Urban Sprawl in Postwar Japan and the Vision of the City based on the Urban Theories of the Metabolists' Projects

Raffaele Pernice

Architect, Dr. Arch., Graduate School of Science and Engineering, Waseda University, Japan

Abstract

The purpose of this study is to analyze the urban schemes and theories developed by Metabolism in the period between 1958 and 1964, a period which saw the economic miracle of Japan, and to relate them in the context of the main international urban design theories and in the process of postwar urban growth of the Japanese city. The following aspects are found through the investigation: 1) Metabolist projects were mainly based on Western precedents in architecture and urban design, even though those models were further enhanced, especially concerning the aesthetic aspect. 2) There was a direct and important influence over those projects resulting from massive engineering works (such as land reclamation) undertaken in Japan for industrial and residential purposes. 3) Metabolist urban projects were a critical response to the city planning methods used in Japan, and aimed to improve the poor quality of the urban habitat caused by urban sprawl resulting from uncontrolled city growth.

Keywords: metabolism; Tokyo; Japanese urban design; Japanese city; modern Japanese architecture

1. Introduction

In 1960, a year after official dissolution of the CIAM and end of the experience of the Modern Movement, Philip Johnson claimed that "There is only one absolute today, and that is change. There are no rules, surely no certainties in any of the arts. There is only a feeling of wonderful freedom, of endless possibilities to investigate, of endless past years of historically great building to enjoy".1 In the same year the World Design Conference in Japan showed a new course of Japanese architecture and urban design, and on this occasion the Metabolist Manifesto was presented, which focused on some proposals for a new urbanism in Japan. Initially this collection of essays was meant to be the first of a series of further publications to be published in the following years, but it turned out to be the only one and no others followed, so that it can be regarded as the main source of the Metabolists's vision of the city. Since most of the previous researches have deepened analysis of the architectural aspects of the Metabolist group, this study proposes an approach which focuses primarily on the evaluation and description of their urban theses as a response to the general megapolitan crisis of the modern city, and relates them in the context of the fast changes of the Japanese urban environment and the spread of new urban models, concepts and theories mainly from Western countries.

2. Overview of the Postwar Urban Design Theories and City Models in the Western World

Since the beginning of the postwar years and during the peak of the process of reconstruction, while it was still strong the willingness to continue in the path set by the Modernist tradition both in architecture and city planning, it could be seen the growth of a new generation of architects and planners, and the progressive development of a phase of critical revision of the Functionalist principles and methods.

The Functionalist City, conceived and expressed as a mechanical form of interrelated but independent and well-ordered parts with specific functions and separations, became the universally accepted model implemented in the planning of new large urban settlements and small neighborhoods, from America to Europe and other developing countries.2 The predominant idea of economic regeneration through urban development, which dominated the economic boom of the 1950s and 1960s, fostered the construction of huge and extensive infrastructure systems in the cities as urban and interurban networks of movement, communication and energy supply integrated with public spaces, industrial and residential zones, to support the fast urban growth and create a solid basis for, as it was truly hoped at the time, an overall social order and harmony.3 Basic planning concepts derived from pre-war urban theories and sources, such as the concept of decentralization and the importance of an efficient transportation development aimed
at controlling urban congestion, assuring good functionality of the industrial systems of production and fostering an ordered dispersal of activities and people on a regional scale, were assumed as key elements in the design of new housing complexes and in the proposition of the "new towns" and "satellite towns" policies proposed for a great number of new rational cities by many governments in the US and Northern Europe.

However, implementation of these same rationalist principles in most of the carefully planned projects of "slum clearance" and "urban renewal", as named in America and Europe, the construction of extensive, geometric-patterned, modern and healthier housing settlements and neighborhoods based on abstract schemes, which were intended to improve the living conditions of low-income people and give them higher standard dwellings, resulted in an epochal failure both because of the poor quality of the housing complexes and drastic alteration of the pre-existing urban environment.\(^5\)

The main consequence of the dreadful effects of large scale redevelopments and in general of the irreversible urban growth was the loss of the familiar community-based neighborhood and traditional image of the city as something coherent and comprehensive, so that the city appeared to be more complex and chaotic than ever. Dissatisfaction with and criticism of the traditional tools of urban planning and design, and the awareness of their evident failure in controlling the growth of extensive suburbs of what was seen as an "exploding metropolis",\(^5\) resulted in the complete collapse of Modern Movement theories, and gave way to new researches, methods and strategies to shape the modern city. In particular three issues were felt to be the priorities of the time and became catalysts of fundamental investigations: the issue related to what has been called the debate over the "Poetic of the New Dimension", the problem of how to regain the comprehensibility of the modern city as a total visual image shared by all citizens, and the search for an effective relationship between single urban elements and the whole urban system in the industrial metropolis (namely how to create a link between individual buildings and the entire city).\(^6\)

New fundamental publications appeared in the early 1960s and marked a turning point in architectural and urban design for the following decades (Kevin Lynch, 1960, Gordon Cullen, 1961, Jean Gottmann, 1961, Christian Norberg-Shulz, 1963, Christopher Alexander, 1964). The new social sciences had more and more influence on the theories and schemes of designers and planners. Structuralist thinking, which originated through studies conducted in the field of linguistics, was particularly relevant. New movements in architecture, which polemically called themselves "Neo-" or "-ism", multiplied and spread with vigor, each of them proposing urban projects which stressed their common vision of the contemporary planning of the modern city as a scientific process essentially aiming to forecast and anticipate the conditions of a likely future. Whereas some proposals emphasized the new scale of interventions for a city that became a megalopolis, and consequently proposed bold visions of a utopian technological urban environment consisting of transient structures that rejected the forms of the existing city as an extreme expression of the influence of industrialization and standardized mass production over the human habitat, many other more realistic and effective projects and movements derived from rediscovery of the urban quality of old patterns of living in the city of the past, in an attempt to restore the nostalgic image of traditional architecture.\(^7\) Especially this last attitude, supported by the shame of the destruction of many ancient urban fabrics that occurred in cities during the last decade, promoted and spread a renewed general interest in history, which resulted in a deeper interest in particular concerning vernacular architecture and pre-modern urbanism, in search of the basic elements of urban image and form, and new principles of composition.

In general, in Western countries during this period it is possible to detect, apart from the still persisting modernist lesson, many different stances or approaches in the methods adopted as a new fundamental theoretical basis for innovative urban design and city planning schemes, which however, gave shape to two main basic philosophies and urban models. On one hand, according to the Humanist and Regionalist approach, some architects and planners, such as some members of Team X and the Dutch School, trying to regenerate the historical city and human scale of familiar neighborhoods with their complex and close social structures, opted for a decisive shift to a smaller scale of design, and conceived the city as a collection of mixed use enclaves as parts of a system of interrelated urban (village like) clusters composed of simple geometries. On the other hand, other architects were especially influenced by Structuralist thinking and by the Systemic Approach and, rejecting in part the validity of the lessons of the pre-existing urban fabrics, relied heavily on technology and transplanted the idea of the industrialized system of production into the construction of human settlements, opting for large scale projects. They envisioned the city as a polycentric and efficient system of ordered and interrelated webs of functional connections of places and movement corridors for vehicular transportation, which supports other urban elements (housing, services, public spaces) as integrated appendices, and creates an extremely flexible, dynamic and changeable overall structure able to define a comprehensive urban form and image, as it is the structure of movement that becomes the unit of order of the buildings in a city.\(^8\)
3. Urban Sprawl in Japanese Cities

The most evident and massive changes in the Japanese urban system and townscape occurred in the period between 1955, which saw the official end of the postwar phase of reconstruction of the social and economic fabrics, and the early 1960s. This was the period which has been generally known as the "Japanese Economic Miracle" or "Great Economic Growth", with an average national GDP of 9% per year for the entire decade until the early 1970s. During those years the main aim of the Japanese government, which played a key role in managing the whole process of redevelopment of the country, was the rebuilding of the nation in terms of physical structures and economic production. Since the creation of a modern and competitive economy was fundamental for recovery from the war, a program of systematic public works was proposed and financed to create a strong industrial base as the fundamental sector of the new national economic policy, with direct and decisive consequences on the future layout and functional and visual qualities of the Japanese urban environment and skyline. The development of new industrialized areas for modern factories equipped with advanced technologies paralleled the construction of an impressive system of basic infrastructures such as roads, bridges, railways and ports, which were intended to support both the process of industrialization and the economic recovery of Japan. The upgrade of new available technologies from abroad promoted expansion of the industrial sector for the production of goods for export overseas. The transformation of Japan from a mainly agricultural based economy to an industrial and service sector based economy in a span of less than a decade caused a strong phenomenon of immigration of people in search of shelter and jobs, and produced a wave of movement from the countryside and the less developed regions towards the main urban conurbations along the Pacific Rim, which in turn enacted a fast and uncontrolled process of transformation of the natural environment, with progressive alteration of the waterfronts through reclamation, and expansion of the fringes of the suburbs into the rural areas of the main industrial metropolises to allocate new housing settlements and factories.

By the early 1960s all the economic plans promoted by the government were completely fulfilled, and Japan became one of the most dynamic and advanced industrial powers among the developed countries. However, even though the main outcome of economic advancement resulted in the development of modern infrastructures, an improvement of living standard, better alimentation and a general increase in the national wealth and technological progress, new serious problems arose as direct consequences of that fast growth, posing a severe threat to the social life of the citizens of the Japanese metropolises. Phenomena such as environmental destruction and the spread of several cases of pollution contaminations in degraded urban districts, were mainly caused by both a combination of poor city planning regulations, and the evident priority given to economic growth over the citizens' welfare promoted by the central government. Whereas by 1960 the worst cases of environmental contamination were basically due to a lack of governmental pollution standards and regulations, what made the levels of pollution more acute and dangerous to the health of citizens, was the presence of a high concentration of factories and industrial plants in urban areas, with the high density of population placed in the big industrial cities, caused both by the rapid urbanization of the previous years driven by economic growth, and by the fact that in Japan the industrial complexes tended to be located in small geographic areas as integrated clusters of interrelated industries close to each other and to the worker's residential areas (kombinatos). Furthermore, the pace of accelerated urban growth and the fast urbanization of large rural lands generated a massive extension of disordered areas and uncontrolled urban sprawls on the outskirts of all the industrial cities. This caused two main problems: the chronic shortage of many public services and facilities faced by the growing number of their residents (such as the lack of parks and libraries, inadequate roads, sewers and water supply systems), and the awareness that the inefficient land use in the vast extensions of congested and undeveloped/unplanned urban areas created serious obstacles for any attempt at further improvement and urbanization according to rational plans, because of the higher costs to be paid for the construction of the infrastructures and lack of space for effective improvement works. Eventually the rampant and widespread urban sprawl of the early 1960s became a matter of serious concern to the Japanese government, which indeed had as its main responsibility the narrow vision of city planning (toshikeikaku) as a simple process of planning and supply of public infrastructure as functional and necessary elements to sustain the
process of economic growth (and for that reason of the exclusive competence of bureaucrats, technicians and engineers), without any interest or real attention given to issues related to environmental embellishment and quality improvement in the urban life of the citizens. As a result, the real planning technique concerning the Japanese city turned out to be almost exclusively regulated by and based on the land readjustment (kukaru seiri) methodology, a key-planning instrument in Japan since the Kanto Earthquake which hit Tokyo in 1923. The consequences of this tremendous mix of ineffective building standard laws, inconsistent city planning and political unwillingness, caused the fast, chaotic and largely unplanned development of vast low quality urban areas in the main industrial districts of Tokyo, Osaka, and Nagoya, creating a set of specific and less specific issues concerned with expansion of the urban model of an industrial metropolis, which called for a response equally rapid and effective.

4. Metabolism 1960 and the Proposals for a New Urbanism

In 1959 the CIAM meeting in Otterloo signaled the definitive collapse of the Modern Movement theories and the conclusion of an experience that lasted for 30 years. The main international meeting before the first independent meeting organized by Team X (to be held near Avignon) in the summer of 1960 was the World Design Conference in Tokyo, planned for May of the same year. This conference suddenly gained a special value because of the recent important changes in the world architectural context, and was carefully planned by Japanese architects, planners and designers. It was on this occasion that a new group of young architects, who called their movement "Metabolism", presented their manifesto, which summarized in a collection of essays published under the title "Proposals for a new Urbanism" their vision of the future city. Indeed, since the beginning, these essays denoted the heterogeneity of the same architects concerning the design approach and their views regarding city problems and ways to change the urban form, even though they shared some basic fundamental concepts, such as the principle of "cycles of change" of architecture and the concern for the design of urban spaces and mass housing for urban communities as a fusion of tradition and modern/futuristic living.

a) Kiyonori Kikutake and Kisho Kurokawa

Kikutake appeared to be one of the leaders of the Metabolists, as his essay amounted to half of the total length of the original manifesto. It was essentially the summary of previous articles published two years earlier in some Japanese architectural magazines and contained his urban projects developed since 1958, such as "Marine City" and "Tower Shape City". Kikutake devoted most of his research efforts to the development of urban communities as totally artificial habitats built into the sea, as a solution to the problems of fast urban growth and over congestion of the modern city (well represented by the case of Tokyo) caused by traffic movement and chaotic residential development. Rejecting the historical city, the limits and the constrictions represented by land ownership, and the past heritage represented by the monuments and pre-existing urban fabric, he saw the new natural space available in the ocean as a valid alternative for the development of new human settlements. Recalling Karl Shmitt's theories, he announced the surge of a forthcoming "Marine Civilization" as a completely new world for mankind, rich in materials and enjoyable environments. More pragmatically his projects relied greatly on the new technologies derived by advancements in coastal engineering and land reclamation to create marine structures as flat floating artificial islands, which formed archipelagos of high-rise residential towers. The projects for marine cities developed from 1958 to 1963 formalized his architectural and urban theories in a series of schemes, which derived much from other modern urban models, especially the concept of the "Garden City" by Ebenezer Howard and the studies for the "Immeoubles Villa" by Le Corbusier. In fact his scheme for an Ocean City (Unabara) as a new self-contained community planned off the shore of Tokyo bay, is basically a decentralized new town on the sea, which assumes the shape of a circular system of islands with prefixed limits for land size and population growth, since every excess of population leads to the foundation of a new and independent archipelago-city. The system of floating platforms is conceived as residential and service areas for the citizens, and is designed according to the functional prescriptions of modernist principles, with housing blocks which contain collective/public services (named like Le Corbusier's "extension of residences") and the vertical development (as vertical zoning of the settlements) by means of tall towers developed as shafts supporting movable prefabricated capsules, whose massive scale however defines a system of urban places fundamentally alien to the traditional townscape of buildings, urban blocks, squares and streets. Following a coherent pattern of thinking derived especially from modernist examples, such as the Bauhaus' industrial design approach, but very rare in Japanese modern architectural tradition, Kikutake created a complete and detailed new urban system which ranges from the design of the city scheme to that of the single dwelling and its interior furniture. Emphasis on the search for a better quality of dwellings for mass housing through new design concepts and the revival of a sense of community and identity on the model of the traditional Japanese neighborhood (machi) — more and more in danger in the confused contemporary city — became elements which attempted to combine with a comprehensive urban approach based on new building technologies and materials.
More ambiguous is the position of Kisho Kurokawa, the youngest architect of the group, whose contribution to the manifesto revealed a double sided approach, partly influenced by Team X's basic concepts of clusters, movement networks and urban in/between spaces, as expressed in the project for an "Agricultural City" (with its human scale and elegant and sober grid scheme), and partly echoing the aspiration to a totally renewed urban environment of massive scale, with little concern for the pre-existing city ("Wall City" and "Neo Tokyo Plan"). In his following urban projects was this trend which prevailed, together with an evident predilection for high-tech construction systems and extensive use of prefabricated industrial housing units, such as capsules, which eventually became the main characterizing elements of his architectural design and urban proposals. The same elements taken from the most advanced Western humanist theories, such as the system of elevated pedestrian walks, the cluster of buildings and search for a symbolic value of urban architecture were further transposed and rearranged on a much larger scale in his next projects for a "Helix City" (1961) and "Floating City" (1963), which focused on the theme of industrialized architecture and communication channels as basic components of a polycentric city with high growth potential. Adapting the architectural design methodology to urban design, Kurokawa, deconstructed the city in simple and elementary units as autonomous blocks of residential service functions, whose assemblage to each other according to apparent casual layout and unpredictable organic patterns of development (along open spaces for transportation and movement) would eventually give shape to the whole city according to the different metabolic processes of urban development. The urban model proposed (in spite of the appealing forms shaped as multi-cellular organisms) is the traditional linear city, so that the city grows freely as a system of clusters of neighborhoods and as a network of infrastructures for movement and communications, creating a sort of "Patchwork City", with a scheme that conceptually recalls directly the clear separation of function/spaces and the differentiation of metabolic cycles of life of its elements, features which also are present both in Kurokawa and Kikutake's capsule architecture of the time.  

Kurokawa refined his urban principles in other projects, and eventually designed and built the master plan of two new towns, Hishino New Town (1966) and Fujisawa New Town (1967), conceived as settlements developed around the road system, composed by groups of mixed residential and service areas and without an urban center, with a formal organic pattern of growth which recalled in part (but without the use of megalastures) his earlier proposals for a Metabolist City. 

b) Masato Otaka and Fumihiko Maki

Among the Metabolist architects, Otaka and Maki appeared to be the more realistic and were less concerned with the myth of technology as key elements in a new urban design approach. Otaka, who was the oldest of the group, was an active member of the studio of Kunio Maekawa. In 1957 he worked on the design of the "Harumi Apartments", an innovative mass-housing block inspired by Le Corbusier's "Unite" to be built in a reclaimed area of Minato Ward, Tokyo. The theme of the reclamation of the coasts in the big Japanese metropolises to develop industrial and residential complexes (kombinatos) on artificial land became an important issue by the end of the 1950s. As a response to the plan of the president of the Japan Housing Corporation to fill up most of the east side of Tokyo Bay to gain more land for construction activity, Otaka presented as a counterproposal, his "Neo Tokyo Plan" (1958), which was the first project of its kind to conceive the development of a system of expressways and ring-roads in the water of the bay as the backbone...
of the urban growth of the new settlement, anticipating a principle also present in the plan for Tokyo designed by Kenzo Tange two years later. The plan focused on the development of a residential area of an archipelago-like man made land as connective nodes for floating residential platforms 100 meters long, as clusters of blocks based on the model of the residential apartments designed for the Harumi reclamation. Following a strict zoning principle, which recalled somewhat the modernist urban design approach, the new city was made of a series of artificial platforms (as man-made land) divided into parallel interconnected areas, while the stress of the plan was put on the matrix of local service areas of the dwelling complexes and the main transportation network of ring roads, which ran into the bay, creating a horseshoe-shaped layout. Differently from similar bold projects proposed by Japanese planners, the main focus of the projects was to maximize the living quality of the residential area (also as a main element of the urban skyline), which in this proposal could benefit from the amenities of the natural environment of the sea and the rational and well planned net of nodes for different urban services and varied activities. 

The theme of artificial land extending into the sea was further refined by Otaka as an urban podium in the dense fabric of Japanese cities in his projects for the downtown of Ohtenmachi City (1963) and for a residential complex in the city of Sekaido (1963-1968), and then eventually it echoed Le Corbusier's concept of roof garden in his project for "Hiroshima Housing" (1973), which featured a system of hanging gardens and a roof promenade.

In 1960 Otaka coauthored, together with Fumihiko Maki, an essay which illustrated their studies on the concept of group form, which became their contribution to the Metabolist Manifesto together with a plan for the redevelopment of the Shinjuku district in Tokyo. Their studies on group form aimed to define in urban design, some formal schemes in order to see how the various parts of an urban fabric fit together to make up the whole. However, it was Maki who proceeded further in the development of a theory on this issue. Fumihiko Maki spent many years outside Japan, and in the US he was able to deepen his studies, particularly in the field of pre-modern urbanism and on the theme of the relations between the urban elements and their connections in the context of the city as a whole. All of these issues were of great importance at the time for many other designers and planners, who were searching for new strategies in urban design and new principles concerning the organization of urban form.

Before his definitive return to Japan in 1965, Maki, who was assistant professor at Washington University's School of Architecture, published in two influential short essays, the results of his research conducted in the field of urban design: "Investigation in Collective Forms" (1964) and "Movement Systems in the City" (1965), both critical of the excessively high-tech forms of the "pure" Metabolist design and more responsive to a contextual approach in urban planning. The former study was a further and more detailed analysis on the theme of the group forms and the ways the buildings relate in space. Conceiving the city as a collection of individual elements whose complex association and various relations (functional and spatial) create one whole entity, a concept also present in the studies of some European contextualists (Aldo Van Eyck, Hermann Hertzberger), Maki detected three basic frameworks of aggregation (spatial linkages) that always exist among buildings in a space, namely the well known models of "Compositional Form", "Megaform", and "Group Form". The latter study, originated by his research on a survey of the traffic in Boston, detected as a main formal and spatial tool of the urban organization in the modern city, the urban transportation network, and aimed for the creation of an efficient and integrated system of different scales of movement channels and interchange points (linkages) as the basic layout of the city plan.
5. Conclusions
Many elements which permeated Metabolist ideas derived from precedents in Western architectural and urban design concepts. It was social responsibility, and especially the problems of mass housing and the shortage of land for residential use that became the main concerns for Metabolists and influenced directly their vision of the city. In general, the projects and urban architecture of the Metabolist City were characterized by 1) an accentuated a-contextualism in regards to the pre-existent urban environment, 2) the dismissal of any image of elements of the traditional urban environment (streets, squares, parks) in favor of massive and carefully planned mechanical forms, 3) the use of schemes adapted from functionalist and pre-modernist theories (such as the Garden City's scheme and the idea of "tabula rasa" in city planning), 4) the radical attempt to control and to drive at any cost, urban growth of the contemporary city, and especially its final comprehensive skyline and image, by imposing schemes and structures theoretically flexible but in reality too oppressive, derived from an acceptance and trust of modern technology and of some rationalist principles instead of using forms and examples from the historical city, 5) the use of techniques of mass production for the construction of dwellings made of prefabricated components as a common technique to build the urban fabric, 6) an accentuated disregard for deeper social and ecological issues and a strong tendency towards an oversimplification in the design and compositional processes, as well as in adapting the architectural principles to urban design methodology.

In particular it can be noted that the advanced construction technologies broadly implemented in many projects, with the exception of some projects by Maki and Otaka especially, were used to emphasize the implementation of standardization systems for the mass production of dwellings, a theme that gained interest and emphasis in many projects, with the exception of some projects by Maki and Otaka especially, were used to emphasize the implementation of standardization systems for the mass production of dwellings, a theme that became the main source of new studies and surveys in the field of social science and ecology (among others stand out contributions by: Jane Jacobs, 1961; William Whyte, 1961; John Simonds, 1961, and Oscar Newman, 1961), which stimulated further remarkable outcomes in architectural and planning strategies and new methodologies of analysis and understanding of complex urban environments (such as the development of Environmental-behavior studies, focusing on people using city spaces, and Space-morphology studies, focusing on public spaces and urban form), as largely witnessed by the amount of new publications, debates and researches dated from the early 1960s.

"Exploding Metropolis" was the title of a book published in 1958 as a collection of independent essays on the condition of the big conurbations in the US, which mentioned particularly the general state of urban sprawl and transportation development in America. Among the authors: Jane Jacobs, William Whyte and Francis Bellon.

Reference
1. Philip Johnson quoted in: Charles Jencks, Modern Movements in Architecture, 1986, p.208.
2. Spiro Kostof, The City Shaped, Urban Patterns and Meaning through History, Thames and Hudson, 1992.
3. Stephen Graham, Simon Marvin, Splintering Urbanism, Routledge, 2001, p.64.
4. The wave of criticism regarding the new housing complexes built during the 50s focused especially on the excessive segregation of functions and activities, the loss of identity and of human scale typical of the traditional communities, and the consequent evident sense of rootlessness, which many dwellers experienced in their life in alienating environments composed of standardized anonymous urban blocks separated by traffic arteries in the suburbs of the growing industrial metropolis. These complaints and criticisms on the state of contemporary neighborhoods and cities became the main source of new studies and surveys in the field of social science and ecology (among others stand out contributions by: Jane Jacobs, 1961; William Whyte, 1961; John Simonds, 1961, and Oscar Newman, 1961), which stimulated further remarkable outcomes in architectural and planning strategies and new methodologies of analysis and understanding complex environments (such as the development of Environmental-behavior studies, focusing on people using city spaces, and Space-morphology studies, focusing on urban public spaces) as largely witnessed by the amount of new publications, debates and researches dated from the early 1960s.
5. Among the authors: Jane Jacobs, William Whyte and Francis Bellon.
6. See: Siegfried Gideon, Space, Time and Architecture, Harvard College, 1954; Manfredo Tafuri, Francesco Dal Co, Modern Architecture Vol. 2, Electa/Rizzoli, 1985 (1st Italian Edition 1976); Charles Jencks, Modern Movements in Architecture, Penguin Books, 1985; Spiro Kostof, The City Shaped (1991) and The City Assembled, Thames and Hudson, (1992); Nan Ellin, Postmodern Urbanism, Blackwell Publishers, 1996.
7. Inspired by the myth of the "exploding metropolis" and the surge of the new concept of "megalopolis", megalustructural movements were the main outcome of this utopian tendency during the 1960s and comprised a large set of specific groups and theories, such as the "anarchic" movement of the "Situationists" by Constantini, the "Urbanism Spatial" by Friedman, Soleri's "Archology", etc., whose main interest was the development of human settlements on a massive scale, basically conceived as total (controllable) systems of movements and flow of their inhabitants and their architecture (See: Reyner Banham, 1976). Instead the Townscape Movement, Regionalism, Contextualism and New Urbanism moved their proposals on a smaller scale, and aimed to restore, both as visual image and as physical/functional/social entity, the tradition of the neighborhood (seen as a typical feature of the "lost" urban quality of Western pre-industrial settlements) as a fundamental basic urban unit of the modern city.
8. Both these schemes contain some valid elements and some critical elements, but above all reveal the general crisis and contradictions of the time, with one stance emphasizing the importance of the past tradition and the value of history for a better quality of life, the other more concerned to follow the needs of the technological society of the present, and to assure optimal conditions for movement functionality and higher economic production.
9. In the following years the system of promoting public works continued as a "traditional" means to alleviate unemployment, to assure political support for governmental officers and for the
survival of the construction-related industry; see: Asato Saito, “Public Work State in Japan: Urban Restructuring in Tokyo”, paper presented at the Planning Research Conference "Planning Research 2000", London School of Economics, UK.

In 1955 the Hatoyama cabinet proposed the "Economic Independent Five Year Plan" (fulfilled in just two years), followed in 1957 by the Kishi Cabinet's "New Long Term Economic Plan" (fulfilled in a few years), and in the years 1960-1962 by the Ikeda Cabinet's "Double National Income Plan" and "First National Comprehensive Developed Plan", also aimed to foster and control the already impressive economic growth; see: Shogo Takegawa, "The Development of Regional Social Planning in Postwar Japan", paper submitted to the ISA Research Committee Meeting in Copenhagen in 1997.

Sorensen Andre, The Making of Urban Japan, Cities and Planning from Edo to the Twenty-first Century, Routledge Ed., London & New York, 2002; Furthermore it can be noted that the 1st City Planning Law issued in 1919 prescribed the land use into just four distinct areas and conceived a system of mixed land use, which could allocate enough close on the same site both industrial and residential settlements. This planning system was a weak tool in the planning process as it focused only on land use and provision of public facilities in already urbanized areas. It prescribed no effective legal instruments regarding the power to take over private property for public use or for subdivision control, no requirement for basic infrastructures before the construction of new developments, nor any minimum housing standard. In 1950 the "Building Standard Law" was enacted, but it also turned out to be nothing more than a simple collection of restrictions (concerning matters such as the ratio of building coverage in the site, the floor area ratio, and so on), which were indeed subordinate in comparison with similar Western models, and didn't automatically produce satisfactory living conditions in the new constructions. The awareness of the growing problems caused by worsening of the urban environment led towards a new City Planning Law (which especially had the merit to broaden the zoning areas from the former four to eight) only in 1968.

Sorensen Andre, "Building World City Tokyo: Globalization and Conflict over Space", in: The Annals of Regional Science, Springer-Verlag 2003, p.23.

This subject has been widely investigated in researches published both by Japanese and foreign scholars. Among the most recent illuminating and complete works worthy of mention are: Andre Sorensen (2002), Carola Hein (2003).

Indeed the WodeCo meeting in Tokyo in 1960 had an important impact on the audience, especially the Western architects, due to the disclosure of projects conceived on a design approach (fulfilled in a few years), and in the years 1960-1962 by the Ikeda Cabinet's "Double National Income Plan" and "First National Comprehensive Developed Plan", also aimed to foster and control the already impressive economic growth; see: Shogo Takegawa, "The Development of Regional Social Planning in Postwar Japan", paper submitted to the ISA Research Committee Meeting in Copenhagen in 1997.

The unexpected success of the group owed much to both the bold and appealing images and forms shown in their projects, which became well known icons of the megastructural trend in the following years, and also to the tutorship and support of Kenzo Tange, at the time the most famous Japanese architect, who also presented on the same occasion the early drafts of his famous Tokyo Plan.

Karl Schmitt, a German politician, philosopher and legal scholar (1888-1995) wrote in 1942 the essay "Land and Sea" where he postulated that the history of mankind is the history of the endless struggle between the land civilization and the marine civilization. According to Schmitt (and also as suggested by Kikutake himself), the marine civilization will eventually reach a kind of supremacy over the continental civilization.

The social utopias of Le Corbusier were set in tall mass housing complexes scattered in the green of a park, instead Kikutake chose the blue of the sea. It is also interesting to note that Kikutake's Tower City scheme anticipated similar proposals by Isozaki (Joint Core System) and by Tange.

Also in this case the immediate reference for the dwelling design by Kikutake for his "Marine City Unshara", appears to be Fuller's "Dymaxion House". "Machi" means city or part of a city; in this last sense its Chinese character (kanji) can be written as "Cho", which means administrative unit, and denotes both a physical area (basic urban unit) and a small social unit, as local community with its own sense of identity.

See: Kisho Kurokawa, Metropolitan in Architecture, Westview P., London, 1977. The idea of different cycles of life in architecture was especially evident in the projects by Kurokawa and Kikutake. In particular Kikutake, who exerted a great influence over Kurokawa at the time, called this approach "Law of Rebirth or Ideology of Replacement", which he derived from analysis of the traditional Japanese architecture based on wooden architecture. However it is plausible that a strong influence on both of them derived also from the design methodology developed by Louis Kahn, who since the late 50s conceived a kind of architecture based on the functional and ordered separation of spaces and functions.

Much criticism was already spreading after the former presentation of the Metabolists urban proposals, especially regarding the massive scale of their architecture as megastructure. Manfredo Tafuri refers to them as "Academy of Utopia" (Tafuri, 1964; p.214) and Charles Jencks defines the Metabolist City as "...formalization of frozen process and fixed schemes" (Jencks, 1986; p.356).

It can be noted that in 1958 also Kikutake unveiled his counterproposals to the Kuro Kano plan of filling Tokyo Bay: "Marine City" and "Tower City Shape", both presented by Tange at the CIAM meeting in Otterloo 1959, and then published in Metabolist Manifesto (Metabolism in Architecture 1960. The Proposal for New Urbanism, Bijutsu Syuppon Sha, Tokyo, April 1960).

The urban podium acted as a tray above the street level to accommodate the masses of the buildings and pedestrian areas, leaving the space for car movements under it. According to the critic Noburo Kawazoe this project was "...the first city plan in Japan by a Japanese architect"; Noboru Kawazoe, Contemporary Japanese Architecture, Kokusai Bunka Shinkokai, Japan, 1968, p.73.

In spite of his teaching activity in the US, Maki was also active as an architect in Japan. In 1962 he designed a project for the Dojima district in Osaka, whose general characters, inspired by the models of urban renewal of the big US metropoliises, reveals the strong influence of the American experience over his design approach.

See: Maki Fumihiko, Fumihiko Maki, Buildings and Projects, Princeton Architectural Press, New York, 1997. In particular the Group Form can be considered as a collection of single and independent buildings of different forms and various functions, which define an overall and flexible system of elements able to change at any time without altering the main layout or the shape of the whole system, so that it can survive in time. The first application of the Group Form's principle in a project by Maki could be seen in the general plan and the organization of the spaces in the "Ritsuko University", designed in 1965.

Source of Photographs (Edited by the Author)

Fig.1. Japan Society of Civil Engineering, Digital Archives, Fig.2. S. W. Goldhagen, R. Legault, Anxious Modernisms, 2000, Fig.3. Kisho Kurokawa, Metabolism in Architecture, 1977, Fig.4. Kenchiku-Bunka, No. 148, February 1959, Fig.5. Fumihiko Maki, Fumihiko Maki, Buildings and Projects, 1997.