

**Metabolism:**  
**Apocalypse, Rebirth, and Identity in Post-war Japan**

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By

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## Introduction:

### Build the Future then Tear it Down: Metabolism Realized

In April of 2007, an architectural report on *Architectural Record's* online journal drew international attention to a specific building in Tokyo, one of the few buildings in existence that actually represented Metabolist ideas of *megastructure* and *group form* since its construction in 1972. The Nakagin Capsule Tower located in the Ginza area of Tokyo, Japan was designed by Kisho Kurokawa (1934 – 2007) and is arguably the finest built work to truly capture philosophies resulting from the Metabolist movement of the 1960's. (Lin, *Nakagin*)



Fig. 1: Nakagin Capsule Tower designed by Kisho Kurokawa and completed in 1972. The photo on the left shows the interior of a single residential capsule and demonstrates the efficient use of compact space. The photo on the right demonstrates the unique structure of the building and clearly shows the permanent red towers as well as the more temporary pods that surround them.

[//commons.wikimedia.org/wiki/File:Nakagin\\_Capsule\\_Tower\\_03.jpg](https://commons.wikimedia.org/wiki/File:Nakagin_Capsule_Tower_03.jpg) (December, 2012)

<http://www.lejapon.fr/blog/index.php?2008/12/19/762-tour-nakagin-capsule> (December, 2012)

Its design consists of two permanent towers that function as the support structures for 144 interchangeable capsule compartments, each the size of a shipping container. Every capsule is a self-contained residential area attached to the towers by flexible joints, representing Metabolist concepts of adaptability and renewability (Lin, *Nakagin*, 13). Despite the building's position as a monument to this key moment in Japanese architectural history, health issues regarding the use of asbestos during its construction as well as complaints by the residents about the interior falling into disrepair have prompted the owners of the property to vote to tear down the Capsule Towers and replace them with a newer, more cost-efficient residential building. Kisho Kurokawa launched a campaign to halt the demolition of his building, but in essence, the Nakagin Capsule Tower faces destruction at the hands of the very ideas that facilitated its creation. This controversy regarding Kurokawa's Capsule Tower raises a number of key questions about the legacy of the Metabolist movement in Japan and elsewhere, as well as issues on the preservation of relics of architecture. Was the Metabolist movement simply a regional variant of a more international post-war fascination with *megastructure*, or was it a uniquely Japanese movement that differed from other architectural styles under the umbrella of futurism? Is it right to tear down a monument that is so representative of the Japanese struggle toward modernity? In the following chapters, I will discuss other examples of futurist architecture from around the world and argue that Metabolism, though within the futurist umbrella, is a movement that is rooted in Japanese culture and tradition. Though a Metabolist city as envisioned by the original members of the movement was never realized, the philosophies of urban adaptability and renewability are historically Japanese ideas that remain embedded within the culture in theory and in physical practice, as represented by feats of both modern and historical Japanese architecture.

My goal is to analyze the Metabolist Architectural Movement, which was born in Japan during the 1960's following World War II, and to explore the impact it has had on popular works of art in the anime genre (Lin, *Kenzo Tange*, 1). As an avid viewer and devotee of Japanese Sci-Fi, I believe there to be some importance in the drawing of connections between fiction and reality. Fiction is, after all, a controlled expression of reality, and I aim to explore the degree at which Metabolism has found a home within the science fiction genre.

In Chapter One, I will discuss the founding members, overall history, and specific philosophies from which the Metabolist movement was conceived. In Chapter Two I will look at the legacy of the movement in existing architecture, specifically the Nakagin Capsule Tower located in Tokyo, which I feel is the only existing structure that fully represents a complete Metabolist style of Architecture. In Chapter Three, I will examine Metabolism as an influence in Japanese science fiction and on Japanese conceptions of Utopia and Dystopia. To do this, I will reference some of my favorite anime and explore the fictional settings in which Metabolist structures may come to life. I hope to show that Metabolism is culturally a Japanese movement that was motivated by the large-scale destruction of city centers like Tokyo and Hiroshima during World War II, and that the Utopian nature of many of the proposed Metabolist *megastructures* hindered its reception in reality. Rather, Metabolism has been readily accepted into Science Fiction where it has become the poster child of the Utopian, post-apocalyptic nature of futurist Japanese society. In Sci-Fi, Metabolism is the face of progress.

## Chapter 1

### The Metabolist Movement

Great social changes, specifically Utopian projects, tend to formulate at times when societies undergo dramatic political or economic transitions. For example, “Italy in the early Renaissance, France during the period of great revolution, and Europe as a whole at the dawn of the twentieth century have provided some of the best examples of such Utopian projects” (Lin, *Kenzo Tange*, 1). Given this trend, post-World War II Japan was fertile ground for visionary change, the Metabolists being some of the more vocal advocates. Metabolism fueled the nation politically and culturally at the end of WWII and demanded a redefinition of several critical relationships within design: order and chaos, permanence and transience, collective thought and individual expression, and planning with spontaneity. All of these ideas are within Metabolist schemes, the evolution of structure and impermanence of form being the strongest of themes.

Among the ranks of these innovators were Kiyonori Kikutake (1928 – 2011), Kisho Kurokawa (1934 – 2007), Fumihiko Maki (b. 1928), and Arata Isozaki (b. 1931). Kenzo Tange (1913 – 2005), though not a formal creator of Metabolism, was a prominent and respected Japanese architect in his own right and served as an influential mentor to the younger members, helping to generate the birth of the movement with his own large-scale plan for the reconstruction of Tokyo (Ross, 21). Kikutake is well known for his design of the Tower-shaped City, based on the design concepts of “major structure” and “minor structure” (Lin, *Kenzo Tange*, 25) as well as the Marine City, a theoretical city that achieves harmony

with the unpredictable nature of the sea while existing as an artificial slab of land (Kikutake, *From Tradition*, 127). A stable and balanced piece of artificial land recycles as many resources as is possible to maintain minimal impact on the environment (Kikutake, *From Tradition*, 127). Kurokawa was influenced by his teacher Uzo Nishiyama of Kyoto University (1911 – 1994), a Marxist architectural theorist, and is known for his Neo-Tokyo plan and socialist ideas of design and planning (Lin, *Kenzo Tange*, 28). Maki is thought to be responsible for coining the term “*megastructure*” as it exists in Metabolism, that is, a strategy in urban design that houses the functions of all or part of a city within a single structure (Lin, *Kenzo Tange*, 9-10). Maki claimed that more radical expressions of *megastructure* could be made possible through modern technology (e.g., Marine City); his fellow architects would later design many structures that fall under this category of architecture (Lin, *Kenzo Tange*, 9-10). Isozaki was not a formal member of Metabolism but was friendly with members of the group. He is recognized for a series of sketches published in 1962 that depict a design for a building under the name “City in the Sky”, a tree-like structure 650 ft in height. The highly technological design called for a gigantic cylindrical ‘trunk’ covered with numerous horizontal arms upon which plug-in ‘branch’ residences could be supported (Ross, 29). All of these architects are known for their usage of major and minor structure in their visions of *megastructure*.

To put it in its simplest form, the theory of Metabolism was based on two principles. The first was the symbiosis of different time periods, or diachronicity. The term “metabolism” was borrowed from the science of biology, where it refers to the processes and changes that a creature undergoes as it lives. The first principle of the Metabolist movement was to introduce this regenerating, metabolizing process into architecture and city planning. The name “metabolism” was chosen for the movement to express the conviction that a work of architecture should not be frozen and unchanging once it is completed but should be apprehended instead as a thing – or as a process – that evolves from past to present and from present to future.

(Kurokawa 1988: 13)



Metabolist schemes suggested a reconfiguring of the modern structure of cities to fit with the life cycle of citizens, meaning that the structures themselves would be designed to grow and transform in a manner very similar to the evolution and metamorphosis of an organism (Lin, *Kenzo Tange*, 2). The movement was extremely Utopian in nature and inspired by the notion of “city as process,” envisioning urban structures in the sky and on the sea, paradises that are able to change and adapt with respect to the ebb and flow of human civilization (Lin, *Kenzo Tange*, 2). To better know about these ideas of the 1950’s and 1960’s, it is important to understand the movements that preceded them. Among previous avant-garde schools were Italian Futurism, Russian Constructivism, and German Expressionism (Lin, *Kenzo Tange*, 7)). However, it was not until 1928 that these isolated approaches were gathered into a strong, *functionalist* approach toward modern architecture. Documented plans for cities in this school of thought often included rigid *functional* town layouts, including plans for dwellings, work places, and recreational zones that were laid out in an orderly way (Lin, *Kenzo Tange*, 8). *Functionalism* became a dominant methodology following the Second World War, dictating the re-designing of cities and architectural thought until the late 1950’s, when dissatisfaction with design principles influenced architects to turn toward more avant-garde styles of design. This strong opposition toward bureaucratization was spurred on by the influx of new visions and competing ideologies in 1959 when the dissolution of the *Congrès internationaux d’architecture moderne* (CIAM) signified the end of an era dominated by a unified paradigm of architecture, creating new possibilities for exploring urbanism (Lin, *Kenzo Tange*, 8). Various theories of *structuralism* contested the previously accepted *functionalist* ideas, causing the scientists and architects of the 1960’s to adopt a more creative and spontaneous outlook on design and architecture. During this time,

Tange helped and assisted the new movement by lending a hand to soon-to-be-Metabolist Kikutake, boosting his visionary plans for the future onto an international stage. Kikutake's new and revolutionary ideas included the "Tower-shaped City" and "The Marine city," ideas that helped to sow the seeds of the emerging Metabolist movement and introduce new ways of thinking into the international Architectural scene that pushed design philosophies from "modernism" to "postmodernism". Thus, the Metabolist movement moved the world of architecture from functionalism to structuralism, and coined the term *megastructure* for the first time through postmodern ideas of post-war, utopian cities. (Lin, *Kenzo Tange*, 7-10)

## **Megastructure**

Designing a structure to function on basic levels in a way similar to that of the organisms it houses was a groundbreaking idea, albeit one that would see little practical use at some of the more extreme levels of its conception. The advent of the *megastructure*, a term coined by the Metabolist, Maki, who foresaw the composition of a city in ways that strongly mirror that of a singular building, was an idea that is itself evidence of Japan's strong connections with its Western architectural counterparts, sharing such concerns of massification, mobility and transformation of the modern city. The European movement, Archigram, was an avant-garde movement that is frequently compared to Metabolism. Both arose in the 1960's, were futuristic and imaginative in design, and took a serious stance on ideas of *megastructure* (Lin, *Kenzo Tange*, 11). Archigram, however, was not as concerned about revolutionizing the social structure, its members often content in the designing of pamphlets and illustrations. Metabolist proposals for *megastructure* were generally more

realistic and hopeful for reality. Moreover, Metabolism stemmed from traditionally Japanese concepts of destruction and rebirth whereas Archigram was mostly focused on its own futuristic ideas about technology (Lin, *Kenzo Tange*, 11).

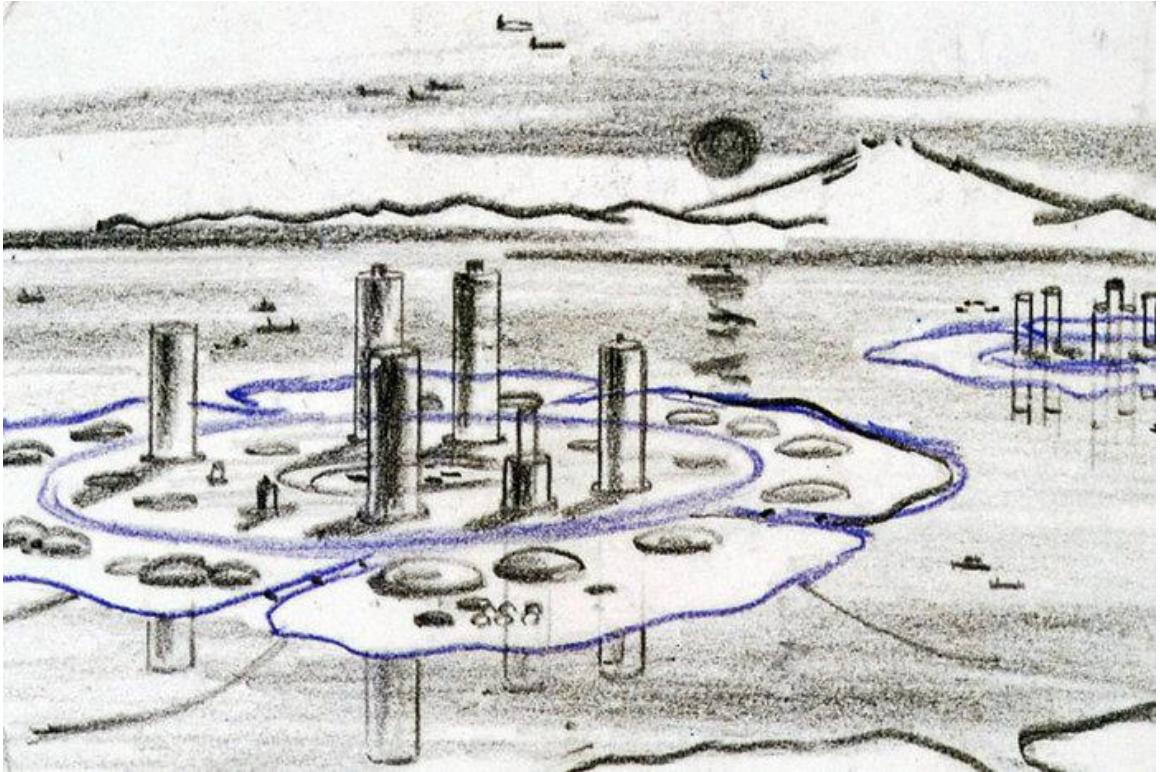


Fig 2: Kikutake's "Marine City", a self-sustaining Megastructure-type city intended to transcend what he called "continental civilization". As a vehicle of liberation from life on the land, the Marine City is capable of movement and even self-replication, much like a biological organism.

<http://japanfocus.org/-vivian-blaxell/3386> (2013)

By definition, a *megastructure* is a city that exists as an enormous, singular construct. A city of this type would embody hierarchical organization with a focus placed on the overall super-scale structure, which would then be used to determine the configuration of the individual component units. An example of this type of architecture would be Kikutake's Marine city, shown above in Figure 1. In his plans, Kikutake intended for the city to be entirely independent and contained within a singular man-made structure on the sea, thus liberating its inhabitants from the restrictions of life on land. It would also have the ability to

replicate, or evolve, through a specifically designed system on the outer edge of the main platform, a process similar to rebirth (Lin, *Kenzo Tange*, 25). The Marine City was designed with a specific function in mind, meaning that the organization of the individual components (i.e., houses) would all be uniformly based on the overall structure, leaving little room for significant individual structural expression. Construction would necessarily be limited and confined to the artificial land. The Marine City portrayed the differences between “Major structure” and “Minor structure”. The major structure of the artificial island would be covered predominately by farms, support systems and entertainment centers, with the minor structure towers in the center serving as primary hubs for business and residential areas. The towers extend 200 meters below the water table and are intended to house thousands of citizens (Lin, *Kenzo Tange*, 26). The Marine City was a strong example of Metabolist *megastructure* and embodied key ideas of the movement, which undoubtedly draws from “a traditional understanding of the cyclical movement of death, decay, and rebirth that is decidedly Japanese” (Lin, *Kenzo Tange*, 11). The Marine City would have a permanent *major structure* upon which more impermanent *minor structures* could be built, taken down and replaced as circumstances dictate. This “interchangeability of parts” is very important to Metabolist philosophy and is a primary aspect of the schemes that were publicly shown throughout the 1960’s. Kikutake himself states his interest in creating a system of architecture that utilizes natural resources while minimizing waste and maximizing reusability (Kikutake, *From Tradition*, 10). This idea evolved from wooden construction methods for the roofs and walls of houses that he considered to be traditionally Japanese, and eventually became the basis for his Metabolism, an economic system of interchangeable, reusable parts. “Architectural space was categorized into two types: one that will eventually need reconstruction, and the other

whose utilization will be permanent” (Kikutake, *From Tradition*, 10). Kikutake intended for the part that requires reconstruction, the *minor structure*, to actively allow dismantling, reassembling and rebuilding of pieces on top of the part that is permanent, the *major structure*. Kikutake’s mega-structural philosophy would be born from these ideas.

## **Group Form**

The guiding thread for my studies, can be briefly formulated as follows: In the social production of their life, men enter into definite relations of production which correspond to a definite stage of development of their material productive forces. The sum total of these relations of production constitutes the economic structure of society, the real foundation, on which rises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the social, political, and intellectual life process in general. *It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness* (Marx 1987, 4)

The greatest struggle for any architect facing the design, planning and development of a major structure is the maintaining of an awareness of the fundamental freedoms of citizens that make up society, while simultaneously aiming to create and maintain physical order (Lin, *Kenzo Tange*, 32). The Metabolist Maki introduced the concept of group form, an idea that hoped to achieve a totality through repetition of component parts without sacrificing the freedoms of individuals, to oppose the rigidity of *megastructure* (Lin, *Kenzo Tange*, 32). According to Maki, the conventional compositional method for a city insists on the adding up of each component part to achieve totality. With this system, the overall quality can be altered with the taking away or alteration of a single element of design. However, the metabolists envisioned group form as something that becomes more than the totality of all the elements: it is a system where the overall theme of the structure determines the uniformity of

the components, while maintaining a certain level of disorganization. In this way, if a part gets taken away, the overall intended quality is not altered, and yet a completely static *megastructure* can still be avoided (Lin, *Kenzo Tange*, 33). Essentially, group form is a compromise between uniformity (*megastructure*) and disorganization. In the above passage Marx discusses the role of social life in society, stating that it is the sum total of individual productive forces that constitutes the economic structure of society, the foundation on which legal and political superstructures arise as definite forms of social consciousness. Cities have long been designed with the conventional *functionalist* system as the basis of construction, a trend that began in the west and has since solidified the way that people think about society and the way citizens live within it. Social consciousness has been determined conventionally in such a way that ideas of *megastructure* or group form may sound extreme or dictatorial by comparison. As a movement, metabolism attempts to restructure the way that people think about society in using the apocalyptic destruction of World War II as a springboard. Kikutake was most likely annoyed by Japan's attempts to rebuild its cities quickly and without innovation, believing that people should instead use the destruction as a chance to create something new. His thinking inspired the Metabolists to design a large number of progressive structures, many of which were never finished or torn down not long after completion. Only a handful of Metabolist inspired architecture lives on to this day.

Something like the Marine City would not be possible in a society that is not ready to accept strong ideas of conformity. The product of the individual evolutions of every small part of a city cannot be controlled when the citizens are given freedom in their creation. Thus, individualism is lost under a mega-structural philosophy that insists upon repetition of the minor components. Tokyo, for example, has no form or function when taken as a whole. It is

the collection of functions within each part of the city that has a purpose. I believe Kikutake intended to bring form and function up to the mega-structural level, allowing the city a purpose and a distinct shape that is complemented and enabled by its constituent parts, yet also subject to the growth and evolution of its inhabitants. For example, the Marine City also functions as a slab of artificial land. His idea has yet to flourish in the way that he imagined it in his drawings, perhaps because the concept of *megastructure* is still rejected in some way. Be that as it may, the Marine City still manages to fascinate viewers, and it is because of this that it has been kept alive, along with many other Metabolist ideas of *megastructure*, in alternative ways. *Megastructure* has been readily accepted into many instances of Japanese Science Fiction.

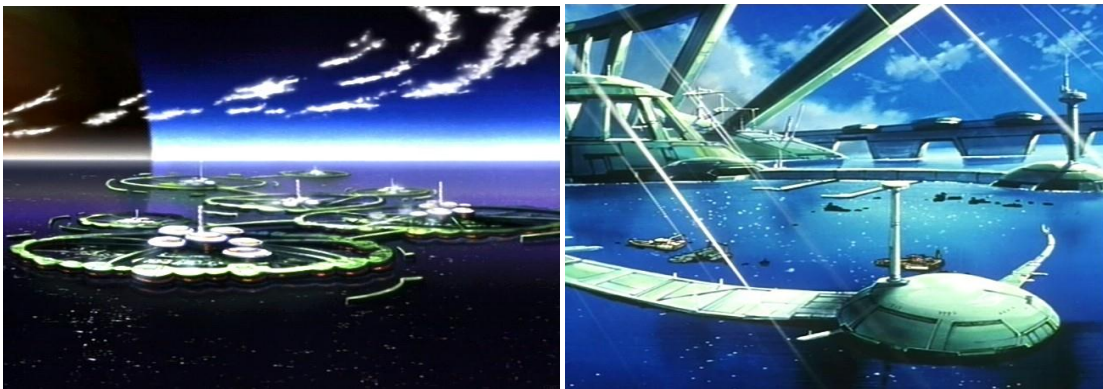


Fig 3: Though this concept was never physically realized, the “Marine City” found a home in the 1998 animated television series *Cowboy Bebop*, a futuristic take on the period of the American frontier written by Keiko Nobumoto. This particular scene depicts man-made ocean cities on Ganymede, one of Jupiter’s moons.

<http://raypunk.tumblr.com/post/774039880/a-city-on-ganymede-from-cowboy-bebop-episode-10> (2013)

[http://www.inetres.com/gp/anime/bebop/04/bebop\\_04\\_10.jpg](http://www.inetres.com/gp/anime/bebop/04/bebop_04_10.jpg) (2013)

While the sheer scale and complexity of a city designed to function as a *megastructure* might seem incomparable with reality, Metabolism as a movement was created with the full intention of inspiring constructions of this scale. In the next chapter, I will analyze the Nakagin Capsule Towers, which exist as a living legacy to the Metabolist movement and everything it represents. The very existence of a Metabolist building is testament to the ongoing evolution and perseverance of Japanese architecture, but Chapter Two will seek to separate the physical existence of Metabolist architecture from the more intangible philosophies that it represents through the impending demolition of the Towers at the hands of those who consider its design and ideology to be obsolete.



## Chapter II

### The Legacy of Metabolism and Related Movements

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 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.

-Kiyonori Kikutake (Lin, *Kenzo Tange*, 23-24)

The Metabolists were famous for their theoretical urban projects that often envisioned cities in harsh, unsettled environments. These cities would grow, transform and die just like an organism, thus establishing a system of design that clearly defined the “permanent” element, like urban infrastructure, and the “transient” element, as in individual housing. Metabolist architectural schemes frequently included some combination of these two elements, with a *megastructure* inspired structure serving as the permanent base, as well as individual ‘transient’ units attached to the *megastructure* that are subject to frequent replacement or evolution (Lin, *Kenzo Tange*, 236). These two elements can clearly be seen in the Nakagin Capsule Tower (Fig. 1, chapter 1) where the base support towers serve as the permanent piece of *megastructure*, and the capsules are the more transient replaceable pieces. The *megastructure* in metabolism functions less like a building and more like a slab of artificial land upon which individual and more impermanent constructions take place. The key to this concept lies in its versatility, allowing for construction where it would normally be impossible. The vertical *megastructures* of the Nakagin Capsule Towers represent a possible application of this idea on a small scale. In a city of similar construction, the towers that serve as the main structure would grow as population increased, while the individual living pods

would undergo periodic self-renewal (see Fig 2., chapter 1). Although progressive for their time, the metabolists were not the only architects internationally that were concerned with proposals for the restructuring of rapidly expanding post-war cities (Lin, *Nakagin*, 17). Many other avant-garde movements during the 1950s and 1960s attempted to take advantage of the destruction following WWII to apply their ideas and change the way that cities are designed and built.

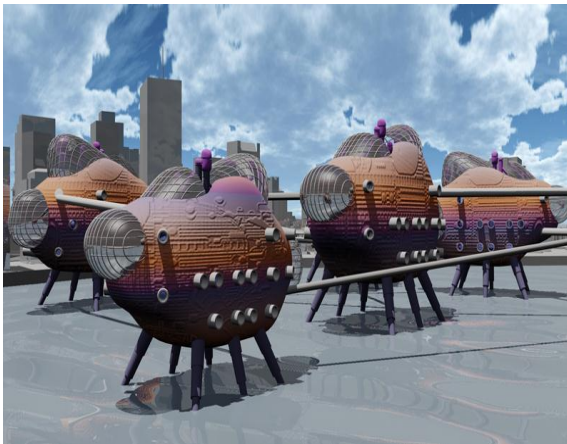


Fig 4 (left): The Archigram architectural movement from Great Britain put forward fantastic schemes that bordered on fiction. Organically themed, it shares many similarities with Metabolism including heavy inclusion of *megastructure*. Fig 5 (right): Superstudio was a movement born in Italy with primary exposure in illustrations for magazines and concepts for fictional narratives (Right).

<http://crystalr.scripts.mit.edu/>

<http://www.revelinnewyork.com/blog/12/11/2009/italians-do-it-better-the-radical-design-of-superstudio?page=3>

Among these movements were Team 10, the Archigram in Great Britain, the *Groupe d'Etudes d'Architecture Mobile* in France, and Superstudio in Italy (Lin, *Nakagin*, 17). These architects shared the dream of revolutionizing the way that modern cities were built and

operated, and focused on three-dimensional urban structure as a framework for urban growth. An example of one of these projects would be Kenzo Tange's (1913 – 2005) Plan for Tokyo, completed in 1960, which represented a complex fusion of Metabolist ideas on an enormous scale. Featuring a series of linear, interlocking loops and highways that spanned the city across Tokyo Bay, this plan served as an alternative to the official plans of Tokyo's reconstruction and proposed to fundamentally transform the structure of the city (Ross, 23). Owing mainly to the vast scale and Utopian nature of such projects, it is not surprising that many of the *megastructural* schemes that were inspired by Tange's Plan for Tokyo were not realized by these futurist architectural movements across Europe and in Japan. (Lin, *Kenzo Tange*, 144]

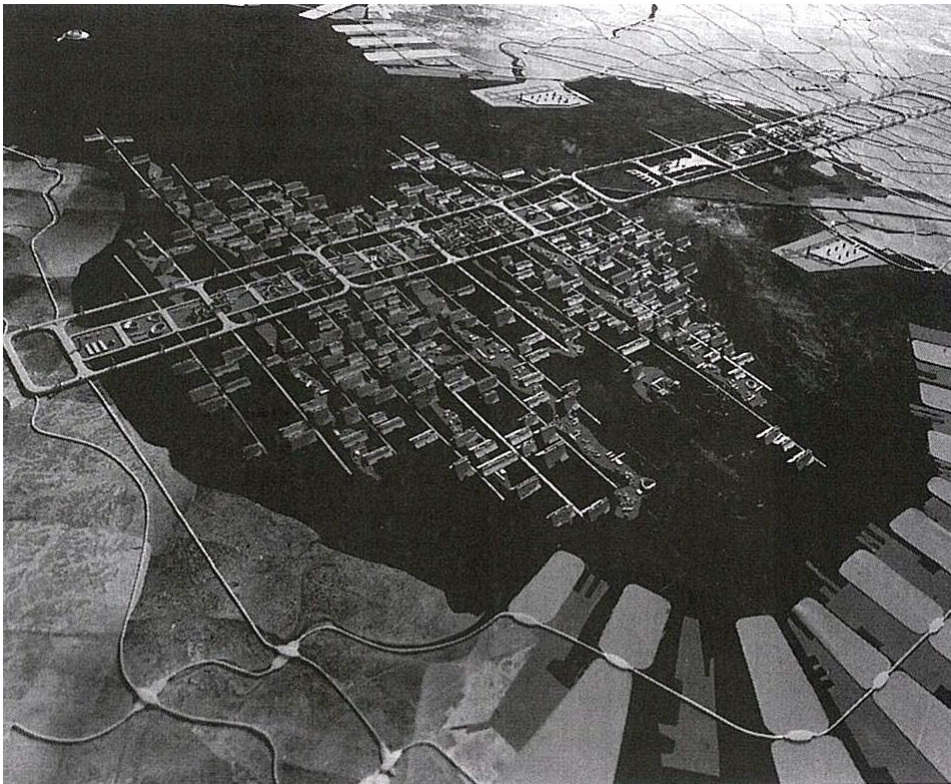


Fig 6: Kenzo Tange's Plan for Tokyo.

<http://architecturalmoleskine.blogspot.com/2011/10/metabolist-movement.html>

## The Nakagin Capsule Tower

The construction and design of the Nakagin Capsule Tower was largely influenced by Kisho Kurokawa's participation in the 1970 World Exposition in Osaka where he first began his exploration of capsule architecture (Lin, *Nakagin*, 18). Kurokawa designed the Takara Beutilion for the expo (Fig. 7), a building that consisted of a three-dimensional framework of steel pipes and prefabricated cubic compartments that were clad in stainless steel and installed in the framework with removable connectors. The framework was also left unfinished in an obvious way so that observers could recognize the possibility of outward expansion of the structure, giving the building an unusual silhouette. Nevertheless, the Takara Beutilion remains one of the most popular architectural fantasies of the Osaka Expo and the effect of its construction lingered following its demolition at the end of the event. [Lin, *Kenzo Tange*, 223]



Fig. 7: Takara Beutilion, designed by Kisho Kurokawa for the 1970 World Exposition in Osaka <http://yapparidesu.tk/2011/09/uniqely-japan-expo-%E2%80%99970-a-showcase-of-culture-technology-and-innovation/>

When Torizo Watanabe, then president of the real estate firm Nakagin Co., visited the Expo and witnessed Kurokawa's creation, he was so impressed that he immediately conceived of the development of a similar building that would see permanent use (Lin, *Nakagin*, 18). The motivation behind the development of the Nakagin Capsule Towers was the conception of "people on the move" which is to say that the building was meant to function as a temporary home for "urban nomads" at the center of the city. Each capsule was only built to house a single resident (Lin, *Nakagin*, 18).

The Nakagin Capsule Tower was constructed to convey the ideas of impermanence and movability, which originate in Metabolism's conception of the city (Ross, 75). Kurokawa configured the building with three basic components according to their different "metabolic cycles": the permanent structure (two ferroconcrete towers), the moveable elements (144 capsules), and the service equipment (utilities) (Lin, *Nakagin*, 18). Their design was based on different life spans and Kurokawa envisioned that the main towers would last for at least sixty years, while the capsules would need to be replaced after about thirty years. The towers rise to different heights and the capsules are arranged in a seemingly random fashion, suggesting growth and an ongoing process of creation. The whole building was constructed so that the towers could grow and the capsules could pile up in response to the needs of the population, another key concept of Metabolism (Ross, 72).

As the world's first fully built capsule building, Nakagin Capsule Tower introduced a number of concepts and revolutionary ideas in design (Kurokawa, *Metabolism and Symbiosis*, 42). A notable successor is the capsule hotel franchise that has since become a staple of



Tokyo, providing a cheap and easy place to stay the night for businessmen and travelers who happen to miss the last train (Lin, *Nakagin*, 20).



Fig 8: A typical capsule hotel. Each pod is specifically designed to contain the immediate needs of a customer within a very small space, creating a system that both conserves space and maximizes occupancy. The rates for a one-night stay at a capsule hotel are very low in comparison with a hotel room of more standard design.

<http://jenho74.wordpress.com/2012/06/27/japanese-capsule-hotel-%E3%82%AB%E3%83%97%E3%82%BB%E3%83%AB%E3%83%9B%E3%83%86%E3%83%AB-try-one/>

Furthermore, some aspects of capsule housing made their way into industrial products, such as the prefabricated integrated bathroom in modern housing. Although Kurokawa envisioned the capsule building as a new prototype for prefabricated housing plans that would unleash the power of mass production on an urban scale, the vision was never realized due to high development costs and small units that can only accommodate a single person (Lin, *Nakagin*, 20). In the thirty-nine years since its construction, the Nakagin Capsule Tower has remained a

static, unchanging symbol of Metabolist architecture in a rapidly evolving Ginza cityscape, symbolizing the principles of Metabolism while no longer participating in its processes (Lin,).

The capsules created by Kurokawa were designed to have a thirty-year lifespan. “Ironically, contemporary cities like Tokyo are growing and transforming so rapidly that their change outpaces the generational ‘metabolism’ envisioned by the Metabolists.” (Lin, *Nakagin*, 20) This explains in large part the plan to demolish the Capsule Tower, although a large percentage of architects from various movements around the world are against this.

Architectural critic Nicolai Ouroussoff (b. 1962) demonstrates this by commenting that the Capsule Tower, while a gorgeous piece of architecture, more importantly represents the crystallization of an ideal. Its existence stands as reminder of paths that we were presented with but did not take, of the possibility of a number of other worlds shaped by different sets of values (Lin, *Nakagin*, 22). The Tower embodies ideas of transformation and regeneration, and in that sense proves through its destruction that the Metabolist movement has had a strong influence on modern architecture.

We can compare this event to the famous periodic construction of Ise Shrine, which is torn down every twenty years and rebuilt from the ground up at an adjacent site in an almost identical fashion (Reynolds, 316-317). As a feat of architecture, the shrines of Ise received very little praise from Western critics. The American Architect Ralph Adams Cram visited Japan in 1898, and had great admiration for much of what he encountered there. However, when faced with Ise Shrine, he described it as being “sufficiently ugly” and “barbarous”, perhaps because of the simplistic style and wooden construction, or because of his own ignorance of the Japanese cultural markers that lend the monument significant (Reynolds, 321). The shrine of Ise was intended at its conception to serve as the dwelling place for the

sun goddess, Amaterasu, and the expensive and time-consuming reconstructions function as a kind of sacrifice to the deity, funded by the Imperial family (Reynolds, 319). It wasn't until 1933 that a more sympathetic German tourist by the name of Bruno Taut would arrive and place the shrines alongside the Parthenon in terms of architectural greatness. "The Parthenon on the Acropolis is to the present day a visible sign of the beautiful gifts that the men of Athens bestowed on their symbol of wisdom and intelligence, Athena: It is the greatest and most aesthetically sublime building in stone as are the Ise shrines in wood..." (Reynolds, 321). Taut believed that fantastic architecture must have a clear relationship with the aesthetics of its surroundings, either in building materials or in design. He believed that the simple yet honest, wooden architecture of Ise as expressed within a forest environment produced "the quintessential expression of Japan's cultural identity" (Reynolds, 321). The ritual reconstruction of Ise shrine paradoxically represents the preservation of historic continuity alongside transformation and regeneration. Awareness of this interesting relationship between transformation and continuity spurred on the Metabolists like Kikutake, creating an understanding of heritage based on the belief that eternity is sustained by change (Kikutake, *From Tradition*, 12)

For better or for worse, the plan to demolish the Nakagin Capsule Tower is representative of the evolution of architecture in a way that coincides with modern capitalist ideas of progress. Metabolism is at its core an expression of evolution and adaptation of design that once fought to break the chains of planning and construction that bound the Japanese prior to World War II, and to bring Japan to the forefront of international post-modernist architecture. However, as the history of the Nakagin Capsule Tower has proven, the cycle of destruction and reconstruction in a society ruled by capitalism far outpaces even



the lofty goals of the Metabolists, as the Nakagin Capsule Tower now finds itself in danger of erasure at the hands of the very ideals it sought to express. Until the day that this relic of post-war futurist expression is replaced by a more economically sound structure, it will serve as the symbol of an outdated, yet progressive movement in architecture that envisioned a future for humanity which may never be realized. In the third and final chapter of my thesis, I will explore the social and cultural reverberations of the Metabolist movement. In doing this, I will show that both the movement's failure, as well as theoretical conditions for the practical realization of such Utopian schemes, have been explored within the last two decades in the abstract fields of Japanese anime and modern art. The Metabolist movement may have failed in a physical sense, but its legacy lives on in the imagination of the artists, designers and writers who continue to dream of the future.

## Chapter III

### The Birth and Evolution of Utopia – A dream for reality

There have always been those people that are infatuated with the idea of progressing quickly into the future. Writers, painters, scientists and architects all share the same imaginative qualities that allow them to see clearly into unknown and new eras, to imagine the possibilities of things that are and of things that are yet to be, and it is through this freedom and liberty of thought that creativity flourishes and ideas come into fruition. George Lucas captured the hearts of millions with his grandiose tales about human civilization on the galactic scale in his technological space odyssey masterpiece, *Star Wars*, just as Gene Roddenberry's *Star Trek* introduced people of all ages to the mysterious romance and excitement of space exploration. Countless other fictional films and novels (i.e., *Blade Runner*, 1984, *Fahrenheit 451*) push the boundaries of human imagination by painting a picture of humanity's progression in ways that can be uncomfortable or unsettling for readers. The bright and progressive utopian cities in *Star Trek* are hopeful imaginings for the future that envision the limits of human society, a constant reminder of our limitless potential and of things that are yet to come. In stark contrast, the dark and hopeless atmosphere in *Blade Runner* presents the viewer with a much bleaker future, a dystopia born within the chaos of evolution and social change. Although both narratives represent growth and progress, each does so in ways that invoke opposite emotional responses within the viewer.

Through these works of fiction, people have been able to imagine their own existence in settings that differ greatly from present situations. Perhaps the mystic and exotic feel of

Science Fiction has always attracted those people that continue to dream about the future, but do not feel like they can adequately express their feelings in a society that no longer idolizes futurist progression as it once did (Morikawa, 123). Post-war Japan was once ripe for technological growth. Places like Akihabara, a district in Tokyo that specializes in electronic merchandise, were dedicated to the sale and advertisement of the gadgets of tomorrow, devices like washing machines or hair dryers, items that embodied technological evolution in an exciting way for the Japanese people. Once technology lost its appeal, Akihabara became a haven for the ‘computer nerd’, or the *otaku*, a new kind of personality that emerged as a result of the loss of the ‘future’ (Morikawa, 123). People with a strong interest in computers were looked down on during this time, and so people that shopped in Akihabara developed an image akin to that of a social outcast. They were the people that had been separated from the social progression of Japan. “Once-ambitious boys, who were particularly affected by the loss of faith in science and technology, were otakus. They used to adore science, and technology, but when America had to shift their resources from space exploration to war, the scientific future started to fade, and their worship shifted from science to Sci-Fi, then to Sci-Fi anime, then to anime characters” (Morikawa, 123). Akihabara is a haven for those that are passionate about a lost endeavor. In some ways, these people can be related to the Metabolist movement. When the aftershocks of World War II began to fade and it began to look as though cities in the sky or on the sea would not be built, Utopian projects lost their appeal. Other options were simply more economic and less complex.

Metabolism was a movement born in the wake of this technological chaos that followed World War II, and as such was open to visions of change, a revolution of modern architectural standards. While it is true that Metabolist *megastructures*, enormous cities

designed to structurally function like a building, received a lot of attention internationally, it has become clear that the level of interest was not high enough to actually facilitate large-scale actualization. It is my opinion that the shape of social consciousness at the time, having previously been influenced by generations of architecture inspired by more conventional methods, rejected ideas of Utopian *megastructure* on a fundamental level. It is possible that we are unable to imagine living in such a finely defined environment, and choose instead to push ideas of *megastructure* into the realm of fiction. Whether or not we can actualize such ideas is entirely dependent on our willingness to risk everything we have gained so far, but history would argue that the conceptualization, facilitation and actualization of grandiose Utopian ideas can only be possible in the aftermath of highly destructive, apocalyptic events. In the case of Japan, such events occurred during World War II with the fire bombings on Tokyo, and the Atomic bombings of Hiroshima and Nagasaki.

### **The Legacy of Metabolism in Modern Anime**

In order to better understand this delicate, transitional period in Japanese history, as well as the goals I believe Metabolism has set out for itself, I wish to clarify the term “Utopia” as is used in previous chapters. In some ways, I would like to emphasize the concept of control, which, in the case of Plato’s *Republic*, is a reference to war. “Plato’s ideal citizen is, above all other things, a fighter: war, with its martial training and exercises, is the breath of his nostrils” (More, xxxv). Plato’s *Republic* is a military aristocracy and prizes its two higher classes, Rulers and Protectors, above all else. Control is enforced from above, and the importance of strength eclipses that of production (More, xxxv). This is but an aspect of

Plato's ideal society. In the case of Thomas More's *Utopia*, war is abhorred and all that act as fighters are loathed. Producers and agricultural workers are regarded as honourable, and the family is the foundation of society. The Utopian ideal is peace (More, xxxv). This restriction on violence and power is also a form of control. Does the Utopia of Metabolism lie with Plato or More? I believe it to be somewhere in between. Metabolism was created from conflict and destruction, yet strives toward a controlled environment in which individuals are allowed expression. Metabolism is a revolution. In his writings, Karl Marx's views on Utopian societies are radically simple. In one instance, he describes a situation in which a world, torn apart through revolutionary change, is reborn free of class antagonisms under the control of the masses of proletariat. The old bourgeois dictatorship would be torn down, along with its classes, and in its place would be left only an association between all people in which freedom of development for every one is the freedom of development for all. Another way of viewing this Utopian scheme is through Marx's "Kingdom of Ends" moral philosophy. In the kingdom of ends, no person would be allowed to use the existence of another as a means to his own end. Similarly, no one person would ever be able to view his or herself as a means to the end of some other person. Rather, each and every citizen in this society would exist simultaneously as a meaningful end, thus doing away with the idea of "stepping on others" for personal gain [Marx]. Once the immensity of this idea is fully comprehended, it becomes clear why a revolution is necessary to the achievement of Utopian ideas. Stripping a civilization of its accumulated social consciousness is no easy feat. In France during the revolution, the citizens rose up en-masse against those of the higher classes, essentially tearing down political and social infrastructure overnight. During the industrial revolution, high

capitalist propaganda and competition motivated the complete revamping of the factory system, creating a system of production that far out-produced previous schemes [Lin].

The historical progression from revolution to rebirth to *proressionism* may lend insight into the reasoning behind the usage of Utopian *megastructure* in Japanese fiction, usually presented alongside a tale of destruction, rebirth and revolution. *Cowboy Bebop* (Fig. 2, Chapter 1) also employs megastructural ideas; specifically, ocean bound cities that are very similar to Kikutake's Marine City plan. In *Cowboy Bebop*, a clever scientific experiment on faster-than-light travel goes horribly wrong, rending the moon into two halves and raining chunks of debris onto Earth, devastating the population. Humans are necessarily forced to colonize other planets in the solar system and many of the resulting communities are Utopian / Metabolist in nature. This exploratory revolution facilitated Utopian ideas (Ch. 1, Fig 3). One of the moons that humanity colonizes, Ganymede, is covered completely in water, and so Kikutake's Marine City might find a use here. People grow, adapt and evolve with the cities they live in so that they can survive in the harsh new environments, which are discovered and colonized following the destruction on Earth. At one point in the narrative, a gigantic city within a crater on Mars is shown. Atmosphere flows from the crater as water does from a cliff, and the clear contrast between the dangerous, inhabitable Martian plains and the colonized space within the crater is thus established. The city, in this instance, has no other purpose than the sustainment and preservation of a suitable habitat for humans, and must grow in accordance with that ideal. Change reinforced by necessity, and eternity sustained by that change: The cities in *Cowboy Bebop* are the last haven of mankind and carry with them the same megastructural philosophies as are found in Metabolism. These fictional cities on Mars,

along with the marine city on Ganymede (Ch 1, Fig. 3), exist precariously close to destruction, relying completely on the design of the *megastructure* for survival, and yet are at equilibrium with the surrounding environment, and maintain a high level of individual expression among the citizenry. These are the dream cities once envisioned by Kikutake.

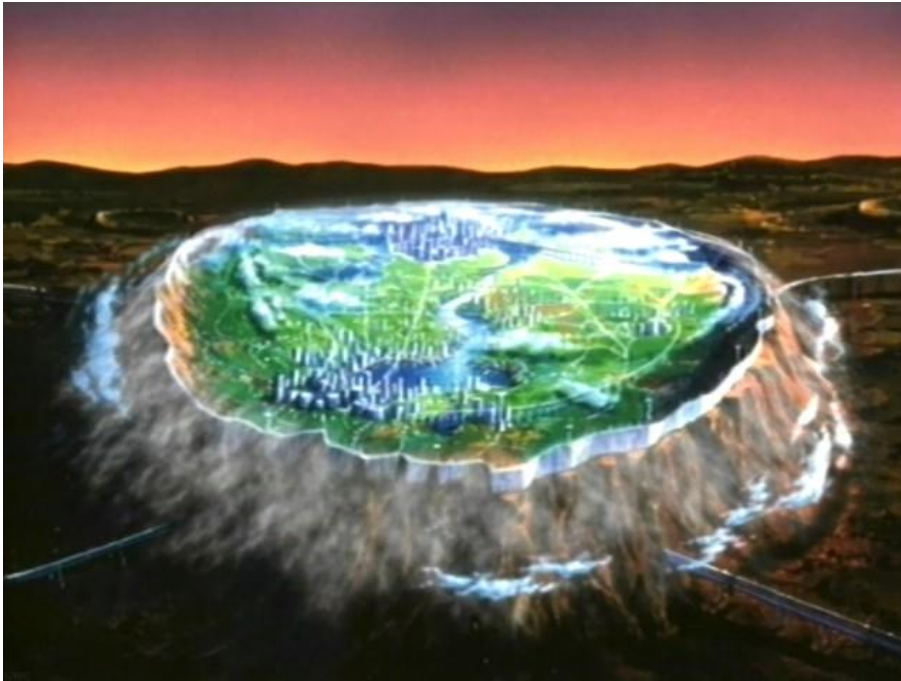


Fig. 9: A Martian city in the animated television series *Cowboy Bebop*.

<http://www.inetres.com/gp/anime/bebop/index02.html> (2013)

In other scenarios, Marxist influence is evident when worlds torn apart by apocalyptic levels of destruction are rebuilt under the direction of Utopian *megastructures*. The cultural and social revolution in these works of Science Fiction, incited by destruction on a large and crippling scale, demands the reformation of society in Utopian ways. The result is almost always some utilization of *megastructure*. The realization of *megastructure* in a number of

Japanese Sci-Fi films is startlingly similar to the Metabolist schemes of Kikutake and Kurokawa, as seen below.

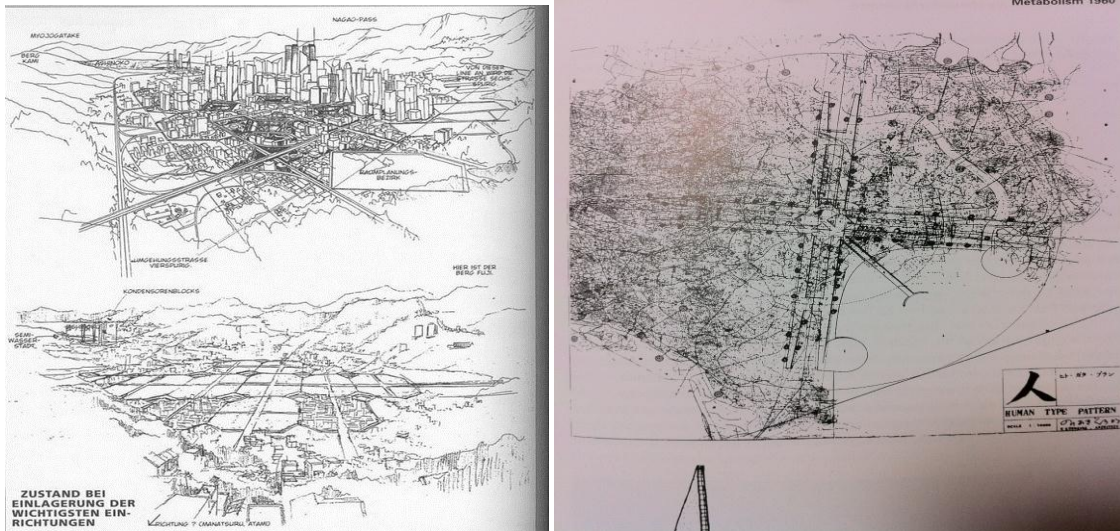


Fig 10: Striking similarities can be seen between Noriaki Kurokawa’s blue print for a megastructure-inspired city he called “Neo-Tokyo”, designed in 1960 (right), Fig 11: and a blue print for a city called Neo-Tokyo 3, featured in the Television show *Shin Seiki Evangelion* (left).

Fig 11: [http://3.bp.blogspot.com/-Cnhhe3hE\\_Tw/T1zdrXghveI/AAAAAAAAAD0c/dR8-jom4fxU/s1600/tokyo3.gif](http://3.bp.blogspot.com/-Cnhhe3hE_Tw/T1zdrXghveI/AAAAAAAAAD0c/dR8-jom4fxU/s1600/tokyo3.gif) (2013)  
 Fig 10: (Lin, *Kenzo Tange*, 29)

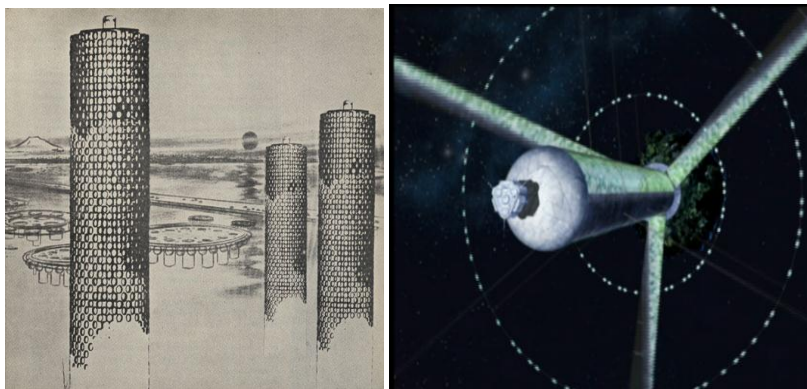


Fig 12: The “Tower City” that Kiyonori Kikutake designed in 1958 (Left) is very much like the cylindrical space colonies featured throughout the *Gundam* Franchise (right) Fig 13.

Fig 12: [http://archpaper.com/uploads/koolhaas\\_project\\_japan\\_07.jpg](http://archpaper.com/uploads/koolhaas_project_japan_07.jpg) (2013)  
 Fig 13: <http://www.gaiaonline.com/guilds-home/heliopolis-a-gundam-roleplay-guild/g.258819/> (2013)



In *Shin Seiki Evangelion* (Fig. 10), a massive explosion more than halves the world's population and destroys most of Japan. Tokyo is rebuilt in the shape of a cross and renamed "Neo-Tokyo" and is remarkably similar to a cross-shaped city of the same name, created by Kurokawa (Lin, *Kenzo Tange*, 29). In *Evangelion*, this new *megastructure* is given a unique bomb shelter-like function and is capable of lowering itself under ground with hydraulics. The construction of Neo-Tokyo in this narrative is a response to the imminent threat of the 'Angels', mysterious extraterrestrial beings that repeatedly attack the city as the story progresses. Once again, Utopias of similar size and detail to those proposed by the Metabolists are present in a post-apocalyptic setting. The world of *Evangelion* is in a state of ruin, and it is implied that this condition necessitates the creation and realization of such structures. Neo-Tokyo is a slab of artificial land with the properties of an elevator upon which more replaceable structures are built. Everything is manmade, and everything is a response to catastrophe.

In *Mobile Suit: Gundam* (Fig. 13), overpopulation and famine forces humanity to move to space. The self-sustained artificial colonies that people live in are capable of containing human life, and are very similar in design to Kikutake's tower city (Fig. 12), a design that emphasizes compartmentalization of people and economy of living space (Lin, *Kenzo Tange*, 20). These Japanese stories of fiction present *megastructure* as a feasible architecture, only after a destructive event of extreme proportions has occurred, and are testament to the idea that these radical structures naturally exist hand-in-hand with devastation. Apocalyptic events give birth to advancements that are proportionally radical and

progressive. This is the philosophy ingrained within these moments of Japanese science fiction.

### **How can we Imagine Disaster?**

Is there perhaps some universality in science fiction that allows for its continued reception across the world? Some of the more common themes in the Science Fiction genre include rapidity of change, the ideology of progress toward some future, and the omnipresence of the machine. Technology is often either cast as a “savior” in times of crisis, or a drug that humans have grown to rely on in peaceful times.

*Akira*, *Evangelion*, and *Cowboy Bebop* all function in a way that exemplifies the darker aspects of modern Japanese society. They are also all immensely popular in the US, and are generally thought to represent the pinnacle of quality within the anime genre. However, a commonality between these futuristic portrayals of Japan is Dystopia. In science fiction, Japan can sometimes embody “The imagination of disaster” in which case it is home to a conflicted and chaotic citizenry, bound by a new dark and foreboding government. One example of this kind of setting is the 1988 film, *Akira*, a feature based on the storyline of an extremely popular graphic novel of the same era. A combination of dystopia and apocalypse envelops a plot that lacks any idea of hope or salvation. *Akira* is a *tech noir*: A hybrid genre that mixes elements of science fiction and film noir into one setting, as seen in *Cowboy Bebop*. Weather effects, like constant rain or fog, play strong roles in these settings, helping to fully bring to life a fragmenting city barely held together by corrupt politicians and

enigmatic military figures. Society is constantly on the brink of destruction, threatened by a delinquent underclass and a violent resistance movement. Neo-Tokyo is always under the shadow of the gigantic crater that is all that remains of old Tokyo, and so it can be assumed that *Akira* is meant to represent a Japan that has come to terms with its lost culture and inability to retrieve or return to the way things once were. The new Japan, however, is a horrifying place, and it should be noted that the city in this film is not an example of *megastructure* as is defined by the Metabolists. Perhaps this is an instance when Utopian ideas could have been utilized in a post-apocalyptic scenario but were not, a warning to the limits of control offered by contemporary architecture in a torn, chaotic world. “Science fiction seeks to de-familiarize and restructure our experience of our own present and to do so in specific ways distinct from all other forms of de-familiarization.” (Napier, *Panic Sites*, 348) *Cowboy Bebop*, *Akira* and *Evangelion* certainly manage to achieve this with chilling tales of apocalypse and fascinating images of futurist *megastructure*. It is important to note, however, that grand experiments in architecture within these moments of Science Fiction, while sometimes viewed with hope and wonder by the characters, are born of chaos and are not the perfect Utopias that they at first appear to be.



Fig. 14: Neo Tokyo as seen in the dystopian movie, *Akira*

[http://theideologyofmodernentertainment.blogspot.com/2011\\_12\\_01\\_archive.html](http://theideologyofmodernentertainment.blogspot.com/2011_12_01_archive.html) (2013)

Just as there is a conflict in Metabolism between the ideas of *megastructure* and Group form, a very similar conflict occurs in the minds of modern day Japanese when it comes to a sense of cultural identity. The expression of this idea can come in many forms, but major themes are technological and economic growth, the importance of the ‘machine’ in everyday life, and gaps in knowledge between generations of people that have experienced life in Japan in differing ways. The advent of the Metabolist movement came at a time of hope and renewal. At its birth, architects observed technological growth with pride and dreamed about the possibilities of fantastic, Utopian cities in extreme environments. Isozaki and Kurokawa did this with the City in the Sky and the Marine City. Things take a much darker turn by the 1980’s with *Akira*. Technological growth and the evolution of city space in a Utopian manner are no longer seen in an ambivalent light. In *Akira*, it is a foul addiction that only reinforces the idea of humanity losing itself within post-modernism.

## Conclusion

As a movement in Architecture, Metabolism represented the idealistic and hopeful dreams of a group of architects that envisioned a greater future for Tokyo, a vision of a city, which would grow to push the limits of human evolution and technological growth. However, the Utopian Ideas of Kisho Kurokawa and Kenzo Tange were more than just hopeful dreams for the future: They were grounded in reality. Kurokawa and the rest truly believed that their grand schemes had a fighting chance of pushing past the boundary of fiction into a reality that would someday become normal for people around the world. The artificial land inspired by human dreams and the *megastructure* that would make those dreams into reality were realized in a larger way than many people might think with the planning and construction of the Nakagin Capsule Towers. This monument to human achievement was meant not only to serve as a symbol to a powerful movement in architecture. It was intended to be the vanguard of a whole host of fantastic Utopian structures, all of which would embody the core philosophies of metabolism, those philosophies being adaptation, evolution, and rebirth, all of which would unite to overcome the destruction of war. Likewise the plan to demolish these towers showed that, while the physical existence of proposed metabolism was not accepted in reality, the basic ideas that facilitated the movement's birth were already deeply ingrained in modern capitalist society. City centers have begun to evolve and change at a pace that not even Kenzo Tange or Kisho Kurokawa could have imagined.

As the years passed, the Nakagin Capsule Towers went from an existence as a symbol of metabolism, to an existence as a relic of an architectural style that stood for futurism in post-war Japan. However, Metabolism still lives on in anime like *Cowboy Bebop* and *Evangelion*, where the realization of metabolist schemes represents hope in societies plagued by apocalypse and destruction. The Utopian *megastructures* in these stories are created in response to the horrible things that befall the human race, whether it be the destructive angels as in *Evangelion* or the dire need to evacuate earth in favor of other planets as in *Cowboy Bebop*. Metabolism was a movement meant to lead us into a new era of existence, born from an era of destruction and despair, and its hopeful imaginings promised a newer, brighter, more technologically advanced future for us all. These ideas live on even now within the broad, abstract category of Japanese *anime*, showing that the ideals, at least, of this progressive movement have not died out completely. Even if physical manifestations no longer exist, Metabolism will continue to live as a bold imagining of the Japanese future and technological growth, both of which were strong cultural rallying points in Japan following World War II. Metabolism has shown that rebirth is always possible following destruction. Science Fiction has only helped us to imagine it.

## Works Cited

- Arisaka, Y. *Beyond "east and west": Nishida's universalism and postcolonial critique*. 1999;59(3):541.
- Calichman, RF, ed. *Overcoming modernity*. New York: Columbia University Press, 2008.
- D. P. Martinez. "From Impressionism to Anime: Japan as Fantasy and Fan Cult in the Mind of the West (review)." *The Journal of Japanese Studies* 35.1 (2009): 120-24. Print.
- Giddens, A. *Modernism and post-modernism*. . 2001:15.
- Hall, John R., Schuyler, Philip D., Trinh, Sylvaine. *Apocalypse observed: Religious movements and violence in north america, europe and japan*. Usa and Canada: Routledge; 2000.
- Kikutake, Kiyonori, and Maurizio Vitta. *Kiyonori Kikutake: From Tradition to Utopia*. Milano: L'Arca Ed., 1997. Print.
- Kikutake Kiyonori et al., *Metabolism: The Proposals for New Urbanism Tokyo*: Bijutsu shuPansha, 1960.
- Kuhn, A, ed. *Alien Zone*. 6 Meard Street, London: Verso, 1999.
- Kurokawa, K., edited by Schmal Peter Cachola, Ingeborg Flagge, and Jochen Visscher. *Kisho Kurokawa: Metabolism and Symbiosis = Metabolismus Und Symbiosis*. Berlin: Jovis, 2005. Print.
- Kurokawa K. *Rediscovering Japanese Space*. Tokyo, Japan: John Weatherhill,

Inc, 1988.

Lin Z. *Kenzo Tange and the Metabolist Movement*. 2 Park Square, Milton Park, Abingdon, Oxon: Routledge, 2012.

Lin, Z. (2) *Nakagin Capsule Tower: Revisiting the Future of the Recent Past*. 2011; Journal of Architectural Education. 13-32

Lippit ,SM, ed. *Topographies of Japanese Modernism*. New York: Columbia University Press, 2002.

Looser, T. "From Edogawa to Miyazaki: Cinematic and Anime-ic Architectures of Early and Late Twentieth-century Japan." *Japan Forum* 14.2 (2002): 297-327. Print.

Lyman, SM. *Roads to Dystopia*. Fayetteville, Arkansas: The University of Arkansas Press, 2001.

Marx, Karl. *A Contribution to the Critique of Political Economy*. New York: International, 1970. Print.

More, Thomas, and Ralph Robinson. *Utopia*,. London: A. Murray & Son, 1869. Print.

Morikawa, K. *Learning from akihabara: The birth of personopolis*.

Napier, Susan Jolliffe. "Japanese Horror Cinema. Edited by Jay McRoy. Honolulu: University of Hawaii Press, 2005. Xviii, 220 Pp." *The Journal of Asian Studies* 65.01 (2006): n. pag. Print.

Napier, Susan Jolliffe. "Japanese Cybercultures (review)." *The Journal of Japanese Studies* 31.1 (2005): 244-48. Print.



- Napier, Susan Jolliffe. "Matter Out of Place: Carnival, Containment, and Cultural Recovery in Miyazaki's Spirited Away." *The Journal of Japanese Studies* 32.2 (2006): 287-310. Print.
- Napier, Susan Jolliffe. *When the machines stop: Fantasy, reality, and terminal identity in "neon genesis evangelion" and "serial experiments lain"*. 2002; 29(3):418.
- Napier, Susan Jolliffe. *Panic sites: The japanese imagination of disaster from godzilla to akira*. 1993; 19(2):327.
- Otomo, Katsuhiro. *Akira*. Hamburg: Carlsen, 2001. Print.
- Reynolds, Jonathan M. "Ise Shrine and a Modernist Construction of Japanese Tradition." *The Art Bulletin* 83.2 (2001): 316-341. Print.
- Ross, Michael Franklin. *Beyond Metabolism: The New Japanese Architecture*. New York: Architectural Record, 1978. Print.
- Sadamoto, Yoshiyuki. *Shin Seiki Evangelion*. Singapore: Chuang Yi, 2005. Print.
- Steinberg, Marc. "Otaku Consumption, Superflat Art and the Return to Edo." *Japan Forum* 16.3 (2004): 449-71. Print.
- Yadate, Hajime, Yutaka Nanten, and Amy Forsyth. *Cowboy Bebop*. Los Angeles: TOKYOPOP, 2002. Print.
- Yasuhiko, Yoshikazu, Mark Simmons, Anita Sengupta, Hajime Yadate, and Yoshiyuki Tomino. *Gundam: The Origin*. San Francisco, CA: Viz Communications, 2002. Print.

