

EXPO 7000

STUDY OF THE 1970 WORLD'S FAIR AS A REPRESENTATIVE OF
THE POST-WAR FUTURISTIC ARCHITECTURAL IMAGINATION



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Study of the 1970 World's Fair as a representative of the
post-war futuristic architectural imagination



2024, Leonardo Hatoum

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Leonardo Hatoum

Thanks to the pedagogical group :

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From an early age, we are exposed to narratives featuring societies in the distant future. These narratives, which can be found in all forms of media, tend to create an imaginary that is recognizable by all. This imaginary is strongly influenced by the cultural and economic context in which we live as well as by the development of technologies. By achieving new feats, scientific progress feeds this imaginary by creating expectations and fears. These visions of the future, in addition to being entertainment, influence the evolution of society by serving as inspiration for different creators.

The 50s and 60s, which followed the Second World War, were a period of many changes. Such as exceptional population growth or accelerated scientific and technological advances. This period was conducive to many fantasies that led to the creation of many utopian architectural projects.

In this context, the 1970 Osaka World Fair was held. Under the theme of Harmony and Progress for Humanity, this event was an opportunity for countries around the world to highlight their technological and economic advances. It was also a opportunity for the architects of the time to put into practice their utopian concepts, making Expo 70 a major representative of the futurist imagination of the time.

The purpose of this essay is to understand and question this imaginary by studying the 1970 World's Fair. First, it will retrace the career of the master planner Kenzo Tange as well as the metabolist group who have together developed the concepts applied during the realization of the exhibition. Then, by analyzing the landscape and infrastructures of the event, we will focus on the political, economic and cultural issues involved in the dissemination of such an architectural imaginary. In addition, we will study how these utopian theories were materialized on the site. What were the constraints that architects and engineers had to face when realizing concepts that had previously been purely theoretical. Finally, we will look at the evolution of this architectural imaginary and try to understand what we can learn from this event.

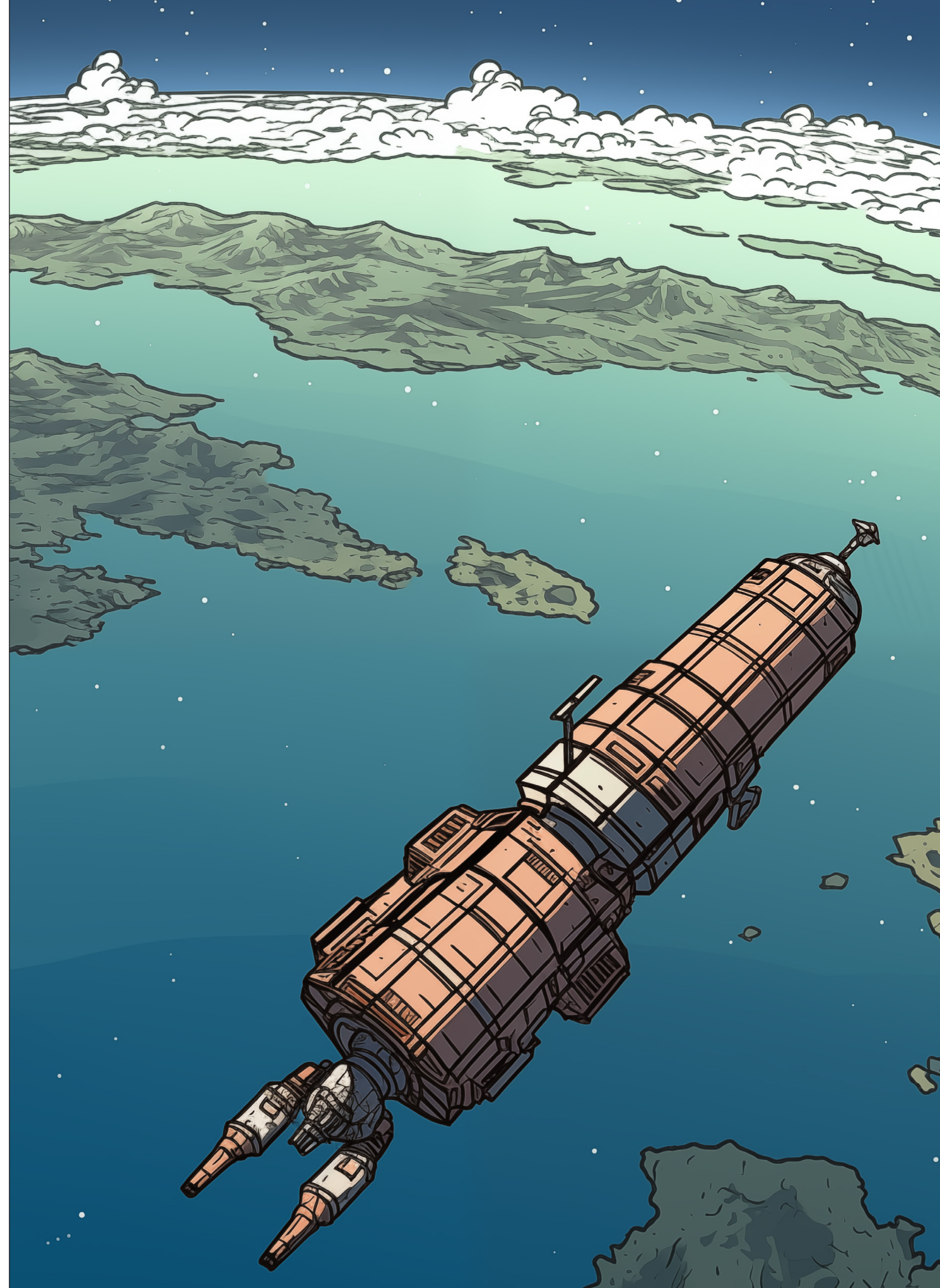
This futuristic imaginary of the 50s and 60s can be nowadays found in many science fiction works that could be described as "retro-futuristic". This is why I chose to make my essay in the form of a comic book inspired by this style. All the images present in comic squares have been generated by artificial intelligence and digitally retouched. These were made using the programs Midjourney and Photoshop.

It is important to point out that these images, although they are used to illustrate the various architectural concepts and pavilions of Expo 70, are only interpretations that have many differences from what was actually achieved during the exhibition. For some of them, photographs or drawings have been introduced into the generation process. These images have been referenced at the end of each chapter using Roman numerals.

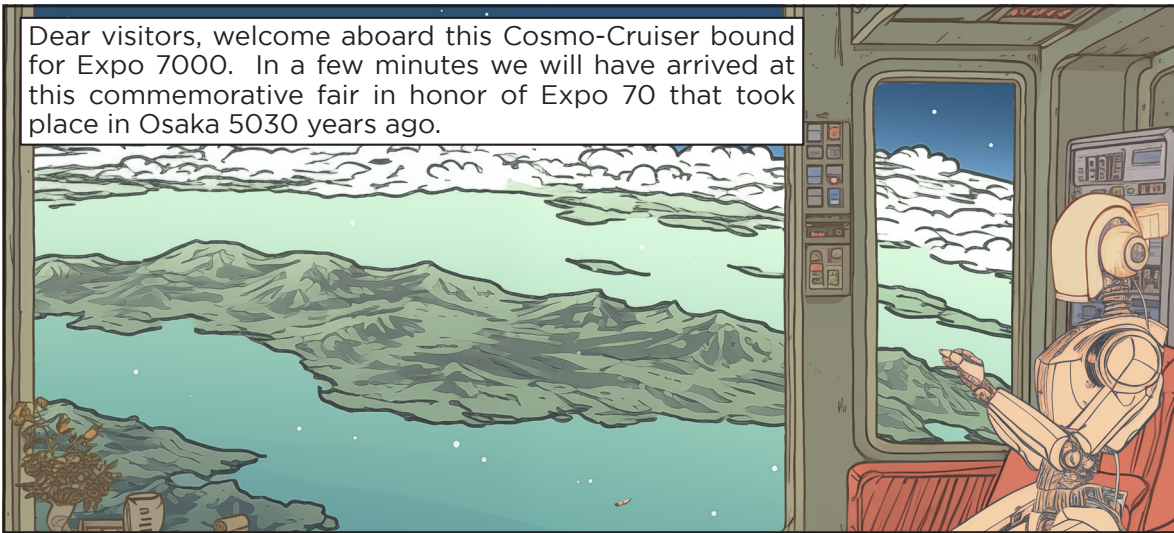
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CHAPTER 1

WELCOME TO EXPO 7000



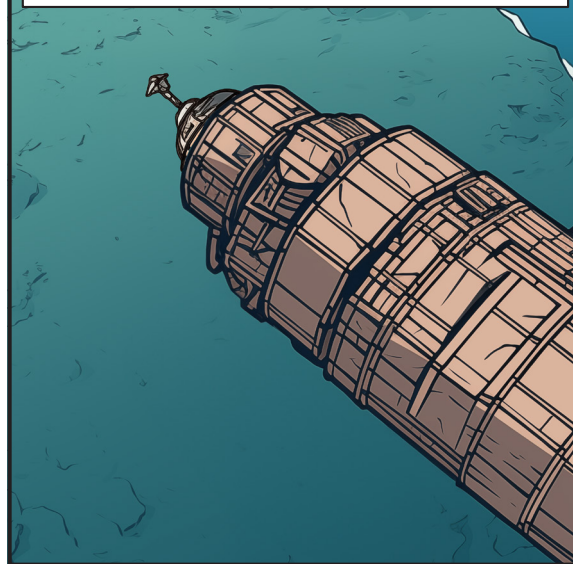
Dear visitors, welcome aboard this Cosmo-Cruiser bound for Expo 7000. In a few minutes we will have arrived at this commemorative fair in honor of Expo 70 that took place in Osaka 5030 years ago.



The 50s following World War II brought a period of rapid scientific progress, political and cultural change. Many major events such as the creation of the atomic bomb, the conquest of space, the reconstruction of cities following the war or the beginnings of computers have seen their appearance. This has given rise to many fantasies, provoking the creation of a whole imaginary focused on progress¹.



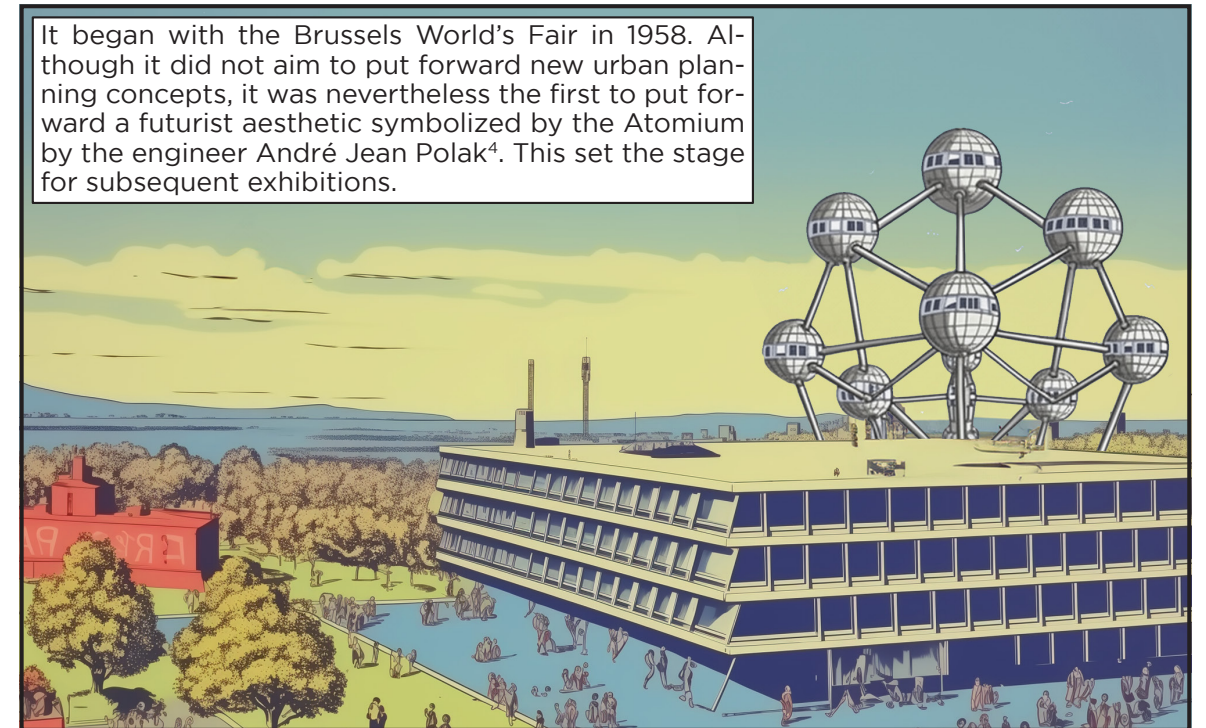
During the 50s and 60s, many architectural theories emerged. These include utopian cities such as "Walking City" by the English architectural group Archigram, Team X's critique of modernism, and the Metabolist movement, whose architectural principles constitute the very identity of Expo 70².



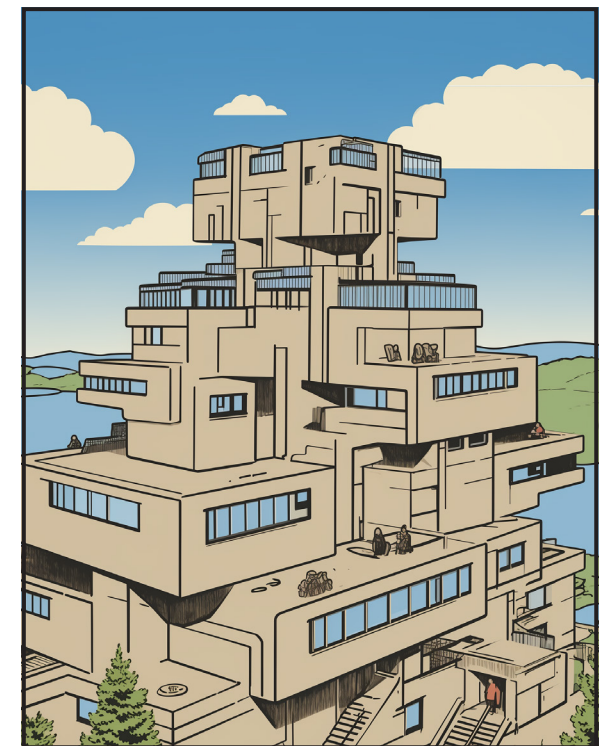
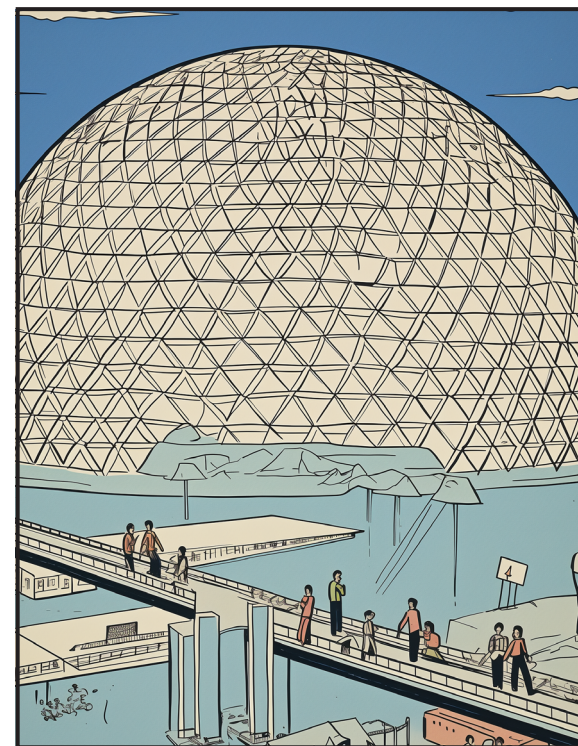
These fantasies were found as much in architectural theories as in popular culture. Science fiction movies began to reach a wide audience, such as "2001: A Space Odyssey," "Planet of the Apes" and "Alien." The same goes for science fiction comics which developed greatly in the aftermath of World War II³. This contributed to the development of a futuristic aesthetic, an imaginary that today can be described as "retro-futuristic". These "visions of the future" have played a decisive role in architecture. Highlighting currents of thought such as structuralism, aiming at a break with history and the enhancement of urban systems applicable on a large scale.

World's Fairs are known for showcasing scientific advances and architectural theories. Those that took place during the post-war period are no exception to the rule. It was a great opportunity for the different nations to showcase their culture, their economy and their progress. It goes without saying that these exhibitions have greatly contributed to highlighting this futuristic imaginary.

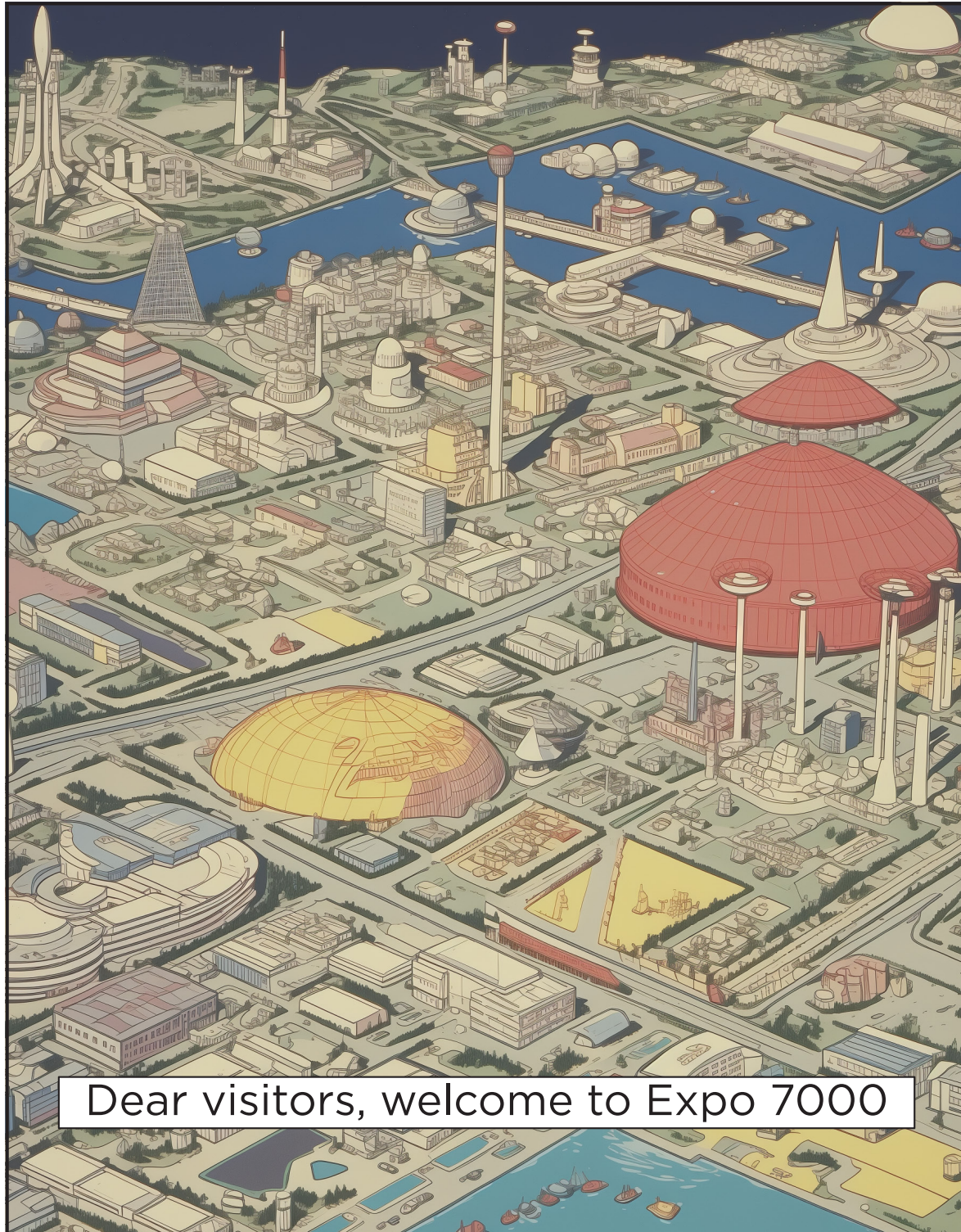
It began with the Brussels World's Fair in 1958. Although it did not aim to put forward new urban planning concepts, it was nevertheless the first to put forward a futurist aesthetic symbolized by the Atomium by the engineer André Jean Polak⁴. This set the stage for subsequent exhibitions.



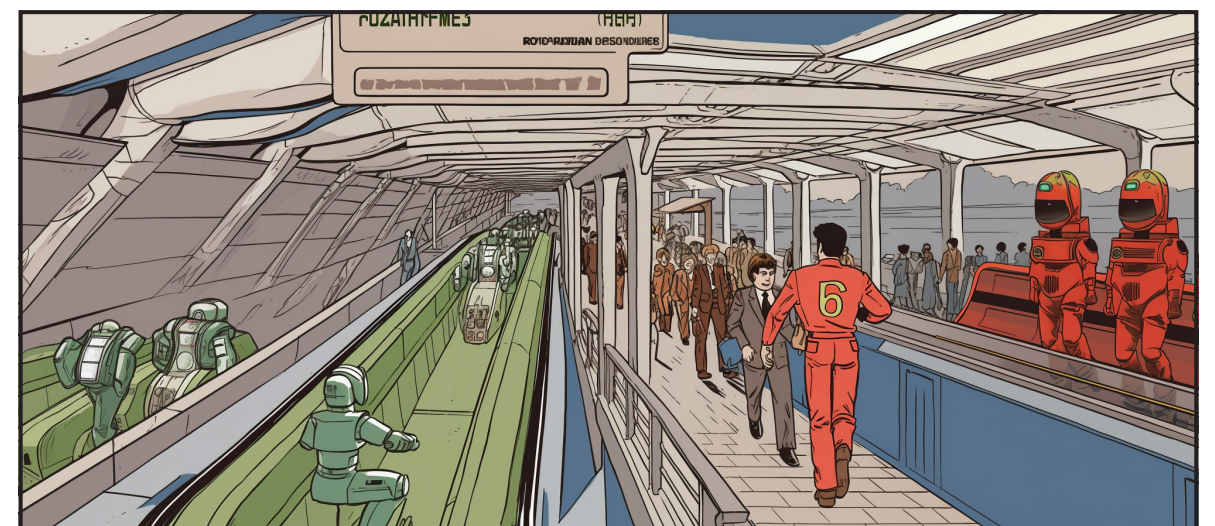
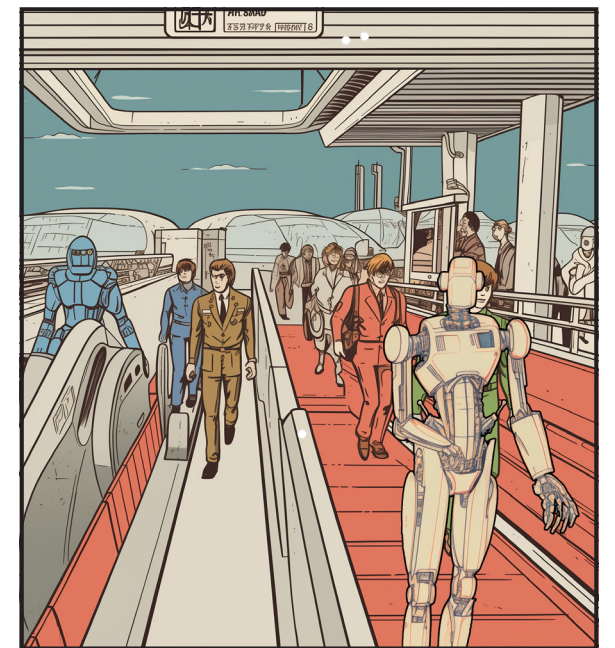
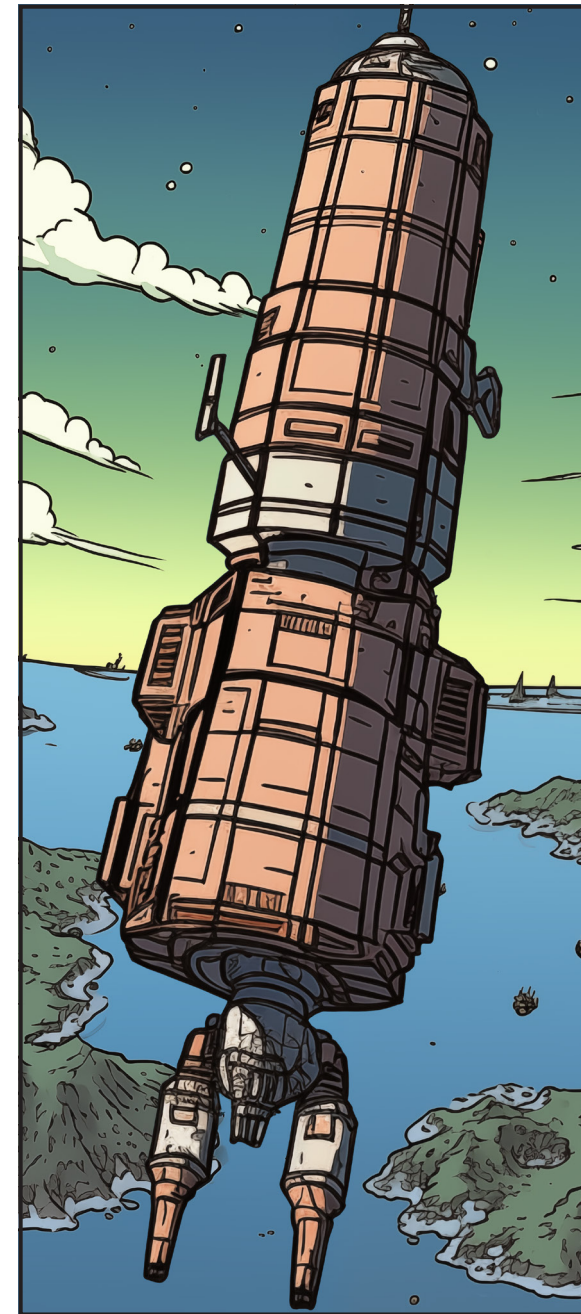
The 1967 World's Fair in Montreal continued this momentum with several pavilions on the theme of space conquest, Buckminster Fuller's emblematic geodesic domed structure for the American pavilion and Moshe Safdie's Habitat 67, concretizing a housing system based on a stacked cells modular megastructure. This exhibition was a great success and will serve as an example for the Expo 70 that you are about to discover⁵.

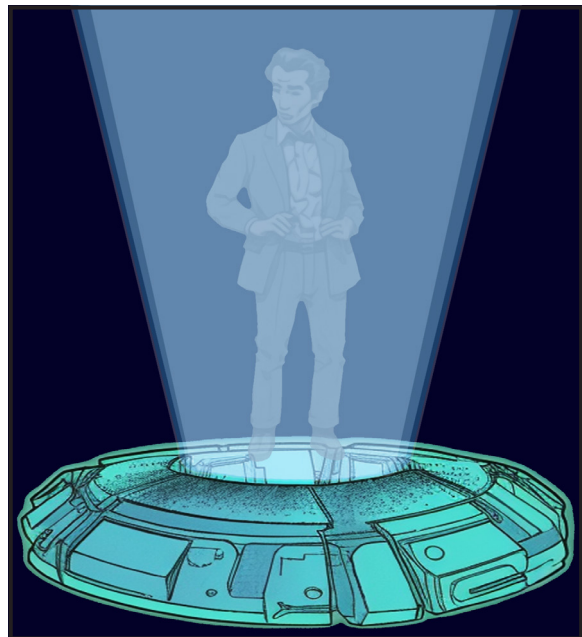


The 1970 World Expo in Osaka went even further in this futuristic imaginary. Strongly inspired by the thoughts of the Metabolist group and the ones of the master planner Kenzo Tange. The exhibition opened its doors on 14 March for a period of 6 months during which the 64,210,000 visitors were able to explore the various pavilions of the 77 participating countries⁶. The theme of the exhibition was “Progress and Harmony for Humanity”. A message of peace and prosperity for an humanity that has emerged from war and has only recently taken its first step on the moon. The exhibition was a reflection of this visionary enthusiasm. The pavilions on display amazed visitors, giving if only for a few months, the impression that this futuristic imaginary had become realit. Immersing visitors in a cybernetic environment, giving the illusion of interstellar travel and offering a taste of what the city of the future could be⁷.



Dear visitors, welcome to Expo 7000





Notes

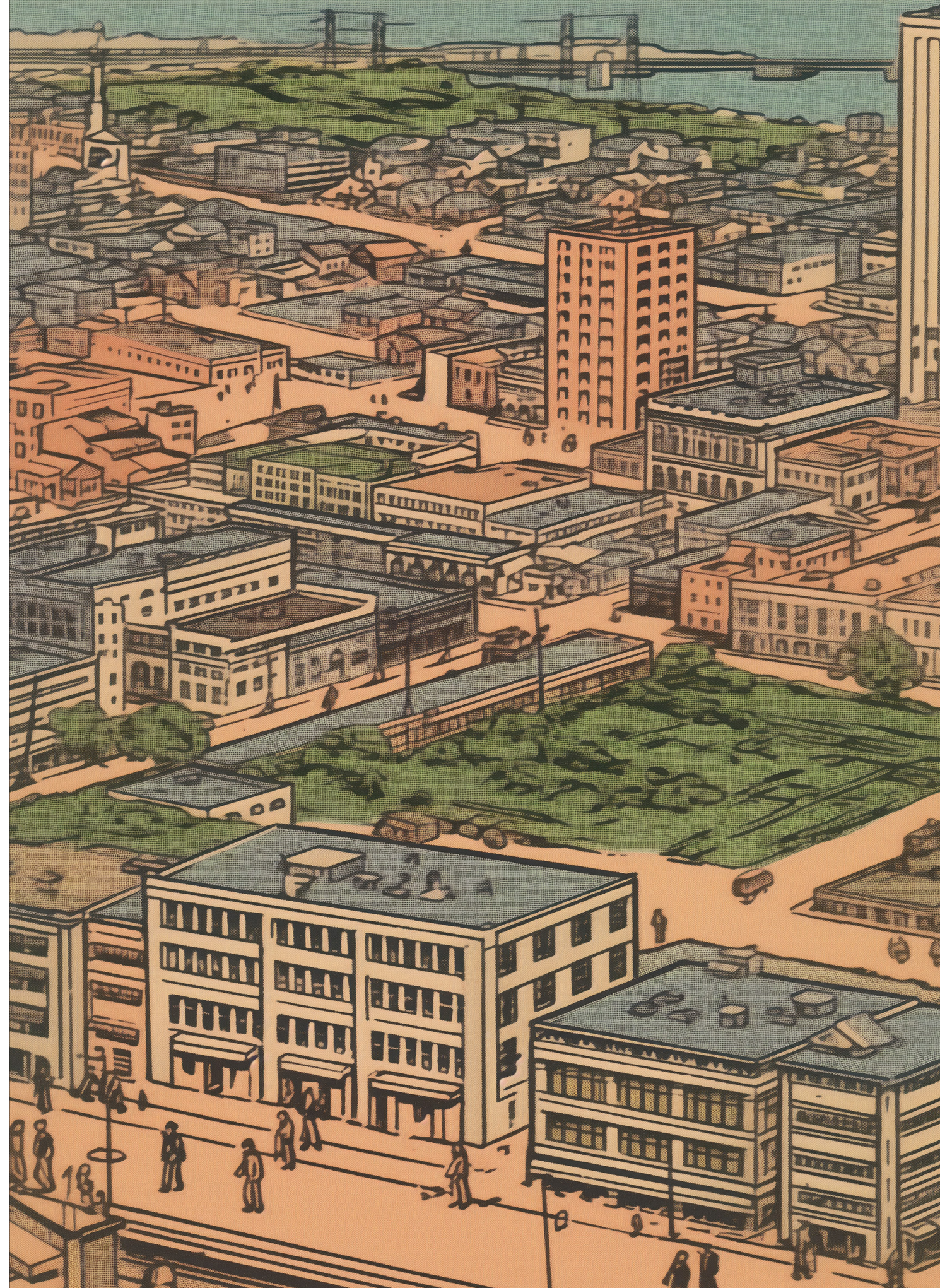
- 1. Marcoux, ‘Expo’67’, p.43
- 2. Ibid, p.50
- 3. Bozzetto, *La science-fiction*, p.34
- 4. Marcoux, ‘Expo’67’, p.51
- 5. Ibid, p.67
- 6. Anderson and Shimizu, ‘*Recollections of Expo 70*’,pp.445
- 7. Kurokawa, *Metabolism in Architecture*, p.98

Images used in illustrations

I. Takato, Marui. *Tower of the Sun*. 2010. Photograph. <https://www.atlasobscura.com/places/tower-of-the-sun>.

CHAPTER 2

TIME TRAVEL



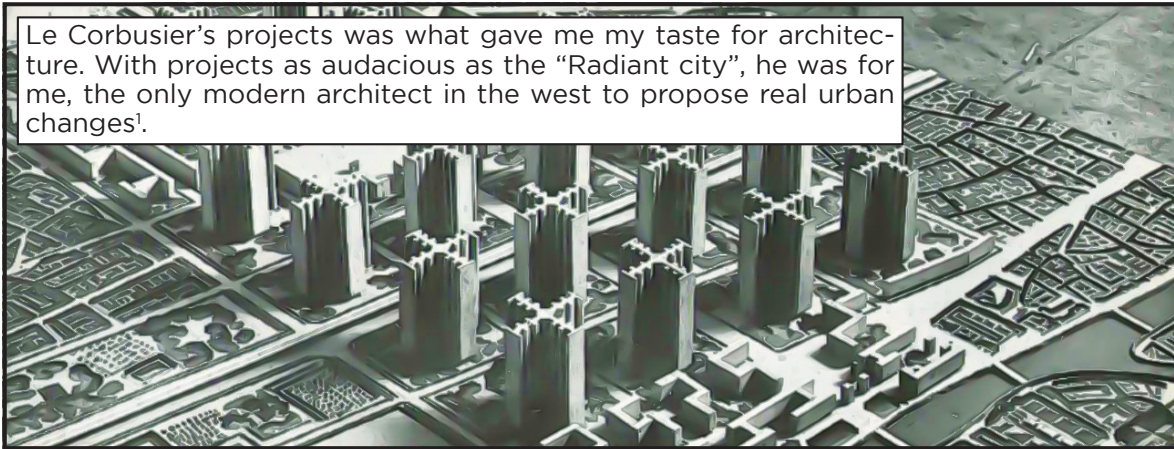
ATOMIC MUSHROOMS AND INTERSTELLAR TRAVEL

As the 1970 World's Fair is representative of the architectural concepts we developed with the Metabolist Group, it's first necessary to understand our influences and the context in which we lived.

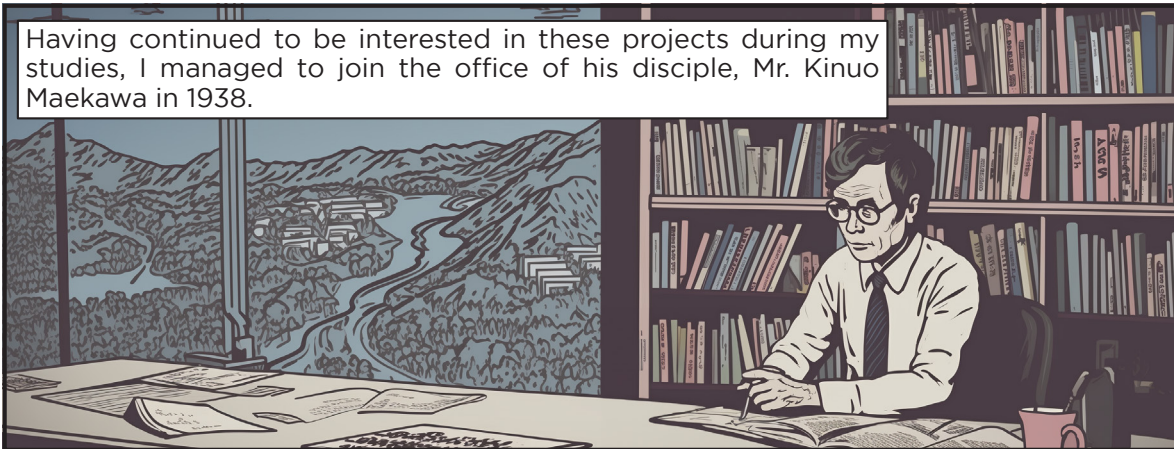
Having spent my childhood in the interwar period, I have always lived in an atmosphere of change. Maybe that's why I've always been motivated by revolutionary thoughts.



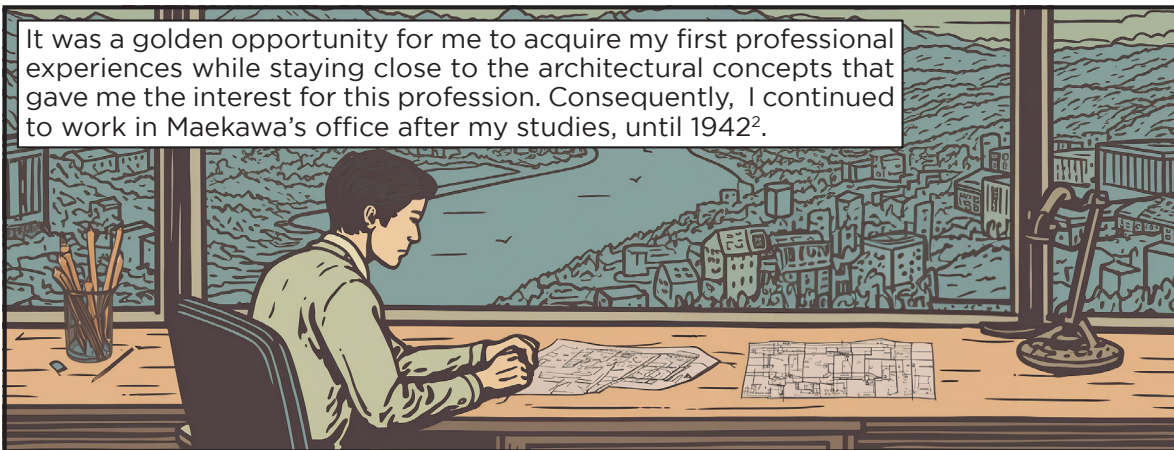
Le Corbusier's projects was what gave me my taste for architecture. With projects as audacious as the "Radiant city", he was for me, the only modern architect in the west to propose real urban changes¹.



Having continued to be interested in these projects during my studies, I managed to join the office of his disciple, Mr. Kinuo Maekawa in 1938.



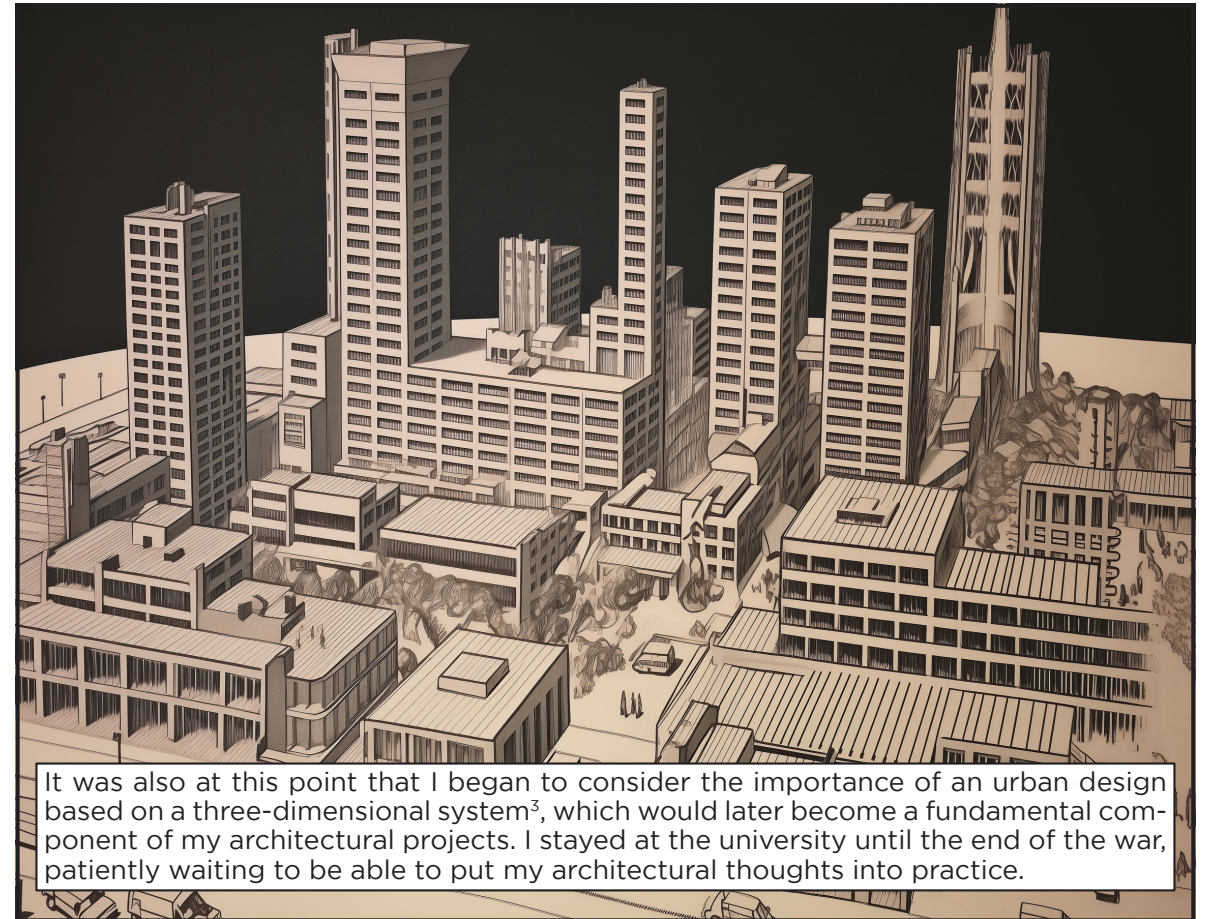
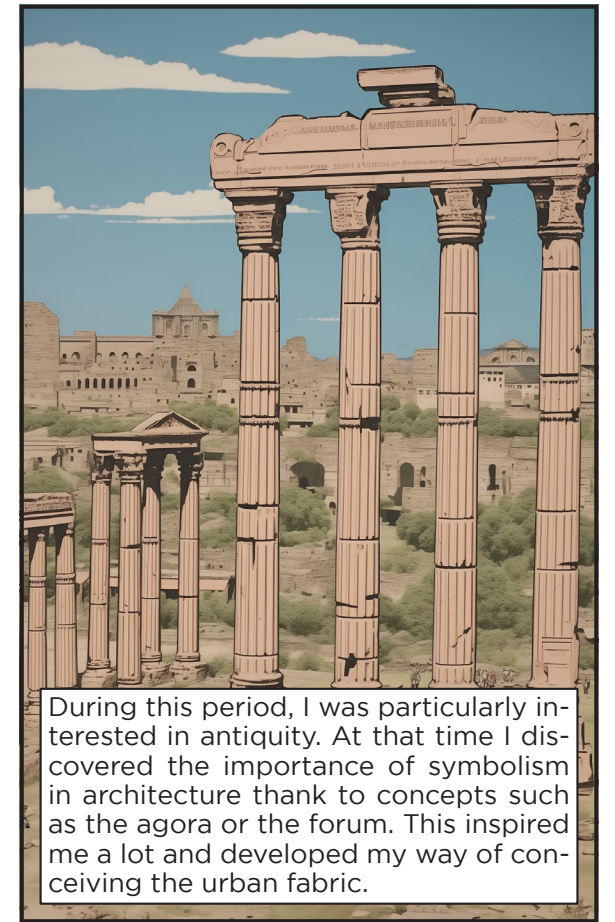
It was a golden opportunity for me to acquire my first professional experiences while staying close to the architectural concepts that gave me the interest for this profession. Consequently, I continued to work in Maekawa's office after my studies, until 1942².



During the war, since there was nothing left to build, I decided to go back to university as a postgraduate. This return to university played a key role in the development of my architectural thinking.



During this period, I was particularly interested in antiquity. At that time I discovered the importance of symbolism in architecture thank to concepts such as the agora or the forum. This inspired me a lot and developed my way of conceiving the urban fabric.

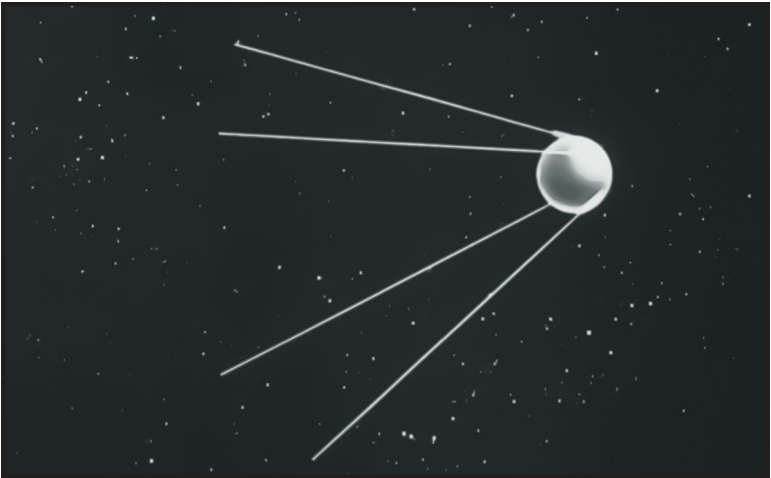


It was also at this point that I began to consider the importance of an urban design based on a three-dimensional system³, which would later become a fundamental component of my architectural projects. I stayed at the university until the end of the war, patiently waiting to be able to put my architectural thoughts into practice.

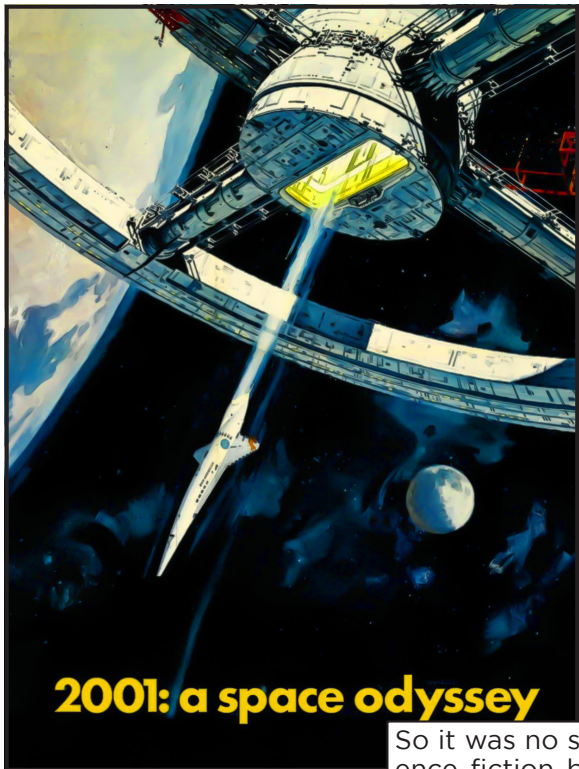
What I didn't know at the time was the extent of the damage my homeland would suffer. In 1945, two atomic bombs were dropped on Hiroshima and Nagasaki, marking the end of the war. But it also marked the beginning of a great ordeal for Japan, which had to get back on its feet as much of the cities were devastated.



Soon after the disaster, the reconstruction of Hiroshima played an important role for the country. Being the first city to be hit by nuclear weapons, the aim of this project was to highlight the resilience of the country's habitant and converting this military city into a symbol of peace⁴. Winning the competition for the “Peace Memorial Park” in Hiroshima has therefore propelled my career, making me an internationally renowned architect⁵.



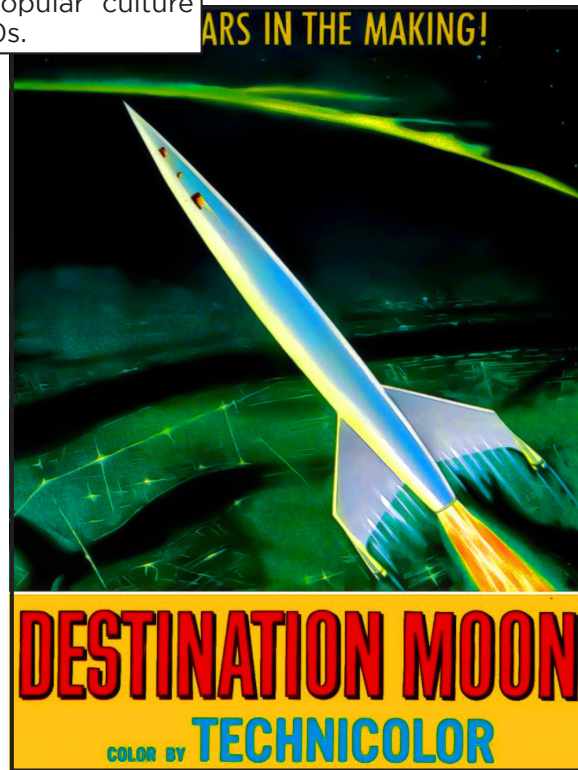
This reconstruction post-war period was accompanied by many technological advances. Those played an important role in our perception of the future. In 1957, the space race was launched, creating many fantasies about the possibility of exploring the universe. In addition, the development of computer science and the progress in molecular biology contributed all the more to the development of this imaginary.



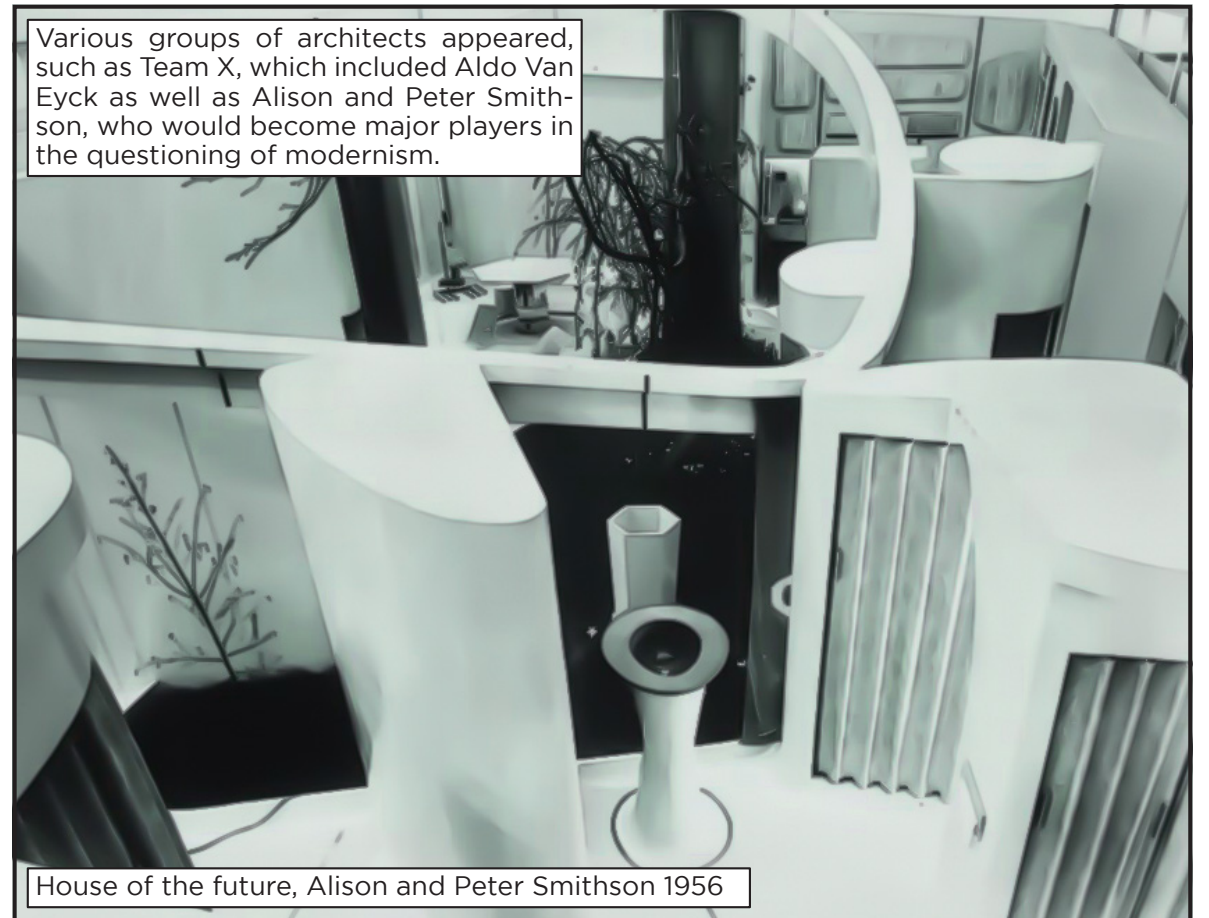
2001: a space odyssey



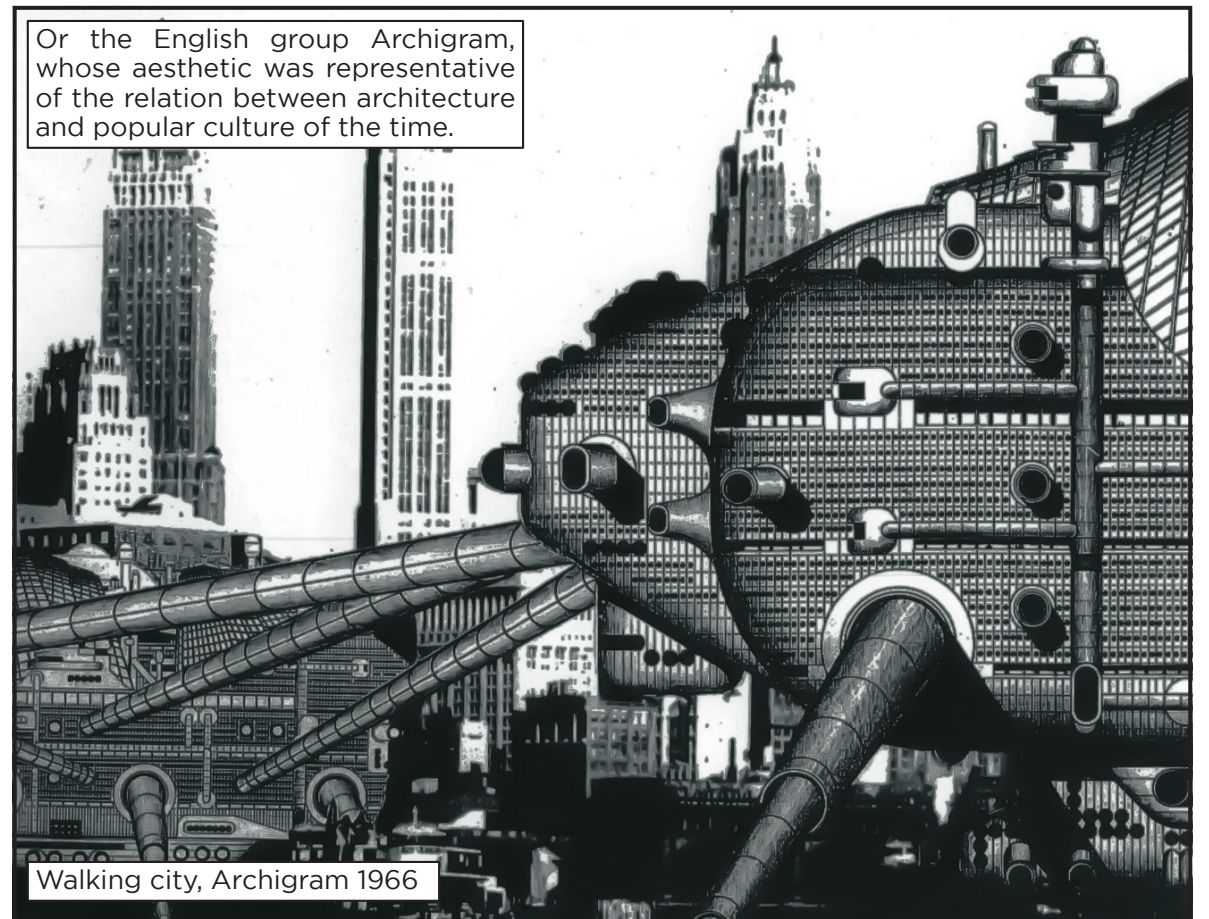
So it was no surprise that science fiction became an integral part of popular culture during the 1960s.



The architectural imagination of this period was anchored in this context, and many utopian projects started to appear all over the world. These projects reflected the cultural changes in which they were immersed. Proposing a total questioning of our way of living by placing technology as the main actor being both the reason and the cause of these changes. At the time, technology was seen as the key to solving the main issues of the period, such as the population explosion that followed the war or the problems related to transportation systems that the proliferation of the automobile created⁶.



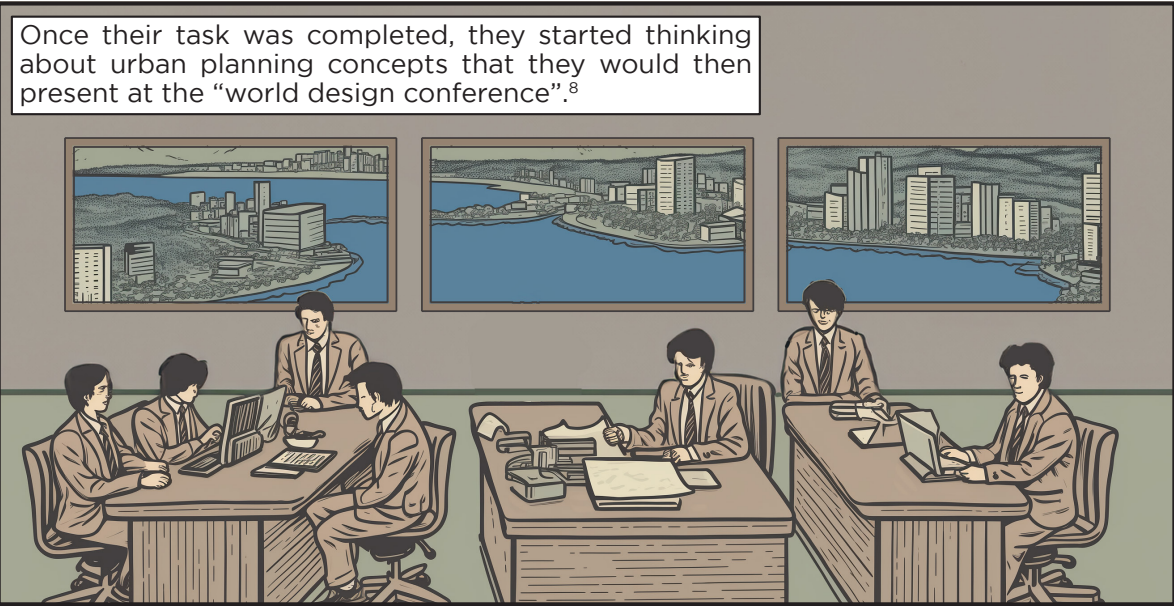
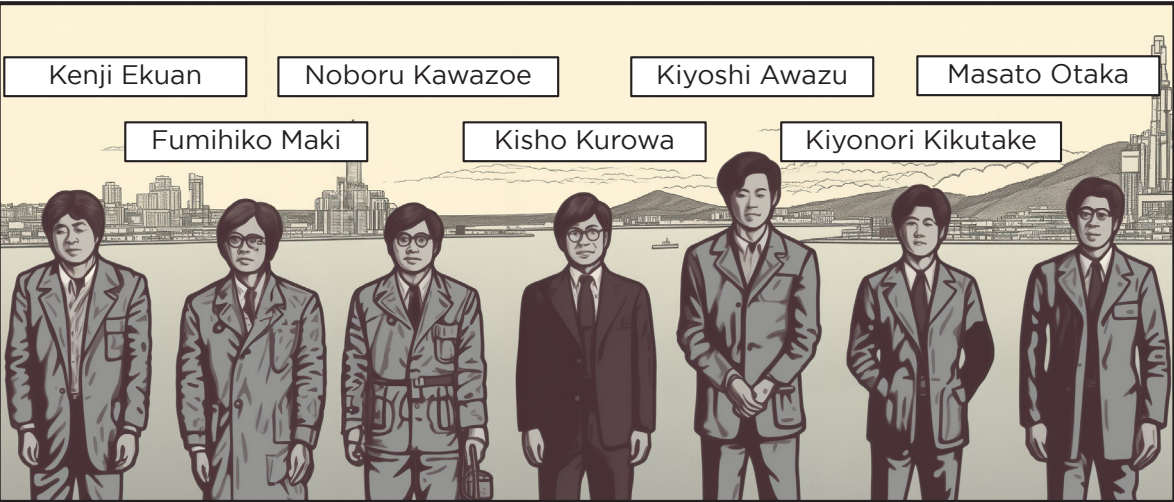
House of the future, Alison and Peter Smithson 1956



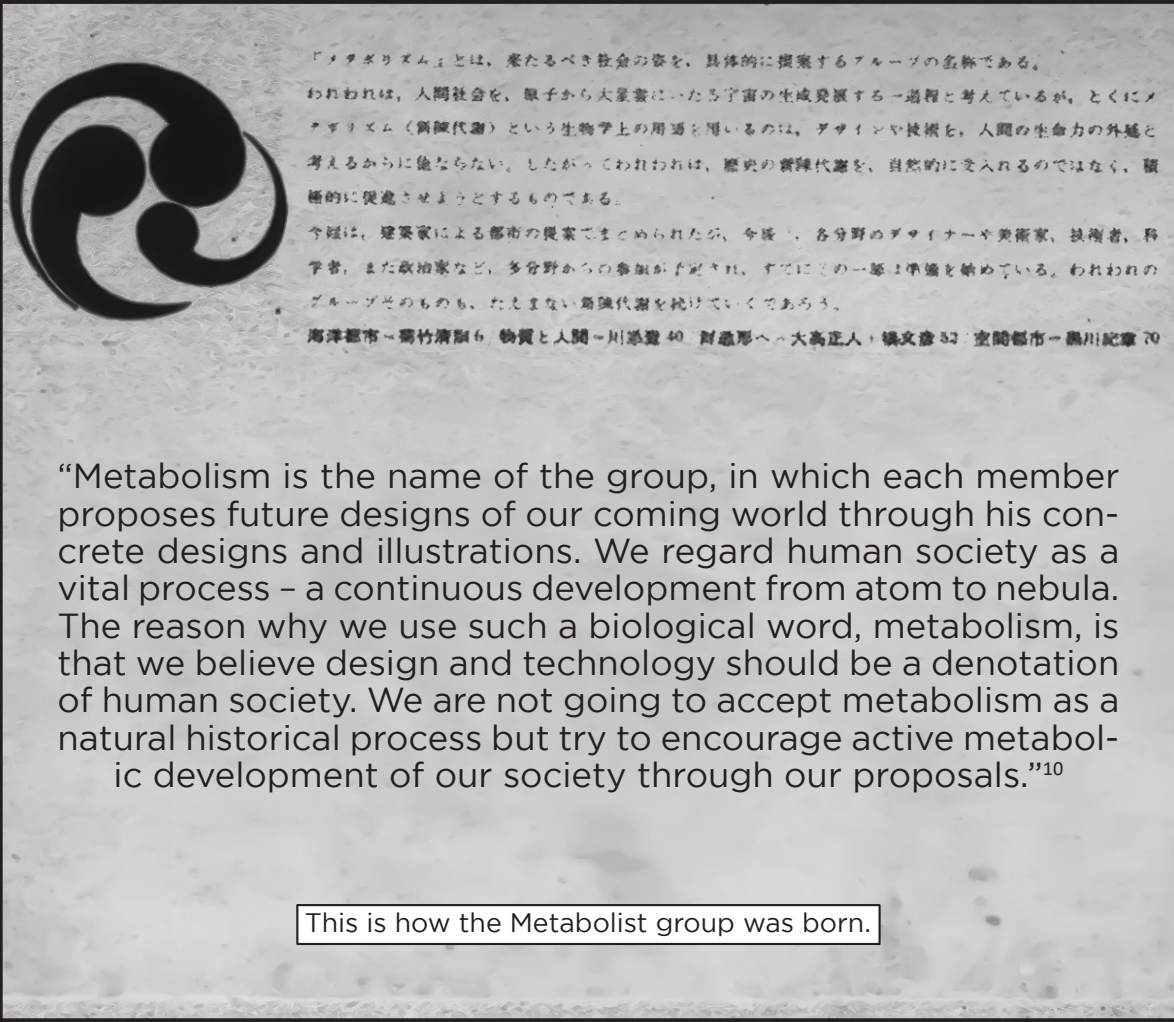
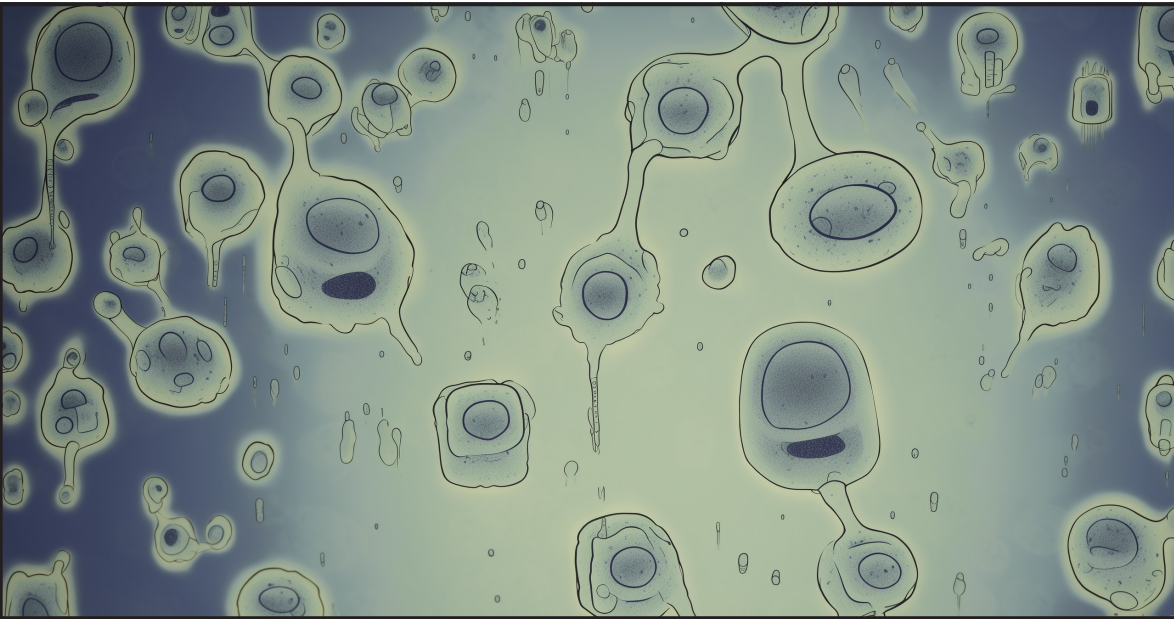
Walking city, Archigram 1966

Various groups of architects appeared, such as Team X, which included Aldo Van Eyck as well as Alison and Peter Smithson, who would become major players in the questioning of modernism.

Or the English group Archigram, whose aesthetic was representative of the relation between architecture and popular culture of the time.



Like myself, these young architects have witnessed the impact that technology can have on society. We’ve seen entire cities been blown away by the impact of the atomic bomb, but we’ve also seen those same cities being rebuilt at lightning speed. From this observation, we understood the importance that technology would have in the development of our cities⁹. This capacity of regeneration was a source of inspiration for the group, which began to draw parallels between architecture and biology.



The formation of the metabolist group marked a major turning point in my career, having a mentor-student relationship with them, we mutually inspired each other¹¹ and worked together on several projects. This group of young architects played a considerable role in the development of the plan for the 1970 World's Fair¹².

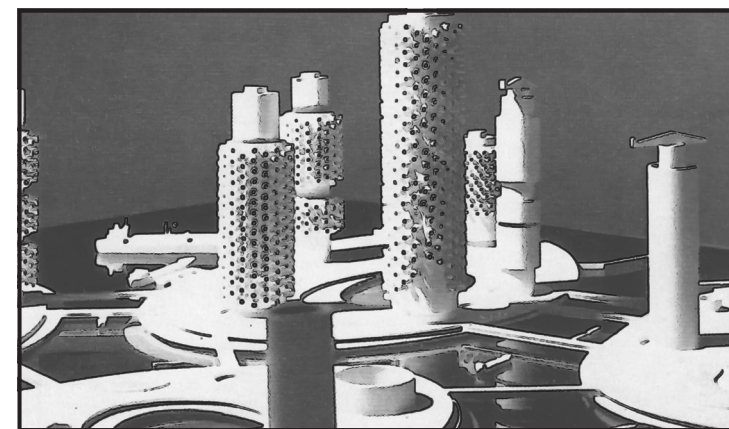


They contributed to the realization of the exhibition by being at the origin of several pavilions of the event. It's also with them I made the plan for Tokyo in 1960¹³, which we made on the occasion of the "International Design Conference" and whose principles served as the basis for the realization of the plan for the exhibition.

In 1960, "Ocean City" was the first essay the Metabolist group had published. It was developed based on two architectural utopias that Kiyonori Kikutake had previously made, namely The "Tower Shaped City" and the "Marine City", both published in 1958 in the newspaper "Kokusai kenchiku"¹⁴.



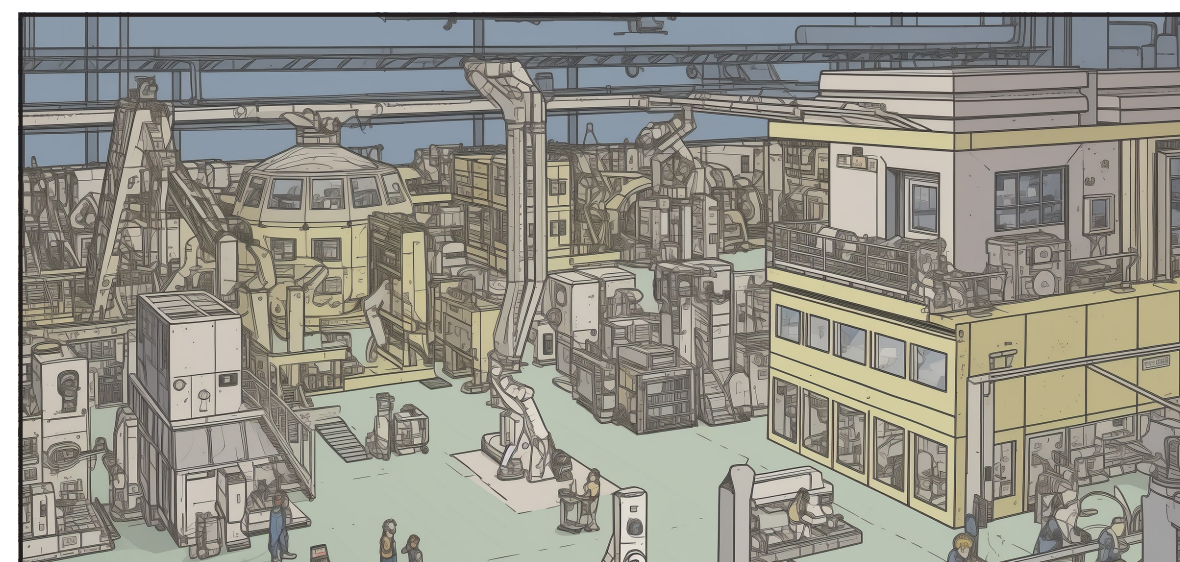
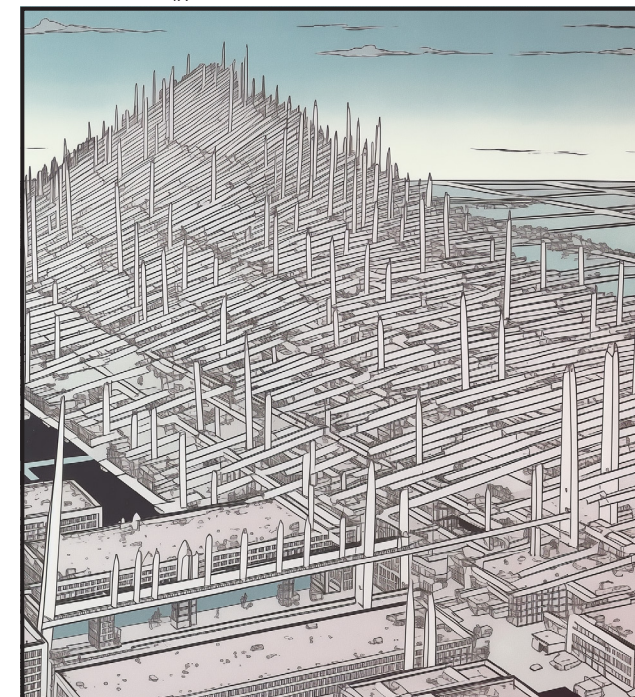
Both projects presented cities made up of gigantic cylindrical towers on which hundreds of housing capsules were attached. The towers contained all the infrastructures necessary for the functioning of the city. In the "Marine City", the city freed itself from territorial constraints to settle at sea. This would have been achieved with the creation of a floating artificial ground, serving as a support for the towers.



IX

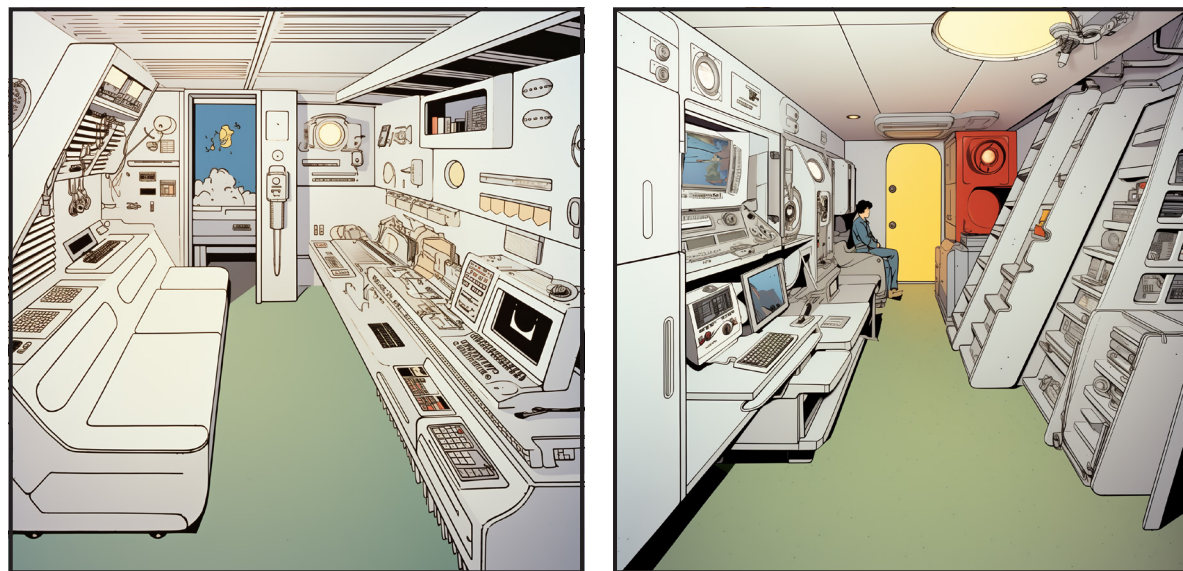
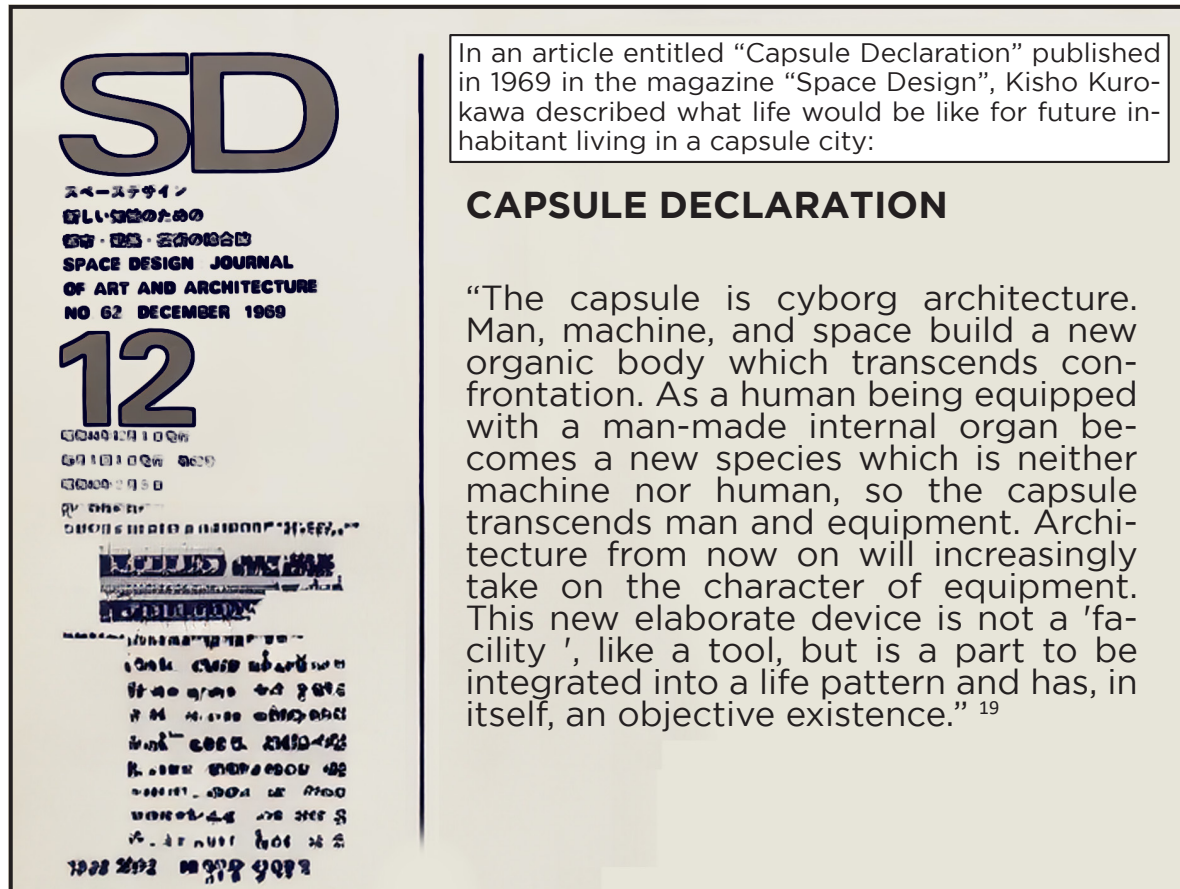
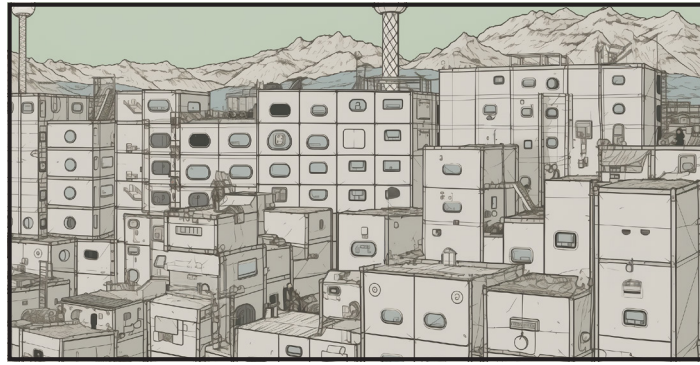
This architectural essay was representative of the avant-garde ambitions of the metabolist group. It highlighted two concepts that became, for these young architects as for myself, key elements in the way we perceived the cities of the future.

The first concept was the use of mega-structures as the base element for the conception of the city. The use of such structures was induced by the densification issue that cities faced and by the aim to make them adaptive. The megastructure would be a new artificial environment that could be expanded at will. It would make it possible to incorporate each urban unit into the very structure of the city. In this way, the different agglomerations would be interconnected with the help of a transport system integrated into the megastructure, transforming our cities into a single megalopolis¹⁶.



The creation of such structures would imply an intense standardization of construction that reflects the importance that industry had in our imagination of the cities of the future. Structural systems such as space frame, highlighted by the work of Buckminster Fuller, was therefore an integral part of this imaginary¹⁷.

The second concept highlighted in “ocean city” was the use of capsules as an architectural unit. Such element can be placed and replaced freely on the mega structure. The capsule was a major element of the Metabolist group’s futuristic imagination. This was a concept that they continued to develop throughout their careers and played a key role in the design of Expo 70¹⁸.



30

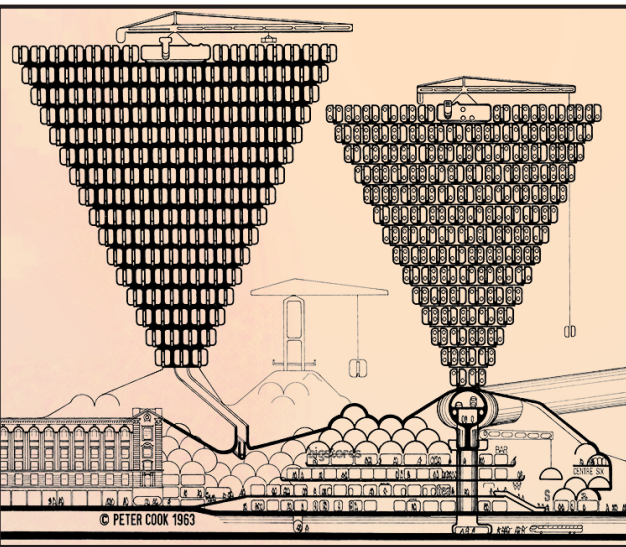
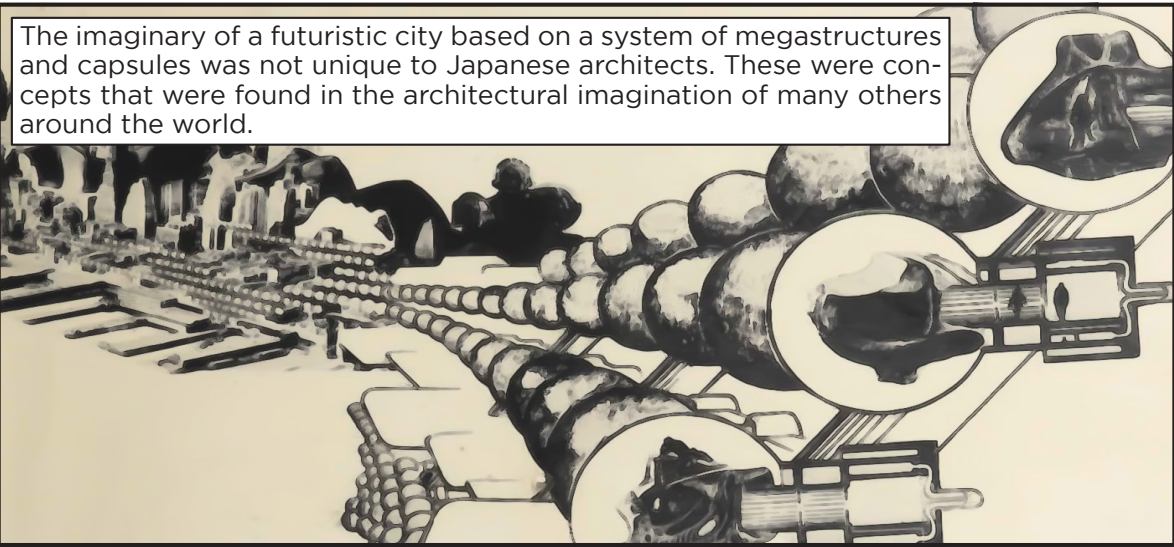
In his article, Kurokawa explained that human beings was becoming more and more dependent on the technologies they develop. These tools, although they were not an integral part of human bodies, would become indispensable elements without which human would become unable to play their role in society. These technologies would develop to the point where it would become the space in which human beings would live. According to this logic, human beings would become one with the architecture in which they live. That's why Kurokawa talked about "cyborg architecture" that he and his fellow Metabolists believed would come to fruition with the help of a capsule system.

He explained that the humans of the future would no longer feel the need to own a large villa. What would matter to them is the freedom of movement, which would be possible thanks to the movable aspect of these capsules. The capsule city would allow individuality to emancipate itself in a society based on diversity. Each individual would have its own capsule representative of his or her personality. And those capsules would offer the possibility to be connected to others. Public places would become groupings of individual spaces, thus redefining the way in which society would be composed²⁰.

This article depicted a society in the image of the one that could be found in a work of science fiction. Although this might seem naïve nowadays, utopian architects of the 1960s thought that such scenarios would be quite likely.



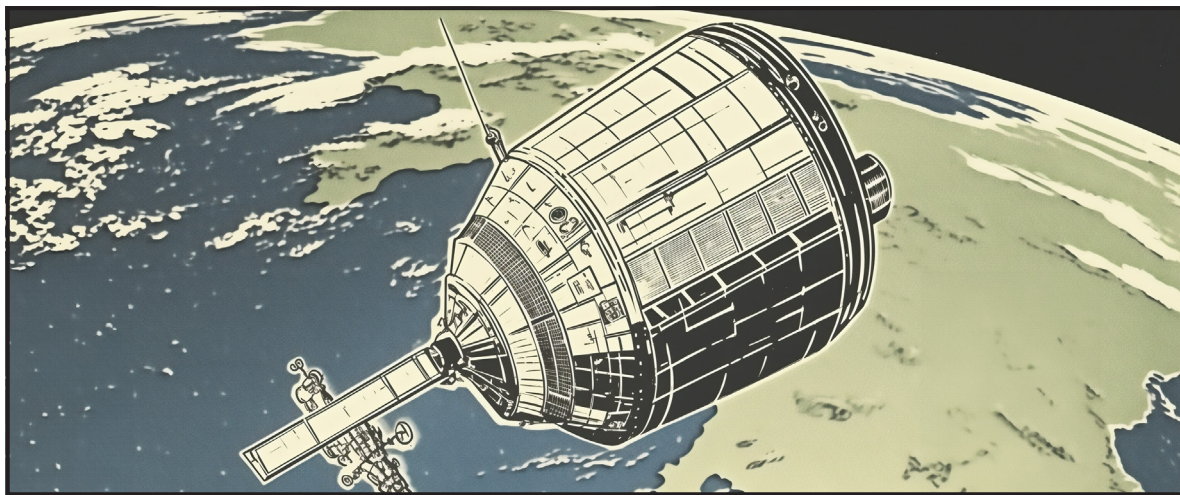
31



An obvious connection can be made with the famous “plug-in city” of the Archigram’s group, which played a major role in the dissemination of utopian thought in Europe during the 60s. The Archigram group is a perfect example to highlight the link between popular culture and architecture. Often making use of a provocative aesthetic similar to that found in science fiction comics.

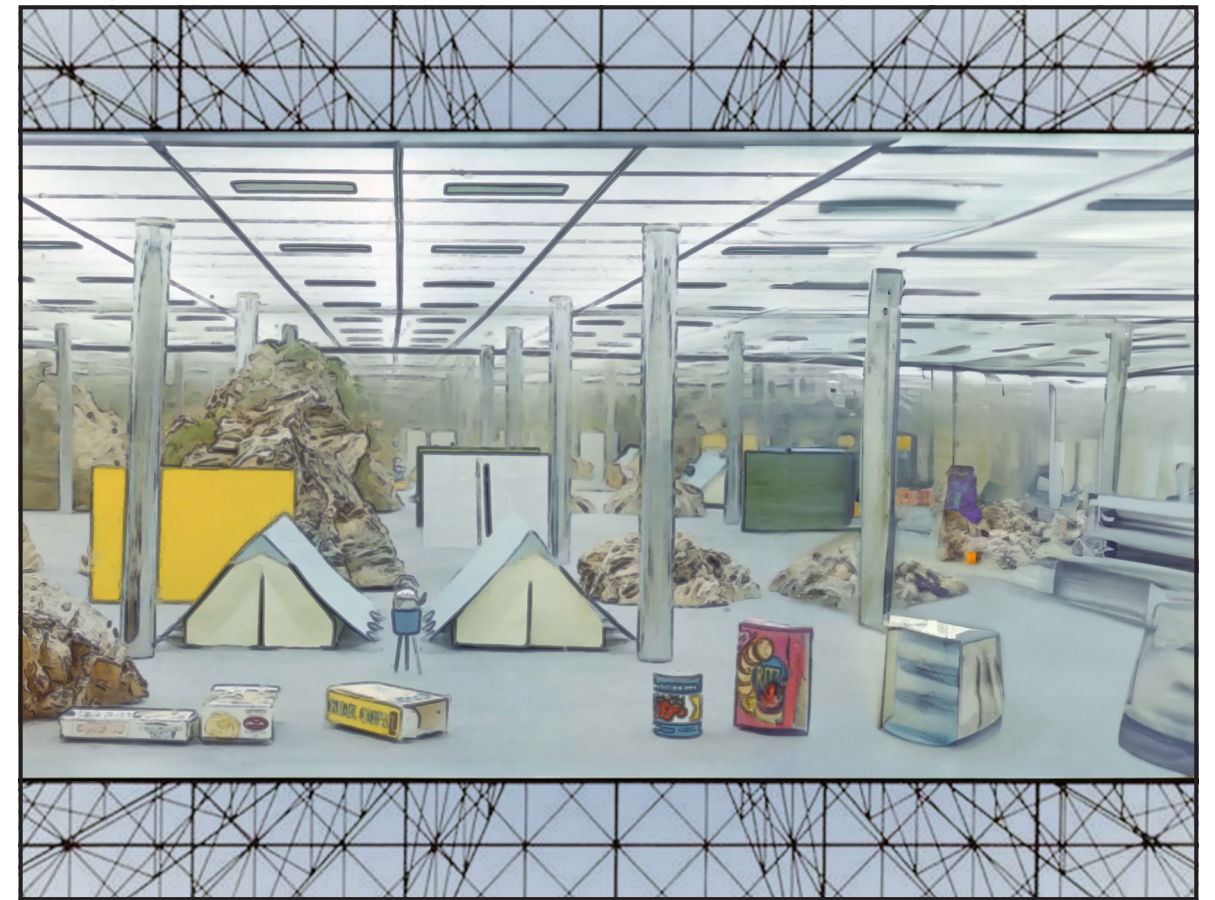
A multitude of other projects of the time used similar language. We can cite projects such as “No stop city” from Archizoom associati or the “space city” from Yonna Friedmann in 1959, which also made use of a structural framework on which housing capsules were suspended²¹.

XI



There is no doubt that the rapid development of technology and the emergence of an aesthetic specific to the popular culture of the 60s contributed to the creation of this “futuristic” language that the architects of my generation developed. Space infrastructures, which have been greatly developed during this same period, also make use of capsules in which the environment is fully controlled. The achievement of such technical feats has therefore given value to the futuristic imaginary that can be found in these architectural utopias.

These architectural utopias were not necessarily intended to offer concrete solutions for the future. These were often diagrams that did not go into the details of their realization. Some of them were used to criticize the system in place, as was the case with No Stop City, by the Italian group Archizoom associati²².

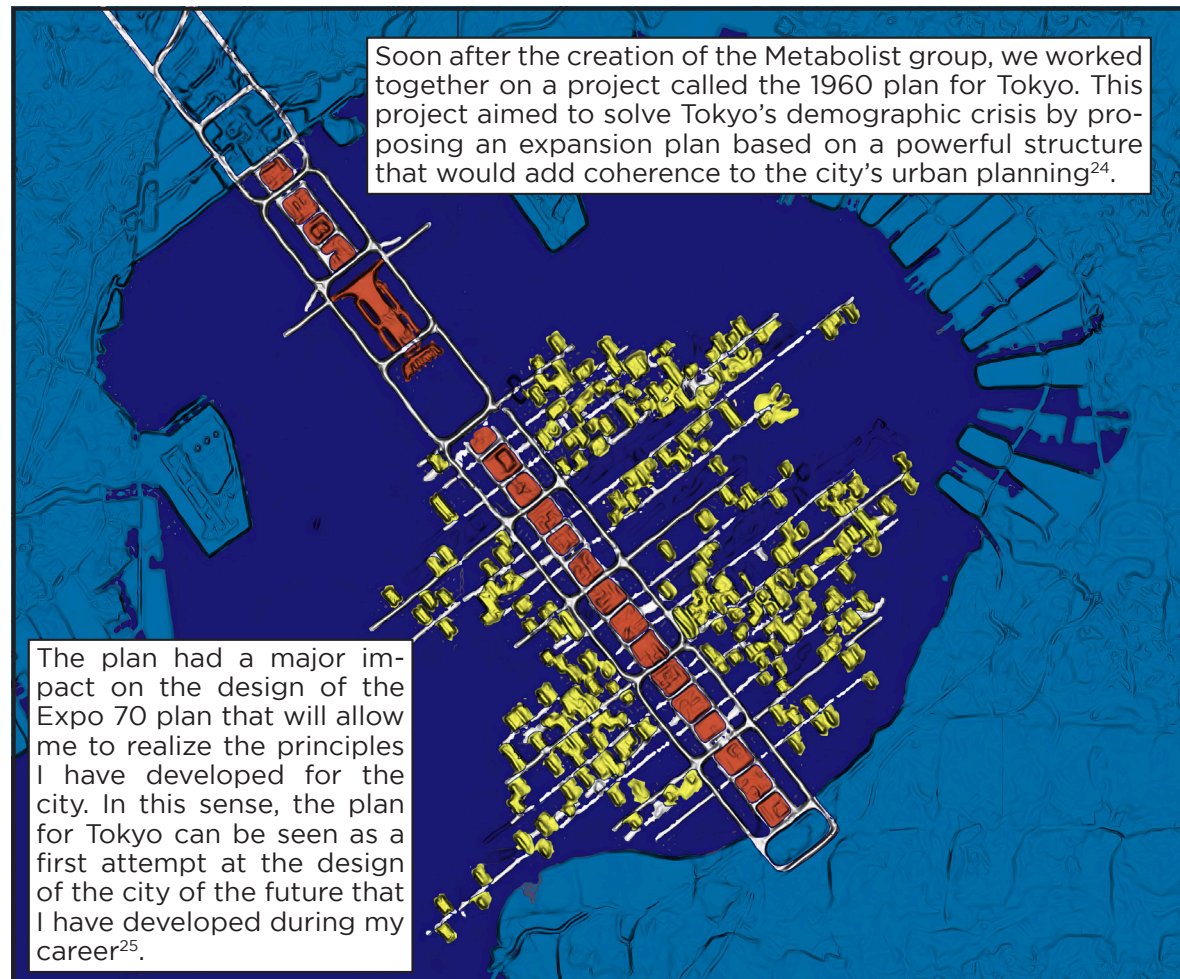


XII



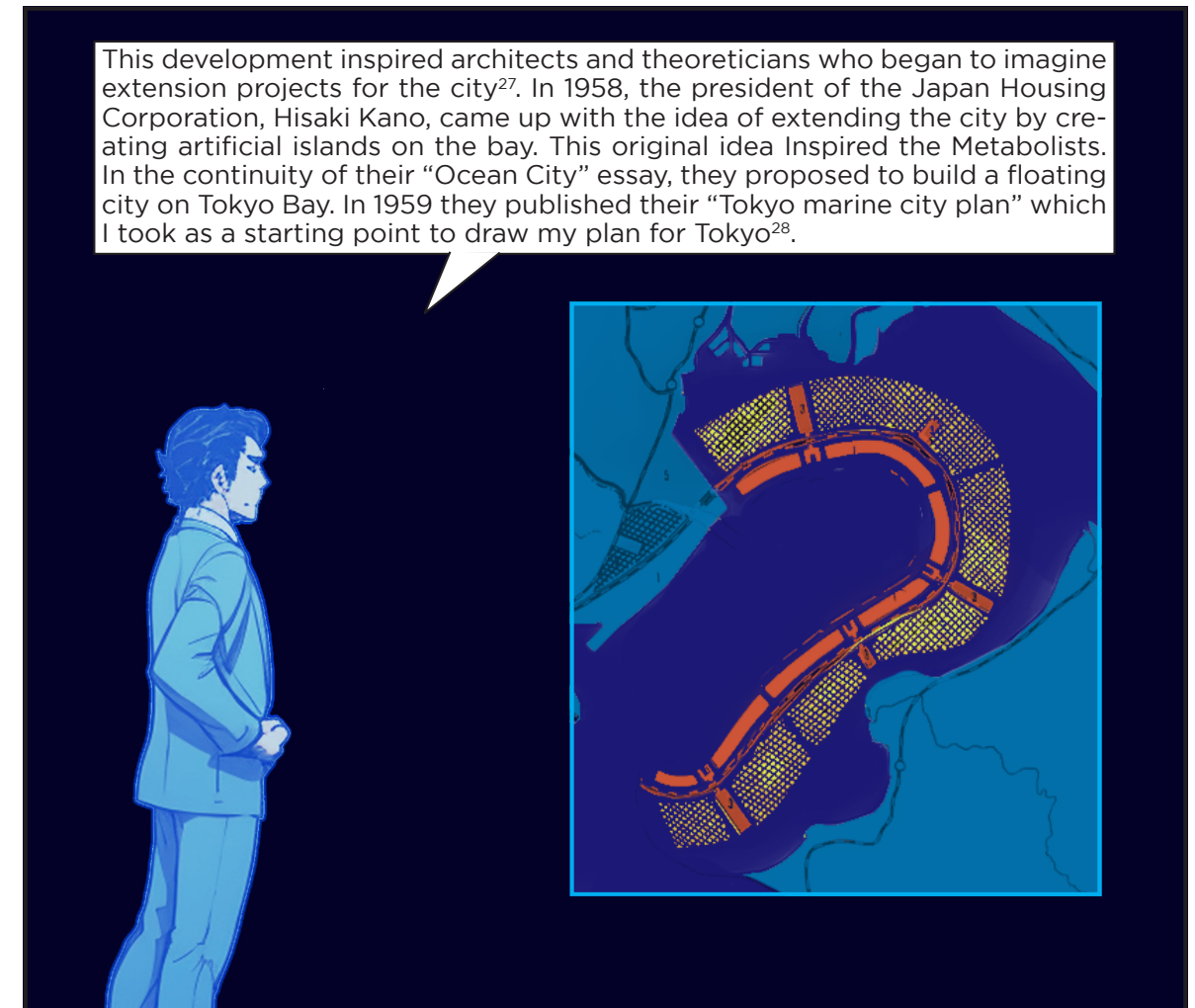
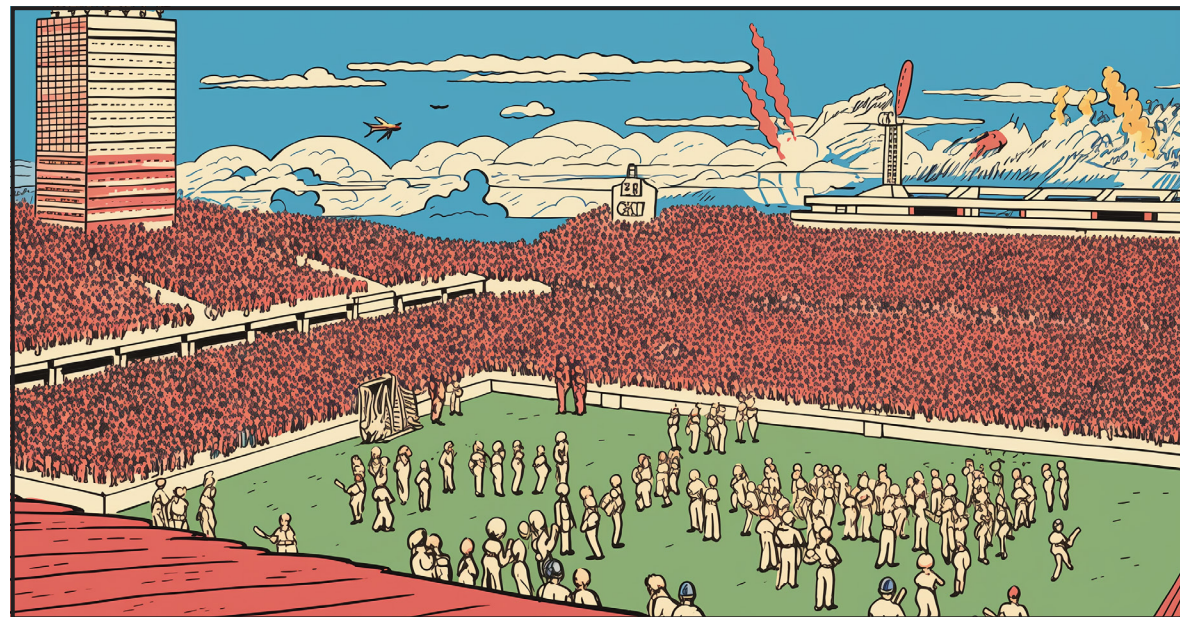
As far as the Metabolist movement and myself are concerned, the use of such an architectural language was really intended to propose solutions for the future. For us, it was a question of creating an architectural identity capable of solving the problems that Japan faced in the aftermath of the war²³. This is what we tried to do in 1960, when we presented our “Tokyo Plan”, which was a first attempt, for the principles that I would later apply in the plan for Expo 70.

THE FIRST DRAFT



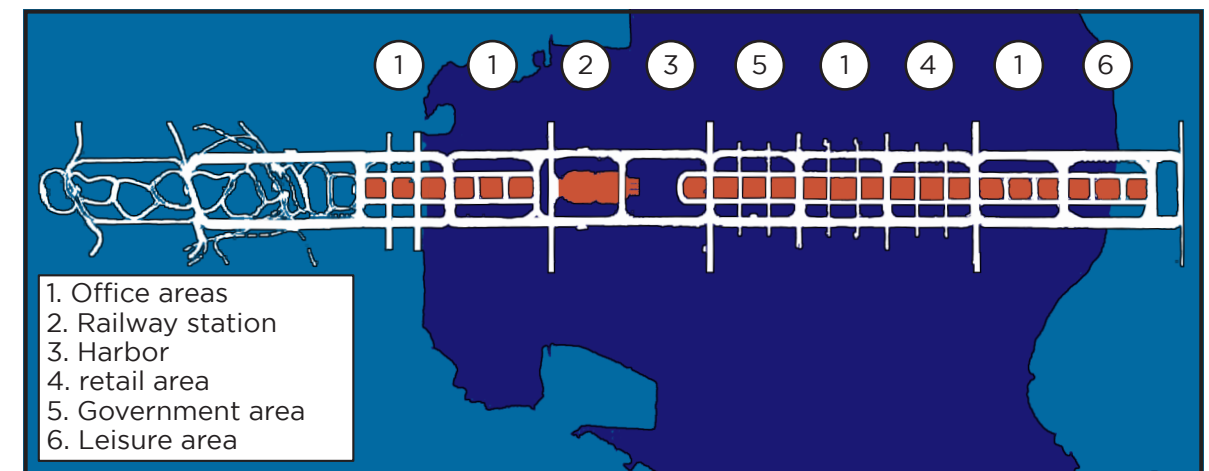
XIII

During the 1950s, the rapid reconstruction of Tokyo led to a lack of coherence in the urban fabric²⁶. Combined with a population explosion following the war and the multiplication of car use, the city's transport system has suffered from severe congestion. The preparation of the Tokyo Olympic Games, which took place in 1960, was the trigger for the development of new public infrastructure. This led to the creation of the Shinkansen train line that connects Tokyo to Osaka, which would later become important for the World Expo.



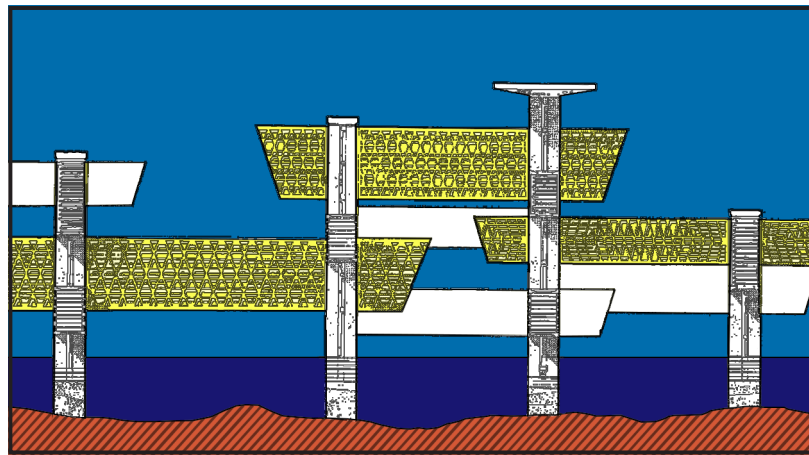
XIV

My plan was based on a gigantic structure made up of twelve loops connected to each other. The first three were placed on land, starting from the city center of Tokyo. The fourth loop were the first to break free from the ground, half of which was above the bay. Finally, the next eight were entirely elevated above the bay. Together, this structures formed the spine of the city, connecting Tokyo to the opposite bank in a straight line. The transport system was the core element of the plan because it was on this spine that the highway was placed, connecting the various areas of the city. All activities took place inside the nine loops that were in contact with the bay. If we count these loops starting from Tokyo, the first two contained an office area in their center, the third and fourth contained the new railway station and the harbor. The following loops hosted two other office areas, a retail area, a government area and a leisure area.

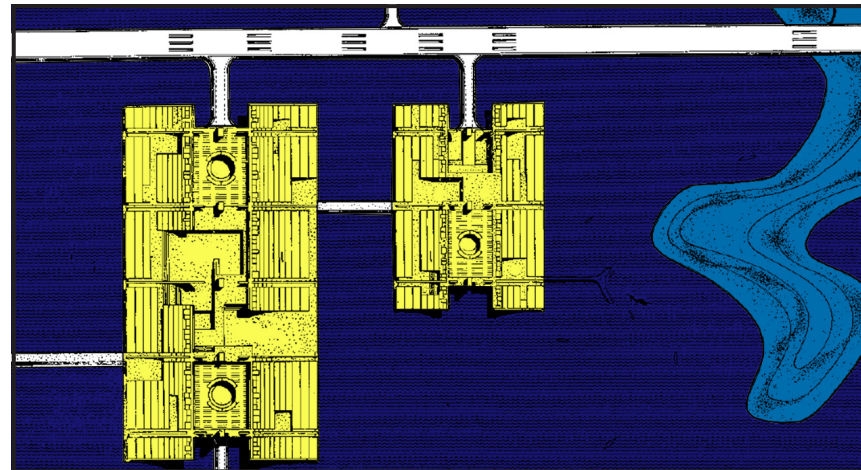


XV

The buildings in these areas were horizontal buildings forming bridges connecting large towers serving for vertical mobility. These towers rested on artificial ground placed on the bay and are connected to each other using a secondary transport network similar to the main structure but on a reduced scale, also composed of successive loops.



XVI



XVII

The dwellings were placed on either side of the spine. They were based on systems of housing blocks containing the apartments as well as all the infrastructure necessary for the lives of the inhabitants. These blocks were connected to the main structure by means of perpendicular bridges²⁹.

Looking at the plan with hindsight, I see that some of the concepts were comparable to those of Le Corbusier and his "radiant city". This includes focusing on the transportation system, separating them from pedestrians by elevating them with stilts or separating the city's activities into distinct zones. This shows how this architect continued to be source of inspiration since in started studying architecture.

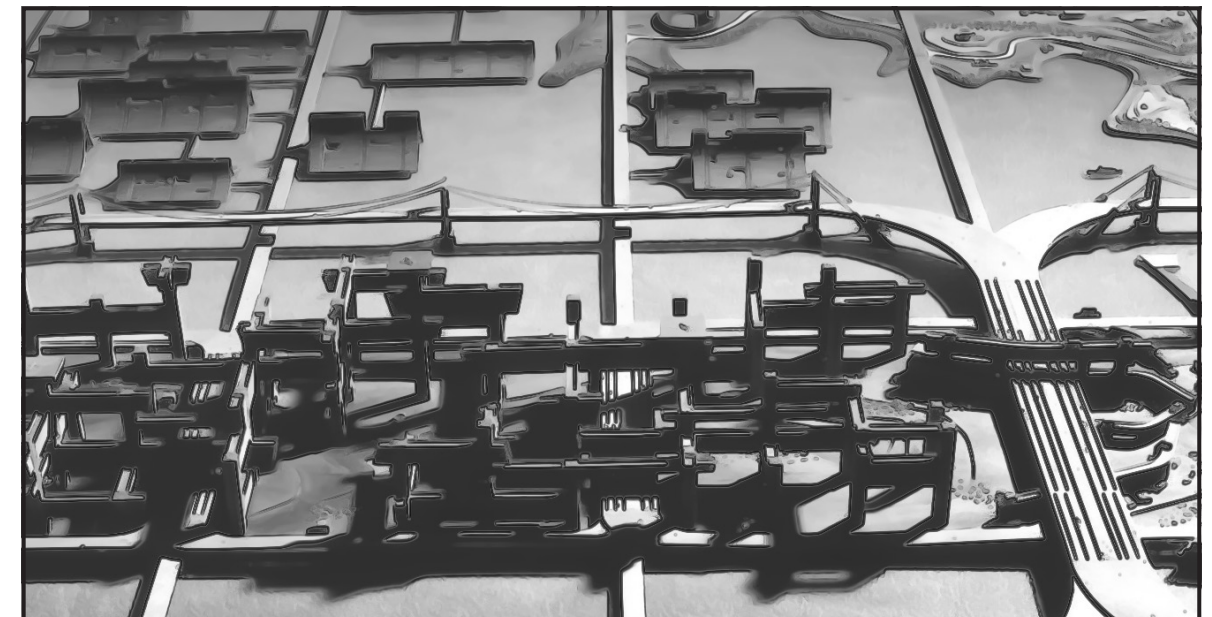
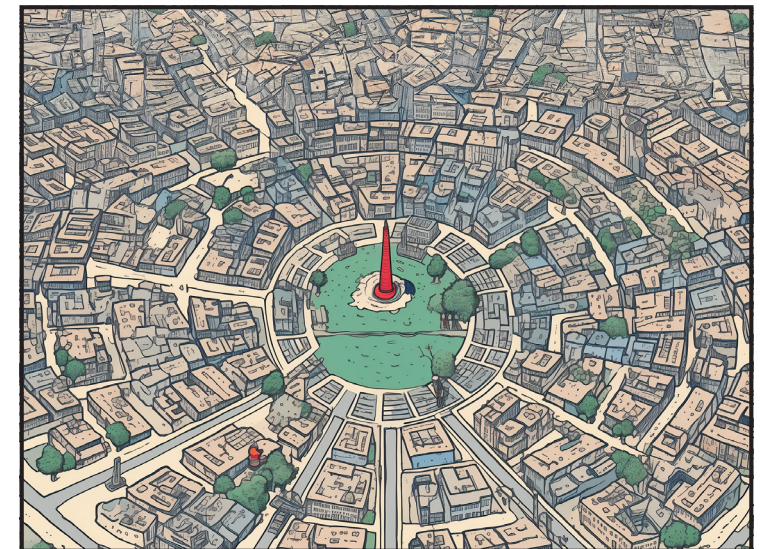
However, when the Metabolists and I were designing the plan for Tokyo, the goal was to create new concepts to solve the problem specific to the post-war context in which we lived.



The concepts we developed during the design of this project can be summarized in two main objectives:

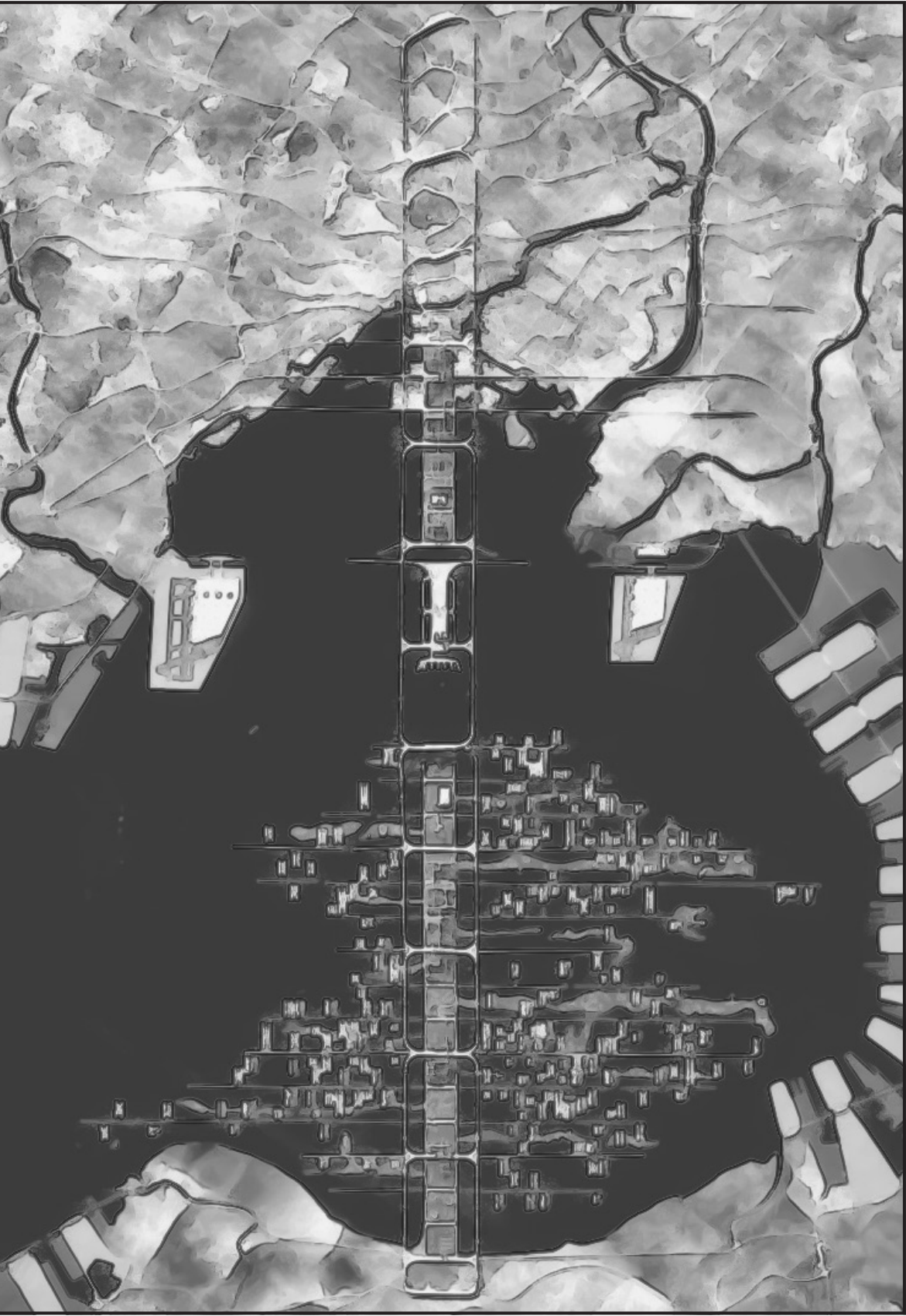


The first was to break with urban planning based on a main core constituting the center of the city. I considered radial planes create closed cities, whose agglomeration towards the center prevents them from expanding. For me, the choice of a linear city was more in line with the development of transport and communication systems. The plan for Tokyo was an opportunity to create a "civic axis" that could expand at will. Such a conception of the city will encourage spontaneous mobility, making the city an open city.



The second objective was to combine transport, urban structure and architecture into a coherent whole. That's why I decided to base the city on a system of primary, secondary, and basal structure that could be compared to a tree. The primary structure, which could be called a megastructure, is the trunk from which the branch that are the secondary roads would unfold. At the end of it are the flowers that make up the housing blocks³⁰.

The plan for Tokyo also highlights the value I bring to symbolism in architecture. The gigantic spine that was the main structure of the city acted as an icon representative of a post-industrial city whose speed is one of its major characteristics. For me, symbolism was an essential component of architecture because it is what will allow humanity to retain its importance in a highly technological future³¹.



Notes

1. Lin, *Kenzo Tange and the Metabolist Movement*, p.47
2. Ibid, p.48
3. Ibid.
4. Hein, ‘Scales and Perspectives of Resilience’, p.7
5. Boyd, *Kenzo Tange Makers Of Contemporary Architecture*, p.11
6. Lin, *Kenzo Tange and the Metabolist Movement*, p.172
7. Ibid, p.19
8. Ibid.
9. Ibid, p.174
10. Metabolist group, *Metabolism: The Proposals for New Urbanism*, p.1
11. Lin and Tange, *Kenzo Tange and the Metabolist Movement*, p.56
12. Ibid, p.200
13. Ibid, p.208
14. Kurokawa, *Metabolism in Architecture*, p.41
15. Lin, *Kenzo Tange and the Metabolist Movement*, p.26
16. Kurokawa, *Metabolism in Architecture*, p.68-69
17. Dahinden, *Urban Structures for the Future*, p.26-27
18. Lin and Tange, *Kenzo Tange and the Metabolist Movement*, p.216
19. Kurokawa, ‘Capsule Declaration’.
20. Ibid.
21. Chave, ‘Tokyo et Les Architectes Métabolistes’, p.87
22. Ibid, p.88
23. Lin and Tange, *Kenzo Tange and the Metabolist Movement*, p.69
24. Ibid, p.133
25. Lin and Tange, *Kenzo Tange and the Metabolist Movement*, p.144
26. Ibid, px.136-138
27. Ibid.
28. Lin and Tange, *Kenzo Tange and the Metabolist Movement*, p.143
29. Dahinden, *Urban Structures for the Future*, p.124-127
30. Lin and Tange, *Kenzo Tange and the Metabolist Movement*, p.153
31. Ibid, p.177w

Images used in illustrations

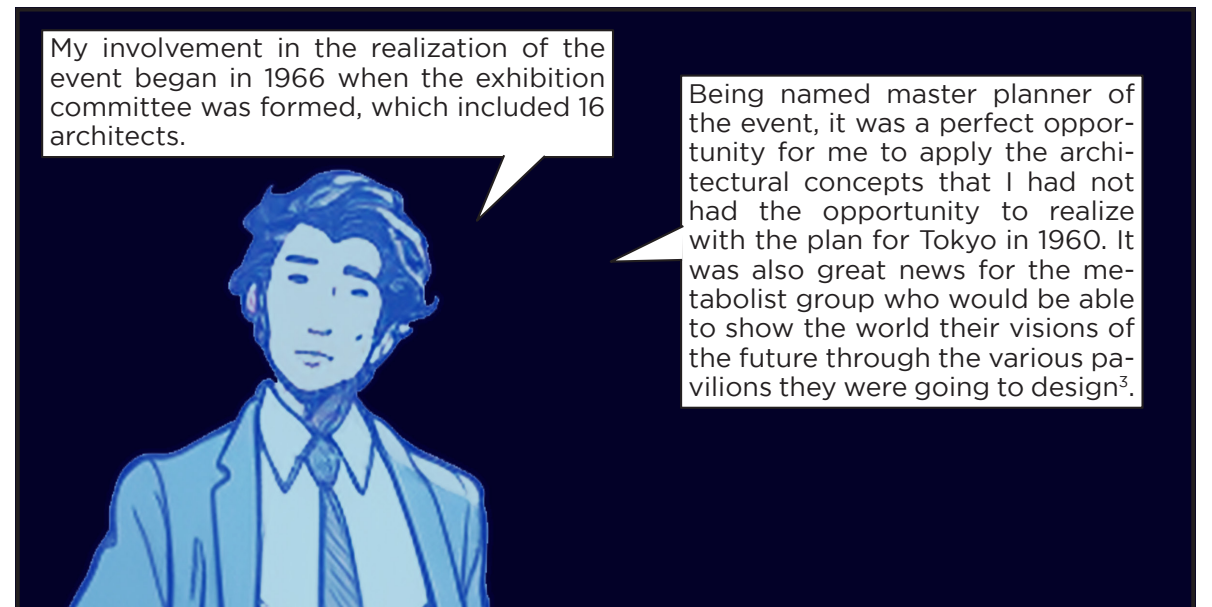
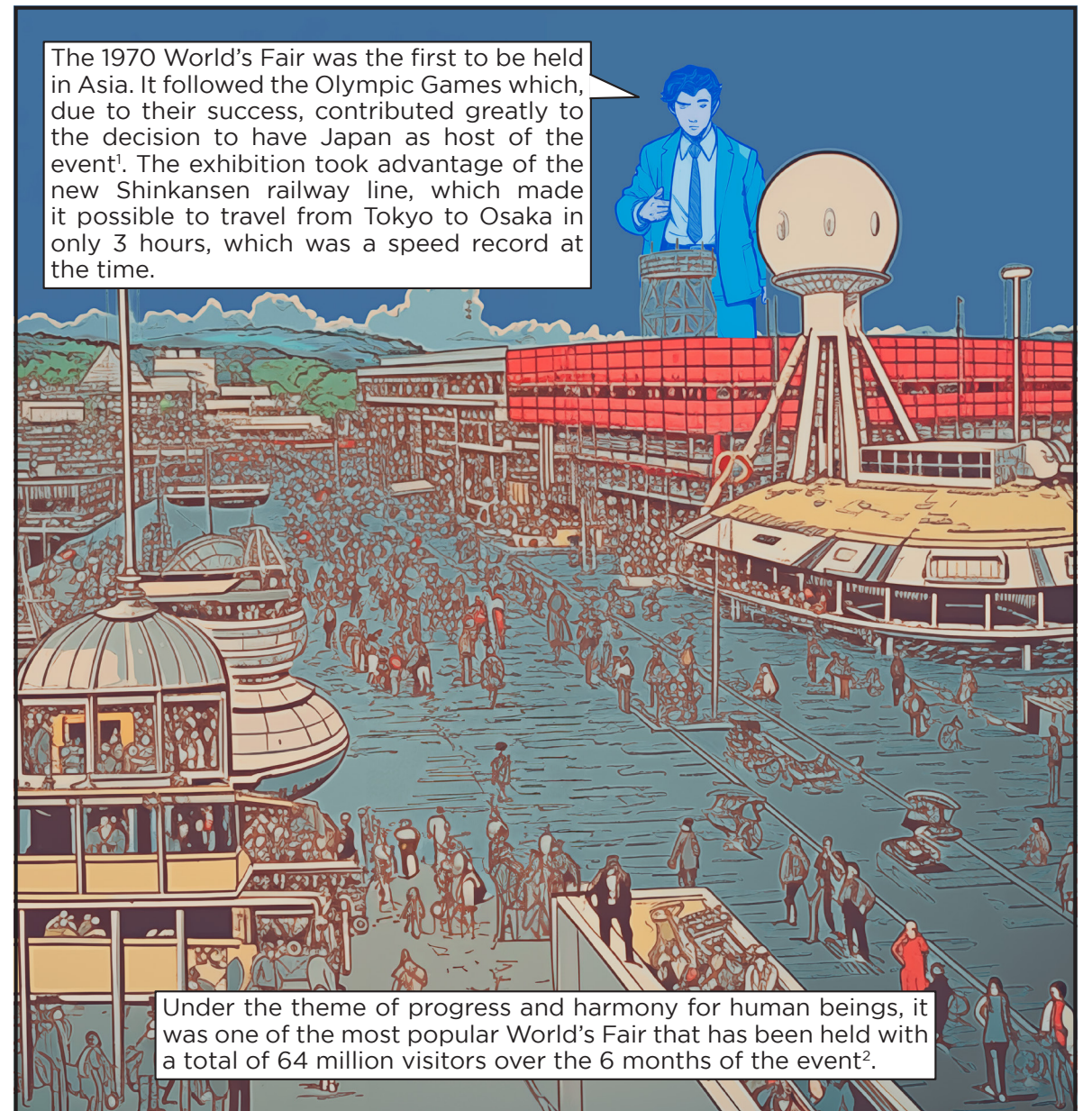
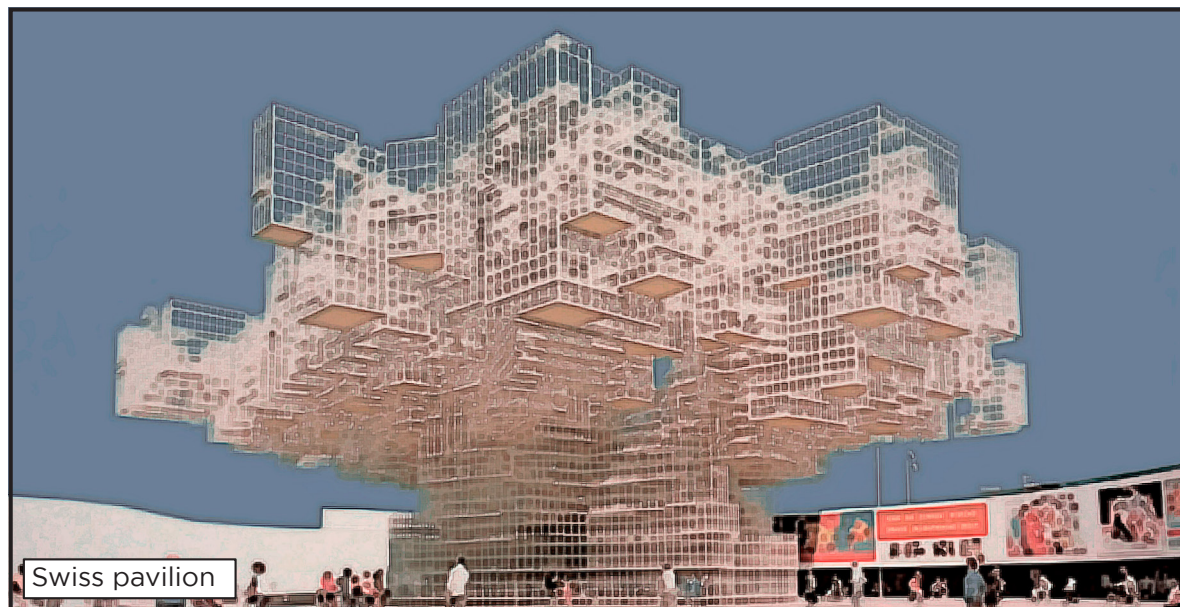
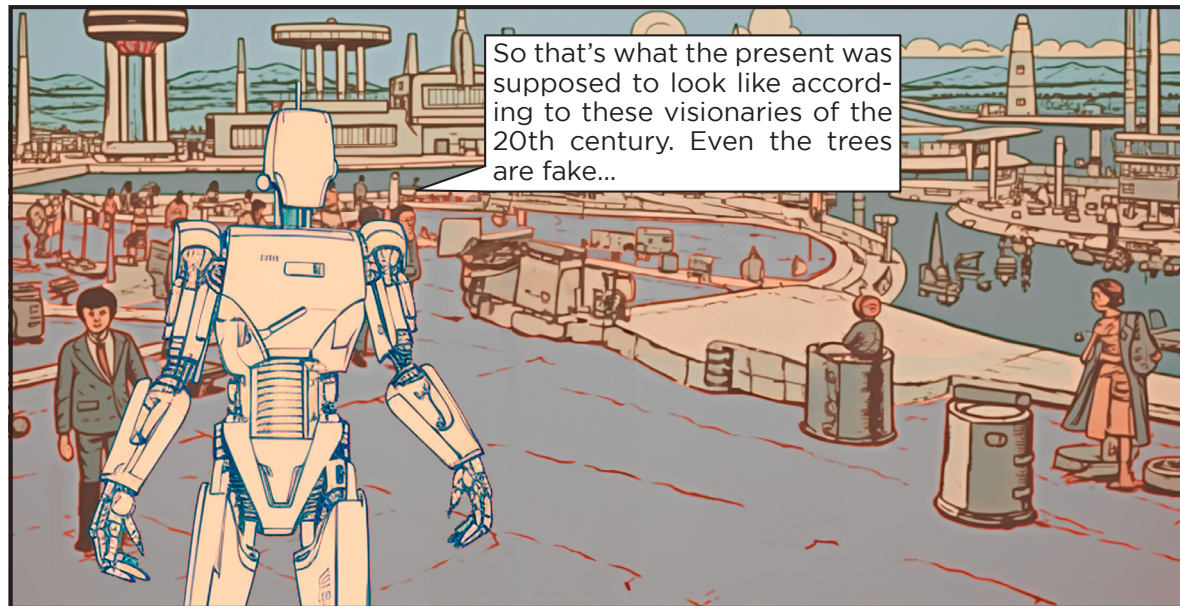
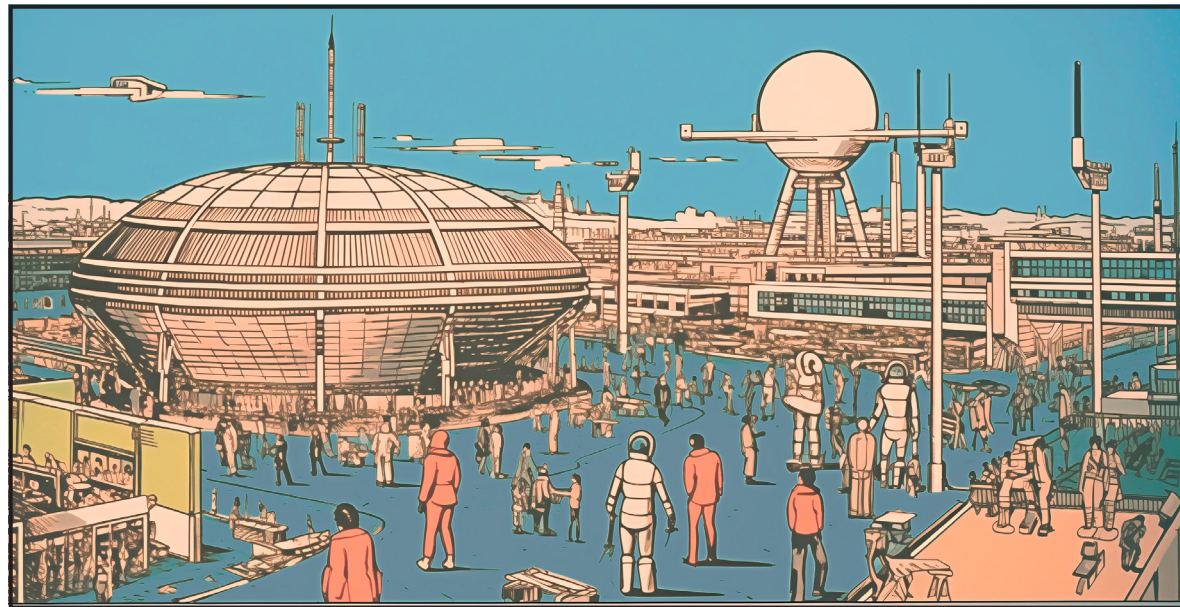
I. *Radiant City*. photograph. <https://www.fondationlecorbusier.fr/en/work-architecture/projects-plan-voisin-france-1925/>.
II. *2001 Space Odyssey*. 1968. movie poster. <https://www.imdb.com/title/tt0062622/>.
III. Komazuzaki, Shigeru. *comic robot*. Illustration. <https://publish.illinois.edu/undergradlibrary/tag/big-man-japan/>.
IV. *Amazing Stories*. 1960. comic cover. https://fr.wikipedia.org/wiki/Octavia_E._Butler#/media/Fichier:Amazing_stories_196010.jpg.
V. *Destination Moon*. 1950. movie poster. <https://www.cinemaclock.com/films/destination-moon-1950>.
VI. *House of the Future*. 1956. photograph. <https://www.cca.qc.ca/fr/articles/issues/2/cetait-le-futur/32734/1956-house-of-the-future>.
VII. Archigram. *Walking City in New York*. 1964. drawing. <https://www.epfl.ch/campus/art-culture/museum-exhibitions/fr/archizoom-fr/conferences/petercook/>.
VIII. Kikutake, Kiyonori. *Marine City*. 63 1958. photograph. <https://archeyes.com/marine-city-megastructure-kiyonori-kikutake/>.
IX. Kikutake, Kiyonori. *Marine City*. 63 1958. photograph. <https://archeyes.com/marine-city-megastructure-kiyonori-kikutake/>.
X. *Pneumakosm*. 1967. drawing. <https://arquitecturasdeemergencia.blogspot.com/2010/10/1967-pneumakosm-haus-rucker-co.html>.
XI. Archigram. *Plug in City*. n.d. drawing. <https://www.archdaily.com/1006203/ephemeral-cities-3-radical-city-concepts-that-propose-for-users-to-shape-their-built-form/64efb155bbf563583c72a72e-ephemeral-cities-3-radical-city-concepts-that-propose-for-users-to-shape-their-built-form-photo>.
XII. Archizoom. *No-Stop City*. 1959. Illustration. <https://www.friedmanbenda.com/editorial/andrea-branzis-design-approach-no-stop-city-and-beyond-2020/>.
XIII. Tange, Kenzo. *Plan Fo Tokyo*. 1959. Illustration. <https://arquiscopio.com/archivo/2012/07/14/plan-para-la-bahia-de-tokio/?lang=fr>.
XIV. Metabolists. *Marine City of Tokyo*. n.d. drawing. <https://archeyes.com/marine-city-megastructure-kiyonori-kikutake/>.
XV. Tange, Kenzo. *Plan Fo Tokyo*. 1959. Illustration. <https://arquiscopio.com/archivo/2012/07/14/plan-para-la-bahia-de-tokio/?lang=fr>.
XVI. Tange, Kenzo. *Plan for Tokyo, Buildings*. 1959. drawing. <https://architecturalmoleskine.blogspot.com/2011/10/metabolist-movement.html>.
XVII. Tange, Kenzo. *Plan for Tokyo, Blocks*. 1959. drawing. <https://archeyes.com/plan-tokyo-1960-kenzo-tange/>.
XVIII. Tange, Kenzo. *Plan Fo Tokyo, Model*. 1959. photograph. <http://architecture-history.org/architects/architects/TANGE/OBJECTS/1960,%20A%20Plan%20for%20Tokyo%201960,%20Tokyo,%20JAPAN.html>.
XIX. Tange, Kenzo. *Plan Fo Tokyo*. 1959. Illustration. <https://arquiscopio.com/archivo/2012/07/14/plan-para-la-bahia-de-tokio/?lang=fr>.

CHAPTER 3

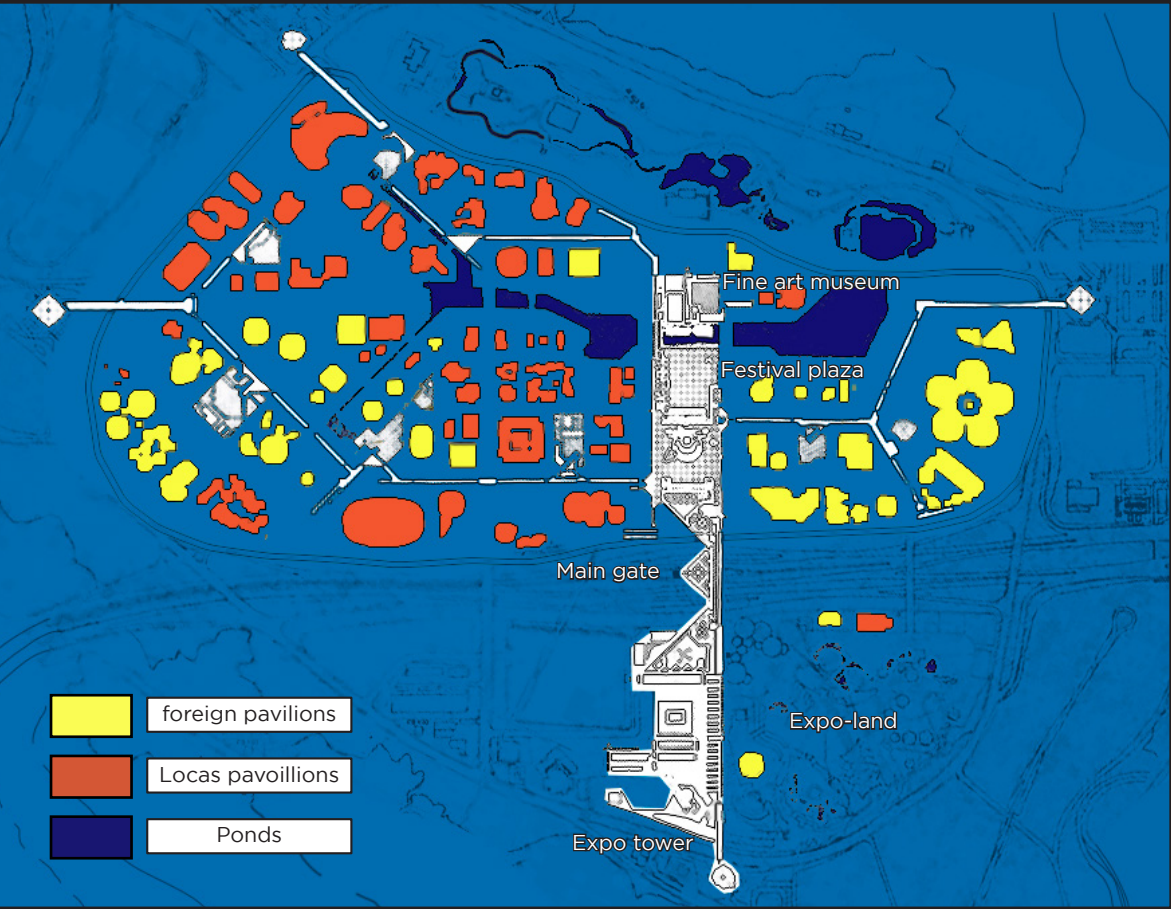
THE ANCIENT CITY OF THE FUTURE



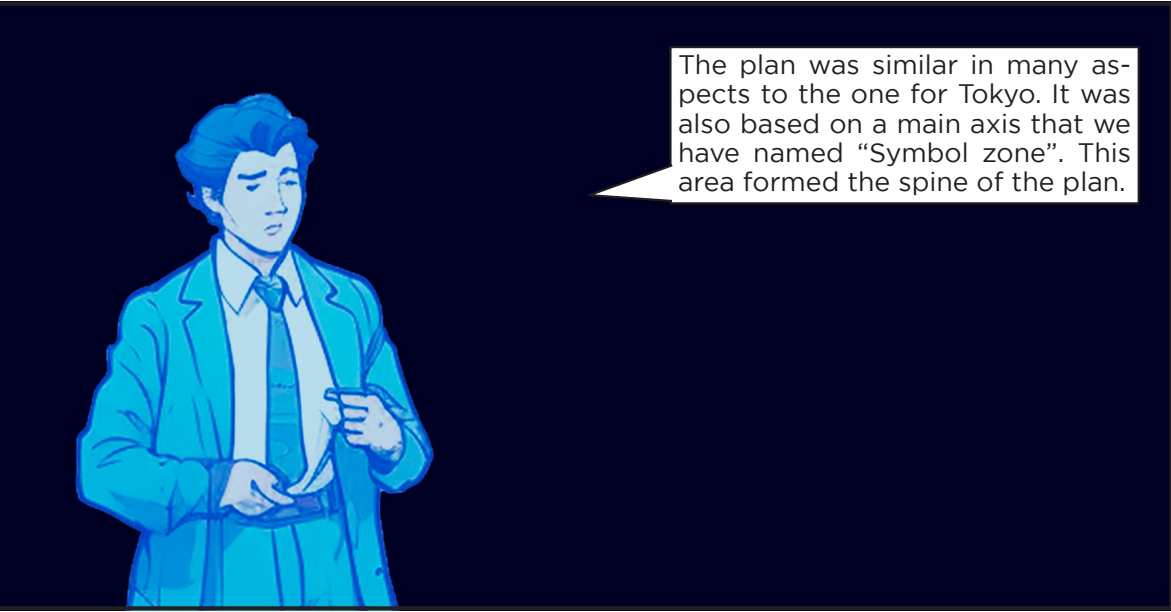
ARTIFICIAL ENVIRONMENT



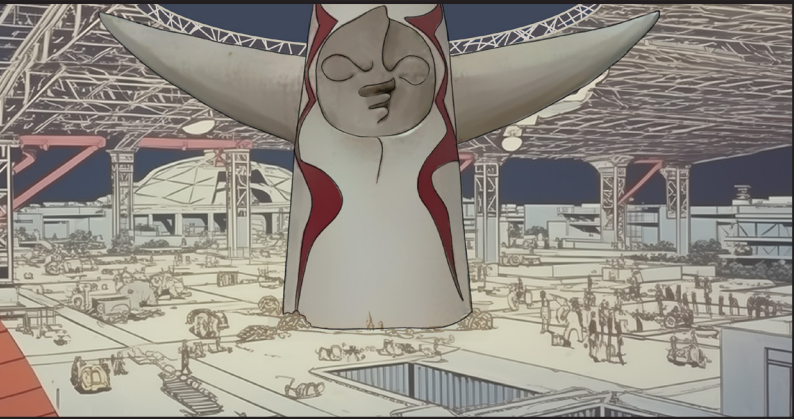
Initially, as the committee's decisions had not yet been made and we did not know how many visitors were expected, we made a very schematic plan to develop the concept of the exhibition⁴. In 1967, the various tasks were assigned to the various architectural firms in charge of carrying out their part of the plan. Which led to the final plan⁵.



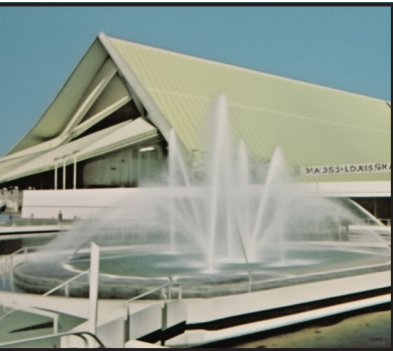
The exhibition covered 330 hectares on which the pavilions of different countries and societies were spread. 77 countries, 4 international organizations and 32 Japanese companies contributed to the design of the many pavilions on the site⁶. It was a major event that offered the opportunity to experience many different cultures. Which was exceptional for the time. This contributed to the visitors' amazement, creating lasting memories⁷.



Starting from the south, this area initially included the exhibition tower, which marked the landscape, asserting the architectural identity of the exhibition from the outset with its metal structure and geodesic domed capsules. At the foot of this tower was some auxiliary buildings as well as the headquarters building. Next to it was the main entrance located above a railway station designed for the occasion.

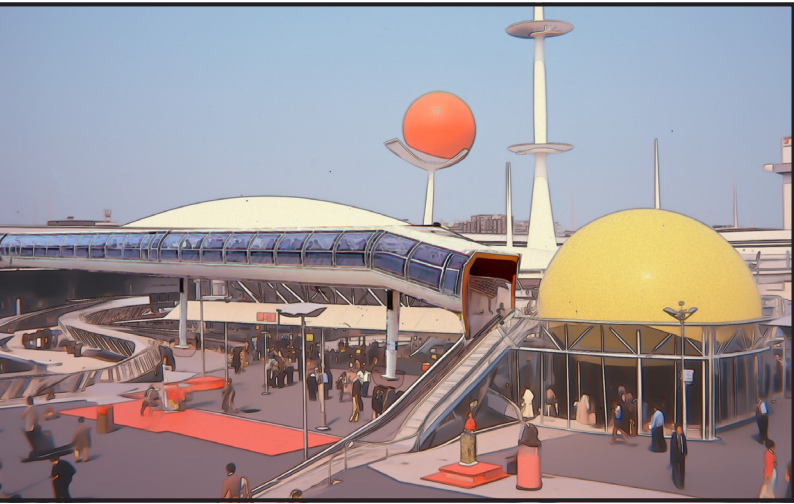


Upon entering, visitors arrived directly at the festival plaza, which was covered by the gigantic metal structure. This structure, called "Big Roof", housed the center of the festivities and placed it at the heart of an artificial environment in the image of an aerial city model based on a system of mega-structures and residential capsules.



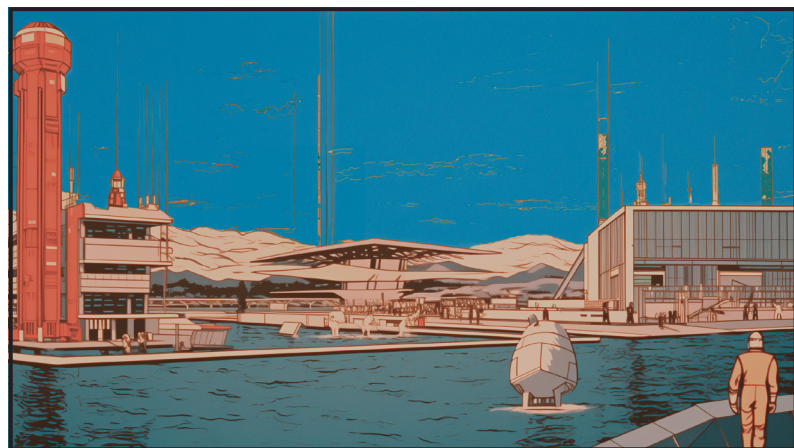
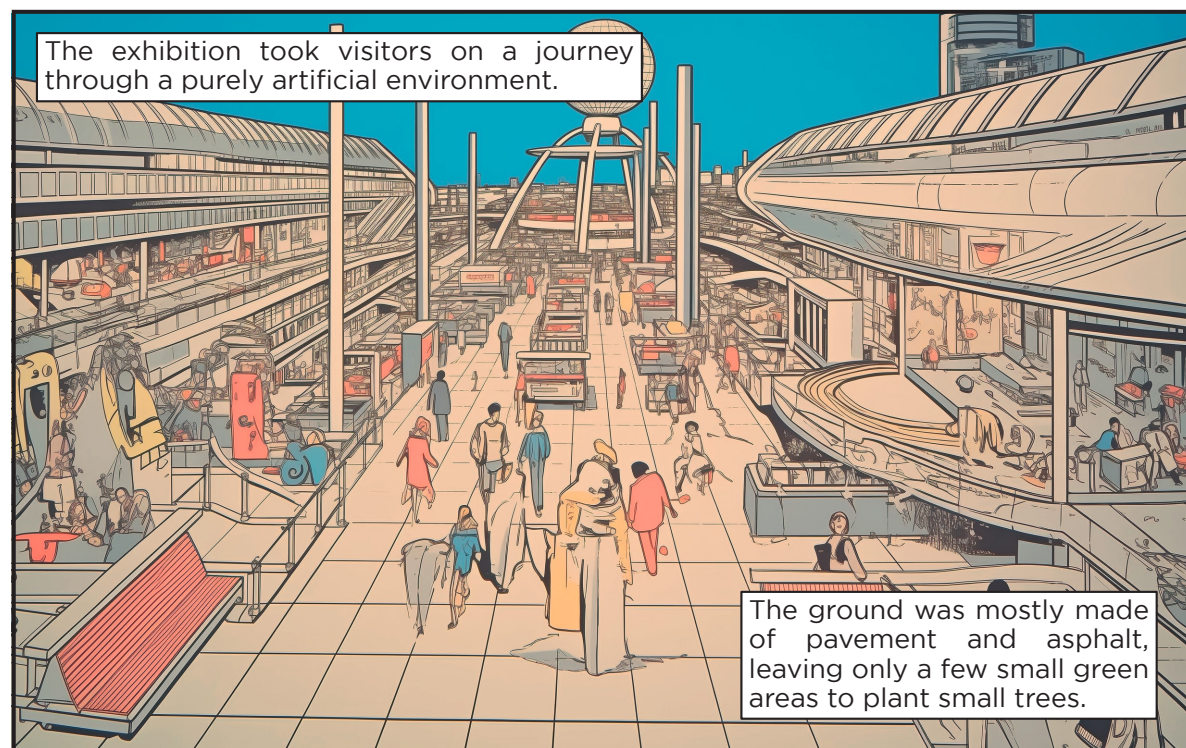
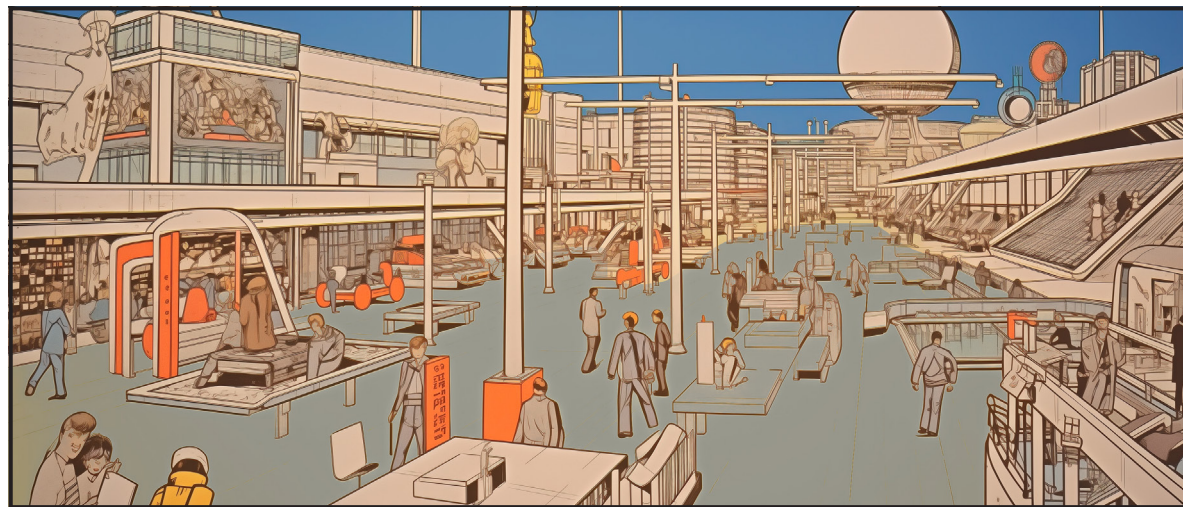
In the north of the symbolic area was the Museum of Fine Art.

A leisure park was located next to the exhibition. This park, named "Expo-land", contained, among other things, a roller coaster.



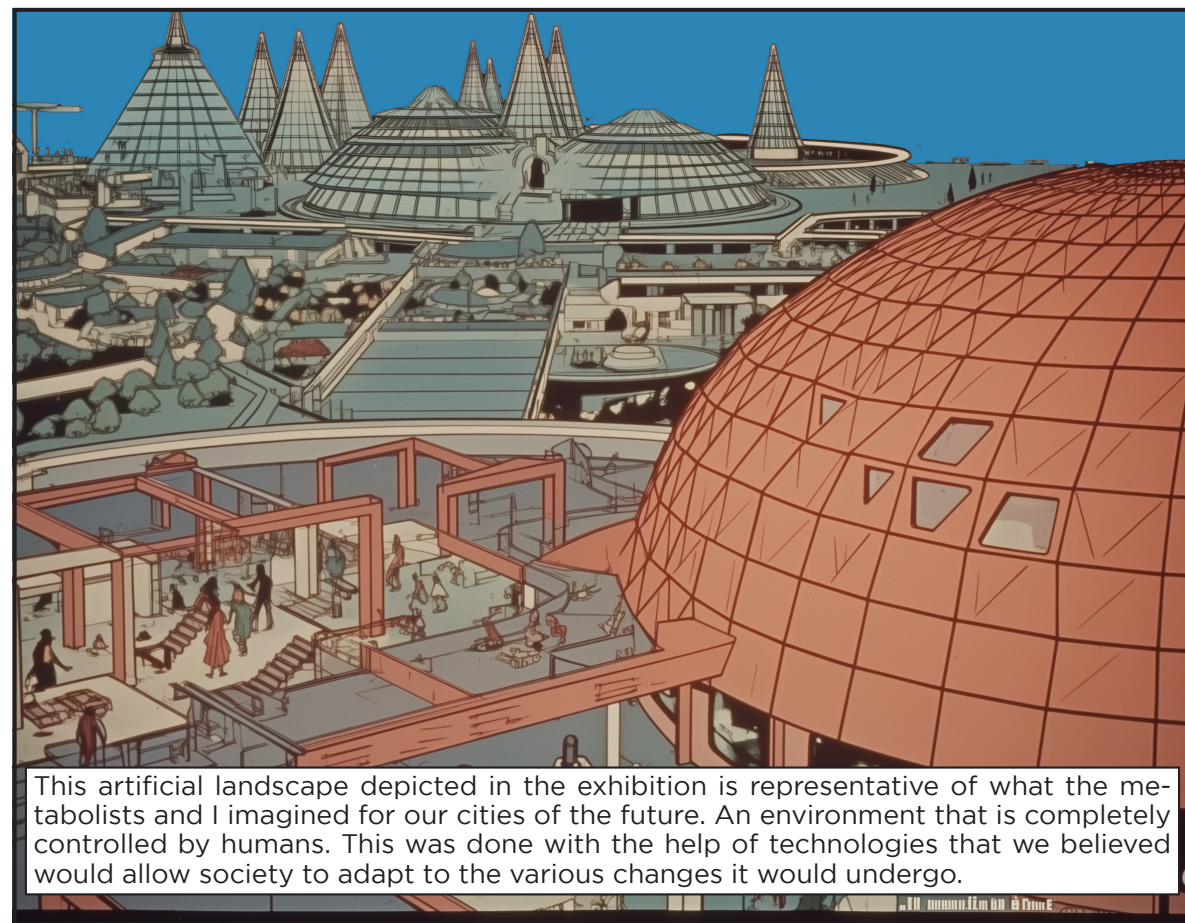
The different pavilions were positioned on either side of the zone symbol and were connected to it by raised corridors, creating several levels of circulation. This composition is again comparable to the plan for Tokyo as it reuses the metaphor of the tree. The symbol zone being the trunk and the corridors are the branches. The pavilions were placed chaotically on the composition, representing the flowers of the tree.

Along these branches was also 7 secondary squares named as the days of the week. These squares were identifiable by the 9m diameter balloon that was placed on each of them and by their building consisting of a metal structure forming a square grid. In these squares there were shops, restaurants and information centers⁸.

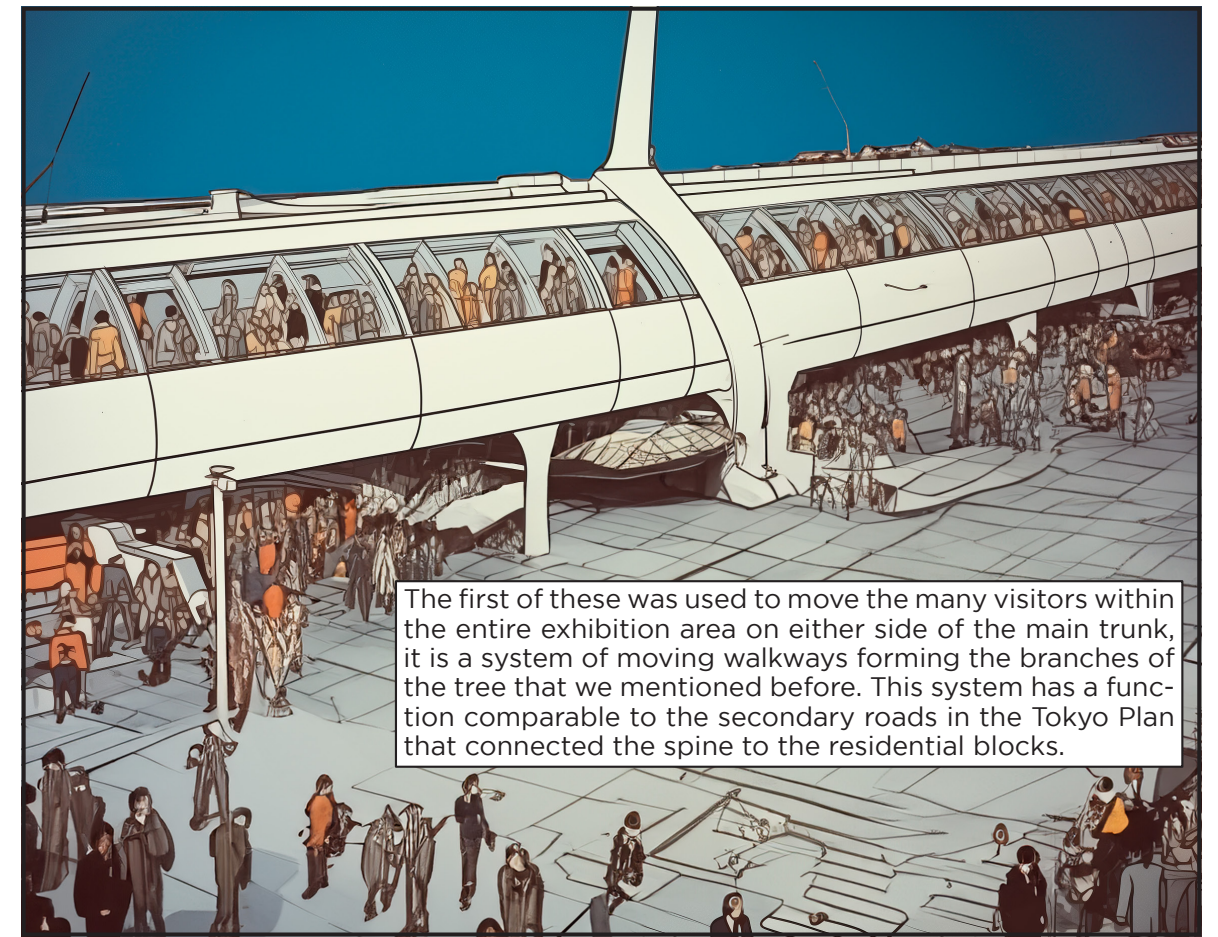
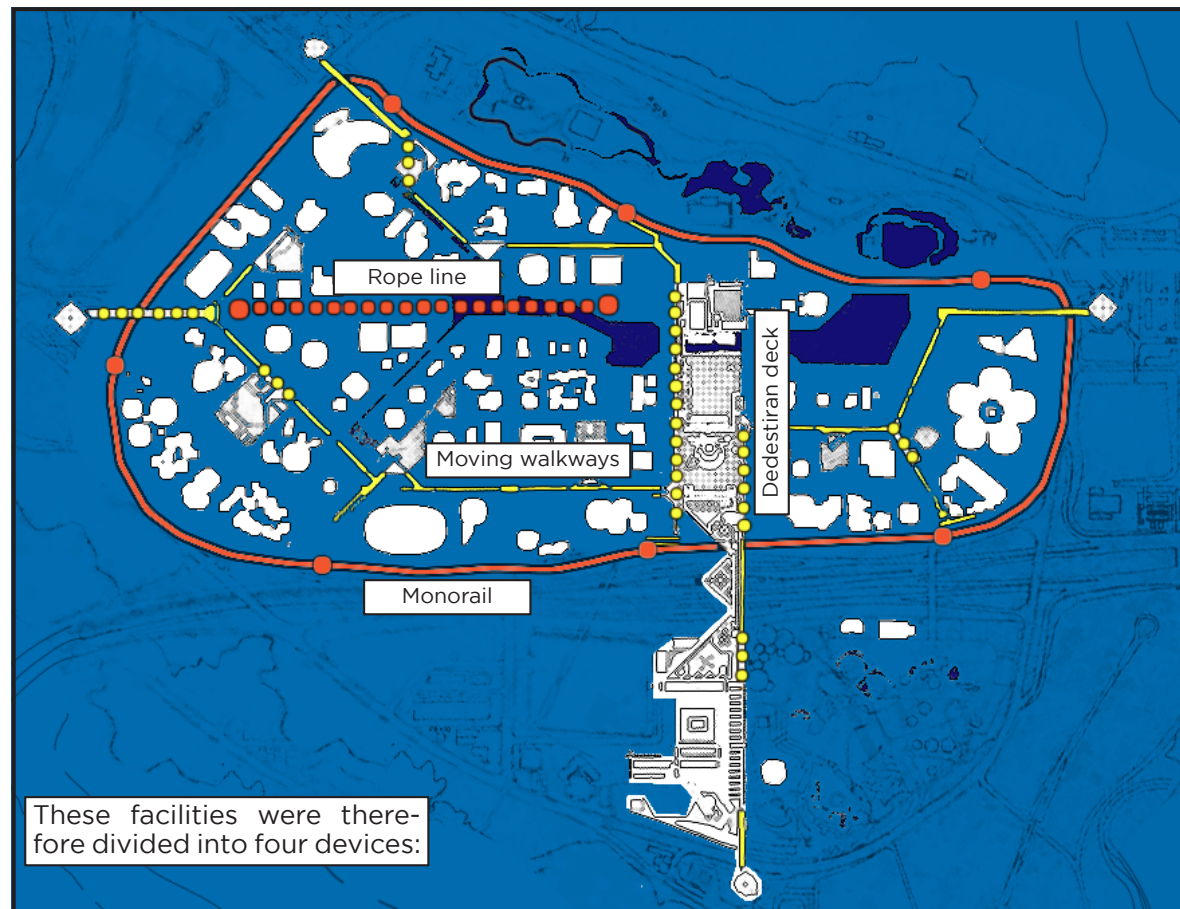
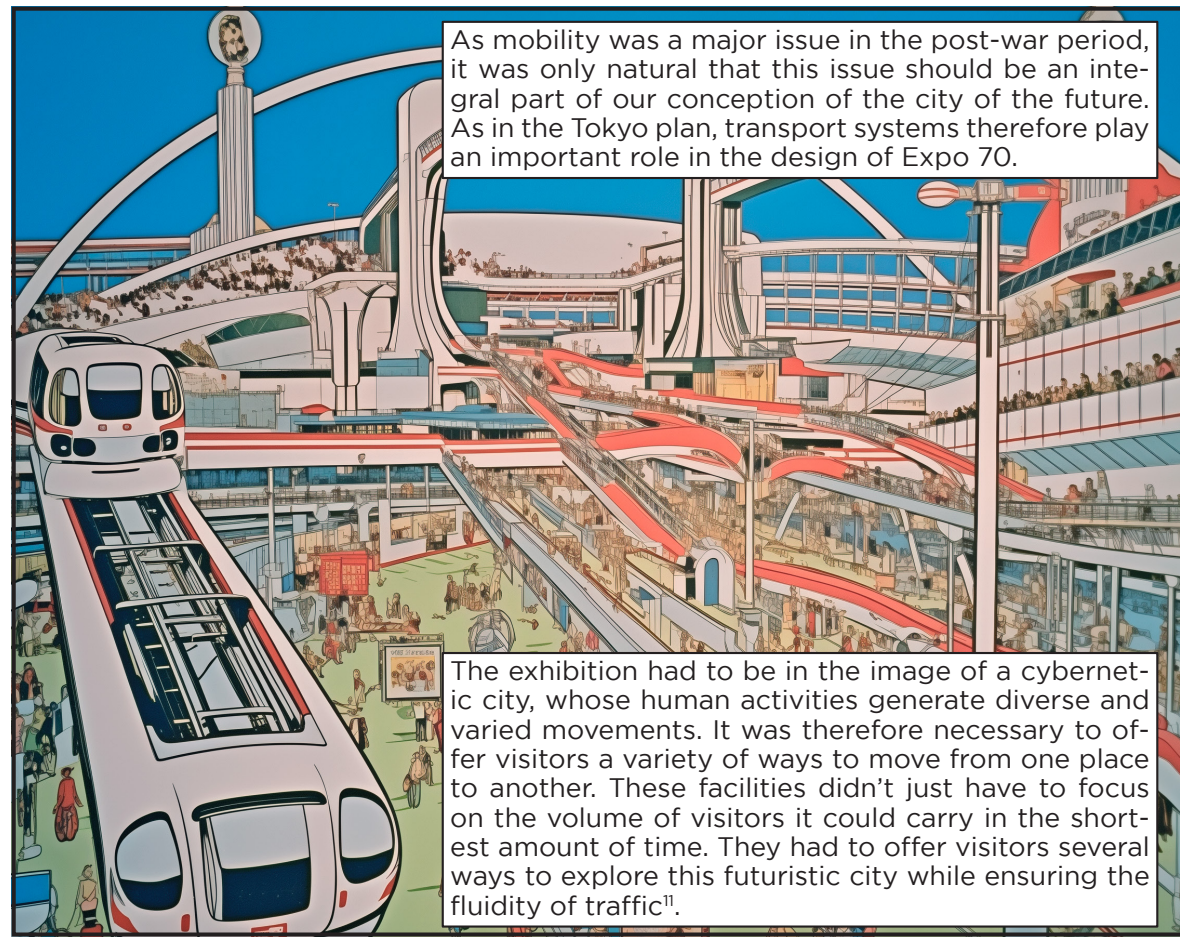


Since the presence of water contributed to the success of the previous World Expo, several artificial ponds were placed on the plan⁹. These ponds were in fact pools that did not look natural at all. Fountains were placed there to contribute to the futuristic aesthetic of the exhibition landscape. Street furniture such as telephone cabin or street lamps used the same aesthetic¹⁰.

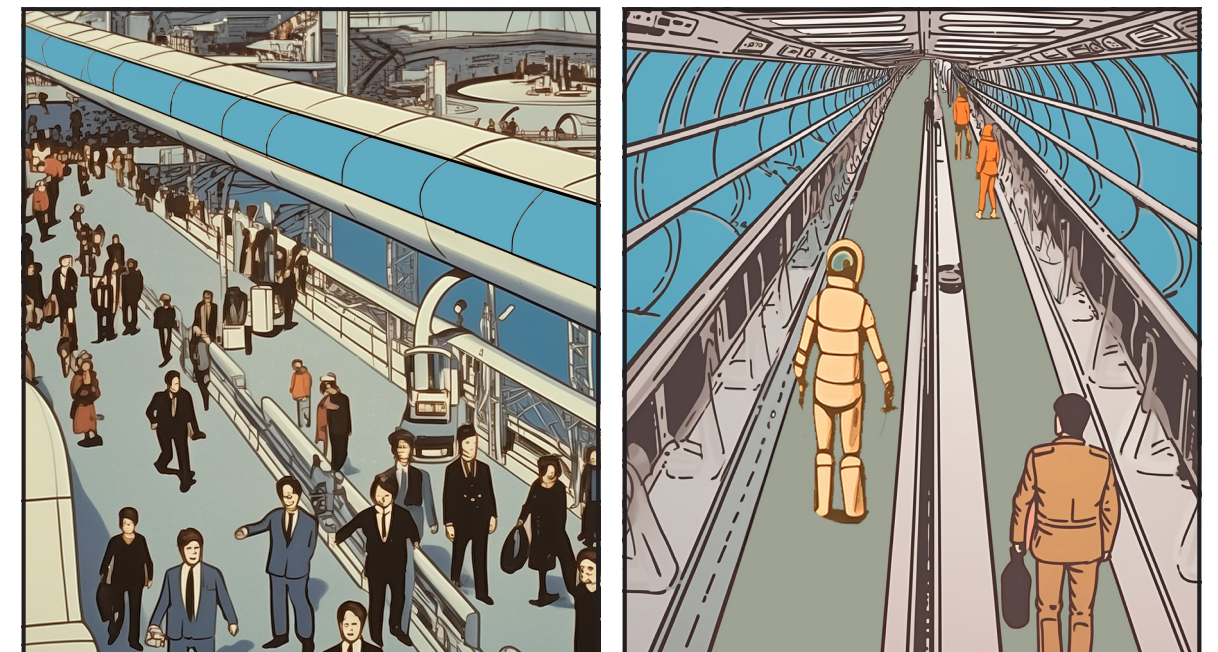
Finally, the facades of the various pavilions contributed greatly to creating a futuristic atmosphere in the exhibition landscape. The buildings had more than a few extravagant shapes and some were surrounded by a metal structure giving the illusion that these buildings could be part of a city based on a megastructure.

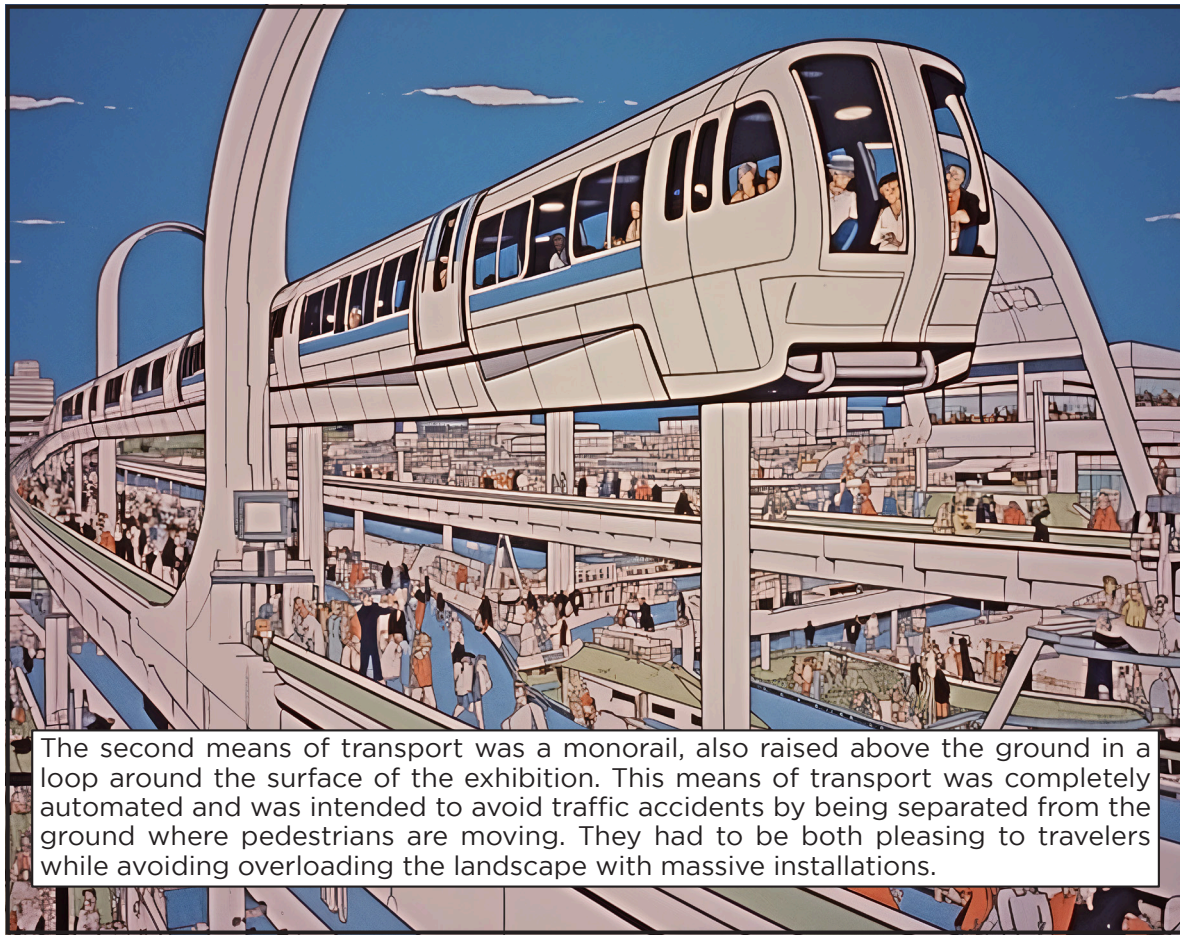


THE CITY TOUR



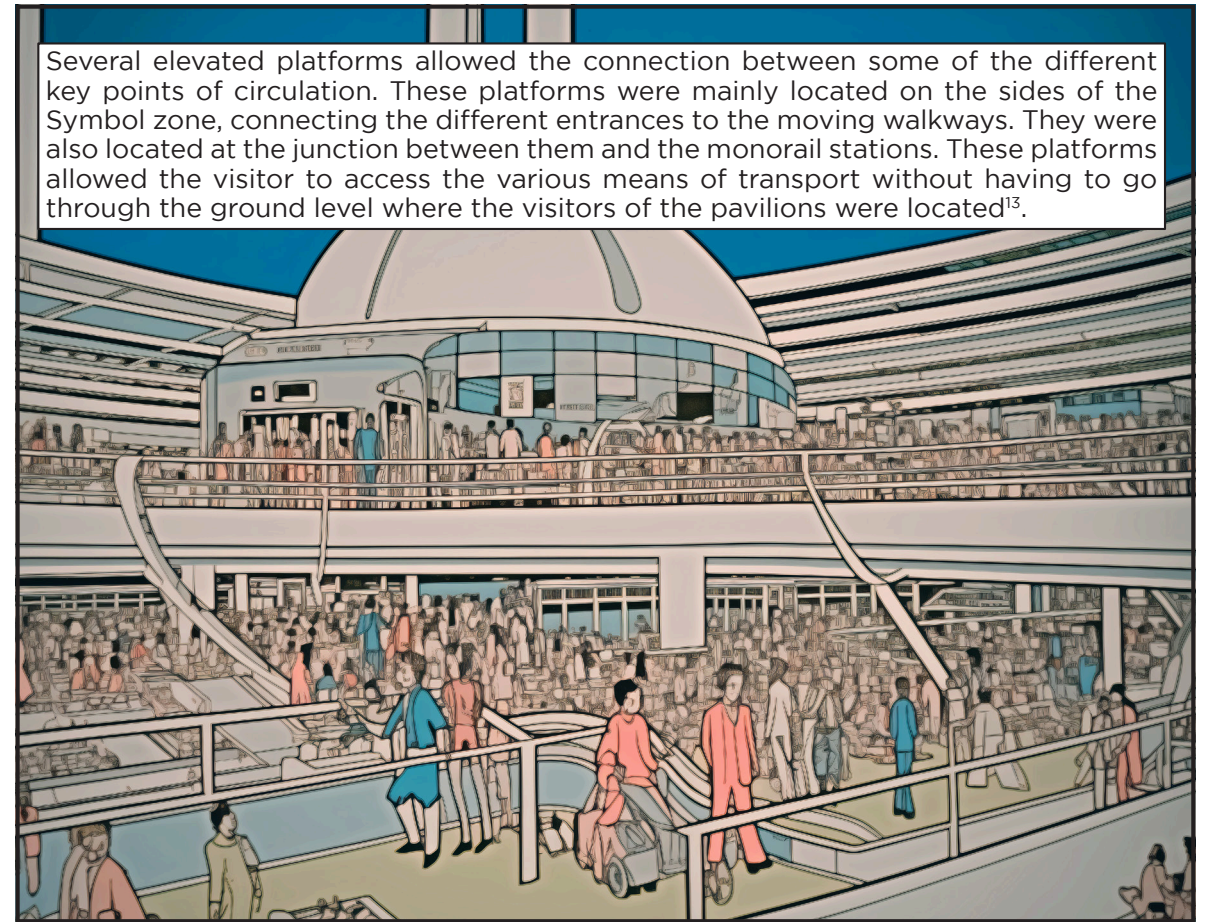
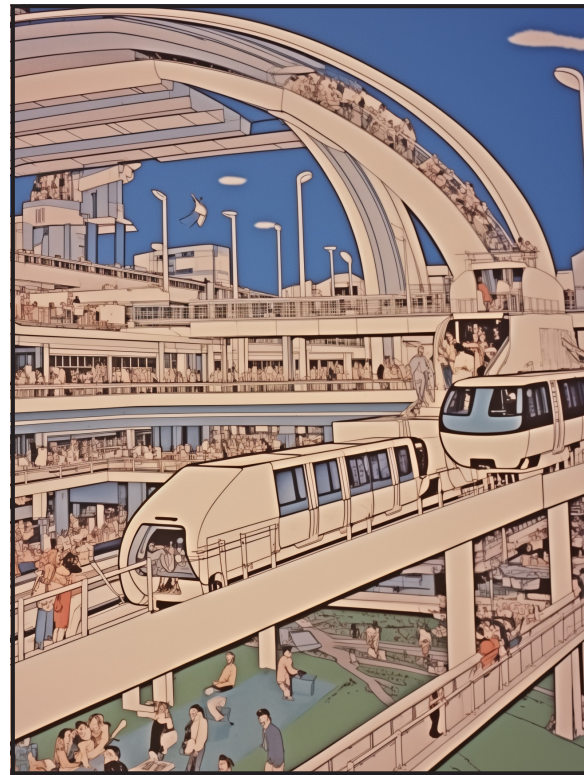
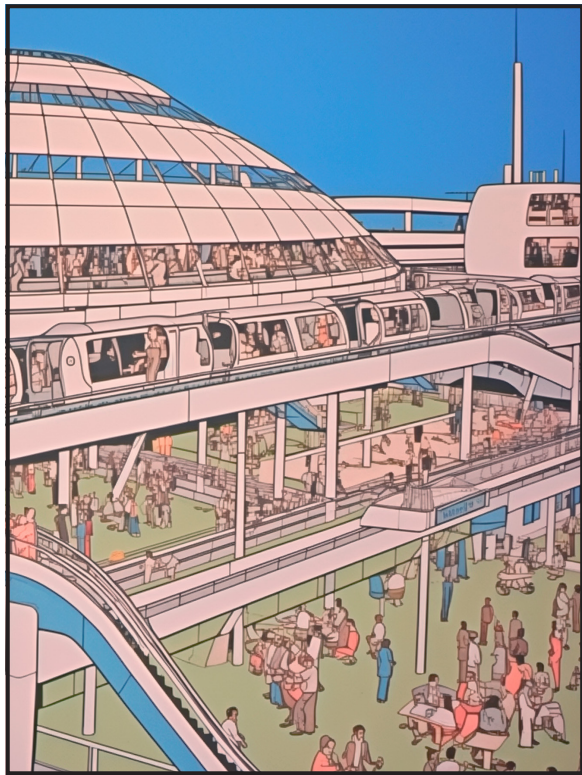
These tunnels, raised to a height of 5 meters, went in 4 directions from the plaza festival and led to the 7 secondary squares. The cumulative length of this corridor was 1.5 km. Inside its corridors was a conveyor belt for each direction of travel. Those moving at 2.4km/h. allowing 7000 people to move per hour. It was therefore a transport system that allows large volumes of visitors to be moved at a slow speed. An air conditioning system combined with the use of reflective materials on the envelope ensured a comfortable temperature during the journey. Long windows allowed light to flow into the tunnels and allowed visitors to enjoy the view during their journey.



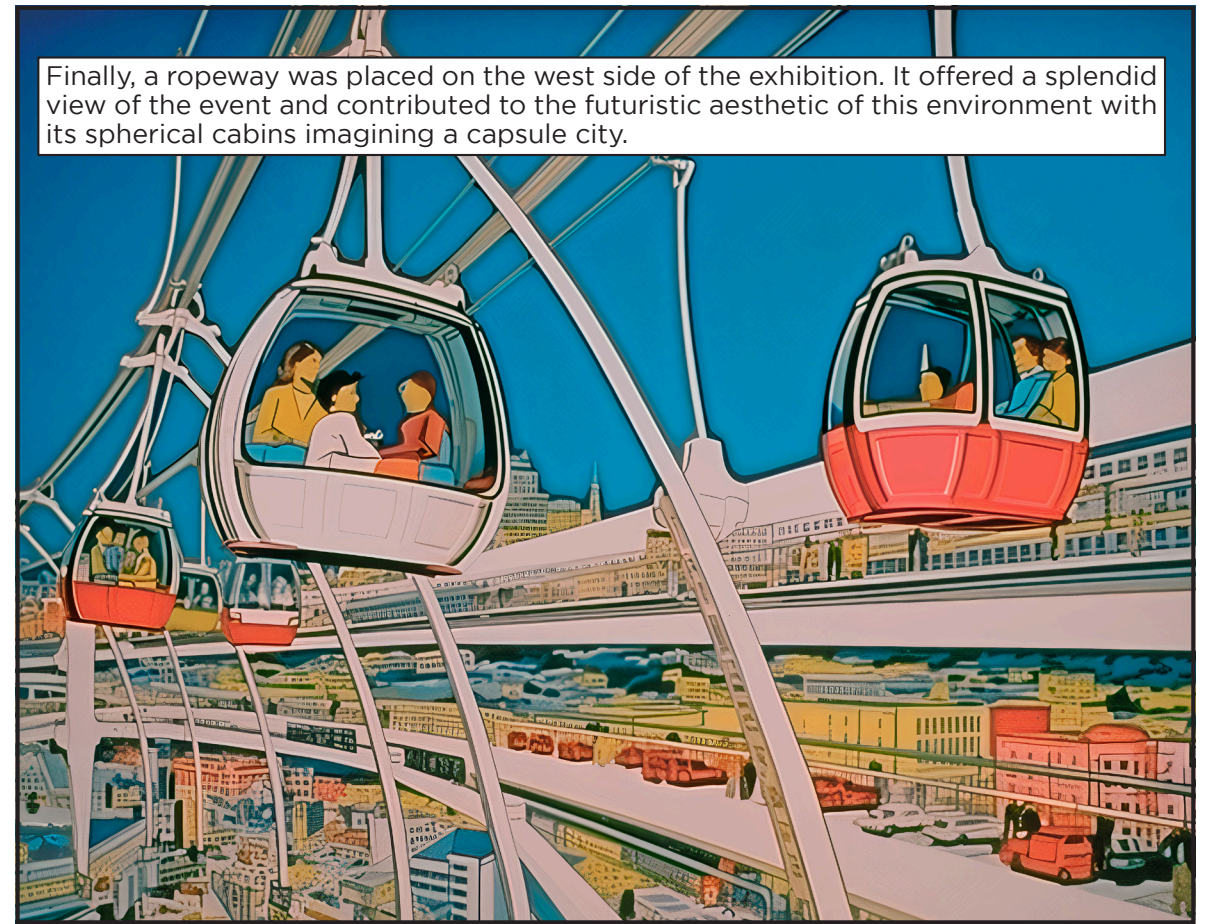


The second means of transport was a monorail, also raised above the ground in a loop around the surface of the exhibition. This means of transport was completely automated and was intended to avoid traffic accidents by being separated from the ground where pedestrians are moving. They had to be both pleasing to travelers while avoiding overloading the landscape with massive installations.

Along its route, the monorail passed through 7 stations, all close to a moving walkways. Ensuring a smooth connection between the different means of transport. This monorail traveled at 17km/h and circled the site in 15 minutes. It was composed of 4 wagons and could move 2500 visitors per hour¹².

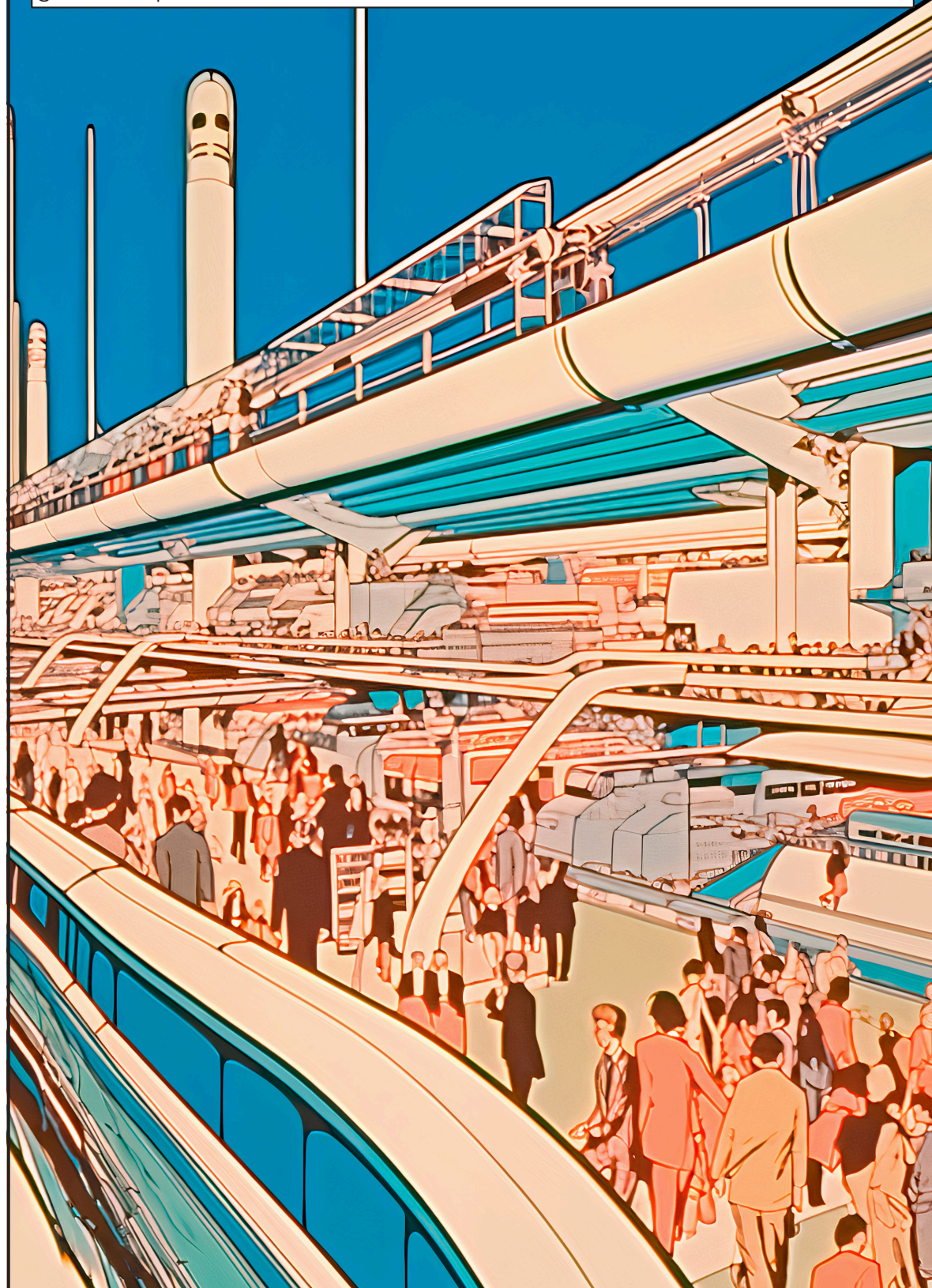


Several elevated platforms allowed the connection between some of the different key points of circulation. These platforms were mainly located on the sides of the Symbol zone, connecting the different entrances to the moving walkways. They were also located at the junction between them and the monorail stations. These platforms allowed the visitor to access the various means of transport without having to go through the ground level where the visitors of the pavilions were located¹³.



Finally, a ropeway was placed on the west side of the exhibition. It offered a splendid view of the event and contributed to the futuristic aesthetic of this environment with its spherical cabins imagining a capsule city.

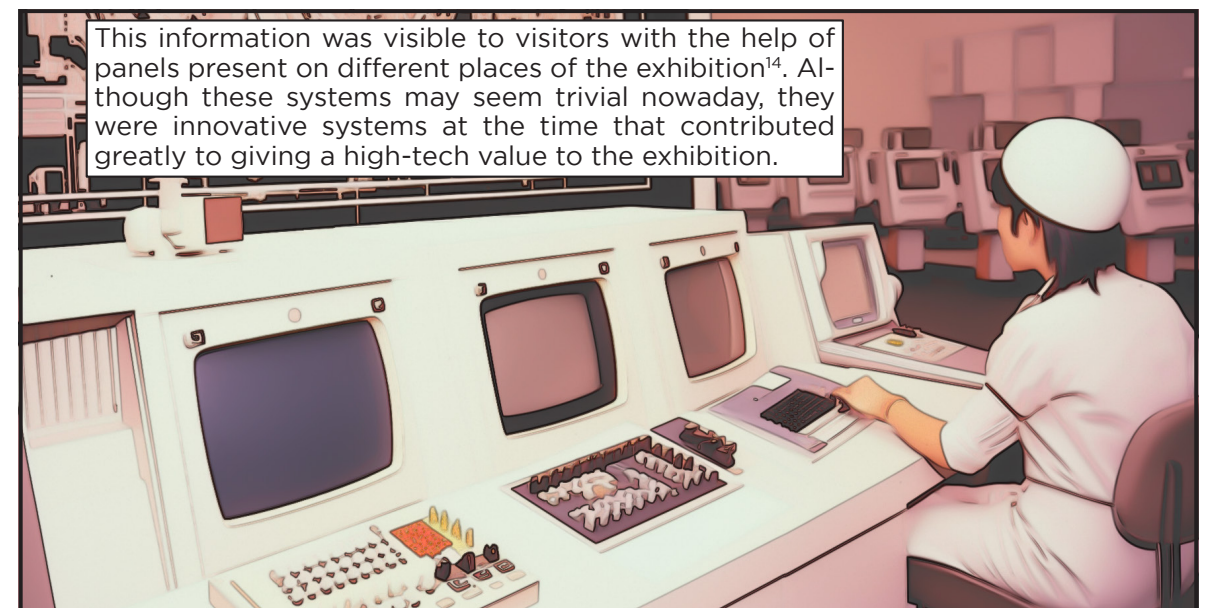
These transport systems gave the exhibition the appearance of a dynamic city representative of a society based around industry. By placing all these devices at a higher level, the landscape of the fair resembled a megalopolis whose three-dimensional component is sublimated. The use of innovative public transport systems would make it possible to maintain the use of cars outside cities. Placed at a higher level, these infrastructures generated fluid and safe mobility while reserving the use of the ground for pedestrians.



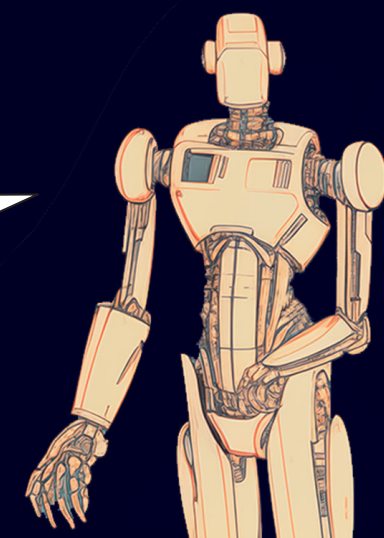
The implementation of these facilities went hand in hand with a mature information system. In Expo 70, the use of sensors placed at the entrances made it possible, with the help of a computer system, to count visitors and to know in real time where potential crowd areas were.



This information was visible to visitors with the help of panels present on different places of the exhibition¹⁴. Although these systems may seem trivial nowadays, they were innovative systems at the time that contributed greatly to giving a high-tech value to the exhibition.



If I may say so, Mr. Tange, how is it that after the horrors your nation suffered because of atomic bombing, you were so optimistic that technology was the solution to all your problems in society?

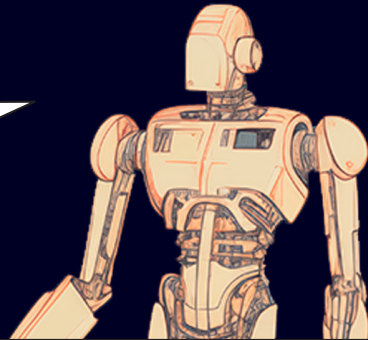


From my point of view and that of metabolists, it was clear that technologies could be the cause of many disasters. But seeing how they allowed our country to recover from the bombings. It seemed obvious to us that these technologies would also allow us to solve the various problems we were going to encounter. Thanks to the development of telecommunications and high-speed transport.



We believed that technology was what would allow the whole world to unite and bring peace to the world. This is the message we tried to convey to visitors across Expo 70. The goal was to unite nations by promoting a message of peace while celebrating the progress of humanity¹⁵.

However, we know that World Expos often had political stakes. It was an opportunity for different countries to show off their progress and wealth. So I imagine behind its message of peace, the exhibition was an opportunity for Japan to make a name for itself on the international stage by showcasing their economic and technological progress.



Indeed, the purpose of the different pavilions was to highlight the progress made by each of the countries¹⁶. In particular, it was an opportunity for the United States and the U.S.S.R to show their progress in space research.

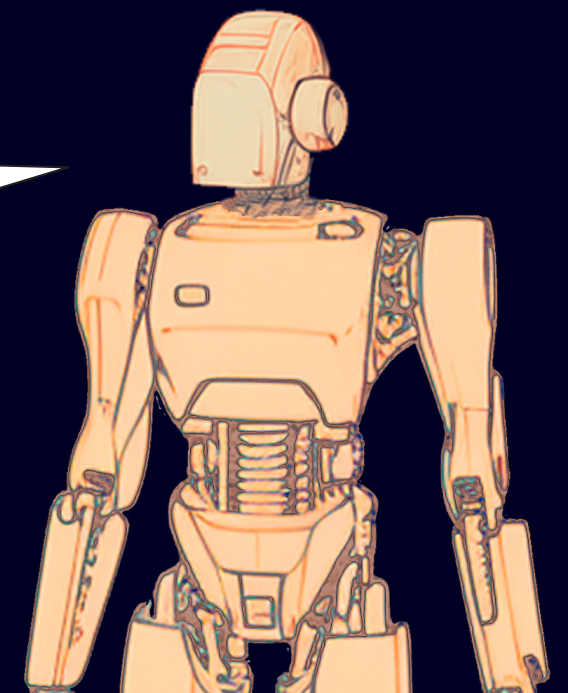


As far as Japan is concerned, it is obvious that the exhibition would put the country in the spotlight during the six months of festivities. It was therefore an opportunity to celebrate its resilience in the aftermath of its defeat, to highlight the pride of the Japanese people in the successful reconstruction of Hiroshima and to show that despite its defeat, the country remains an economic powerhouse¹⁷.

But this exhibition was also of great importance to the Japanese people themselves. Deprived of its military might, post-war Japan based its economy on advances in industry and science. Technology therefore played a big role in the country's economy. Thus, it was necessary for the Japanese people, still traumatized by the ravages of the atomic bomb, to reconcile with it¹⁸.



This futuristic imaginary depicted in the exhibition could therefore be considered as propaganda to disseminate a positive image of technology. A kind of advertisement to highlight the country's economic players.



This is indeed one of the criticisms that the journalist Takabumi Sasaki made of the exhibition in his article "A passage through the dys-topia of Expo'70" which he published in the magazine "The Japan Architect" that appeared during the exhibition.

Reportage: A PASSAGE THROUGH THE Dys-topia OF EXPO '70

by Takabumi Sasaki

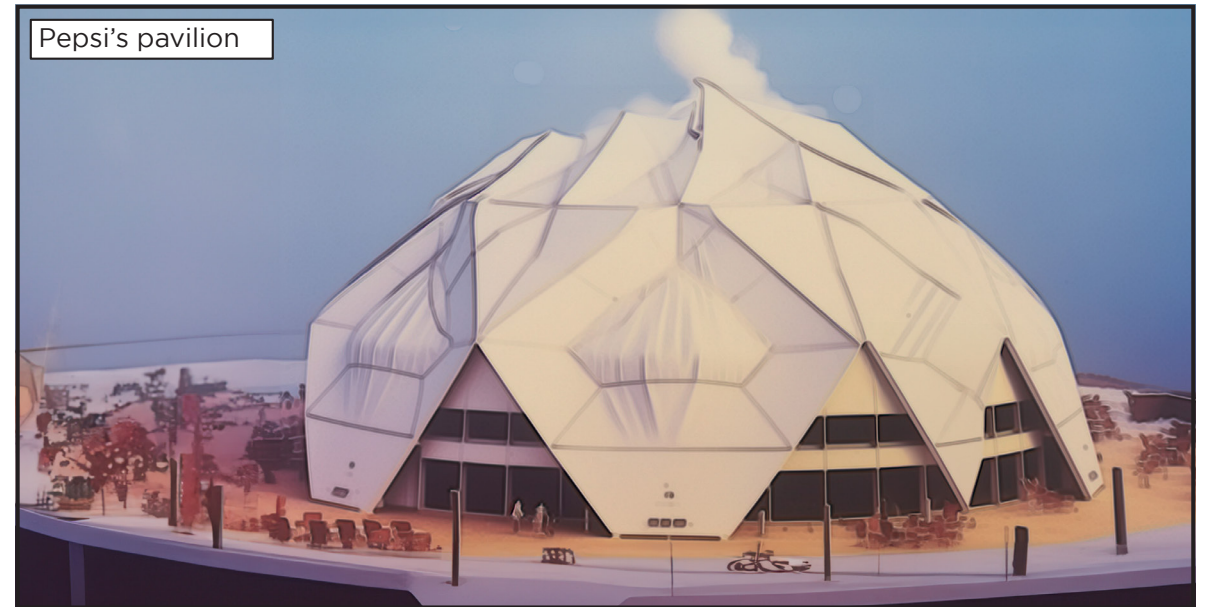
"Without doubt, each country and each exhibiting organization is insane for its own profit. In addition, though all of the exhibitions should agree in at least this aim, they manage to indicate the true sham nature of their world by exposing their real desires in individual buildings while attempting to bide them on an EXPO-wide scale. For example, Japan, while displaying the national pride in sufficient economics resources to put on a vast show of this kind, ornament apparently less worthy motivating forces behind the altruistic Progress and Harmony for Mankind theme. All of the domestic participants too elected to grace their commercial pride and power with phrases like Beauty, Love, and Hope

(Sumitomo Fairytale Pavilion), The Joy of Beautiful Living (Takara Beautillion), the Garden of Creativity (Mitsui Group), Hope-Light and Mankind (Toshiba IHI), and so on. Thus, EXPO has come into being by treading on the requirement of actuality while attempting to carry the whole thing out by means of a process of concealment. The grounds and the buildings clearly reveal this design theory: since the human situation demands sham, it is best to seduce people by creating illusions. Although in Japan this theory had already found classic expression in the designs of short-time hotels, the EXPO buildings will doubtless give greater meaning to its possibilities and extend its influence."²¹



In his article, Sasaki denounced the commercialism of the fair, which was part of the growing trend of the time to sell dreams to the population. To make people forget about the problems of society, giving them the illusion that a better world is coming. Taking this opportunity to highlight consumer products¹⁹. Indeed, the exhibition includes many private companies such as Toshiba, Fuji or Mitsubishi. Publicity was therefore an integral part of the exhibition, which was much less the case in previous World Expos²⁰.

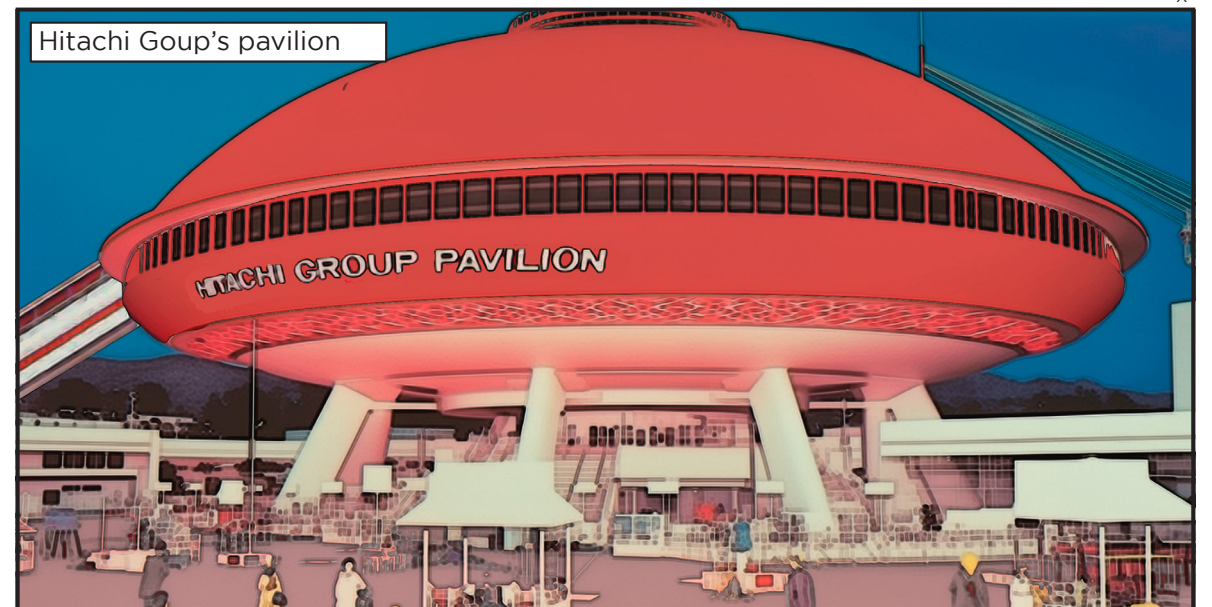
Pepsi's pavilion



Japan Gas Association's pavilion



Hitachi Group's pavilion



VISIONS OF THE FUTURE

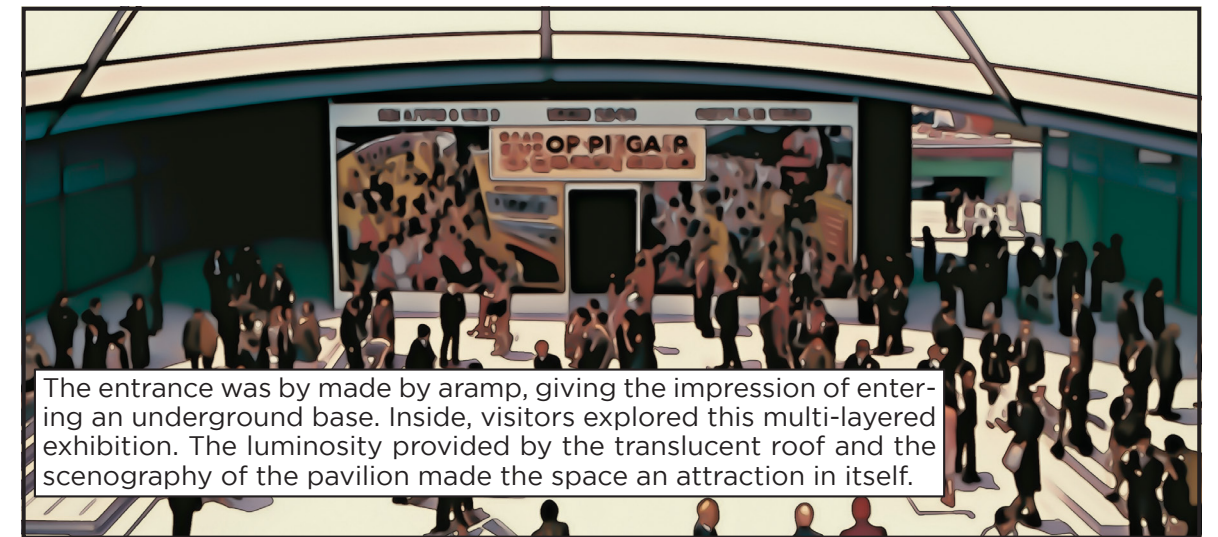
In addition to serving as advertising for the various brands and companies, the pavilions present on the site enabled the different participating countries to showcase themselves. Now that we've taken a tour of the city and its infrastructures, it's time to discover the different universes showcased by these buildings, which used a variety of scenographic means to take visitors on a journey through idealized environments.

Covering 950 m², the United States pavilion, designed by the architects of "Harak Associate", was one of the largest in the exhibition.

It was a building that fits into a cavity formed by a ring of embankments.

This large cavity was covered with a translucent fiberglass textile held in place with a lightweight structure based on a system of tensioned cables. The textile was inflated with air injected by four blowers. To do that, only a small pressure drop was required, given the very low weight of the envelope.

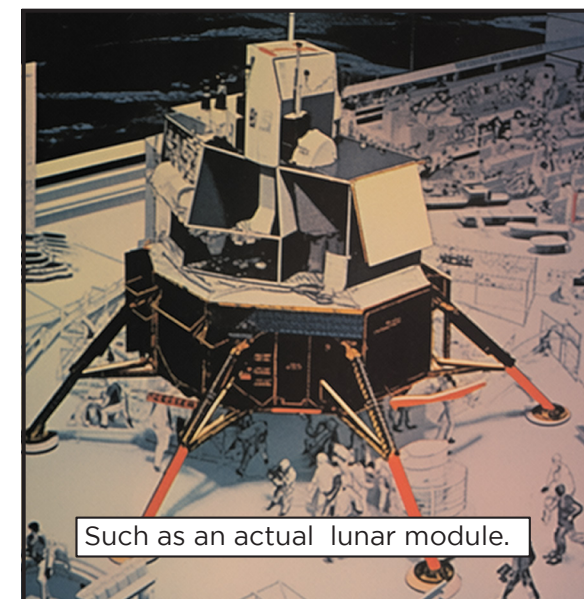
It was the highest grade of cabled structure ever built at the time, a testament to the importance of the World's Fair in terms of architectural experimentation²².



The entrance was by made by aramp, giving the impression of entering an underground base. Inside, visitors explored this multi-layered exhibition. The luminosity provided by the translucent roof and the scenography of the pavilion made the space an attraction in itself.



Of course, this exhibition was an opportunity for the United States to celebrate its recent landing on the moon. Between the various paintings, photographs and objects specific to the culture of the country. Visitors had the opportunity to see spatial objects.



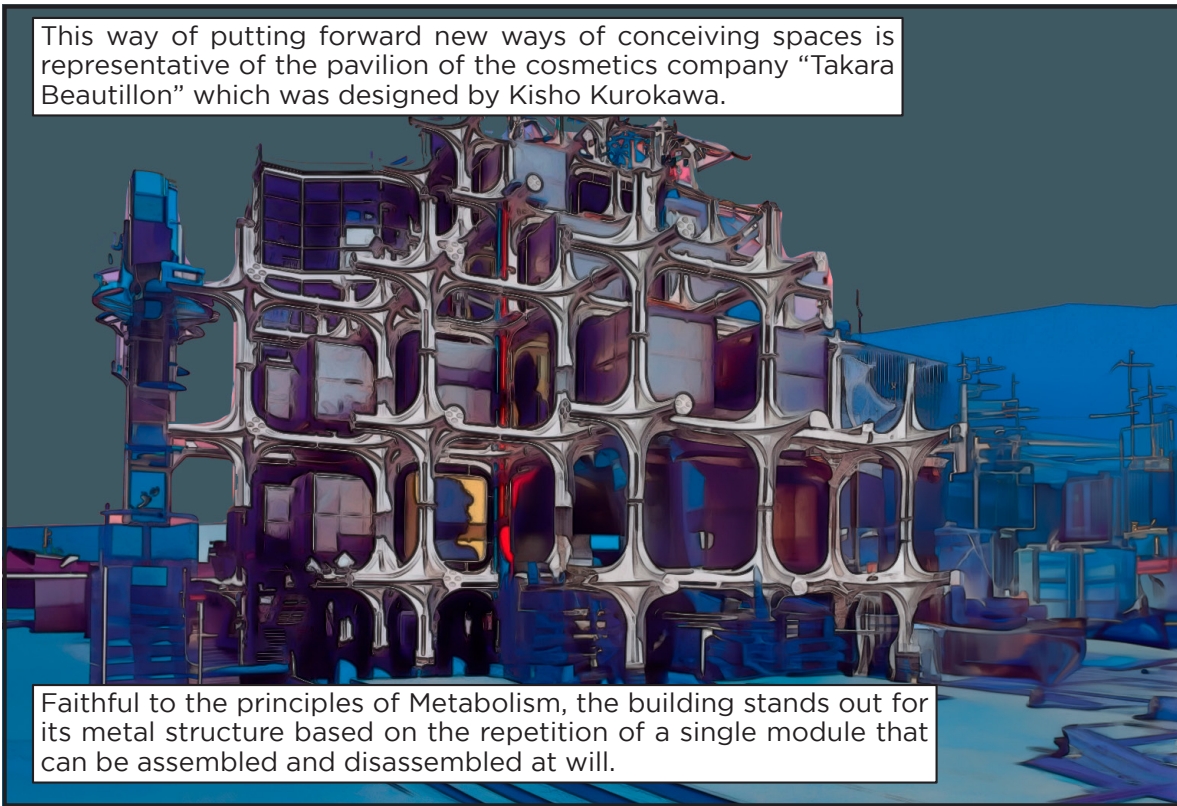
Such as an actual lunar module.



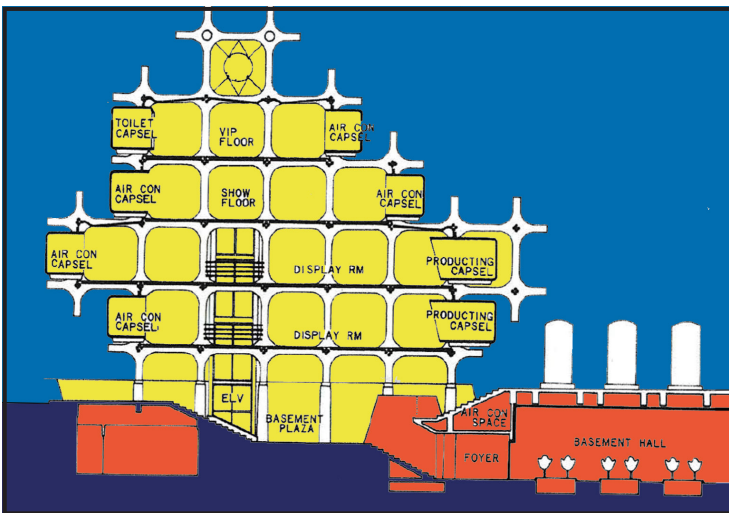
As well as an authentic moon stone.

This part of the exhibit featured various satellites, spacesuits, and other devices used in space²³. The enthusiasm of visitors around these feats made this pavilion the most visited in the exhibition, ahead of the U.S.S.R²⁴. This rivalry between these two pavilions is representative of the importance of the space race for the time. The visitors' imaginations were imbued with the dream of one day being able to colonize the space. This has greatly contributed to the depiction of controlled environments, giving the impression that humanity could live independently of the Earth's atmosphere.

This way of putting forward new ways of conceiving spaces is representative of the pavilion of the cosmetics company "Takara Beautillon" which was designed by Kisho Kurokawa.

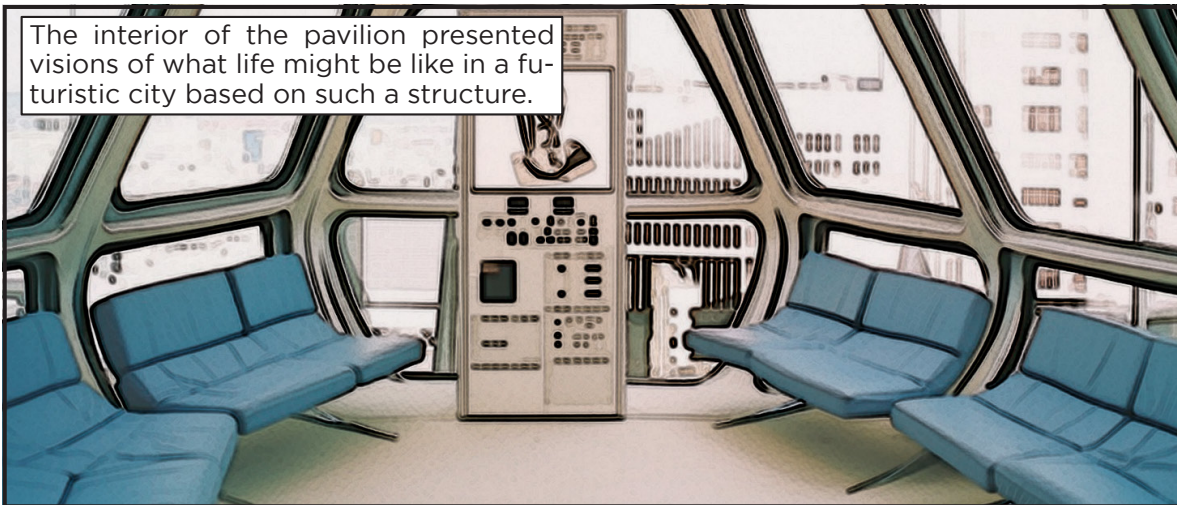


Faithful to the principles of Metabolism, the building stands out for its metal structure based on the repetition of a single module that can be assembled and disassembled at will.

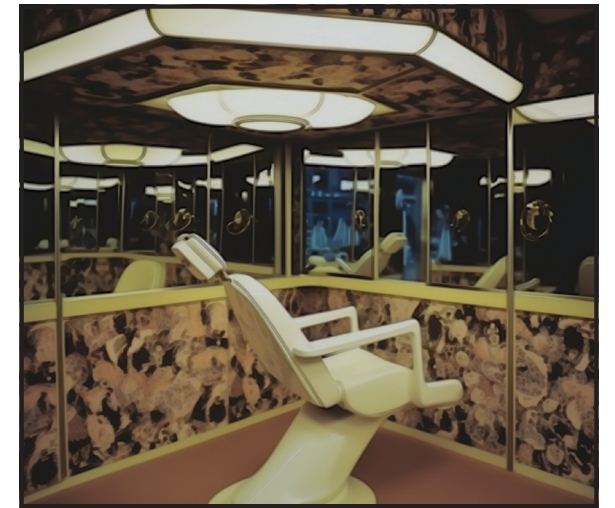


The stacking of the 200 structural modules generated a mesh whose interstices formed cubic spaces of 6m by edges in which capsules as well as prefabricated reinforced concrete floors could be placed as needed. This system allowed total freedom of composition. The structure was held in place by reinforced concrete pillars on which the lower modules rested. The assembly of the pavilion took only a few days, testifying to the effectiveness of the construction system that Kurokawa proposed²⁵.

The interior of the pavilion presented visions of what life might be like in a futuristic city based on such a structure.



There were domestic spaces, in which it was possible to see how the furniture and kitchen modules were integrated.



Visitors could also see public spaces, such as shops or hair salons.

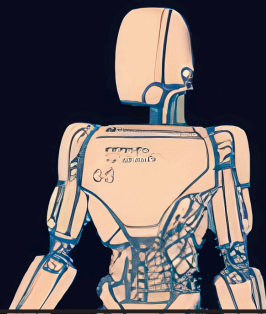
The pavilion had a basement where there was a theatre in which images were projected to take the audience on a journey through time and space²⁶.



This pavilion shows that for the metabolist group, this fair was not only intended to entertain visitors, it was to highlight their desires to propose solutions for the future and to give a foretaste of what tomorrow could look like. Kurokawa would continue this momentum after the exhibition by inaugurating his famous "Nakagin Capsule tower" barely two years later, which would become the symbol of the metabolist movement.

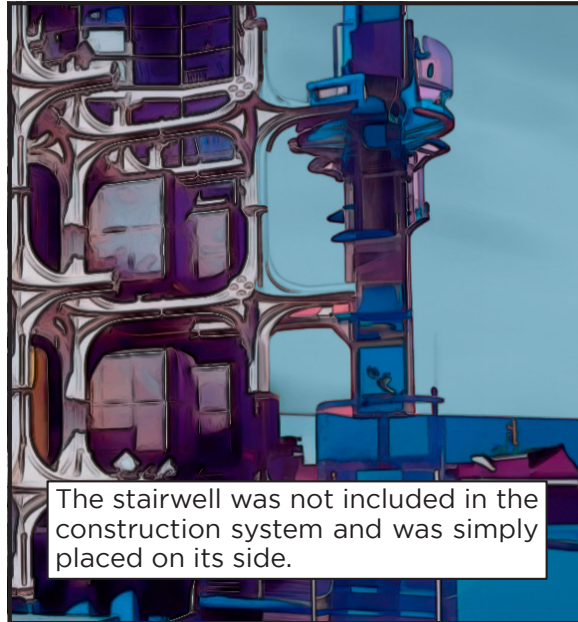


However, this system does not seem to be complete.



Pipes and other technical installations were not integrated into the system²⁷.

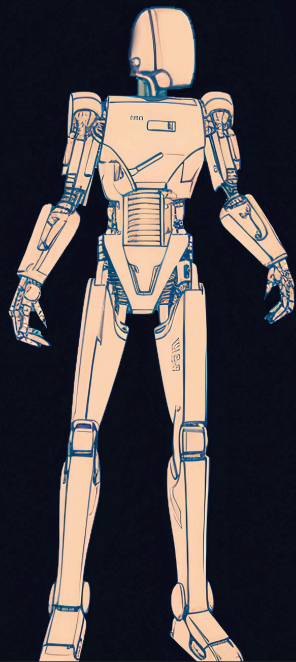
XIX



The stairwell was not included in the construction system and was simply placed on its side.

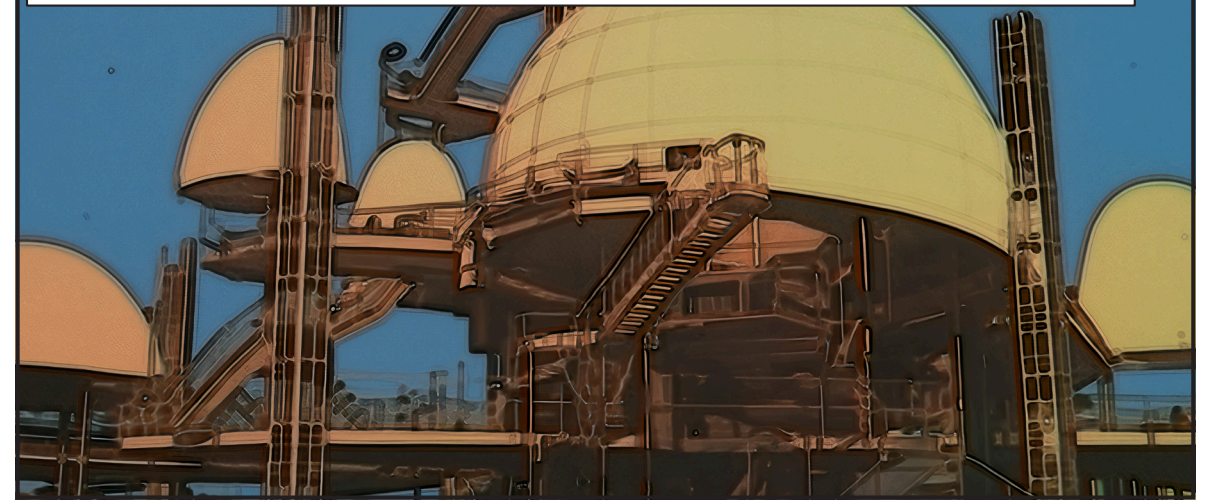
XX

Finally, the system did not take into account the drainage of rainwater, many parts had to be improvised to avoid leaks.



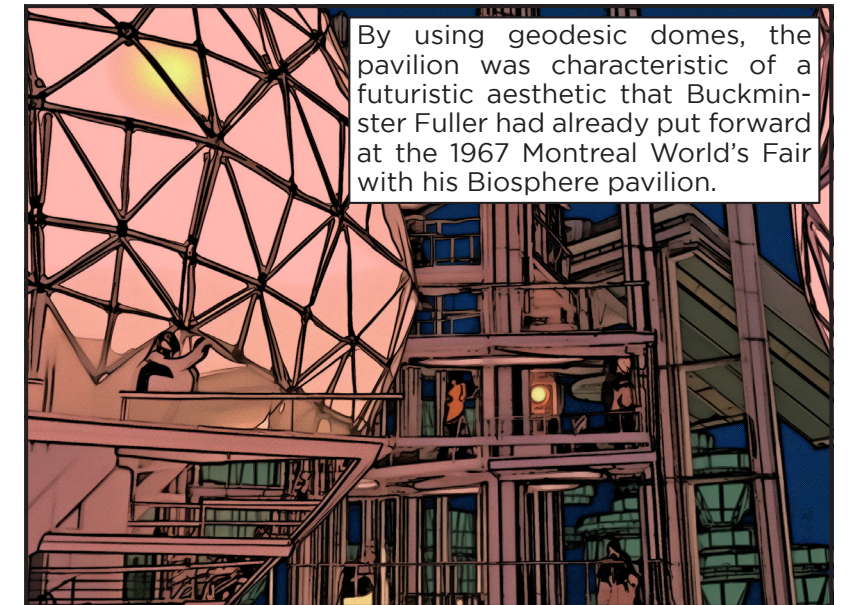
Although this system gave a good idea of what modular construction could look like in the future. This one seemed to be nothing more than a showcase for the dreams of the metabolist movement. Confirming Mr. Sasaki's assertion that this fair was all about selling dreams.

The dream was the theme of the "Sumitomo fairytail pavilion" designed by Sachio Otami. It was an authentic suspended city composed of 9 domes of different sizes. This pavilion is a good example of the exhibition's desire to highlight the development of the industry by using several construction systems and highlighting these escalators.



XXI

The pavilion seemed to defy gravity, playing with height with the help of ramps creating a path between the different domes. These were held up high by means of triangular metal columns and concrete stairwells. Some domes had an opaque envelope while others were made of glass. Thus creating various lighting atmospheres within them. The interior spaces featured different environments on the theme of accounts and legends including puppet shows or movie projections²⁸.



By using geodesic domes, the pavilion was characteristic of a futuristic aesthetic that Buckminster Fuller had already put forward at the 1967 Montreal World's Fair with his Biosphere pavilion.

This aesthetic was all the more highlighted by the number of components of the pavilion. Making the building difficult to understand at first glance.



The presence of the "Sumitomo fairytail pavilion" in the landscape of the exhibition greatly contributed to the representation of a city breaking with the terrestrial environment.

Although surprising, such a construction does not seem to offer a concrete solution for urban planning, as its construction was too complex to be applied on a large scale.



These pavilions are just a few examples to illustrate the overall atmosphere of the exhibition. These were integrated into the artificial landscape of the exhibition, forming a whole that could be considered destabilizing for visitors.

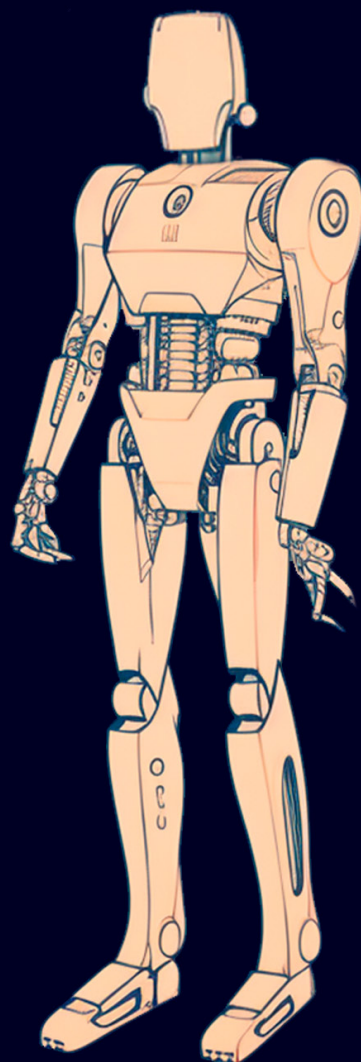
This environment puts forward an idealized image of the future, demonstrating the optimism that the exhibition seeks to promote by taking visitors on a journey through spectacular environments.

Paradoxically, although this event proclaimed itself to be representative of the future, the architecture exposed was deeply rooted in its time.

First, the exhibition was comparable to the many architectural utopias of period. A recognizable imaginary that was already depicted in the many science fiction works of the time.

In addition, the innovations highlighted in the pavilions as well as on the site of the event offer specific solutions to the problems that humanity encountered at the time of its construction, such as mobility, communication and the creation of efficient construction systems.

This phenomenon is all the more obvious when we note that these hypothetical structures of the future do not seem to be at all concerned with the environmental problems they could generate. The question of the resources used and the energy consumed by such infrastructures is almost never mentioned. This shows that those issues weren't questioned at the time.



Indeed, when we conceived such projects, we were influenced by current issues. That said, We were aware that the future would bring with it many unforeseen events, which is why our concepts were based on adaptive structures that were independent of the natural environment. We believed that if we had control over our environment, we'd be able to cope with the unexpected³⁰.

However, with hindsight, it may seem naïve to put so much faith in the fact that we would be able to maintain total control over our environment, while at the same time being able to evolve it as we progressed.

In addition, we didn't mention the difficulties we would have to face to make such concepts a reality. To give you an idea of the challenges involved in creating an authentic megastructure, I invite you, dear visitors, to join me at the festival plaza.



It's time to discover to the heart of the city.

Notes

1. Lin, *Kenzo Tange and the Metabolist Movement*, p.208
2. The Official Site of the Tower of the Sun Museum. 'About Expo '70 in Osaka'.
3. Lin, *Kenzo Tange and the Metabolist Movement*, p.200
4. *The Japan Architect Vol 164*, p.29
5. Ibid.
6. 'About Expo '70 in Osaka'. site
7. Anderson and Shimizu, 'Recollections of Expo 70', p.445
8.
9. *The Japan Architect Vol 164*, p.160
10. Marcoux, 'Expo'67', p.70
11. *The Japan Architect Vol 164*, p.165
12. *The Japan Architect Vol 164*, p.168
13. *Ibid*, p.167-169
14. Ibid.
15. *The Japan Architect Vol 164*, p.170
16. Eckersall, *Performativity and Event in 1960s Japan*, p.114
17. Ibid, p.111
18. Lin, *Kenzo Tange and the Metabolist Movement*, p.224
19. Eckersall, *Performativity and Event in 1960s Japan*, p.122
20. *The Japan Architect Vol 164*, p.143-149
21. Eckersall, *Performativity and Event in 1960s Japan*, pp.111
22. *The Japan Architect Vol 164*, p.143-149
23. *The Japan Architect Vol 164*, p.92
24. United States Information Agency, 'US Pavillion Guidebook', p.16-20
25. Anderson and Shimizu, 'Recollections of Expo 70'.
26. Kurokawa, *Metabolism in Architecture*, p.101
27. worldfairs.info, 'Takara Beautillon : Pavillons Japonais Privés'.
28. Kurokawa, *Metabolism in Architecture*, p.102-103
29. worldfairs.info, 'Sumitomo : Pavillons Japonais Privés'.
30. Lin, *Kenzo Tange and the Metabolist Movement*, p.35

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II. The Japan architect : Special edition EXPO'70. *Expo 70 Master plan*. 1970. drawing, p.24
III. *Expo Tower*. photograph. https://fr.m.wikipedia.org/wiki/Fichier:EXPO_TOWER.JPG.
IV. Takato, Marui. *Tower of the Sun*. 2010. photograph. <https://www.atlasobscura.com/places/tower-of-the-sun>.
V. *Museum of Fine Art*. 1970. photograph. https://en.worldfairs.info/expopavillondetails.php?expo_id=18&pavillon_id=1514.
VI. *Moving Walkways*. 1970. photograph. <https://www.flickr.com/photos/46633980@N04/4382081504/in/photostream/>.
VII. The Japan architect : Special edition EXPO'70. *Expo 70 Master Plan*. 1970. drawing, p.24
VIII. *Operation and Control Center*. 1970. photograph. <https://taiyounotou-expo70.jp/en/about/expo70/>.
IX. Mee, Thomas. *Pepsi Pavilion*. 1970. photograph. <https://medium.com/@JanBossing/art-meets-tech-91f82e8789b9>.
X. *Japan Gas Association Pavilion*. 1970. photograph. https://en.worldfairs.info/expopavillondetails.php?expo_id=18&pavillon_id=1532.
XI. *Hitachi Group Pavilion*. 1970. photograph. https://www.worldfairs.info/expopavillondetails.php?expo_id=18&pavillon_id=1533.
XII. *USA Pavilion*. 1970. Photograph. <https://hiddenarchitecture.net/united-states-pavilion-osaka-70/>.
XIII. *Ibid*.
XIV. *Ibid*.
XV. *Takara Beautillon Pavilion*. 1970. photograph. https://www.worldfairs.info/expopavillondetails.php?expo_id=18&pavillon_id=1551.
XVI. The Japan architect : Special edition EXPO'70. *Takara Beautillon Pavilion Section*. 1970. drawing, p.131
XVII. *Ibid*.
XVIII. *Takara Beautillon Pavilion*. 1970. photograph. https://www.worldfairs.info/expopavillondetails.php?expo_id=18&pavillon_id=1551.
XIX. *Ibid*.
XX. *Ibid*.
XXI. Oota, Kouij. *Sumitomo Fairytale Pavilion*. 1970. photograph. https://commons.wikimedia.org/wiki/File:Sumitomo_Fairy_Tale_Pavilion.jpg.
XXII. Takato, Marui. *Tower of the Sun*. 2010. photograph. <https://www.atlasobscura.com/places/tower-of-the-sun>.

CHAPTER 4

THE HEART OF THE CITY

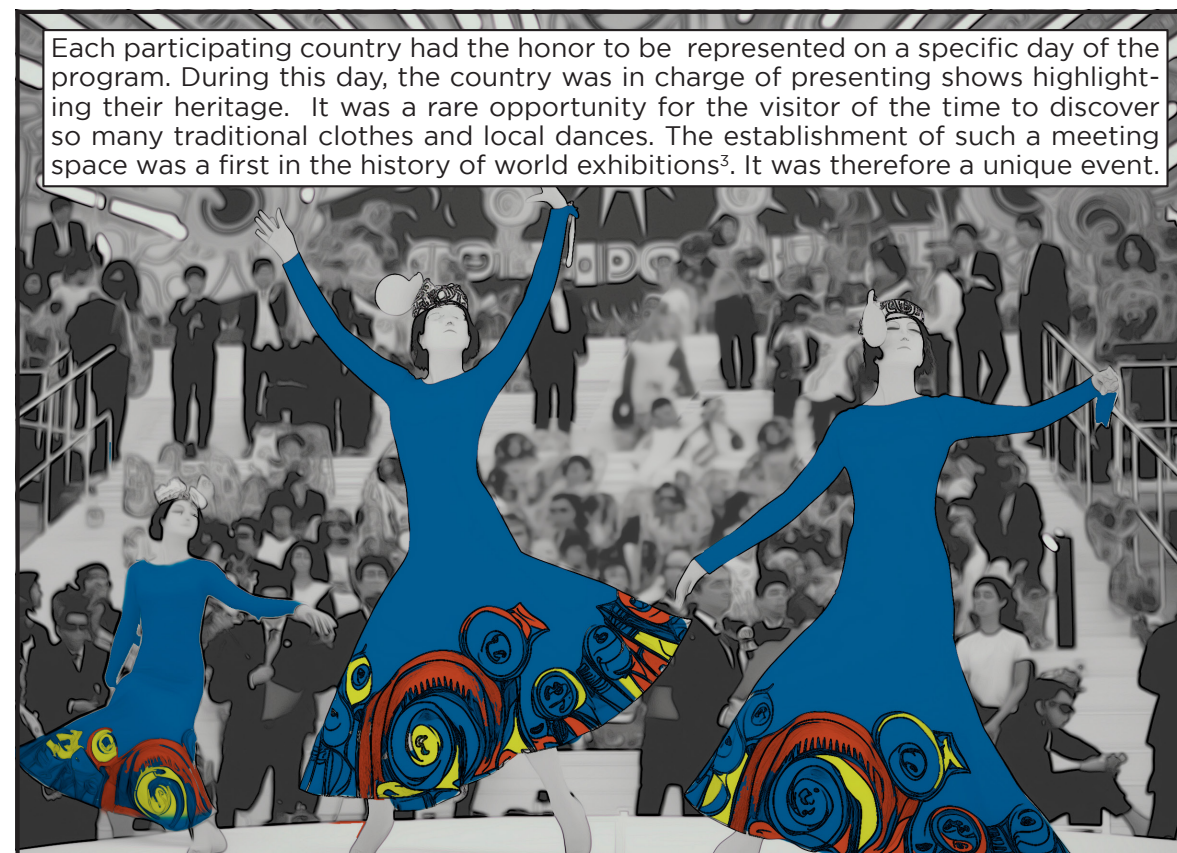
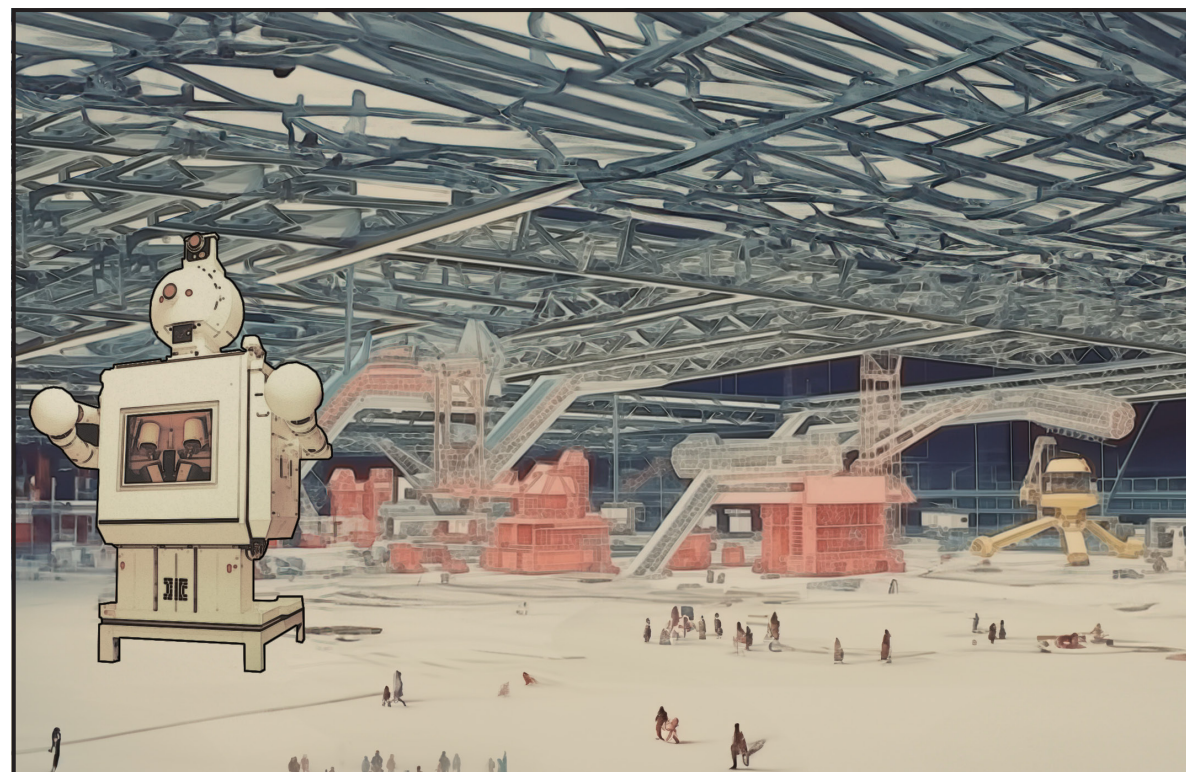
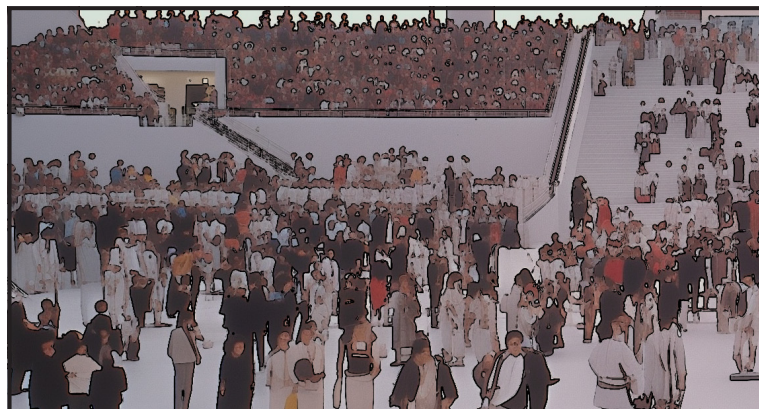


Welcome back to the festival plaza located in the center of the Symbol Zone. During this part of the visit, we will talk about this square and the various activities that took place there under the gaze of the “tower of the Sun”, this huge sculpture serving as an icon for the exhibition.

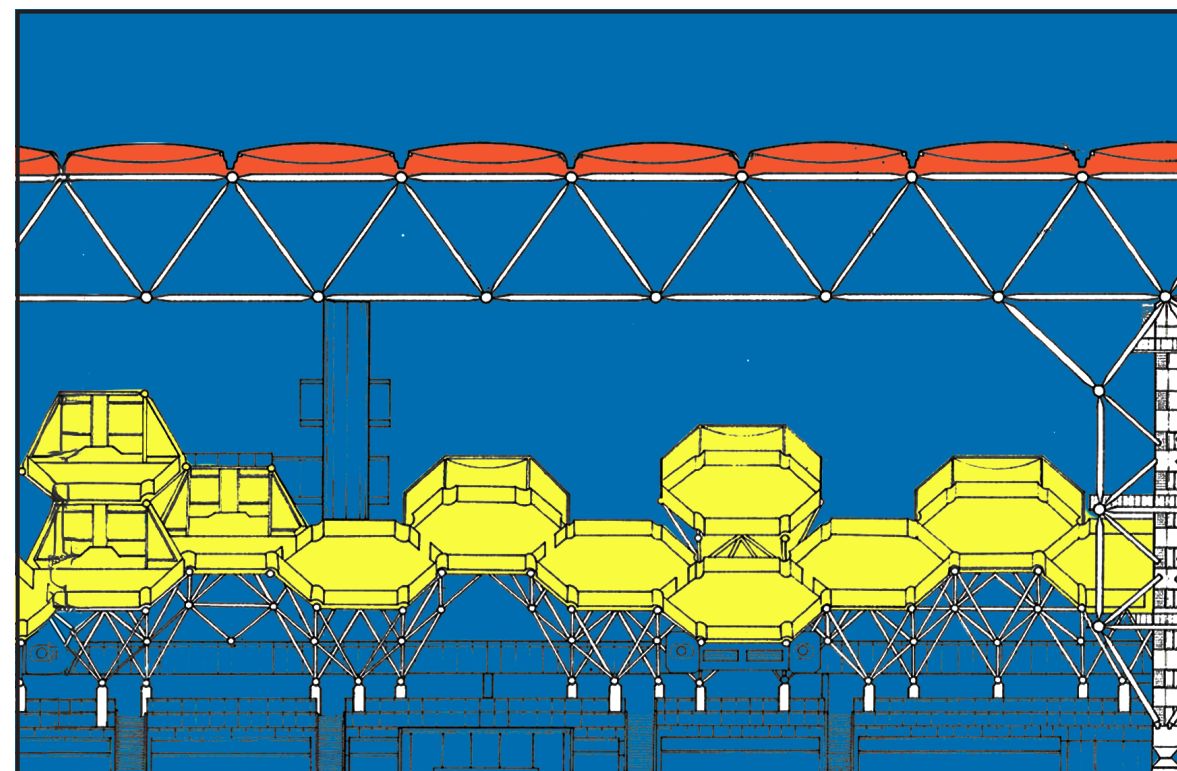


Next, we'll look at the “Big Roof”, the gigantic metal structure you're standing under. This area plays a major role in the exhibition and the architectural advances it promotes. Its realization is representative of the desire that we architects had to transform our dreams into reality, by building for real the megastructure we imagined for the city of tomorrow.

This place can be considered as the cultural center of this futuristic city. Covering an area of 108m by 291m¹, this place hosted various events with the aim of celebrating the meeting between the different cultures of the participating countries. These included dance performances and speeches about world peace and the latest economic and technological advances².

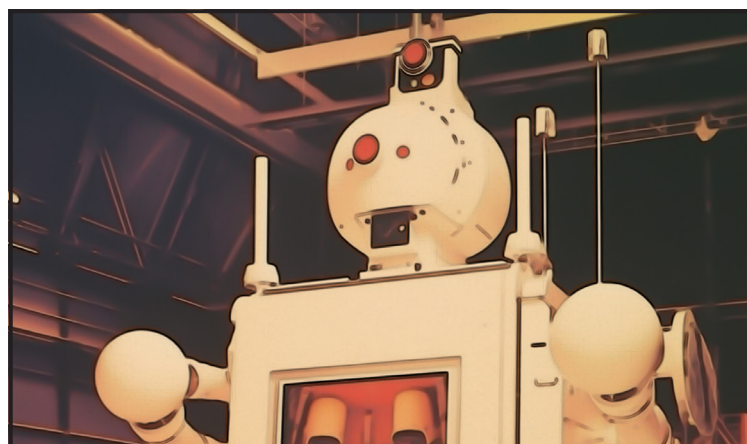


Each participating country had the honor to be represented on a specific day of the program. During this day, the country was in charge of presenting shows highlighting their heritage. It was a rare opportunity for the visitor of the time to discover so many traditional clothes and local dances. The establishment of such a meeting space was a first in the history of world exhibitions³. It was therefore a unique event.

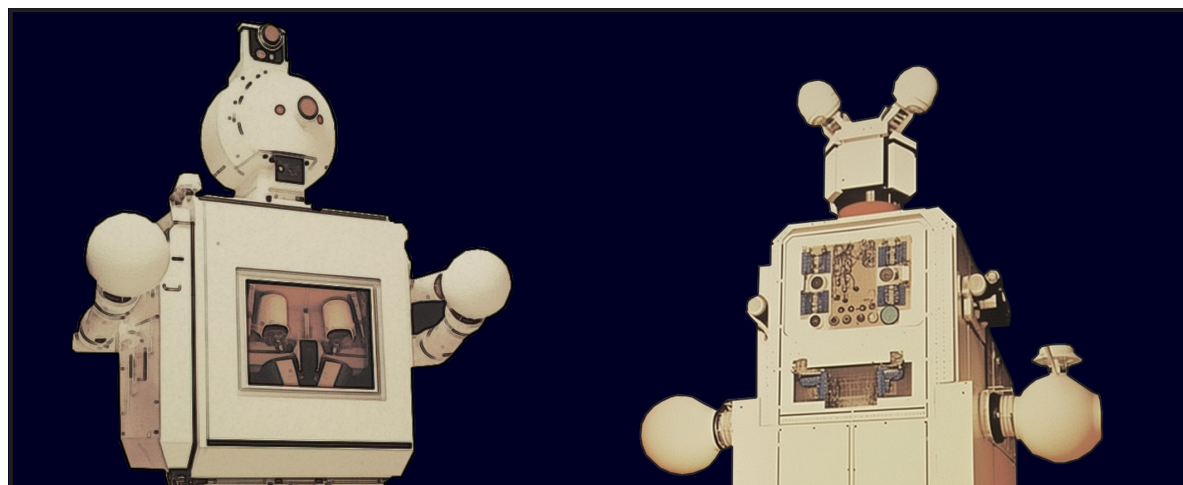


The spectators were placed on the sides of the stage, in bleachers whose metal structure matched that of the roof located at a height of 37m⁴. This roof partitioned the space, acting as a barrier against the weather and the view of the sky. Thus, this space took the form of a gigantic artificial environment. According to historian Hans Ulrich Obrist, this space was the first cybernetic environment ever created⁵.

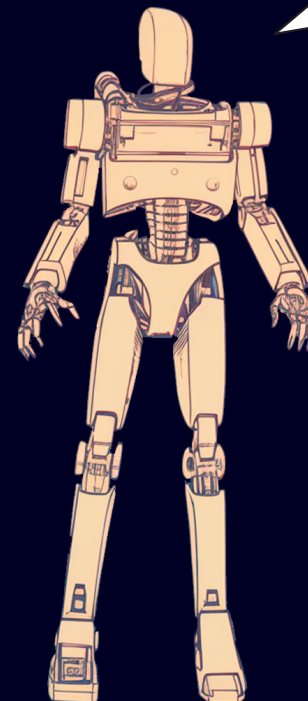
When there were no shows, this area was enlivened by installations that could be visited. Visitors could for example enter inside the “tower of the sun”. This structure designed by designer Taro Okamoto, symbolizing the themes of progress and harmony for humans. Inside, there was a strange environment marked by a skylight and abstract sculptures⁶.



In addition to the tower, two huge robots measuring 20m in height were designed by Arata Isozaki. These were placed in the square, adding a cybernetic touch to the space. They were huge structures that visitors could climb into. These robots are perfect examples of what Kurokawa explained in his article “Capsule Declaration” when he explained that technology would become the environment in which humans live⁷.



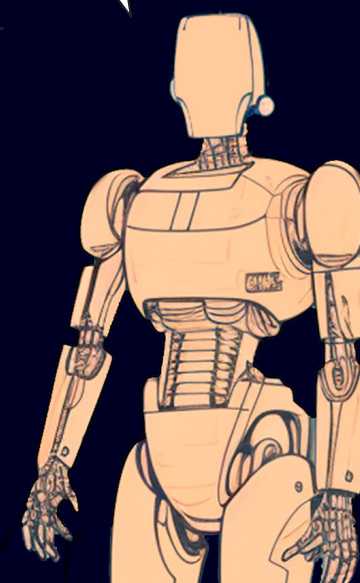
Making this cybernetic space a place of festivity and meeting was a strong message to put forward the idea of technology will lead to a peaceful world. This festival plaza is therefore representative of the techno-optimistic idealism that the exhibition puts into it.



In addition, this area highlights the importance that Mr. Tange brought to symbolism. The gigantic size of this space and the presence of the “Tower of the Sun” at its center made the festival plaza an imposing mark in the exhibition territory. Bringing to the fore the big roof and its powerful structure seeking to revolutionize the design of the urban fabric.

However, the dimensions of this space and its facilities were such that human beings did not seem to be adapted to it. Indeed, rising 37m above the ground, the roof could seem disconnected from the events that were happening below it. Moreover, when there was no show, despite the presence of the robots and the “tower of the sun”, the square seemed to be a vast expanse devoid of function⁸.

This phenomenon is symptomatic of the utopian thinking of the period. Which tended to promote systems that could be applied on a very large scale. Without giving enough attention to the smallest components. These futuristic imaginaries often had problems of scale.



The creation of the big roof covering the Plaza festival was a major challenge for me and for the Metabolist architects, it was a question of applying our theories and creating an authentic megastructure that would serve as an example for the cities of the future.

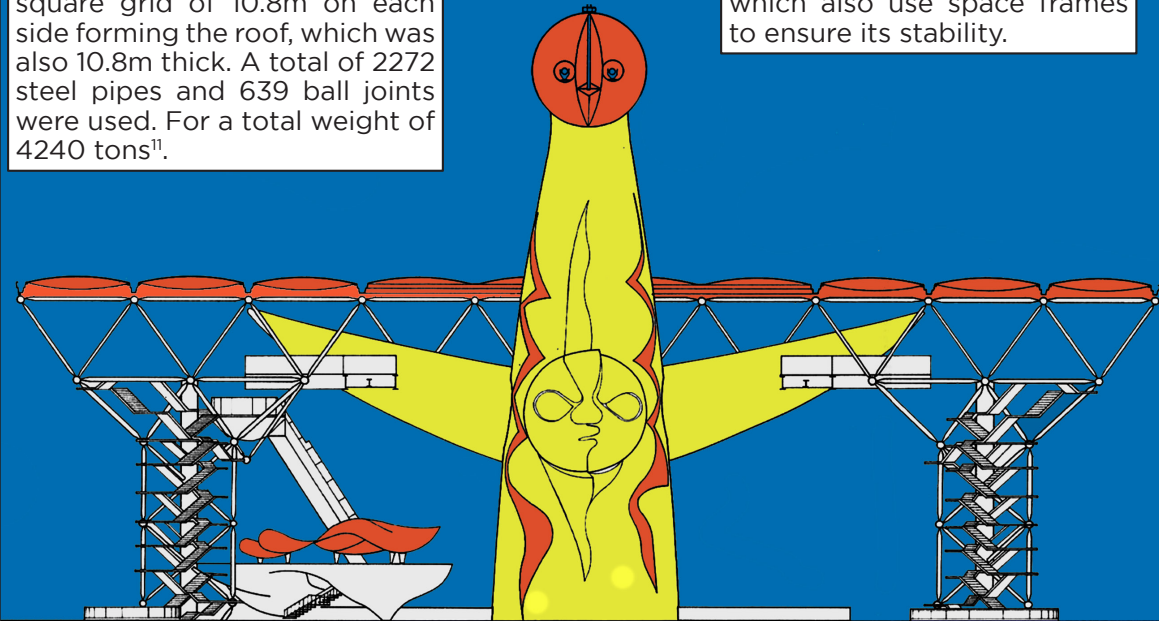
One of the challenges of this production was therefore to affirm the credibility of this imaginary that we were trying to realize. To do this, the building had to meet the criteria of adaptability and freedom that we attributed to the city of the future. The structure also had to have a dynamic and homogeneous look⁹.



The use of space frame, a construction system put forward by the research of architect and engineer Buckminster Fuller, seemed to us to be a wise choice because it made it possible to create flexible, economical structures representative of the industrial society in which the inhabitants of the future would live. This is a three-dimensional structural system based on the use of steel pipes jointed using cast-iron ball joints. The whole forms a rigid mesh capable of supporting large loads¹⁰.

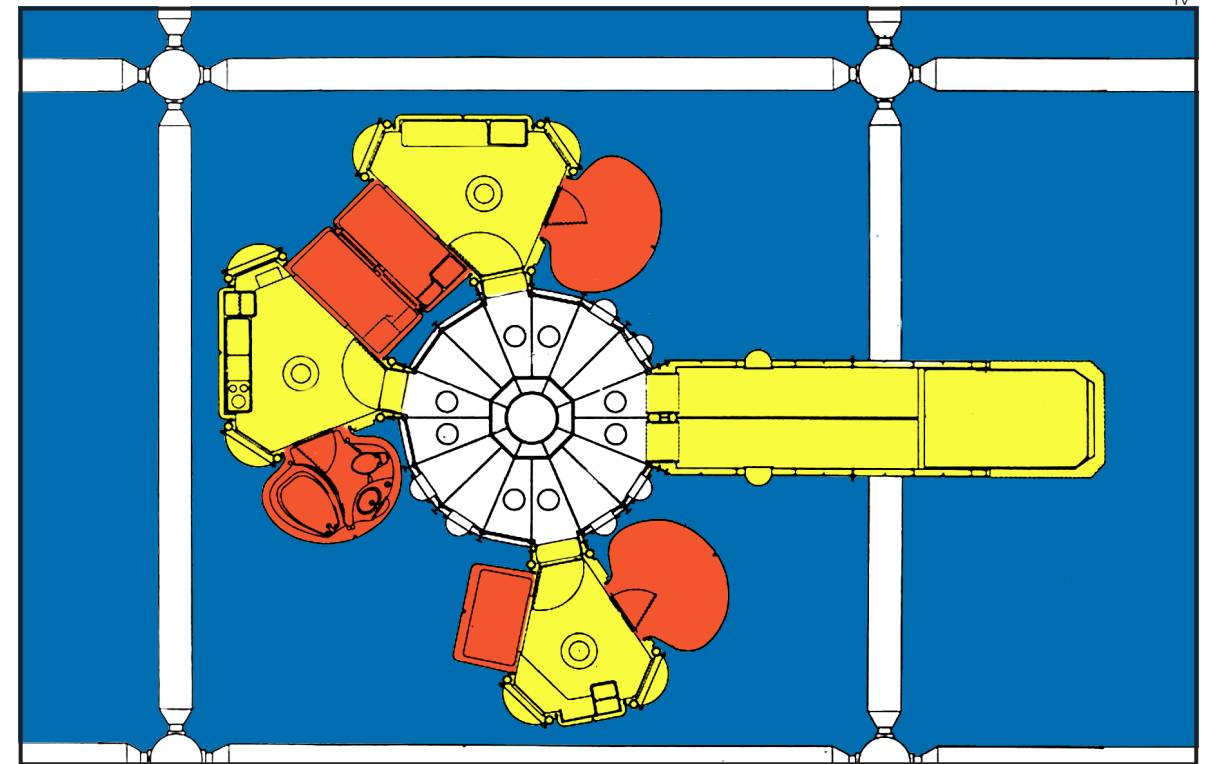
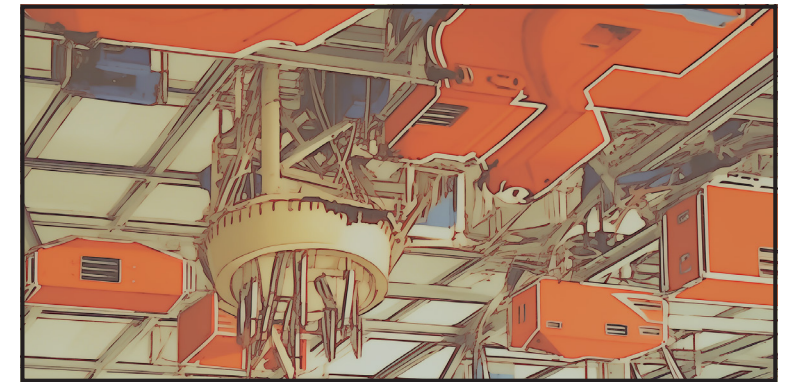
In this specific case, the diagonal elements used formed a square grid of 10.8m on each side forming the roof, which was also 10.8m thick. A total of 2272 steel pipes and 639 ball joints were used. For a total weight of 4240 tons¹¹.

The structure was held in place by six metal columns, which also use space frames to ensure its stability.



To protect the plaza festival from the elements and contribute to the creation of a human controlled space, the structure was covered with a translucent pneumatic envelope. It has been designed in such a way as to reduce the noise of the rain that had on it, which contributes all the more to this idea of environmental control¹².

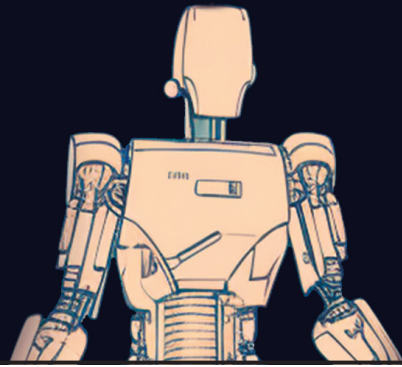
Finally, this structure was to serve as a support on which infrastructure was to be suspended, thus forming a capsule city. As part of the exhibition, various architects from around the world. Including the Metabolist group and Archigram¹³, have created a set of capsules forming a suspended residence representing life in a futuristic aerial city.



This capsule house was composed of a central core forming a circular corridor allowing access to the different living modules. These modules corresponded to a main room in the residence. This would allow the potential resident of the future to compose his home as he wishes, by choosing the number of bedrooms, living room or kitchen is wanted. Secondary modules, containing bathrooms or storages, were added to the main modules¹⁴. The entrance was made by a walkway to the central core, suggesting that several residences could be connected to form a larger one.

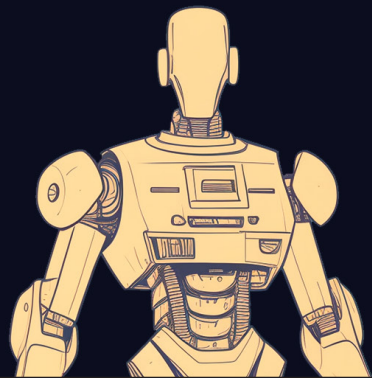


This capsule residence gave, as with the rest of the pavilions, a glimpse of what life might be like in capsule city. However, it was not a functional residence, the technical installations were not taken into account. In addition, public facilities were not represented on the big roof. It was therefore not possible to understand how these residential capsules would be connected with the rest of this hypothetical air city.



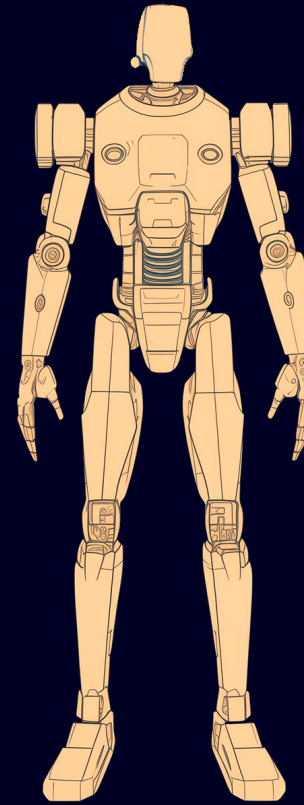
By bringing your architectural theories to life, I imagine you were able to draw conclusions about the feasibility of such a project. What can you tell us about the construction of the Big Roof?

Indeed, various hazards have made me to question the realization of such a system. I would say that the financial aspects have been a major problem in carrying out this project. In fact, although the structure was made with the help of standardized elements. The dimensions of the roof were such that the loads it undergoes have been much higher than originally imagined. To overcome this, it was necessary to use large diameter profiles, which greatly inflated the price of the structure and made the structure far more imposing than I'd originally hoped¹⁵.



This problem was also due to the desire to make this structure a support for a capsule city. Since the capsules had to be able to be moved freely on the roof, the structure had to be dimensioned as if maximum load were present all over its surface¹⁶.

In addition to the economic problems, there were difficulties during the assembly. The structure had to be assembled on the ground and then raised from one piece to the air before placing the pillars under it. This was not in the direction of an adaptive structure that can be assembled and disassembled at will. Similar problems arose when it came to lifting the suspended installations, some of which had to be dismantled and then reassembled in the air¹⁷.



These problems you encountered show that you were still far from being able to apply such a concept at the territorial level. The difficulty you encountered in hanging the capsules testifies to the fact that, in the end, the freedom of movement that you hoped to give to the inhabitants of this city would be very difficult to achieve.

This is comparable to what happened later with the Nakagin capsule tower. This was supposed to allow the various residential modules to be moved freely on its structure. But in the end, it was far too much of an effort to be made, resulting in a building that was just as static as the others.

Despite everything, I remained optimistic about the development of this structure. I thought that this could, at the end of the exhibition, be preserved to serve as a starting point for a city developing from the exhibition site¹⁸.

Unfortunately, in the end, the structure was dismantled, only the "tower of the sun" and part of the structure were preserved. The Big roof ended up as the other pavilions.



Notes

1. *The Japan Architect Vol 164*, p.53
2. Lin, *Kenzo Tange and the Metabolist Movement*, p.53-55
3. Ibid, p.56-59
4. Ibid, p.53-55
5. Shaffer, 'Incongruity, Bizarreness, and Transcendence', p.43
6. The Official Site of the Tower of the Sun Museum , 'About Expo '70 in Osaka'.
7. Shaffer, 'Incongruity, Bizarreness, and Transcendence', p.46
8. *The Japan Architect Vol 164*, p.146
9. Ibid, p.31
10. Ibid, p.51
11. Ibid, p.53
12. Ibid, p.55
13. Lin, *Kenzo Tange and the Metabolist Movement*, p.219
14. Kurokawa, *Metabolism in Architecture*, p.98
15. *The Japan Architect Vol 164*, p.51
16. Ibid.
17. Ibid, p.53
18. Lin, *Kenzo Tange and the Metabolist Movement*, p.215

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I. The Japan architect : Special edition EXPO'70. *Festival Plaza*. 1970. Photograph, p.58
II. The Japan architect : Special edition EXPO'70. *Festival Plaza Section*. 1970. Drawing, p.77
III. Ibid.
IV. The Japan architect : Special edition EXPO'70. *Capsule House*. 1970. Photograph, p.38
V. Metabolism in architecture. *Capsule House Plan*. 1970. Drawing, p.98

CHAPTER 5

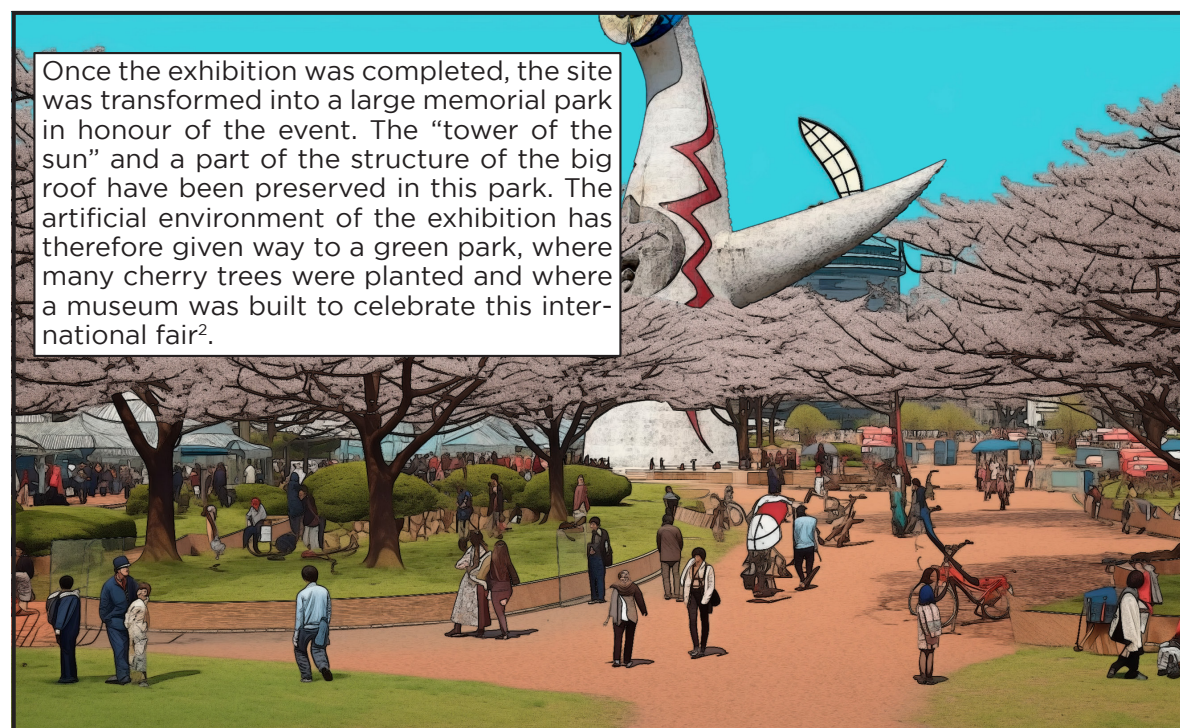
THE END OF FESTIVITIES



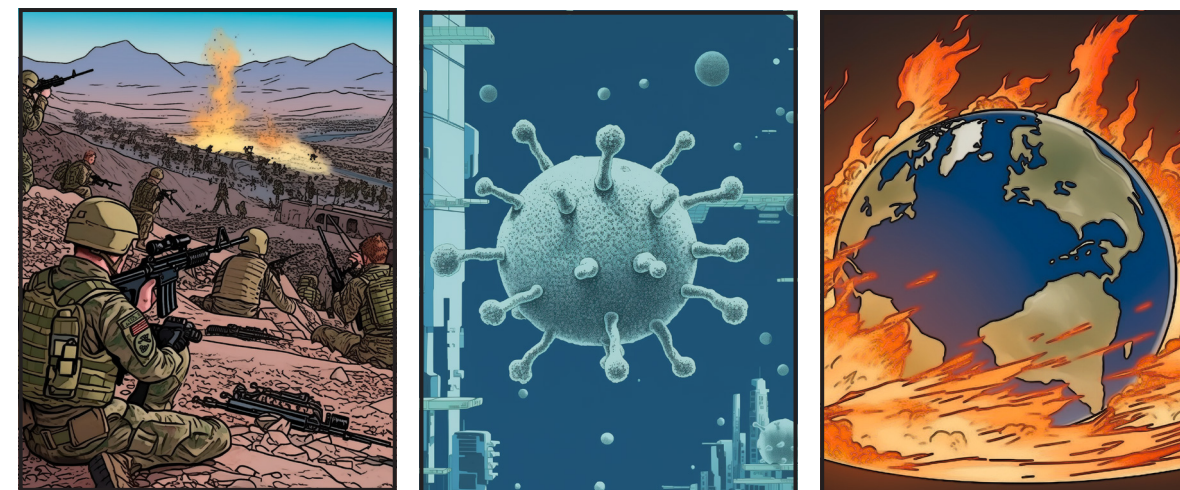
THE TIME CAPSULE



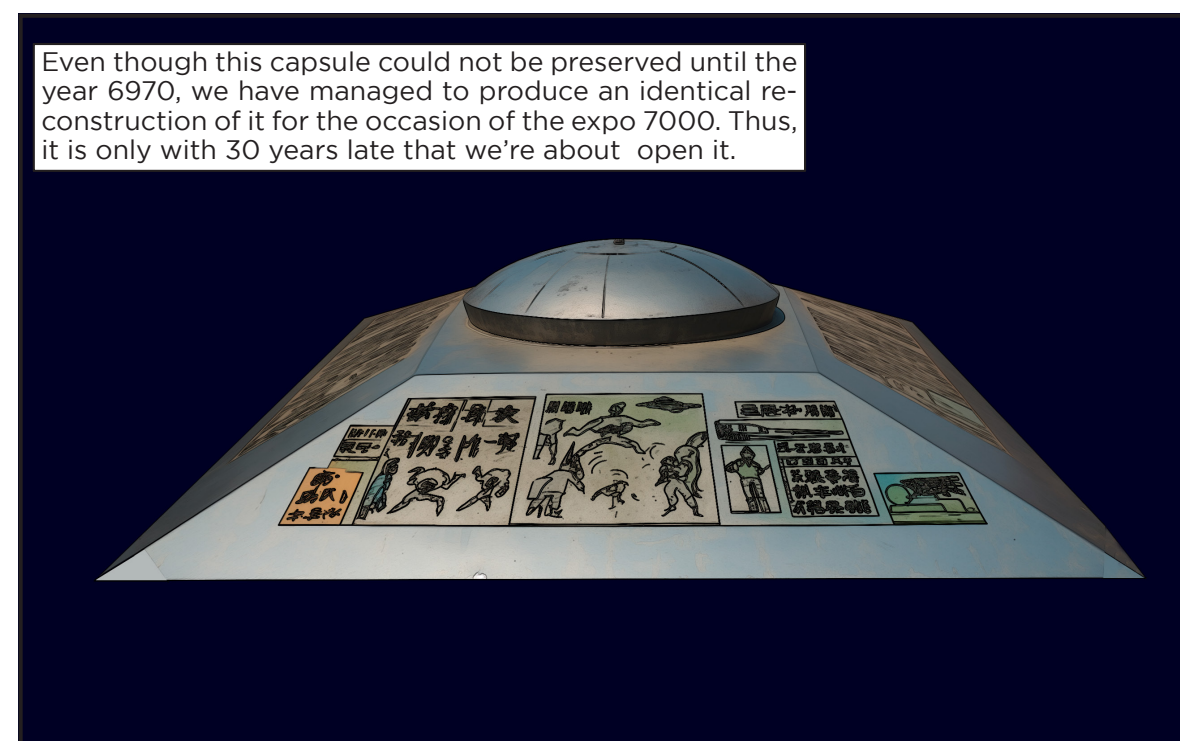
Indeed, during the period of preparation of the exhibition, a time capsule was designed to contain various objects and messages intended for the humanity of the future. It was a question of showing to people from the future various elements specific to the society of the 60s¹. By highlighting various technological objects, the goal was also to affirm to future societies that the 20th century was already a society of progress. This approach demonstrates once again that this exhibition was forward-looking and a celebration of the innovations of the time.



This is in this expo museum that the time capsule was placed. This was intended to be kept sealed for a period of 5000 years. The optimism shown by the exhibition organizers that such a capsule could be kept intact for such a long duration was partly indicative of the extreme confidence placed in the technology during the event. On the other hand, it was a question of reinforcing the message of peace conveyed by the exhibition by affirming that no war would come to destroy this capsule for the next 5000 years³.



Unfortunately, these hopes for peace have turned out to be the manifestation of naïve idealism....



The capsule contained various objects related to the Japanese culture of the 60s, there were many clothes, fabrics and everyday objects such as watches, sandals or eyeglasses. Several electronic objects have also been placed there. These included a recorder, a radio or a portable television. On top of that, there were miniature versions of a car, a train, and an airplane that showcased the transportation systems of the time. These are just a few examples of a large list of objects in the capsule. These were classified into categories ranging from medical objects to objects related to the conquest of space to synthetic materials⁴.



What struck me more than the objects in the capsule were the letters and drawings that had been placed in it. These were an opportunity for those to depict the way they imagined the future while trying to describe the times in which they lived.

MEETING THE EXPECTATIONS OF THE FUTURE

The age we live in is sometimes referred to as the age of nuclear energy or the age of space travel, but in fact we are merely on the threshold of major developments in these fields. We are still investigating the potential of nuclear energy and making our first exploratory journeys into space.

This is an exciting era in which systematic research promises the answer to many of the problems facing mankind. It is our hope that you, the people of the future, will understand not only the way we live now but also the particular spirit of the year 1970 AD.⁵

Umejima Tadashi
President, The Mainichi Newspapers

In this letter, Mr. Tadashi explains that his era can be defined as the era of nuclear power and space travel. With a focus on these new discoveries. He expressed his beliefs that these advances would solve many of humanity's problems. This letter is therefore representative of the optimism characteristic of that time.

WITH BELIEF IN ETERNAL PROSPERITY

Today, we have a high level of material civilization, as witnessed by the great advances in electronics and the development of so many labour-saving products. But even so, there are still many people on this earth who are plagued by war and poverty; many people are now asking whether we have failed to pay sufficient attention to spiritual prosperity and sincere thought is being given to the improvement of the quality of life for everyone.

No human being alive in 1970 AD can possibly expect to be on hand in 5,000 years to greet the people of the future, but we hope that through the records and objects in the capsule we can demonstrate not only the practical aspects of life today but also how we have tried to create a humanitarian and liberal-minded society. We hope that our descendants will have the wisdom to learn from our mistakes and build a society based on mutual understanding, trust and the love of mankind.⁶

Matsushita Masaharu
President, Matsushita Electric Industrial Company

The letter of Mr. Masaharu shows a more nuanced speech. He explains that despite these advances, humanity still faces many problems. Moreover, it does not seem to assert certainty as to the resolution of these problems. By not extolling the merits of the technology, this letter reflects the fact that there were also many doubts about its use. This illustrates the fact that by setting up such an imaginary highlighting the benefits of technology, the exhibition sought to convince this more suspicious part of the population.

I also imagine there will be no school like the one I go to every day. Teachers will teach you from a television screen whenever you push the button for the subject you want to study. You will be able to move up to higher grades at any age if you pass the examinations and plan and carry out your own education. I suppose that will be the way of studying in your age.

Today, scientists across the world are studying hard to find out the secrets of outer space and the moon. In December 1968, three Americans circled the moon for the first time and came back to earth. Everybody was surprised and happy. There was great excitement. You're surprised and saying, "how childish", aren't you? I believe there will be space cities and undersea cities in your age. You will say "I'll visit my uncle in the undersea city" and start out on a moving road. How fantastic!⁷

Rin Masayuki
4th grade, Itabashi-ku Oyama Primary School, Tokyo

The messages left in the capsule by younger people were all the more revealing of this futuristic imaginary rooted in the mentalities of the time. An imaginary that was not so different from the one that endured during the later centuries. In her letter, the young Rin Masayuki highlights her enthusiasm for the idea of being able to travel into space. A fantasy that has become almost stereotypical of science fiction. In addition, Rin imagined studies in the future being done remotely across the screen, which turned out to be a reality during the pandemic period that affected humanity in the year 2019.

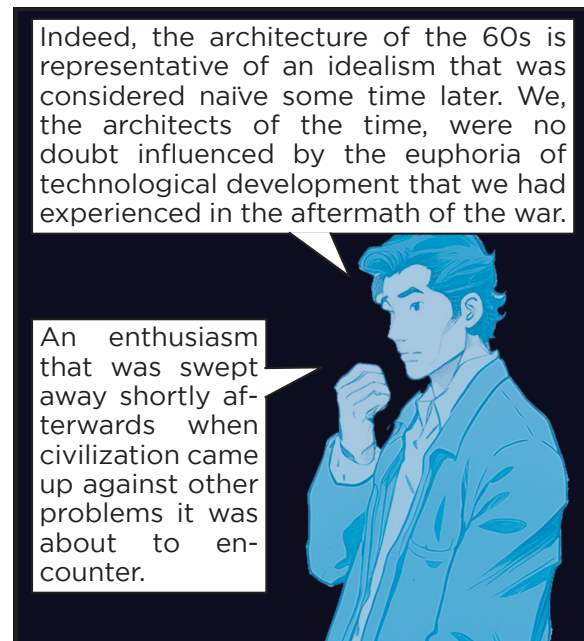
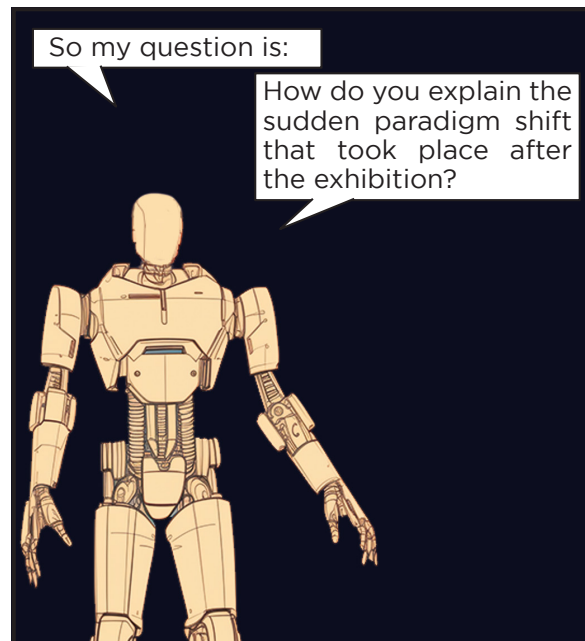
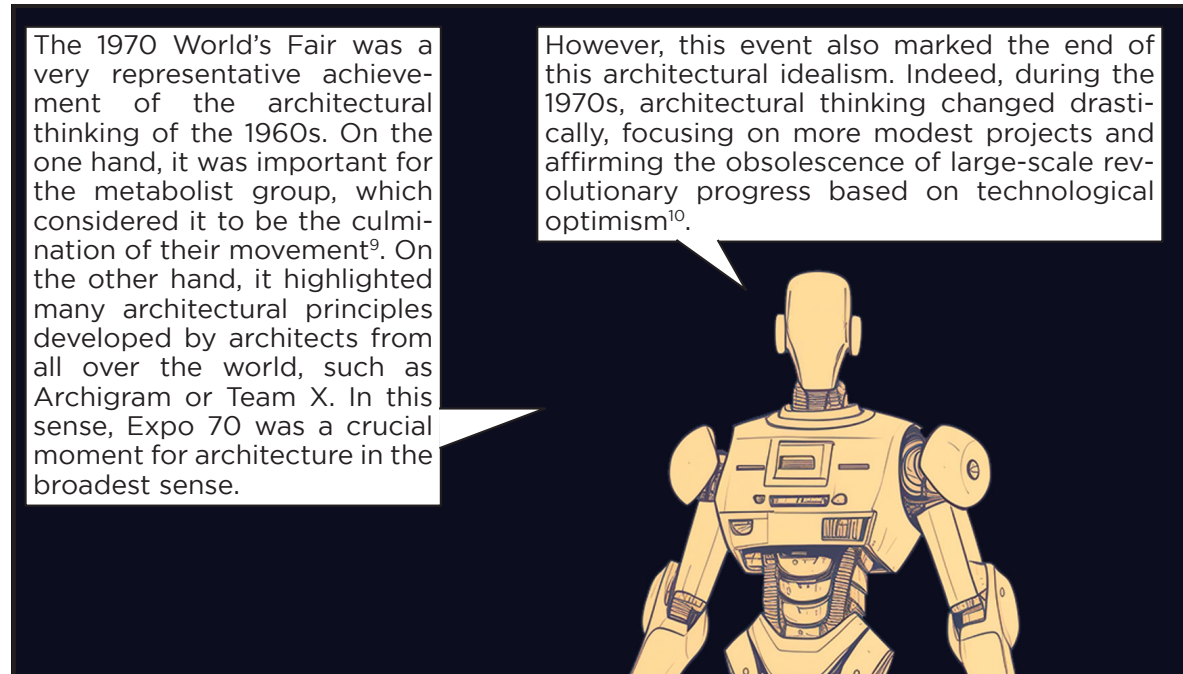
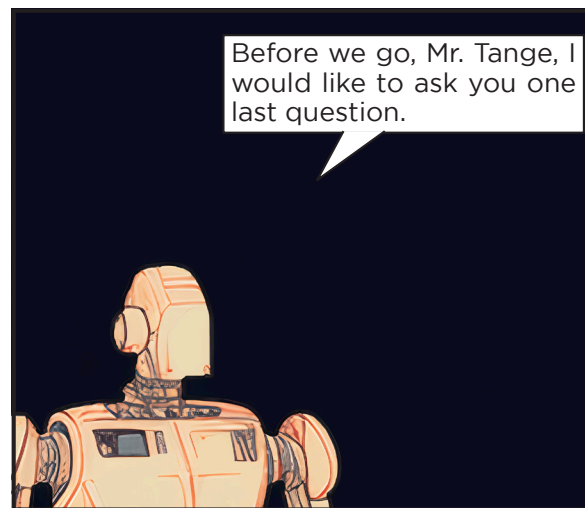
How are you, people of 5,000 years hence? I am boy living in the 20th century. In today's world, everybody is dreaming about and yearning for the world you are living in. Some say, "I wish I could have been born 5,000 years later." What is lifelike in your world? I suppose the world will certainly be united and convenient with everybody using the same language and speaking freely with each other.

I suppose the means of transportation will be totally different from those at present. Electric material transmitters which can send anything anywhere in an instant will be in practical use. Their energy will probably be sent from the sun through a pipeline.

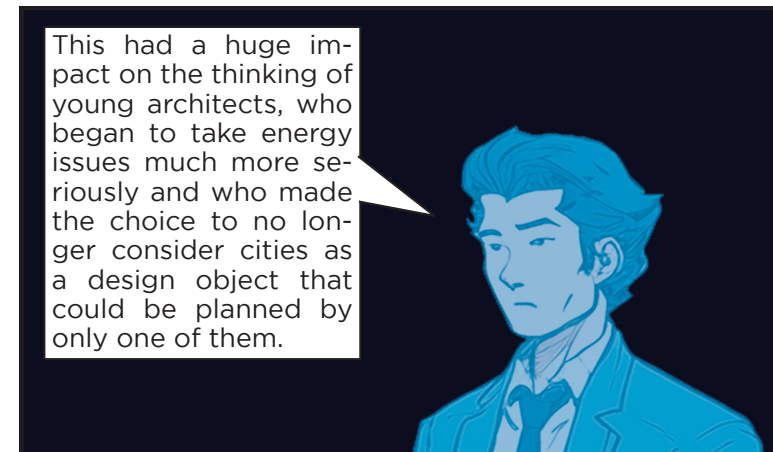
At home, you will be just sitting in a chair with a machine attached to your head. If you want to do anything, just think of it, and the machine will do it. Children will be able to play any games in any era they like with material transmitters and time machines. Children will be happy about not having to study while they are awake. Machines will teach them while they are sleeping, and there will no longer be homework and school tests.⁸

Harima Hideki
grade, Osaka City Aioi Junior High School, Osaka

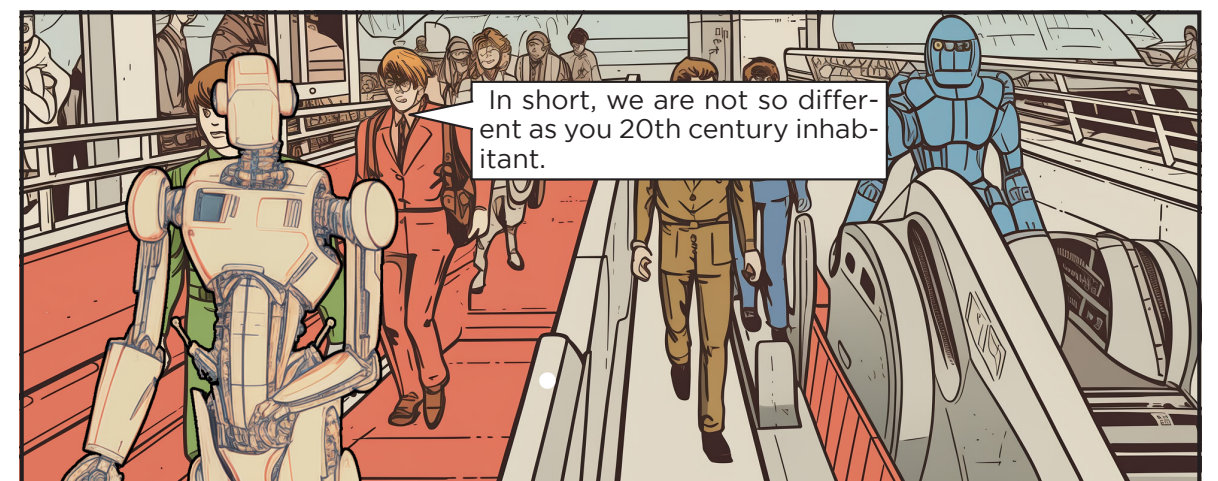
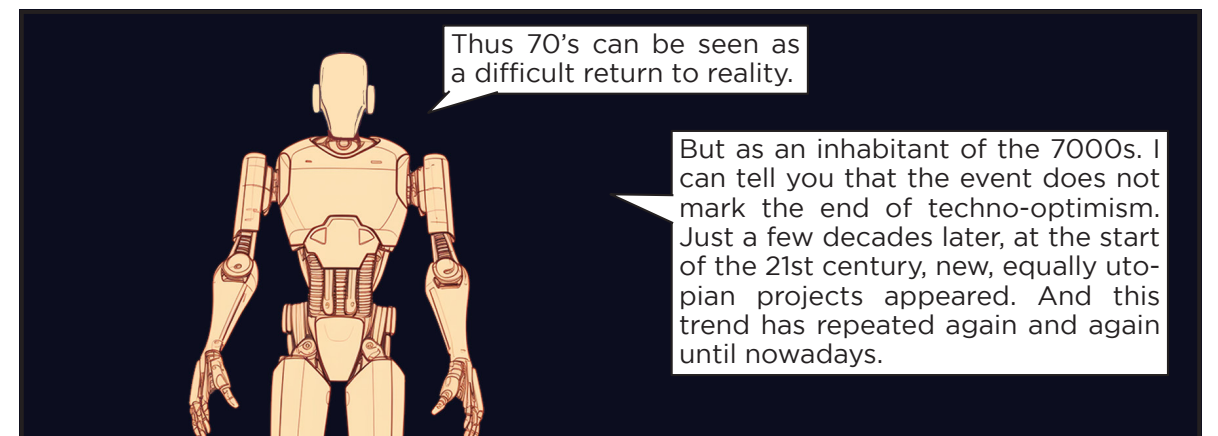
Rin's letter shows that some fantasies representative of this imaginary have turned out to be real topics in the space of fifty years. The young Harima Hideki confirms this by evoking in the letters the phenomenon of globalization or the use of virtual reality headsets. These letters reveals that this futuristic imaginary has not disappeared with time. It has only evolved and even allowed some fantasies to come true.



One of the major problems putting an end to this technological optimism occurred in 1973, it was an oil crisis. This energy crisis had, in a short period of time, cut off the momentum of economic growth in the various countries. Japan had been particularly hard hit by this crisis. Having based its economy on industry and technological developments, the country quickly realized that innovation was far from being a reliable investment¹¹.



The concept of a mega-structure had been criticized. Architects understood that it was not feasible to base urban planning on permanent structures¹². Indeed, although the metabolist group saw such a structure as a way to make our cities adaptable. This concept, only made these utopian cities prisoners of a rigid system, thus doing the opposite of what they had been chosen for.



Notes

1. Site of Panasonic global :‘Time Capsule EXPO ’70’.
2. The Official Site of the Tower of the Sun Museum , ‘About Expo ’70 in Osaka’.
3. Eckersall, *Performativity and Event in 1960s Japan*, p.107
4. Site of Panasonic global :‘Time Capsule EXPO ’70’.
5. Site of Panasonic global :‘Time Capsule EXPO ’70’.
6. Ibid.
7. Site of Panasonic global :‘Time Capsule EXPO ’70’.
8. Ibid.
9. Lin, *Kenzo Tange and the Metabolist Movement*, p.200
10. Ibid, p.227
11. Jaquet and Souteyrat, *L’architecture Du Futur Au Japon : Utopie et Métabolisme*, p.18
12. Lin, *Kenzo Tange and the Metabolist Movement*, p.228

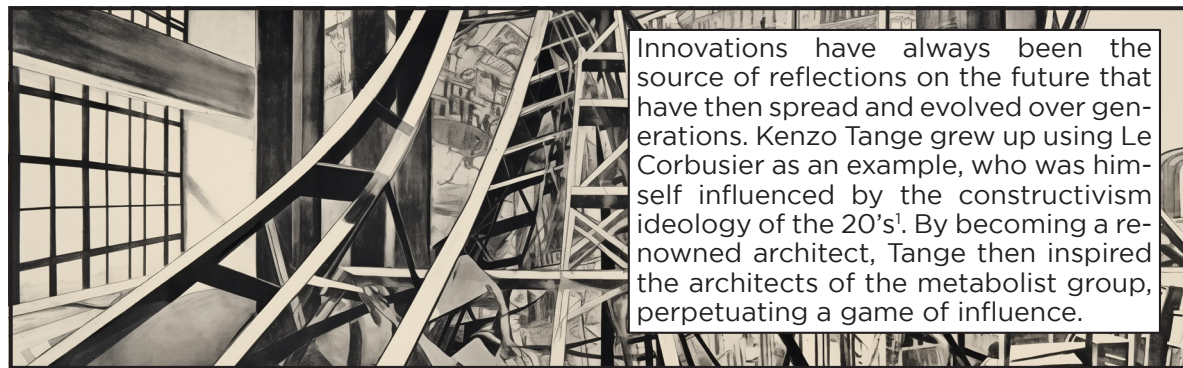
Images used in illustrations

I. *Expo 70 Commemorative Parc*. Photograph. <https://www.japan-guide.com/e/e4029.html>.
II. Ibid.
III.Plusminus. *Expo 70 Time Capsule*. 2007. Photograph. https://commons.wikimedia.org/wiki/File:EXPO70_TimeCapsule.jpg.

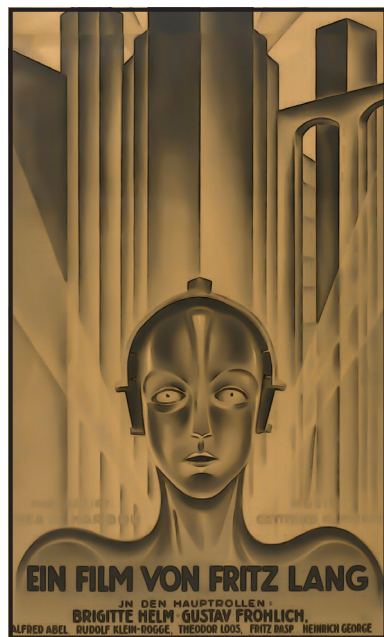
CHAPTER 6

CONCLUSION



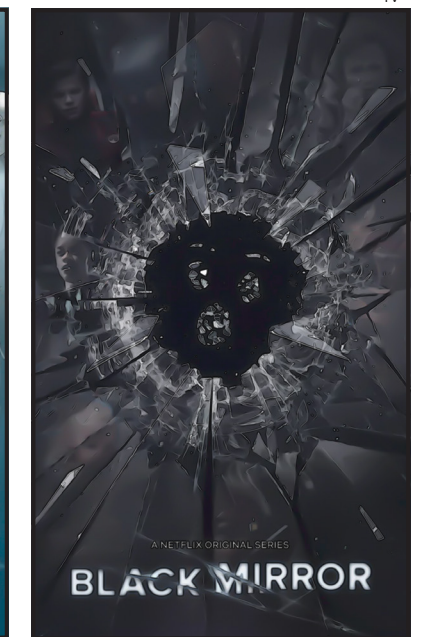
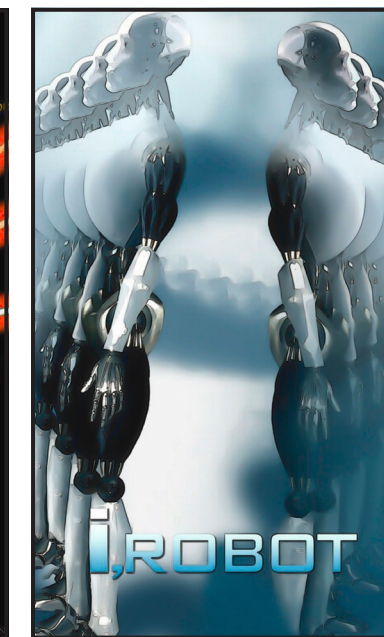
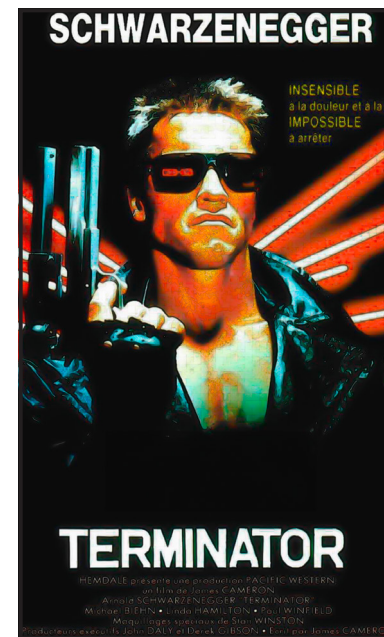
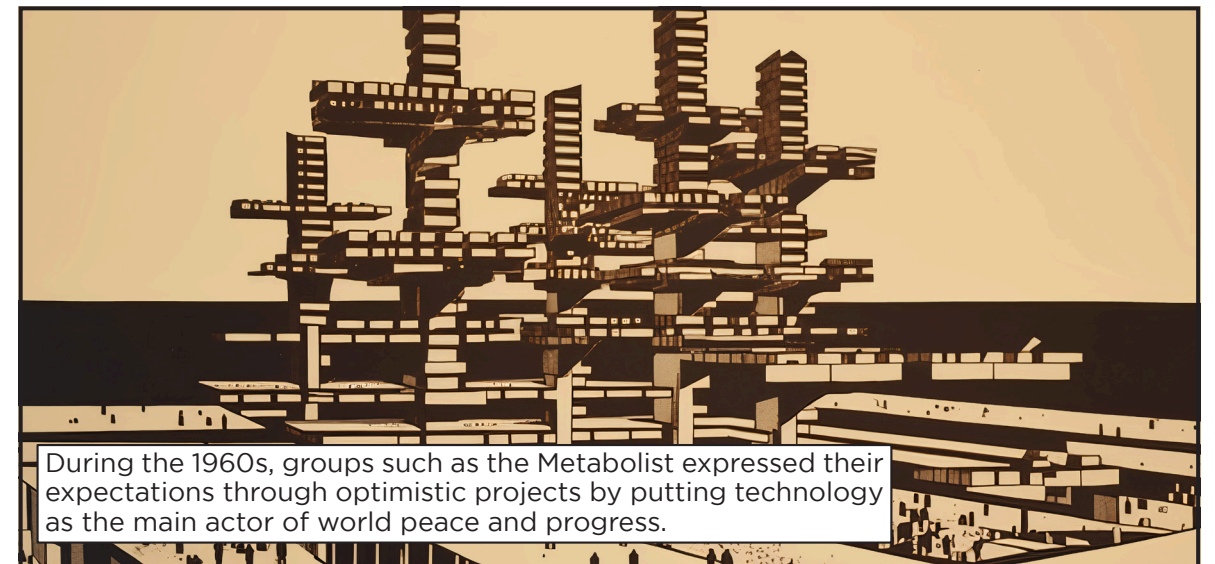
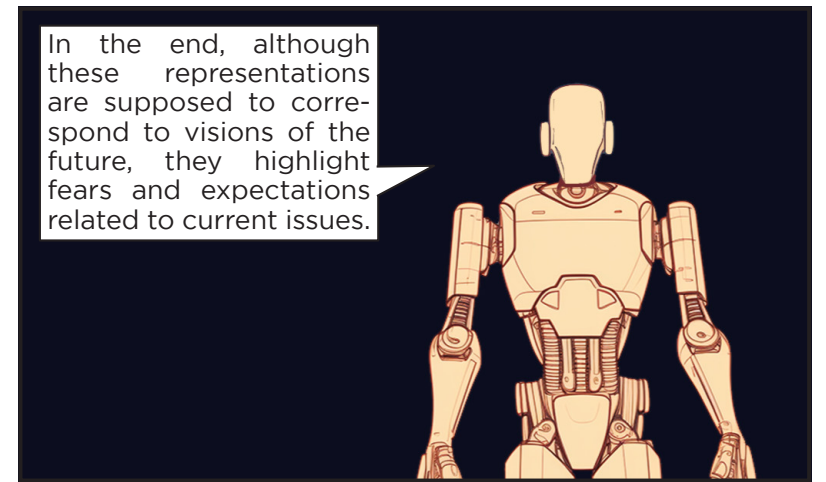


Cultural works, such as those from cinema or comics, through their ability to reach a wide audience, have greatly contributed to the spread of these utopias. These works have made it possible to create a graphic identity characterizing these visions of the future. By being representative of the imaginary specific to the period in which they were created. These highlight the issues relating to the society in which they were born, thus taking on a historical value².



Since they reach a wide audience, these works of science fiction play a role in the imagination of young architects, artists and other agents of change. There is therefore a mutual influence between these cultural works and utopian architectural projects such as those developed by the Metabolist group³.

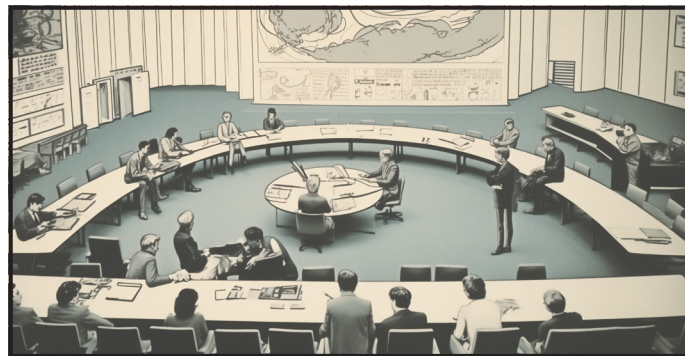
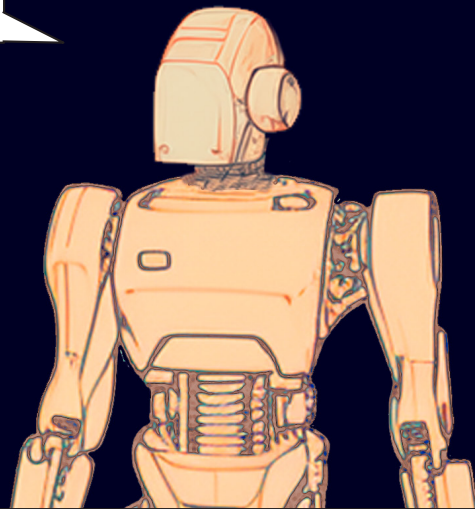
Of course, both are also very much influenced by the latest events happening in the world. During the 1960s, the conquest of space, war and the proliferation of the automobile gave rise to an imaginary world centered on the creation of artificial environments, adaptability and mobility. Later, energy and ecological issues led to the imaginary of a green architecture that makes use of organic forms.



In the decades that followed, a succession of works emerged that promoted a more negative image of technology. These were representative of a growing fear of technology⁴.

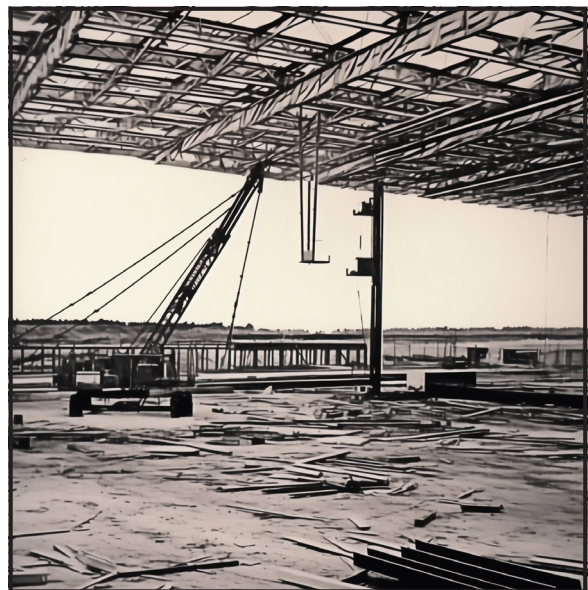
In both cases, this has led to much reflection and debate, demonstrating the importance that these representations of the future have for society.

In this sense, although today the 1970 World's Fair can be considered a caricatured and naïve representation of the technological optimism of its time. This made it possible to make architects' dreams come true in the space of 6 months, thus highlighting the various social issues they were discussing.

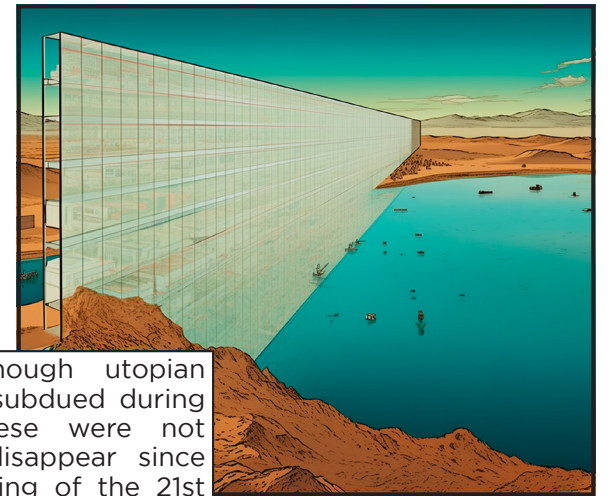


The article "A passage threw the Dys-topia of Expo70" is a perfect example of the ability of utopias to create debates. Thanks to this event, Takabumi Sasaki was able to highlight the fact that this futuristic imaginary could also be used as a propaganda tool in the service of political or economic interests. Expo 70 was also criticized as representative of the development of a consumerist society.

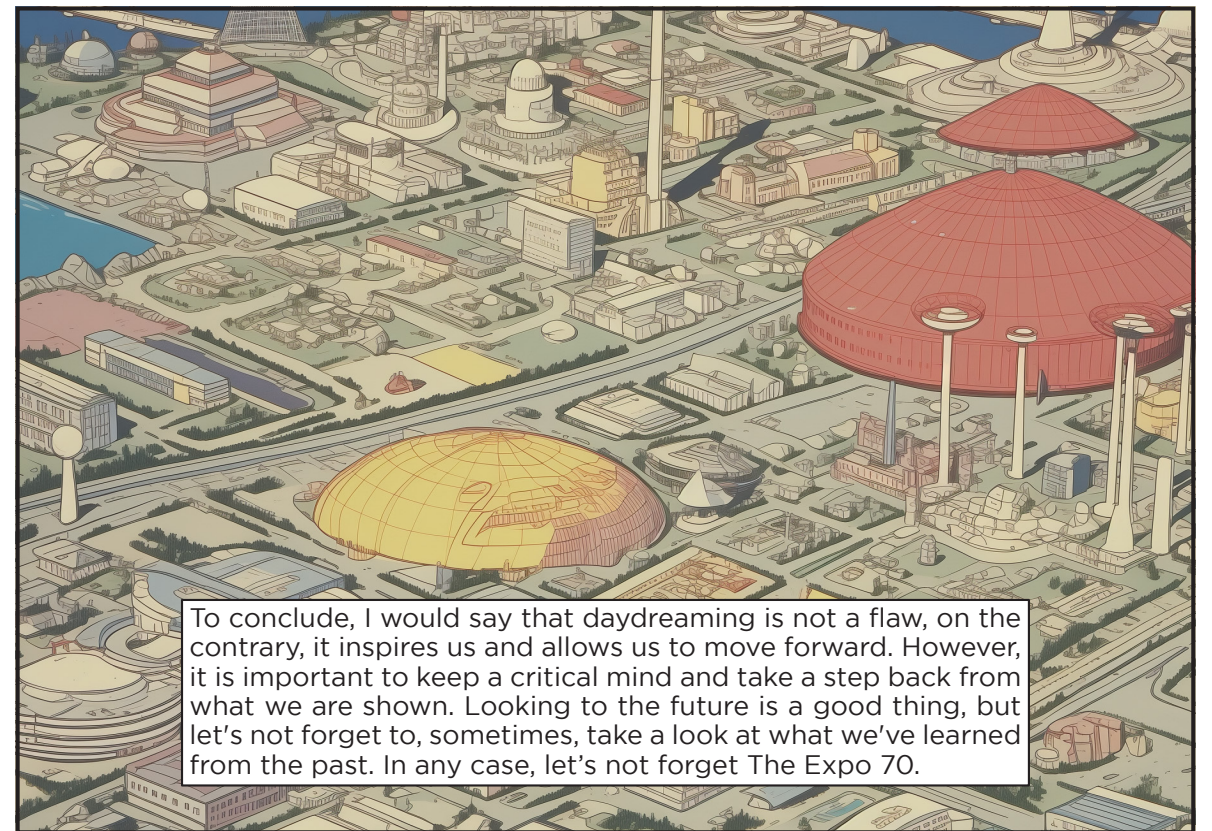
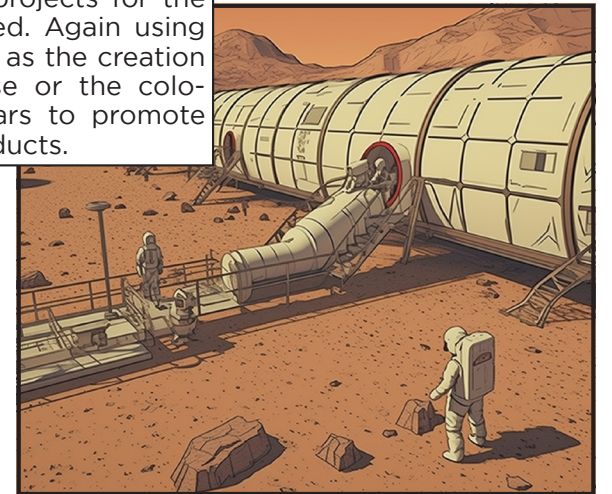
Moreover, by allowing these utopian architects to put their thinking into practice, Expo 70 allowed these architects to confront the reality on the ground. Highlighting many practical and economic constraints that hide behind an utopian thinking that is often very simplistic.



During the 1970s, when society faced an energy crisis, Expo 70 became an example not to be followed, showing once again its importance for the development of architectural thought⁵.



However, although utopian thinking was subdued during the 70s. These were not doomed to disappear since at the beginning of the 21st century, new projects for the future appeared. Again using promises such as the creation of a metaverse or the colonization of Mars to promote consumer products.



To conclude, I would say that daydreaming is not a flaw, on the contrary, it inspires us and allows us to move forward. However, it is important to keep a critical mind and take a step back from what we are shown. Looking to the future is a good thing, but let's not forget to, sometimes, take a look at what we've learned from the past. In any case, let's not forget The Expo 70.

Notes

- 1. Lin, *Kenzo Tange and the Metabolist Movement*, p.196
- 2. Bozzetto, *La science-fiction*, p.18
- 3. Lin, *Kenzo Tange and the Metabolist Movement*, p.109
- 4. Bozzetto, *La science-fiction*, p.52-53
- 5. Lin, *Kenzo Tange and the Metabolist Movement*, p.229

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- I. Neudamm, Heinz Schulz. *Metropolis*. 1927. movie poster. <https://www.moma.org/collection/works/88251>.
- II. *2001 : Space Odyssey*. 1968. movie poster. <https://www.imdb.com/title/tt0062622/>.
- III. *Interstellar*. 2014. movie poster. <https://www.scifi-universe.com/films/13674/interstellar/image/44787/affiche-us-mcconaughey>.
- IV. *City in the Air*. n.d. photograph. <https://www.archdaily.com/912738/the-city-in-the-air-by-arata-isozaki>.
- V. *Terminator*. 1985. movie poster. <https://www.allocine.fr/film/fichefilm-309/photos/detail/?cmediafile=21951304>.
- VI. *I,Robot*. 2004. movie poster. <https://www.cinematerial.com/movies/i-robot-i343818/p/prensb9y>.
- VII. *Black Mirror*. 2011. movie poster. <https://www.allocine.fr/series/ficheserie-10855/photos/detail/?cmediafile=21512769>.

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worldfairs.info. “Pavillons - Expo Osaka 1970”, n.d. https://www.worldfairs.info/expolistepavillons.php?expo_id=18.



In a distant future, visitors are going to Expo 7000, an event to commemorate the World Fair that took place 5030 years earlier. Upon arrival, they will be greeted by a digital reconstruction of the Japanese architect Kenzo Tange, who was in charge of the masterplan of the exhibition. With him, visitors will discover how, millennia ago, utopian architectural theories gave birth to this fair representative of the futuristic imagination of the 50s and 60s.