resident movements, but also to the rise of land prices as time went by, which made settlement issues difficult to solve, and furthermore, caused vicious circle of protest movements.<sup>12</sup>

Otaka thought that his idea of artificial land would offer an answer to these deep-rooted issues (Picture 12)<sup>13</sup>, while Tange proposed to create newly artificial land on Tokyo Bay and with their profit on its sale to solve the land issues in the Tokyo City area (Picture 13).<sup>14</sup> Furthermore, as one of the reasons for choosing to construct artificial land in the sea, Tange explained as follows: "Although construction cost [in the sea] will be higher than on land, I think there will be less speculative investment. In the sea, where superficies are irrelevant, I can have a total new expectation that a new city entity separate from land will emerge."<sup>15</sup> Here we can observe two aspects of the grandeur and, at the same time, practicality of transforming the existing system. Meanwhile, Kikutake considered that clinging to land ownership itself was the cause of the wars in the past five thousand years, and he argued that his Marine City is a farewell from such bloody history (Picture 14)<sup>16</sup>. Hence, the criticism of treating land as private property. Kurokawa in his Agricultural City also proposed to release farmland for cooperation and joint control (Picture 15).<sup>17</sup> Further-

12 Ishida Yorifusa, *Nihon Kindai Toshikeikaku no Hyakunen*, Jijitai Kenkyusha, 1987, p. 229.

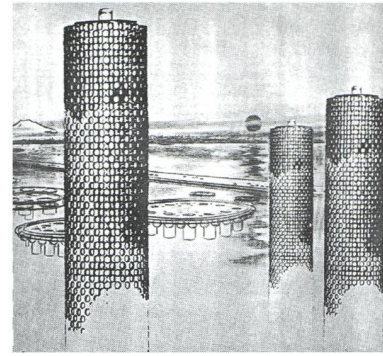
13 Shin Kenchiku 1963.11, p. 160.

14 Shin Kenchiku 1961.3, p. 118.

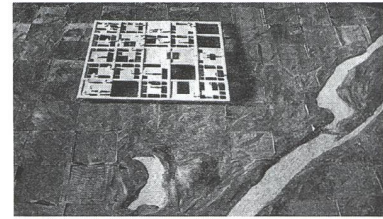
15 Shin Kenchiku, 1961. 3, p. 99, 1.32-35.

16 *Metabolism—Proposal for new Urbanism*, p. 21-22.

17 *Metabolism—Proposal for new Urbanism*, p. 74. 1.8.



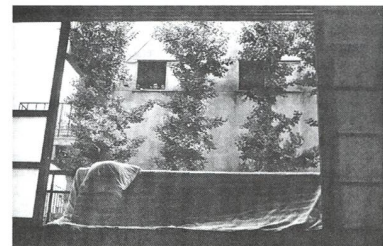
Picture 14: Kiyonori Kikutake, *Drawing for CIAM* 1959



Picture 15: Kisho Kurokawa; *Agricultural City*, 1960



Picture 16: New Buildings without respect for the surroundings



Picture 17: Loss of privacy in dense buildings

more, Kikutake criticizes environmental destruction caused by reclaimed land on the seashore, in contrast to his Ocean City which moved about on sea.<sup>18</sup>

The absence of basic laws of city planning, and the limitations of design activity

The other large issue, which caused both the confusion of land use and landscapes, was related to the problem of the city planning system. At that time, there was no appropriate basic law of urban planning which corresponded to the newly established post-war Constitution and the Local Government Act. In short, in terms of city planning, post-war democratic reform of the basic legal system had yet not been launched. In the process of Japan's modernization, an Urban Planning Act had been established in 1919. The building Standards Law was adopted much later in 1950. But there was no comprehensively stipulating law or similar bylaw corresponding to an Urban Planning Law and a Building Standard Law, which laid out purpose or doctrine, content, organization, authority, or procedures, technology, and finance, and guarantees relevant to planning or decision making, and subsequent implementation of city planning. Local governments possessed very weak authority in terms of its urban planning, and a residents participation system was not yet introduced. In terms of the systems of development permits and district or zone planning, the local government had no authority, and it was extremely weak in terms of an area or district system. Thus, in 1948, Tokyo was forced to reconsider and reduce its post-war rebuilding project, due to the impact of U.S. economic policy changes towards Japan. In 1949, the project was in fact brought to an end. At this point, Japanese cities lost the opportunity to put urban development on a solid foundation. However, late reforms were made possible by the New City Planning Act of in 1968, and the Building Standard Act revised in 1970. Yet by 1960, while any basic law was absent, individual development projects were carried out, and this brought confusion in land use and destruction of the environment and nature.<sup>19</sup> In the meantime, 1960 was the year when Tokyo was chosen as host city of the 1964 Olympic Games. Many people held expectations that this event would create an opportunity to accelerate the delayed urban development process. However, Tange criticized the prevailing legal environment, from which in his view fundamental reform could not be expected, with a rather detached attitude, for he hoped that the occasion would not result in a mere emergent treatment.<sup>20</sup>

Under such circumstances, architecture is destructive by paradoxical. Kawazoe argued that architectural destruction is harder to handle than war-time destruction. It is because "destruction due to war is a temporary damage, but architectural one leaves a permanent damage. This is why the ultimate objective of war lies in architecture in a colony."<sup>21</sup> The young Metabolists, who had strong architectural ideals, were experiencing irritation with bureaucratic construction processes in the absence of appropriate regulations. This is shown well in

18 *Metabolism—Proposal for new Urbanism*, p. 22.

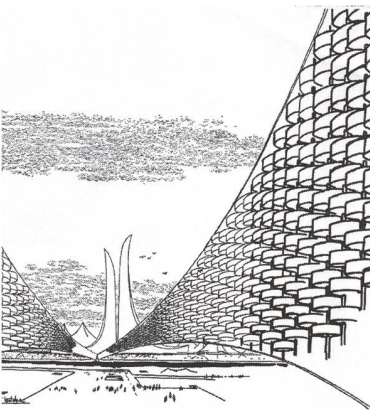
19 Ishida Yorifusa, *Nihon Kindaitoshikeikaku no Hyakunen*, Jijitai Kenkyusha, 1987, p. 13-14.

20 *Asahi Shimbun* 1960, 2. 22

21 Toshi no Miraizo, Sekai 1964. *I/Gendaitoshi to Kenchiku*, p. 103, 1.16-18.



Picture 18: Tokyo as horizontal city



Picture 19: Kiyonori Kikutake, Ocean City, 1960

Tange's chapter on Plan for Tokyo, "From the energy of confusion to the one of structural revolution."<sup>22</sup> It is also shown well in Maki and Otaka's statement on Gun Zokei or Group Form: "Its core is the combination of the violent human energy in modern cities and intuitive modeling. And from here, above the organic combination of elements and the entirety there is the energy of modern life and an attempt to sing a song of life."<sup>23</sup>

Nevertheless, an architect, whose vocation is to design and build, inevitably finds himself criticized as an agent of destructive construction (Picture 16, 17). Kawazoe apologized stating that this reality made architects conscience shout for the adoption of urban planning law system, and present constructive proposals for a city.<sup>24</sup> On the other hand, Isozaki considered this issue much more profoundly and reflectively. His essay, *Toshi Hakai Kogyo KK* is a fiction about an architect and a professional killer, who founded a company for the purpose of causing city destruction.<sup>25</sup> The architect and the killer are described as Isozaki's own dissociation of personality, and by doing so, he presented a destructive result as the architect's self-contradiction of living in a city. At the same time, this book is his declaration of resolve: No turning back on either his own paradox or the social paradox which generates such situation. We can well see young Isozaki in a dilemma there.

#### The absence of methodology obliging landscape design

I have already mentioned that proposals presented by the Metabolists not always consists in solving social issues. Regarding the issues of city landscape, as architects, they raised the issue of citizen's daily space experience and visual environment directly.

Kikutake treated a disorderly city landscape, in which poor wooden residences continued to exist, as an issue. This was because the landscape not only made it physically difficult for a person to position himself but also socially to find a place and live. "The new order in a city starts with city peoples consciousness of their society. It is about being proud of a city as a unit within society. It is about holding one's will on the space where one lives "based upon one's self-awareness of where one spends one's short life. The image of "living" space must grow from there". Time to say farewell to the "horizontal city", buildings were lower than trees is approaching. (Tokyo is a horizontal city with an average of 1.4 floors.) (Picture 18)". The desired to obtain an "unobstructed city space view" again like that which one can experience in the cluster trees. The unobstructed view will make the city become aware of its scale. With unobstructed view, individual as well as a group will be reconnected with the city concept (Picture 19)."<sup>26</sup>

The Metabolists at first addressed the city issues, both as issue of function and of landscape. Therefore their methodology was to undertake not only city planning but also landscape design, for they considered the process of solving city issues as part of the process of forming cities. In doing so, an issue which they

22 Shin Kenchiku, 1961. 3. p.118.

23 *Metabolism—Proposal for new Urbanism*, p. 61, I, 21-23.

24 Asu no Toshi heno Hasso, Asahi Journal 1963.3 3/Gendai Toshi to Kenchiku, pp. 55-56.

25 *Toshi Hakai Kogyo KK*, Shin Kenchiku 1962. 11/Kukan he, Kashima Shuppan Kai 1997, pp. 1-10.

26 *Metabolism—Proposal for new Urbanism*, pp. 14, I. 16-21.

faced was the absence of a referable method of city design. Until that time, a Japanese architect learned from architectural methods in European countries and the United States, and the process of using the methods as ones own method one attempted to establish ones own methodology. Nevertheless, the Metabolists suddenly realized that there was no such thing for them.

### Conclusions

To analyse the conceptual grandeur and practicability of the Organic City model of the Metabolists, I examined the urban development issues addressed by the Metabolists and their way of dealing with them. The following has been clarified: The young Metabolists considered the confusion and the paralysis of Tokyo as the critical, caused by the remarkable economic recovery after World War II, and with city planning left behind non existant. They needed a practical methodology to show their own talents in future business opportunities, and had to confront the land shortage and the absence of basic urban planning laws which limited the humanity of their future work. Before establishing the specific methodology, they shared the same position: That in the process of solving complex city issues in an order by manner, they aimed at reestablishing city order in terms of both function and landscape.

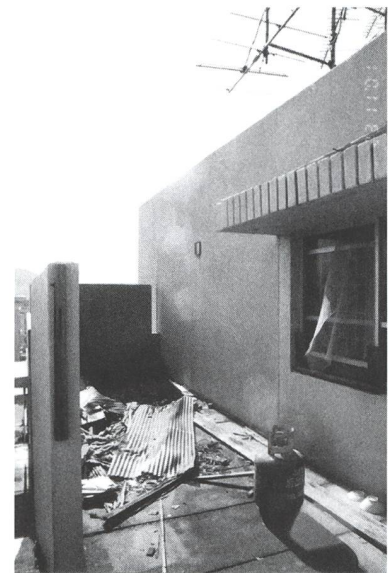
If one wants to examine the content and the background of the Organic City, it is necessary to review the Metabolists' views in the context of Japan's position in the international environment, with the new technology as the significant factor of the high growth of Japanese economy at that time. The Metabolists created their unique methodology by criticizing the early theory of CIAM and exchanging their opinions with TEAM X. And they realized their own work in accordance with this new methodology. More than forty years have passed since then. Their works seem to be left behind conversely on the metabolism of present day city, without changing, or developing their own form or without accelerating the city metabolism (Picture 20, 21, 22). As we are once again in the new social and cultural transition, it is easy to say that Metabolism is a thing of the past.

Nevertheless, as we look for directions for our own current and future urbanism in past architectural movements, we must examine the historical background with great care. It is necessary to analyse not only the factors which promote the birth and development of a movement, but also those which limit its realization, and not just from a neutral perspective, but also from that of an architect. This will lead us to a meaningful criticism of the content of the movement, including the reason for its decline, and a meaningful international comparison with contemporary movements that aim to influence urban development and city Metabolism.

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Picture 20: Kisho Kurokawa; *Nakagin Capsule Tower*, 1972



Picture 21: Masato Otaka; *Sakaide Artificial Land*, 1968



Picture 22: Masato Otaka; *Sakaide Artificial Land*, 1968