



Proceeding Paper

From the Urbanism of Metabolism to Sydney/Tokyo Waterfronts Regeneration (2019–2022) †

Raffaele Pernice

School of Built Environment, University of New South Wales (UNSW), Sydney, NSW 2052, Australia; r.pernice@unsw.edu.au; Tel.: +61-(0)-431-080-616

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Abstract: Focusing on the forgotten lessons and potential legacy of the urban projects proposed by the Japanese avant-garde architectural movement of Metabolism, which emerged in the 1960s, and on the critical and comparative study of large-scale waterfront regeneration and design in Tokyo and Sydney, two education and research projects were initiated at UNSW-School of the Built Environment in 2019 and 2021, with the aim of looking at the future of the city in an age of climate change, global warming and rising sea levels. Structured around a variety of international workshops, joint design studios, collaborative archive and documentary reviews, multi-disciplinary seminars, and international symposia, with the participation of national and international academics and scholars, both research projects are currently in progress, with the support of competitive research grants from the Japan Foundation, the Australia–Japan Foundation (AJF), the Australian Department of Foreign Affairs and Trade (DFAT), and other internal grants from the Faculty of Art, Design and Architecture (ADA) at UNSW Sydney.

Keywords: architecture; Japan; metabolism; Sydney; Tokyo; waterfront regeneration; urban design; climate change; city; urbanism



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1. Introduction

A Japan Foundation—Japanese Studies Fellowship (Short Term) in December 2019, and a Japan Foundation Grant Program for Intellectual Exchange Conferences (Ref.No:10126897) in 2020 have offered a fundamental support for a 3-year research project focusing on the rediscovery of urban models by the Japanese avant-garde movement of Metabolism. This study aimed also to provide an up-to-date re-assessment of the projects that have been designed by the members of this group of visionary Japanese architects and planners since the 1960s.

Another research and education initiative, which is still in its early stage but is grounded on the Metabolism study experience, is the research project entitled “Sydney and Tokyo Waterfronts in an Age of Global Warming”, which has been awarded an Australia–Japan Foundation (AJF) 2021/2022 Grant (Ref. AJF2021113) and is being developed with the intention of fully unfolding in the period 2022/2023.

2. Research Project 1: Metabolism and the Mutant City of Tomorrow (2019–2021)

Metabolism is the name of a group of young Japanese designers and architects who proposed a new form of urbanism, built on visionary urban projects and experimental avant-garde design, as a creative response to this new landscape. The occasion to present their ideas came at the 1960 World Design Conference in Tokyo, when they presented a manifesto entitled *METABOLISM/1960–Proposals for New Urbanism* [1], championing then-innovative concepts such as capsule architecture and prefabrication, and embracing bold forms characterized by sophisticated architectural elements and massive urban structures that continue to fascinate designers today.

Metabolism was active in Japan from 1958 to the 1970s, and its techno-utopias were rooted in the fundamental notions of cycles of use, nomadism, modularity, compact urbanism, expandability and replaceability, inspired by the biological metaphor of the organic growth of living organisms as well as the cultural influence of East Asian philosophical thought and religious traditions. Key figures associated with the Metabolist movement include the renowned architects Kenzo Tange, Kisho Kurokawa, Fumihiko Maki, Arata Isozaki, Masato Otaka and Kiyonori Kikutake, as well as critic Noburu Kawazoe, graphic designer Kiyoshi Awazu and industrial designer Ekuon Kenji. Surviving examples of Metabolist architecture include Yamanashi Press building and the Nakagin Capsule Tower in Tokyo, and the site of the 1970 World Exposition in Osaka.

Recent years have witnessed a renewed and growing interest in the model of cities and the architectural concepts the Metabolists first proposed 60 years ago, especially in the Asia Pacific Region. Attention was drawn by the fact that Metabolist projects have devoted much attention to the themes of compact cities, high-density architectures in rapid growing cities, the exploration of a new form of urbanization in alternative habitats such as the sea (marine cities and large floating urban platforms), as well as the predilection of a technological-driven design approach, built around flexible architectural spaces and changeable urban forms that are reactive to any radical and sudden (human-made or natural) transformation of the surrounding environment.

2.1. *Activities and Results*

Revisiting the past contribution of Metabolism to the architectural and urban discourse on urban development and housing design and sustainable urbanism in an age of climate change, the research fellowship from the Japan Foundation in 2019 allowed for fieldworks and an active archive search in Japan to investigate the possible links with the construction industry of Japan in the years of rapid economic growth, and the mutual influence in the process of designing and building large-scale housing complexes in Japanese cities. At the same time, the short-term stay, thanks to the JF fellowship, supported an initial coordination with local partners and scholars to initiate a symposium project integrated with an exhibition of student's works to be organized at UNSW Sydney—School of the Built Environment and initially scheduled for 2020 for the celebration in Australia of the 60th anniversary of the publication of the Metabolist Manifesto 1960 (the event was eventually moved to February 2021 because of the global COVID-19 pandemic).

The purpose of the international symposium entitled: “Architectures for a Mutant City. 60 years of Metabolism 1960–2020, and Beyond” was to bring together local and international academics and scholars in Sydney to discuss the legacy of Metabolism's architectural visions and urban models in the 21st century (Figure 1). The proposed symposium project aimed to achieve three main goals: (1) For the Australian audiences, it aimed to deepen the knowledge and understanding of the Metabolists' urban projects and, in general, of the contribution of Japanese architects and urbanists to the discourse about the evolution of Modern Architecture in the 20th century; (2) To provide a common platform for multidisciplinary discussion and the exchange of ideas, opinions and information among scholars, academics and researchers on the theme of the urban transformation of the built environment in the modern cities and the challenges posed by the future urbanization approaches through the lenses of the Metabolism's visionary projects and their ideas, theories and concepts, especially the themes related to destruction and landscape, mass housing and eco-urban design in the context of the current climate change, environmental disruption, and the need for more efficient and sustainable forms of large-scale urbanization and habitat design; (3) To help facilitate the creation of new, and strengthen already present, links between Japanese, Australian and international scholars, researchers and academics in view of future international collaborations and joint research projects.



Figure 1. Poster of the symposium 2021.

The research on Metabolism moved in parallel with the teaching of the final graduation studio in the Master in Architecture program at UNSW. Reflecting on concepts such as density, efficiency, livability, changeability, community living and architecture, and in search of innovative ways to pursue integration and a mutual relationship between the city ground and the buildings, students were invited to propose a project inspired by Metabolism’s concepts more than their language. Selected works of the students, produced during the course ARCH7201/7202 Research and Major Design Studio in 2020, constituted the core of the exhibition, which ran in parallel with the symposium (Figure 2).



Figure 2. Poster of the design studio 2020.

2.2. Final Publication 2023

Both the symposium and the student work’s exhibition in February 2021 reached their most important goal: they renewed interest in the Metabolists’ urban projects while also

facilitating the creation of new, and strengthening already present, links between Japanese, Australian and international scholars and academics in view of future international collaborations. In parallel, the completion of an edited book (Figure 3), co-authored by top international scholars, has contributed to the event's resonance and dissemination of the results of each participant's research. The essays presented at the symposium were revised, edited and polished, and are now being collected in an edited book, which is currently under contract with Routledge/Francis & Taylor. The book is entitled *The Urbanism of Metabolism. Visions, Scenarios and Models for the Mutant City of Tomorrow* [2]. It will be released in March 2022.

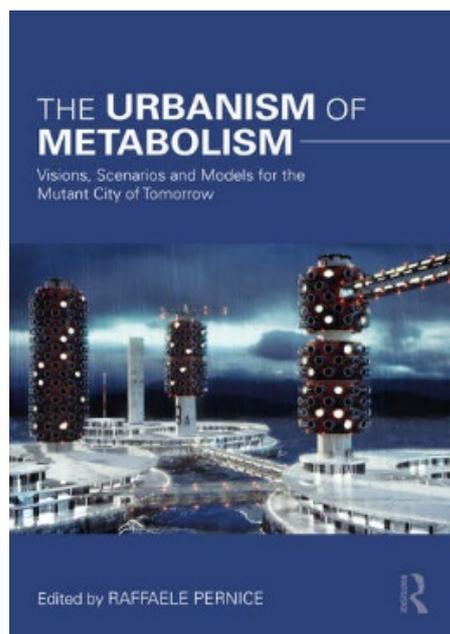


Figure 3. Cover of the edited book 2022.

3. Research Project 2: Sydney and Tokyo Waterfronts in an Age of Global Warming (in Progress, 2021–2023)

The rationale for this new international project lies in awareness that, in the age of climate change and global warming, many waterfront cities in the Asia Pacific Region must deal with increasing challenges caused by rising sea level and flooding risks. The research project is a critical and comparative study of the design and the development of large-scale waterfront areas in Japan and Australia.

The project contemplates a variety of ad hoc research activities and joint design studios under the guidance of academics from UNSW Sydney—School of Built Environment and Waseda University in Tokyo. In particular, the joint studios aim to foster knowledge exchange and share different design approaches, while detecting and interpreting the challenges and opportunities that waterfront cities such as Sydney and Tokyo face in this period of climate change. A series of master-level, research-led design studios, seminars and workshops orchestrated between Sydney and Tokyo were combined in a collaborative investigation with the intention of discussing and comparing the problems of the waterfronts in these two cities. By reviewing case study sites from Sydney and Tokyo academics and students from UNSW and Waseda University, the aim was to explore urban design strategies that address infrastructure improvement and disaster mitigation caused by the sea level rise/flooding risks while utilizing this environmental threat as an opportunity to return the waterfront to residents and raise their awareness of climate change.

The initial joint studio was scheduled for December/January for the cross-disciplinary summer course BEIL6013-Nomad Japan, which is open to UG and PG students from different backgrounds in the School of Built Environment. The research project will continue

in Term 1 and Term 2 for the graduation studio of the Master in Architecture program (Urban Conditions stream) and will culminate in a one-day, international, on-line symposium (webinar) in late November 2022, where scholars, practitioners and academics from Australia, Japan and overseas will present an account of the status of the art of waterfront regeneration and urban design practices. An edited book collecting all the essays presented at the symposium will add to the research outputs of the project in 2023.

Supplementary Materials: Link to the symposium website (Figure 1): <https://conference.unsw.edu.au/en/international-symposium>; link to the book webpage (Figure 3): <https://www.routledge.com/The-Urbanism-of-Metabolism-Visions-Scenarios-and-Models-for-the-Mutant/Pernice/p/book/9781032030739>.

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2. Pernice, R. (Ed.) *The Urbanism of Metabolism: Visions, Scenarios and Models for the Mutant City of Tomorrow*; Routledge: London, UK; New York, NY, USA, 2022; *forthcoming*.