Kisho Kurokawa and the Metabolists, Paving the Way of Tokyo's Post-War Architecture

Max Masquelier - University of Illinois Urbana-Champaign

Tokyo's Nakagin Capsule Tower stands out among the surrounding buildings with its peculiar architectural style. The tower and its design were part of the Metabolist architecture movement. The unique design owes to hundreds of individual concrete capsules that are stacked on top of each other. Each capsule can house one person and the capsule itself is intended to be replaced after some time. This was part of the Metabolist idea of 'living' which can be associated with Tokyo's post-war emergence. After the completion of the tower in 1972, the condition of the building has declined. It now stands as a subtle reminder of the influential Metabolist Movement, which was a groundbreaking Japanese architecture movement during Tokyo's post-war era. As there are efforts to preserve the building, it brings forth notions of the importance of the movement as a whole and what it exactly represents for Tokyo. Kisho Kurokawa, the architect behind the tower, was part of the Metabolist group who were prominent in the 1960s and early 1970s. He played a large part in the movement and used many of the aspects throughout his lengthy career. After the Second World War, Tokyo was decimated, and the post-war years became a critical period in terms of rebuilding. It was exactly during this the time the Metabolists were active.

With the ongoing rebuilding of Tokyo between the 1950s and 1970s, there was a large opportunity to implement new styles and urban development. Kisho Kurokawa and the Metabolist Movement did just that as they took part in this essential era of Tokyo's architectural history. The philosophies of the Metabolist movement were very modern and represented visions

of futuristic development. Several Metabolist designed structures that still exist today stand out and represent something more than modern architecture to Tokyo. Kisho Kurokawa was one of Japan's most well-known architects who was part of the Metabolist architecture movement, which drew attention across the world to an emerging Tokyo from the ashes of the Second World War. Events such as the 1964 Tokyo Olympics brought international attention to this new movement in architecture. Kurokawa and the Metabolists were instrumental in constructing postwar Tokyo due to their futuristic philosophy and their symbolic structures. Scholars have written several pieces on the subject of postwar and Metabolism but have not fully expanded on Kurokawa's early work and Metabolism itself, specifically tied together and their deep connections to Tokyo's post-war urban development.[1] Metabolism's biological concept of urban development and Kurokawa's Nagakin Capsule Tower are just some examples of how philosophy and structures made the Metabolists are critical components to post-war designs.

Scholarly Works on Metabolism

Tokyo's introduction to Metabolist architecture has been the subject of several scholars' works. They have taken the Metabolism philosophies and ideals under a microscope to further analyze them. Kisho Kurokawa is one of the most studied architects along with Kenzo Tange, also a Metabolist. Besides the descriptive of architectural works, scholars have argued that the movement had utopic and mythic ideals. Zhongjie Lin's "Kenzo Tange and the Metabolist Movement" has extensive insight over the various Metabolist architects, their designs, and existing structures. He ties these subjects to Japan's post-war society but takes a broader approach to the ideals of post-war emergence and the connections to other cities across the

[1] Zhongjie Lin, *Kenzo Tange and the Metabolist Movement: Urban Utopias of Modern Japan* (New York: Routledge, 2010).

world. Metabolism has been only analyzed through physical properties of the architecture by previous scholars. Only recently have scholars focused more on the philosophies. This paper will specifically focus on Kurokawa and several designs of his along with existing structures while directly establishing a connection to Tokyo's postwar development.

Scholarly monographs in recent years have dedicated their work on exploring the Metabolist ideals. William Gardner writes in, "The Metabolist Imagination", on science fiction and the connection to the Metabolists. Gardner argues that besides the actual sketches, models, and finished projects, the Metabolists were centered around the processes of change, growth, and decay and imaginary architecture as a tool of comprehending and designing these evolving processes. In addition, Gardner argues that Metabolists built a bridge between architecture and science fiction.[2] Gardner also ties in the post-war period with the scientific fictional idea of an apocalyptic future. Agnes Nyilas' "Beyond Utopia" looks at the idea of 'megastructure' and argues its relation to tradition. Nyilas Agnes' argument is divided into three parts. She utilizes the first part, formal characteristics of Metabolism, and the second, design methods, to support the idea that 'city as living organism' is a metaphor for rethinking the idea of tradition.[3] Both of these monographs rely heavily on philosophy and greater thoughts of the Metabolist movement while linking the featured architects. Kurokawa's designs are highlighted by both authors as they are significant to the Metabolist story.

With certain Metabolist structures that have been constructed, scholars have noted the importance that they hold for the movement and their symbolic presence. Christian Tagsold's article, "Modernity, Space and National Representation at the Tokyo Olympics 1964", focuses on

[2] William O. Gardner, *The Metabolist Imagination: Visions of the City in Postwar Japanese Architecture and Science Fiction* (Minneapolis: University of Minnesota Press, 2020), 2, 22.
[3] Agnes Nyilas, *Beyond Utopia: Japanese Metabolism Architecture and the Birth of Mythopia* (New York, NY: Routledge, Taylor & Francis Group, 2018), 186.

the 1964 Olympics and the scramble for Tokyo to showcase its emerging modern city. He establishes that while "developing infrastructure such as canalization and traffic was very important for Tokyo, symbolic revitalization of the city's fabric was equally crucial."[4] Tange's Yoyogi National Stadium is a staple of Metabolist influence in Tokyo while symbolizing postwar emergence for an international audience. It was at the height of modernity, but now acts as a memory of how modernity rejuvenated Tokyo.[5] Florian Urban's article, "Japanese 'Occidentalism' and the Emergence of Postmodern Architecture", elaborates on the Metabolists and their role in postwar architecture in a broad scope. Finally, it was not a Western nation that was the face of a new modern movement. Urban adds that contemporary architecture was becoming a global phenomenon, and this "revised understanding of contemporary architecture in the 1960s and 1970s was significantly influenced by the Japanese Metabolists…the Metabolists posited an opposition between a dynamic Japanese culture and a stagnant West."[6] While Tagsold focuses on the clear symbolic nature of the 1964 Olympics, Urban notes the heavy influence of Metabolism on the global movement of modern architecture. Lin, Gardner, Nyilas, Tagsold, and Urban all expand on Metabolist ideologies and connect them to broader points such as science fiction, traditionalism, and utopia. These authors note Kurokawa's importance through highlighting his works as he is not hidden in the Metabolist narrative

Kurokawa and the Philosophy of Metabolist Movement

[4] Christian Tagsold, "Modernity, Space and National Representation at the Tokyo Olympics 1964," *Urban History* 37, no. 2 (August 2010): 289–300, https://doi.org/10.1017/S0963926810000362.
[5] Tagsold.
[6] Florian Urban, "Japanese 'Occidentalism' and the Emergence of Postmodern Architecture on JSTOR," *Journal of Architectural Education (1984-),* 65, no. 2 (n.d.): 100.

Metabolism was not a movement of simply style, but was also a philosophical movement on urbanism. In these philosophies, Kurokawa implemented his own useful ideas of urban expansion and the future of it. These ideas were helpful additions to address the ongoing reconstruction of Tokyo. Ultimately, this explains the significant role of Kurokawa and the Metabolist ideas in Tokyo's postwar urban development.

Part of the Metabolist idea was that structures were to be 'living', which can represent and applied to a growing and healing Tokyo, as it was recovering from World War II. As the Metabolist architects established their group, they composed a manifesto that was their debut piece connecting many of their visions. The Metabolists use 'Metabolism' to indicate that they "believe design and technology should be a denotation of human society" and they state, "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."[7] As described by the founding architects, Metabolism has a biological meaning which can easily be applied to their designs and structures. A 'living' urban area is rather special for the Tokyo community. Metabolism can be associated with growing, especially during the late 1950s to the early 1970s, and this is exactly what Tokyo was doing. It was during this time that Tokyo was emerging as a postwar nation. The proposed meaning and background to the Metabolism movement, as described by its members, can be seen as coinciding with Tokyo's healing and growing process in the postwar years. Based on their manifesto, the Metabolist architects were certainly invested in the rebuilding of Tokyo, and their movement's philosophy supported this through ideas of modern urban expansion. Tokyo's new wave of architecture went hand in hand with the construction of Tokyo into a

[7] Noboru Kawazoe et al., *Metabolism: The Proposals for New Urbanism* (Tokyo: Bijutsu Shūpansha, 2005), quoted in Zhongjie Lin, *Kenzo Tange and the Metabolist Movement: Urban Utopias of Modern Japan* (New York: Routledge, 2010).

modern city. Kurokawa on the other hand, mentions "I never understood my architecture as biologistic or biological. Sure, both metabolism and symbiosis are biological terms, but in my architecture, it is more a matter of the whole principle of life underlying them."[8] Even though Kurokawa may have had some disagreements with other members of the movement, his philosophy deeply revolves around the idea of life which still is a fundamental part of Metabolism.

The Metabolists designed massive structures also known as 'megastructures' which were unlike any other existing structures in Tokyo. Kurokawa's essay "Space City" is an example of bold designs fitting into urban areas. Each architect featured in the Metabolism manifesto, offered an essay containing their personal views of the movement through conceptual designs. Kurokawa's was "Space City" which included 'Neo-Tokyo Plan', 'Wall City', 'Agricultural City', and 'Mushroom-shaped house'. Megastructures influenced the proposed urban layouts and were a significant part of the styles which were utopic in the Metabolism Manifesto. Kurokawa's 'Neo-Tokyo Plan', 'Wall City', and 'Agricultural City' designs are quite massive in size. The intention behind this, is to implement connecting infrastructure to shorten the distance between housing and work.[9] Kurokawa states in his own words that "urban units must be incorporated into the city structure so that even though they are remote from the city center, they have the same environment as prevails in the city proper."[10] Kurokawa was redefining and redesigning urban layout to accommodate the evolving commute. 'Agricultural City' is a great example of this as we can see in the image of the plan that agriculture, which is work, is integrated with a

[8] Kishō Kurokawa, *Kisho Kurokawa: metabolism and symbiosis = Metabolismus und Symbiosis* (Berlin: Jovis, 2005), 21.
[9] Lin, *Kenzo Tange and the Metabolist Movement*.
[10] Kishō Kurokawa, *Metabolism in Architecture* (London: Studio Vista, 1977), 69, https://archive.org/details/Metabolism_in_Architecture_by_Kisho_Kurokawa.

city like habitat.[11] He mentions the problems of Tokyo's rapid expansion which is expanded in the next paragraph. It is within these megastructure designs, we see Kurokawa's forward thinking that directly contributes to the development of Tokyo. Obviously, this was not just an architectural style of his, but also a genuine contribution to infrastructure.

Tokyo's ever-growing population during the postwar years inspired the Metabolists to come up with designs that could accommodate a large population. With economic successes, Tokyo was expanding in terms of population and urban development, which resulted in a need for a strengthening of infrastructure. This is exactly where the Metabolists come into play. Kisho Kurokawa composed some of his thoughts post-movement in his book *Metabolism in Architecture.* It is here that Kurokawa mentions the population projections and states that the "architects' job is not to propose ideal models for society, but to devise spatial equipment that the citizens themselves can operate."[12] There is a clear connection between Metabolism and population increase. As Kurokawa explains the origins and meanings behind Metabolism throughout his writing, it is evidently clear that the movement was based on a projected modern Tokyo. He explains that the existing conditions of Tokyo during the debut of the Metabolists were in dire shape. Conditions were deteriorating in other cities as well and new construction would commence without any acknowledgment of future visions. In addition, city planning was equally unsatisfactory.[13] It was the Metabolists that put Tokyo on a track to becoming a modern city, and it was their architectural designs such as Kurokawa's "Space City" that helped develop the ideas.

[11] Kisho Kurokawa, "Agricultural City," accessed December 5, 2021, https://jstor.org/stable/community.16518984.
[12] Kurokawa, *Metabolism in Architecture*, 28.
[13] Kurokawa, 43.

Metabolism is not simply one plan conjured by architects, but consists of several ideas and plans that together would develop the Metabolist vision of Tokyo. Tokyo was in the crosshairs of the Metabolists as the movement was to help the city become one of the most modern cities in the East. Noboru Kawazoe, a Metabolist architect, wrote an article regarding Tokyo, and what it would need to become 'a city of the future'. Kawazoe, in addition to Kurokawa, brings forth the idea that Metabolism is associated with transforming the urban development of Tokyo in the postwar years. He adds that Tokyo's new urban plan should not be simply planned out in one sitting but should be a gradual process while stating "it is a good thing for multiple utopias to arise; it is in the friction between an unlimited number of proposals that a concrete vision for progress will become richer and increasingly clear."[14] Metabolism is not simply one plan conjured by architects but consists of several ideas that together would develop the Metabolist vision of Tokyo. Kawazoe adds to Kurokawa's idea which is "what brings together part and whole in the city and unites gigantic and human scales an 'urban connector'" to which Kawazoe then adds that urban planning should be seen as a practical philosophy coming from asking how humanity should exist.[15] Kawazoe's ideas as to how a city develops into the future are not conventional or simple, but rather consist of several thought-provoking philosophies. His ideas are in line with Kurokawa's outlook on the importance of city development and the idea of 'urban connection'.

Kurokawa assisted in Kenzo Tange's Plan of Tokyo, which was an ambitious urban development plan for Tokyo Bay and became part of the drive to modernize Tokyo. This urban development plan showcased the forward-thinking ideas of Tange, arguably the most famous

[14] Kawazoe Noboru and Ignacio Adriasola, "The City of the Future (1960)," *Review of Japanese Culture and Society* 28 (2016): 154, https://doi.org/10.1353/roj.2016.0031.
[15] Noboru and Adriasola, 160.

Metabolist architect, and it is still praised today. Tange's plan consisted of building across Tokyo Bay, coinciding with the city's ongoing expansion. Kisho Kurokawa created his own version of this plan titled "Neo-Tokyo Plan."[16] Although the Plan of Tokyo Bay was never constructed, it represents Tange's utopian visions of Tokyo, which certainly sparked a further push to develop the city and region into a modern urban area. Still admired to this day, Tange's plans serve an important milestone in modern urban planning

Kurokawa's plan is not as well-known but serves as an indicator of his dedicated role in Tokyo's urban planning. Instead of utilizing the bay area, he rather uses the figure of a cross to extend the city's center. This cross would be an easy access for residents outside of the city to travel to the city center. This can be related to his design titled 'Wall City'. In both works there is a notion of easy access between housing and work. As mentioned previously, this idea by Kurokawa was a unique plan for Tokyo, as the city was rapidly expanding which resulted in longer commutes for residents.

Kenzo Tange's and Kurokawa's plan both display notions of 'megastructures'. Of course, not every design from an architecture movement will see construction, because some designs were simply conjured up to express the philosophies of a movement, as is the case with megastructures. Kurokawa's urban planning and ideas of a modern city is his way of addressing the much-needed help to transform Tokyo into a world class modern city.

[16] Lin, *Kenzo Tange and the Metabolist Movement*, 28.

Physical Structures and Symbols

Kisho Kurokawa's Nakagin Capsule Tower along with Tange's Yoyogi National Stadium serve as important symbolic structures. Beyond contemporary styles, the physical structures of the Metabolists demonstrate their philosophies such as the Nakagin Tower and its relation to the Metabolist idea of 'living'. Metabolism's physical aspect of the movement contributes a critical part to postwar Tokyo as they symbolize a healing and emerging Tokyo.

Tokyo's long history of destruction was something on Kurokawa's mind. In addition, for the people of Tokyo suffering from the aftermath of the war, there was a damaged national identity. Japan's identity would prove to be essential as the people sought to recover from a troubling past. Kurokawa explains the origins of the Metabolist including Tokyo in the years directly after the Second World War and other destruction of Tokyo. Many buildings in Japan are not as old due to the heavy use of wood, and many historical buildings like shrines are not completely original compared to other historical landmarks such as the Acropolis.[17] Kurokawa makes a clever point that "wood, the traditional building material, rots easily, the Japanese have never felt that the materials themselves have a sense of eternity."[18] He also adds that it wasn't until the late 1950s, where modern architecture started taking place in Japan. [19] As the war and destruction concluded, the Metabolists were left with a task of establishing a permanent identity. Linking with the philosophy of a 'living city', Kurokawa and the Metabolists certainly wanted to address postwar thoughts through means of designing structures that were essential to Tokyo's postwar emergence.

[17] Kurokawa, *Metabolism in Architecture*.
[18] Kurokawa, 33.
[19] Kurokawa, 25.

Figure A.: Yoyogi National Stadium

Tange's Yoyogi National Stadium is widely seen as a staple of Metabolism with its unique design. Built for the 1964 Tokyo Olympics, Tange created an impressive design for a stadium that is still used today. It symbolized Tokyo's new path to becoming a modern city and the Olympics brought international attention to this. Along with other Metabolist structures, the Yoyogi National Stadium visibly stands out from its surroundings. Many architectural features of the stadium are not seen anywhere else in Tokyo, which exemplifies its modern design. Figure A is a photograph of the stadium from the 1960s, and it displays various aspects of the Metabolist style. At first glance, no one would ever believe that this would be a sports stadium. In the fore ground is the small stadium that is part of the complex. It has a large mast in the center with the roof declining in a spiraling motion. The larger stadium in the background is the focus of the design with two masts and the roof draped between in almost a shape like a tent. Like other

examples of Metabolist architecture, we see the concrete color gray and its massive size. There are many flowing lines to the stadium.[20] Applying Metabolist philosophies to the Yoyogi National Stadium, Tange certainly created something that would grab the West's attention to show Tokyo's emergence as a modern city of the East. It can be argued that the massive size of the stadium gives megastructure appeal to it. Yoyogi National Stadium's symbolic stature of Tokyo's postwar emergence proved a great deal to the people and the international audience.

For the Metabolism movement, the 1964 Olympics and the 1970 World's Fair was an excellent opportunity to display its modern and futuristic structures as there was an international audience Tokyo's 1964 Olympics was not simply a sports event but was a platform for Tokyo to demonstrate their modern emergence. With this audience, there is obvious pressure to make Tokyo visually pleasing as possible. In addition, it was a time to showcase Tokyo's successes, as the economy prospered in just under two decades after complete and utter destruction. Tange designed the stadium knowing the exact purpose of the structure in such a large national event. Kurokawa mentions that the Yoyogi stadium is a Tange masterpiece and that it was during this time that Japan was prospering economically, and new art movements appeared that were not hindered by the "established orders."[21] It was not only the Tokyo Olympics that brought this attention, as the 1970 Expo did the same thing. Located in Osaka, the World's fair was an event in which the Metabolists had a large influence as well. Several architects of the group, including Kisho Kurokawa, designed the Takara Beautilion, Theme Pavilion, and Toshiba IHI Pavilion for the event. With a combination of Metabolist architects, Expo '70 was able to showcase the contemporary styles of architecture with international attention. Both of these events stood as

[20] Kenzo Tange 1913-, "Tokyo: Olympic Halls General: Ext.: View," accessed December 5, 2021, https://jstor.org/stable/community.13922664.
[21] Kurokawa, *Metabolism in Architecture*, 27.

platforms for the architects, and symbols of Tokyo's postwar prosperity. These two international events exemplify how much Metabolism was utilized in order to put forth the notion of Tokyo's and Japan's modern turn through the lens of architecture.

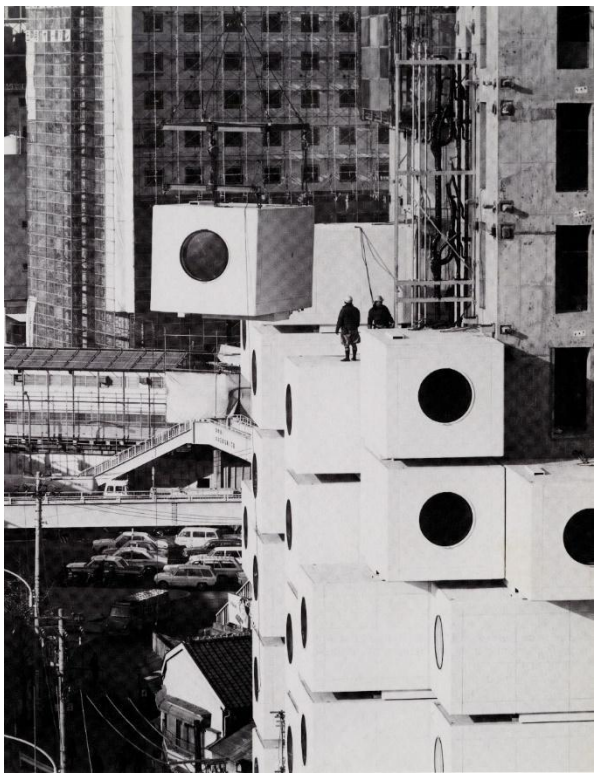

Figure B.: Construction of Nakagin Capsule Tower

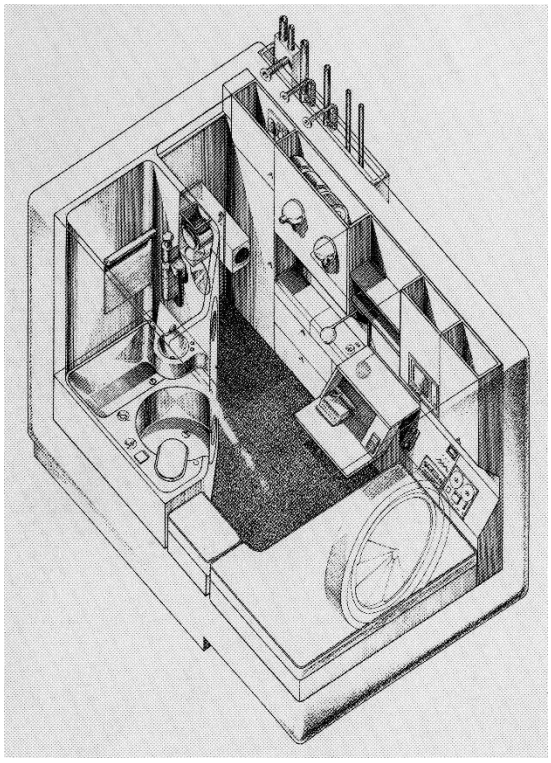

Figure C: Capsule interior design

Kisho Kurokawa's Nakagin Capsule Tower and its peculiar design embodies a fundamental part of Metabolism. As described before, the Nakagin Capsule Tower is quite unique due to it being constructed of prefabricated capsules. The capsules had dimensions of 2.5 meters by 4 meters by 2.5 meters.[22] Inside the capsule there is a small bathroom and bed, along with small amenities which can be seen in Figure C.[23] Kurokawa also mentions that the intention of the tower was "to provide single bedroom dwellings in the heart of Tokyo, studios for the use of businessmen living in distant suburbs of the city, or hotel space for businessmen."[24] This intention for businessmen also connects to the previously mentioned idea of Kurokawa to shorten the commute in Tokyo. He also notes that each capsule connected to a center shaft with bolts on one end, meaning that it could be removed without affecting other capsules"[25] Figure B

[22] Kurokawa, 109.
[23] Kisho Kurokawa, "Nakagin Capsule Tower," accessed December 5, 2021, https://jstor.org/stable/community.16512980.
[24] Kurokawa, *Metabolism in Architecture*, 105.
[25] Kurokawa, 105.

is an image depicting the installation of a capsule which demonstrates the piece-by-piece construction.[26] Due to the prefabrication, construction of the building was shortened. This idea of replacing the capsules is what connects to the Metabolist idea of 'living structure'. With a building being able to have parts replaced and moved it certainly alludes to something living and growing. Besides its peculiarity, it also embodied Kurokawa's capsule idea, which is seen in a good amount of his early works. Mass production is one aspect of the capsule idea, as the capsules are prefabricated and produced in a factory-like setting while being sustainable.[27] Kurokawa visions of Metabolism and Tokyo's future is translated into the tower.

Conclusion

What makes Kisho Kurokawa stand out from the rest of the Metabolists is his consistent close connection to philosophies in his architecture and being a writer as well. Kurokawa's Nagakin Capsule Tower is arguably his most studied early work. Built in 1972, it was almost at the end of the Metabolism era, as the first essays debuted 12 years earlier. Kurokawa states that there was some disagreement between all Metabolist architects on certain ideals, especially on Tokyo's new urban layout. He mentions this in his own book, since there were differences with the methods of addressing Tokyo's urban problem. There were plans to publish another manifesto, but this resulted in being delays which eventually never came to be.[28] Kurokawa also states in his own book that during the late 1970s, the group was producing little to no work, although he was still keeping some broad ideas of the movement in his personal work.[29] In this sense, Kurokawa also makes himself stand out and proposes that he is still carrying the ideals

[26] Kisho Kurokawa, "Nakagin Capsule Tower," accessed December 5, 2021, https://jstor.org/stable/community.16518004.
[27] Kurokawa, *Kisho Kurokawa*, 46.
[28] Kurokawa, *Metabolism in Architecture*, 43.
[29] Kurokawa, 7.

into his later works. These differences make him a critical architect to study as he has still kept close to the ideas of Metabolism well after the decline of the movement.

Tokyo has developed into one of the largest cities in the world while also being one of the most modern. Metabolism resulted in more than an architecture movement, but a symbol for a recovering and emerging modern Tokyo. Kisho Kurokawa, one of the most prominent architects of the group, provided his own views on Metabolism as it differed slightly among all Metabolist architects. It was Kurokawa who continued to have a successful writing and architecture career and still implemented Metabolist ideals throughout is later works deriving from his early days of the career. Metabolist structures still exist today and there are efforts to preserve such structures such as the Nakagin Tower, ultimately demonstrating how influential this movement was to the Tokyo identity.

The philosophies and existing structures of Kurokawa and the Metabolists fundamentally serve as a critical factor in Tokyo's postwar urban development. Philosophies such as 'city as living' and megastructures are prominent factors to the notion of Tokyo's future development as proposed by the movement. The idea of living structure represents Tokyo's healing and growth in the aftermath of destruction. As described by Metabolists, the city was the future of urban development. Kurokawa's *Space City* contains both philosophies. His designs of massive structures proposed to address Tokyo's rapid expansion, by shortening the worker's commute through designs. The other component to the argument is the existing structures and their symbolic nature. Metabolists changed global postwar architecture and the Nakagin Capsule Tower and Yoyogi National Stadium are highlights of this. Tokyo's Olympics in 1964 was a spotlight for an international audience to view the emergence of modern urban development. Both mentioned structures symbolize non-western modern architecture which was an unseen

development. Kurokawa's capsule tower also embodies 'living structure' as its unique design allows for prefabricated capsules to be replaced and renewed. Ideals, structures, and their critical representation fully embody Tokyo's postwar urban development through ways that have lasting effects.

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