地球温暖化時代におけるウォーターフロント再生: オーストラリアと日本からの学び

Repairing Waterfronts in the Age of Global Warming: Learning from Australia and Japan

国際シンポジウム/ウェビナー

24 November 2022

2022年11月24日（木）

International Symposium

The symposium intends to foster knowledge exchange and share different approaches while detecting and interpreting the threats and opportunities that waterfront cities in Australia, Japan and elsewhere on the planet face in a period of climate change and high sea-levels threats. Various participants will promote knowledge exchange and share different approaches while detecting and interpreting the challenges and opportunities that waterfront cities face in a period of climate change and high sea-levels threats through a cross-cultural comparison between Australia and Japan design and planning methodologies.

Through a cross-cultural comparison involving Australian, Japanese, and overseas urban design and planning methodologies, the various participants will promote intercultural awareness and dialogue, and share interdisciplinary perspectives to address the many challenges faced by urban waterfronts in the 21st Century.

Reviewing case studies from Australia, Japan and overseas, the symposium aims to explore urban design strategies that address infrastructure improvement, waterfront revitalization and redevelopment, and disaster mitigation caused by the sea level rise/flooding risks while utilizing this environmental threat as an opportunity to bring back the waterfront to residents and raise their awareness towards climate change.

Webinar via Zoom

AM Session: 9.30am-12.15pm (Australian Eastern Standard Time)
7.30am-10.15pm (Japan Standard Time)

Carola Hein | Helen Lochhead | Raffaele Pernice | Shaowen Wang

PM Session: 2.00pm-4.30pm (Australian Eastern Standard Time)
12.00pm-2.30pm (Japan Standard Time)

Tetsuya Yaguchi | Ryoko Iwase | William Galloway | George Kurumadc

Website link:
https://conference.unsw.edu.au/en/repairing-waterfronts-in-the-age-of-global-warming

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Organizers & Sponsors: UNSW Sydney - Built Environment, Waseda University - Department of Architecture
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UNSW SYDNEY

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2022 International Symposium/ Webinar

Repairing Waterfronts in the Age of Global Warming: Learning from Australia and Japan

SYNOPSIS

Adding to the recent impact of the global pandemic Covid which has changed the world, many serious problems caused by natural disasters and other factors (such as deforestation, overpopulation, resources depletion and widespread pollution) have become prominent on the planet since the end of the 20th Century. In particular, the last decade has seen a constant rise of global temperatures as direct consequence of the emission derived by the exploitation of oil reserves and the intensive use of fossil fuels for human activities.

Global warming is now among the fundamental cause of the current climate change at the turn of the 21st century, which will heavily impact on the urban ecosystem and well-being of world population. A direct effect is that the sea level is expected to rise as consequence of the ice melting while extreme weather phenomena (from heat waves to more violent typhoon and destructive hurricanes causing heavier rains) are exposing coastal cities to unprecedented destructive inundations and flood risks. In this context, recent studies have predicted that the sea-level is expected to rise between 1 and 4 meters by the end of the century, creating an unprecedented threat to the urbanized coastal cities in Australia and Japan and in general to the vast and densely populated megacities in Asia Pacific region.
Amid the rapid transformation of the climate and the natural environments, which will inevitably influence the survival of human settlements around the world, designers, administrators and engineers should start developing various scenarios and possible solutions to tackle the inevitable transformation which will occur in the near future while assuring that spaces and activities on the urban waterfronts provide social, cultural and economic benefits to their citizens.

This one-day international on-line symposium (webinar) is scheduled on Thursday, 24 November 2022 and is being co-organized by UNSW Sydney and Waseda University (Tokyo). The event intends to be an occasion to discuss on these themes and explore and compare possible strategies and solutions in the safeguarding of the coastal cities, the proposition of new visions for the re-use of the often-neglected urban waterfronts in terms of a more effective integration with the city whilst paying attention to the mitigation of the risks related with the effects of the unstoppable climate change.

GOALS OF THE SYMPOSIUM

The symposium intends to foster knowledge exchange and share different approaches while detecting and interpreting the challenges and opportunities that waterfront cities in Australia, Japan and elsewhere on the planet face in a period of climate change and high sea-levels threats. The various participants will promote intercultural awareness and dialogue and share interdisciplinary perspectives to address the many challenges faced by urban waterfronts in the 21st Century through a cross-cultural comparison involving Australian, Japanese and overseas urban design and planning methodologies.

Reviewing case studies from Australia, Japan and overseas, the symposium aims to explore urban design strategies that address infrastructure improvement, waterfront revitalization and redevelopment, and disaster mitigation caused by the sea level rise/flooding risks while utilizing this environmental threat as an opportunity to bring back the waterfront to residents and raise their awareness towards climate change.

Contributors will thus explore themes which aims at integrating the various scales of architectural, urban design and city planning processes for the enhancement of the urban waterfronts. They will review and discuss case studies and real projects aimed at activating, conserving and improving waterfront precincts to better integrate them into the city while making them more resilient to climate change; and they will investigate the notions and feasibility of innovative and radical alternative (nor conventional) urban model/prototypes suitable to orchestrate future developments of the coastal cities facing future challenges related with the global warming and the high sea level threats in the 21st century.

EVENT INFO

Thursday, 24 November 2022
Online webinar via Zoom

AM Session - 9:30am-12.15pm (Australian Eastern Standard Time)

Moderator: Dr. Raffaele Pernice

9:30am-9:45am	Introduction and welcome
9:45am-10:10am	Carola Hein (Delft University of Technology)
10:10am-10:35am	Helen Lochhead (UNSW Sydney)
10:35am-11:00am	Raffaele Pernice (UNSW Sydney)
11:00am-11:25am	Shaowen Wang (UNSW Sydney)
11:25am -12:15pm	Plenary discussion

12:15pm-2pm Lunch break

PM Session - 2-4.30pm (Australian Eastern Standard Time)

Moderators: Dr. Raffaele Pernice & Dr.Tetsuya Yaguchi

2.00pm-2:25pm	Tetsuya Yaguchi (Waseda University)
2:25pm-2:50pm	Ryoko Iwase (Kyoto University)
2:50pm-3:15pm	William Galloway (Toronto Metropolitan University)
3:15pm-3:40pm	George Kurumado (Takenaka Corporation, Tokyo)
3:40pm-4:20pm	Plenary discussion
4:20pm-4:30pm	Final remarks and wrap up

Organizers and sponsors
UNSW Sydney – School of Built Environment
Waseda University – Department of Architecture
Australian Government Department of Foreign Affairs and Trade (DFAT)
Australia-Japan Foundation (AJF) *(Grant Ref. AJF2021113)*

Symposium Organizing Committee
Dr. Raffaele Pernice (UNSW Sydney, School of Built Environment)
Dr. Tetsuya Yaguchi (Waseda University Tokyo, Department of Architecture)

Porosity in Port City Territories: Reconceptualizing the intersection of water and land for sustainable development

Carola Hein
Delft University of Technology

Port city territories are a particular type of space, located at the edge of land and sea, built to facilitate the transfer of goods, people, and ideas. These territories are characterized by multiple boundaries--geographical, institutional, and cultural--established and reaffirmed by diverse public and private stakeholders, often over centuries. I argue that the concept of porosity can help conceptualize and ultimately rethink the ways in which the spaces and people of ports, cities, and neighboring areas intersect. The notion of porosity both challenges and expands on the well-established theme of the interface and on more recent reflections on the port city threshold by arguing for a conceptualization of the port cityscape as a continuous network of port-related spaces and practices.
The presentation first places the theme of port city porosity in time, it then explores the ways in which boundaries have shifted and opened up and introduces geospatial mapping as a tool to conceptualize port city porosity on the seaside and on the land side, finally reflecting on its usefulness as a tool for spatial design and sustainable development.

An evaluation of the resilience of the regenerated waterfronts of Sydney Harbour (1970s - 2020s) to the impacts of climate change

Helen Lochhead
UNSW School of Built Environment

Like many modern cities Sydney has had to deal with the tension of competing agendas over time, economic growth versus environmental protection, public versus private interests, conservation versus renewal. At key moments, these tensions have provoked public discourse that led to pivotal transformation around the harbour. An imperative to challenge the status quo, has stemmed from both adversity, such as the decline of industry around the harbour in the 1960s-70s; as well as opportunity like Australia's 1988 Bicentennial and the 2000 Olympic Games.
The advocates for Sydney Harbour have often been architects, planners, and environmentalists, who proposed priorities and alternative visions. Many have been realised by successive governments' investment in public policy and significant urban projects that have shaped Sydney's identity. Some architectural icons, such as Sydney Opera House, others, the result of policies rolled out over decades, such as Sydney's necklace of foreshore open spaces, a requirement for all redevelopments. This legacy is largely due to successive Governments commitment to the public domain, but how effective have the planning, policies and built projects been in safeguarding the regenerated waterfronts from the impacts of climate change?
Through a series of case studies, this lecture will analyse and evaluate, the resilience of Sydney's waterfront, the effectiveness of public policy and governance, and provide lessons for other waterfront cities undergoing transformation.

Urban life on the water. Concepts, models and prototypes for marine habitats in Japan 1958-2020

Raffaele Pernice
UNSW School of Built Environment

The paper will highlight the significance of various mega-structural forms for marine cities, floating communities and waterfront developments which for most of the second half of the 20th century were among architects and designers a popular model of utopian urbanization model replacing the decaying inner cities, given the relevance of issues such as population growth, rapid urbanization, shifting to a mass-consumerism society and the total control on the production process.
Revisiting in particular the impact of the Japanese avant-garde movement of Metabolism in the 1960s on the current urban discourse for future city development and new forms of regenerative architectures, the study will explore the contribution and theoretical interchange with the urban projects developed by the so-called Big 5 construction companies (Takenaka, Shimizu, Teisei, Shimizu and Obayashi), and the mutual influence in the process of designing and building large scale “planned utopias” and “metabolic cities” for an urban future on the water.
The macroscale and technological complexity of these projects embraces the concept of utopia, which is interpreted not as an escape from reality into dreamlike artificial environments and habitats, but as a speculative model of architecture which operates as a self-conscious stimulus to test new radical solutions and foster innovative ideas to counter existential problems for humanity like climate change and sea-level rising in the 21st century.

Ground Condition re-conceptualise: Sydney waterfronts in Urban Conditions Studio

Shaowen Wang
UNSW School of Built Environment

The impacts of climate change in architecture and urbanism have been the main theme for the Graduation Studio in Urban Conditions stream (Master of Architecture) at UNSW since 2021. Five waterfront sites around the City of Sydney were interrogated in 2021 followed by the two sites among them in 2022: Camellia and Lavender Bay. Both are Sydney suburbs threatened by the Climate Change in the foreseeable future: rising sea level, extreme weather and flooding, and the increasing pressure caused by development and forced migration.
Camellia is bounded by Parramatta River to the north, and adjacent to Rosehill in the south: a flat stretch of post-industrial site undergoing environmental remediation since 2015. Lavender Bay sits on the lower North Shore of Sydney isolated by the topography and cut off from the surrounding suburbs by bundle of infrastructures brought forth by the Sydney Harbour Bridge: Cahill Expressway, Warringah Freeway, and the rail lines.
These two waterfront sites together have addressed the inevitability of the challenges by Climate Change, they have however revealed the limitation of the established structure for the architectural design studio: research theme, site analysis, precedent study, research question leading to design proposal, and the final design project.

This presentation wants to interrogate the concept, method, and the practice of site analysis in a design research studio that is informed by the impacts of Climate Change: waterfront architecture and communities. Survey of the similar type design studio for the waterfront site and the methods of site analysis will be compared. How the imaginary of the siting strategy has been shaped by the statistics and projections relating to Climate Change will be discussed. As stated in the Conclusion from the book:

In Time with Water: Design Studies of 3 Australian Cities (2019), the planned relationship between buildings (architecture) and an area of development (urbanism) is often non-existent. There is a "confluence" between them (page 280). The critical examination into the concept and practice of site analysis in the teaching of design studio, when confronted by environmental instability such as rising sea level and flooding, attempts to re-conceptualise the notion of "ground condition" in the reality of Climate Change.

Afternoon Session, 24 November (webinar 2-4.30pm Sydney Time)

Moderators: Raffaele Pernice & Tetsuya Yaguchi

Pre-Disaster Community Recovery through Evacuation Map Making Process: A case of Totsuka District, Shinjuku, Tokyo

Tetsuya Yaguchi
Waseda University

Japanese Planners realized the importance of pre-disaster community recovery after the experience of The Great Hanshin earthquake in 1995. In Totsuka District, Shinjuku Ward, Tokyo, The Totsuka Community-Based Collaborative Recovery Activity Research Group (TCCRG), an independent research group led by Emeritus Prof. Sato, has been working with the communities to create a pre-disaster recovery vision since 2010. At the most recent workshop held in 2021, TCCRG and the communities employed a new methodology called Nige-Chizu (Evacuation Map) to visually understand the flood risks and evacuation obstacles along the Kanda River. Nige-Chizu method is gaining popularity because it allows not only to understand risk and threads graphically and intuitively, but also to reflect local knowledge of evacuation strategies usually prepared by municipal governments. In this specific case, residents brought up several proposals that impact the current evacuation strategy, including the use of the riverfront path as an alternative evacuation route, additional safe evacuation spots not addressed by the municipal government, and the importance of resting spaces on the evacuation route for seniors and person with disabilities, and so on.
Through TCCRG's firsthand experience with residents living within the flood plain, the importance of sharing and accumulating local knowledge among residents and municipal government before the flood event is essential to mitigate the risk while archiving active waterfront environment during normal times.

Tocotocodandan: flood defence as waterfront public space

Ryoko Iwase
Kyoto University

The Japanese are accustomed to climatic disasters. Tsunamis, earthquakes and floods are all regular events. High flood defence walls protect cities like Osaka from the risk of flooding but at the same time disconnect citizens from their living waterfront. The scale of the walls eliminates any communication with the water, and the citizens lose their awareness of the sea, forgetting both their fear of and their delight in the water.
Studio IWASE's project 'tocotocodandan' is the waterfront promenade + public space with the function of the flood defence. It reclaims the flood defence wall, converting the hard, engineered infrastructure into public space, a terraced landscape, with room for varied interpretation, inhabitation and appropriation by the users. There's a continuous footpath along the water's edge to encourage people to walk by the water and there are big steps of the right size for sitting, inviting people to stay and watch the water. There is also a system of planters which are designed to invite citizens to actively tend the greenery. By re-imagining infrastructure as public space, people now have the opportunity to spend more time outdoors, connecting to the forces of nature both passively and actively.

Afternoon Session, 24 November (webinar 2-4.30pm Sydney Time)

Moderators: Raffaele Pernice & Tetsuya Yaguchi

Resilience in Tokyo – Building on Change

Will Galloway
Toronto Metropolitan University

Resilience is about building capacity to manage change. There are however different ways to plan for that management. This article considers the difference between engineered resilience and ecological resilience and the connection each type has with the normal processes of change in the urban environment of Tokyo and its waterfront.
Engineered resilience is based on a system where all variables are known and efforts are directed at ensuring that change is resisted. Ecological resilience is based on the possibility that multiple futures are equally valid, and planning is focused on managing the shift from one stable state to another. Tokyo is well known for its fast pace of change and constant rebuilding. That pace is supported by a regulatory environment that is generally open-ended though it also maintains strict protections and goals.
This paper describes the potential for resilience available to Tokyo and ways that existing systems can be used to strengthen the city's ability to respond to change in the future. It makes use of a conceptual model of Tokyo's planning system along with its various logistical networks and proposes a way to access them. As the waterfront may well experience significant but shifting stress due to climate change it is especially important that overly rigid plans are not adopted.

Waterfront Urban Planning and Communities for Resilience

George Kurumado
Takenaka Corporation, Tokyo

While traditional Japanese communities have strong social constraints, it is said that the strength of people's connections contributed to the mitigation of damage and reconstruction after the Great East Japan Earthquake of 2011. However, in modern society, the strength of social constraints has been considered an impediment to social change and progress. In modern urban planning, urban space has been designed to be efficient for human and vehicular traffic, and wide, straight streets have become the goal, far removed from an environment that fosters community, where people can stroll and talk as if they are escaping social restrictions. A prime example is the Tokyo waterfront area. It is a relatively new neighbourhood that has been built up over the past quarter century. The country is expected to experience earthquakes, typhoons, and the power outages that accompany such disasters, and communities will be expected to demonstrate their bonding and resilience in many ways. We would like to consider what remains of the modern urban planning that is still in place and what needs to be changed.

LIST OF SPEAKERS AND PROFILES

Carola Hein is Professor and Chair, History of Architecture and Urban Planning at Delft University of Technology, Professor Water, Ports, and Historic Cities at Leiden University and Erasmus University and UNESCO Chair Water, Ports and Historic Cities in the Leiden-Delft-Erasmus consortium. She has published widely in the field of architectural, urban and planning history and has tied historical analysis to contemporary development. Among other major grants, she received a Guggenheim Fellowship, an Alexander von Humboldt fellowship and a Volkswagen Foundation grant for mixed method digital humanities projects *ArchMedia,* and *Time Travel.* She leads the LDE PortCityFutures Centre, serves as *IPHS Vice President,* as *IPHS Editor* for *Planning Perspectives,* and as editor of the *European Journal of Creative Practices in Cities and Landscape.* Her recent (co-)edited books and monographs include: *Oil Spaces (2021), Urbanisation of the Sea (2020), Adaptive Strategies for Water Heritage* (2020), *The Routledge Planning History Handbook* (2018).

George Kurumado. As Managing Executive Officer in charge of design at Takenaka Corporation, a general contracting firm, he is primarily responsible for design, and was appointed as an advisor in April of this year. He is currently a doctoral student in social engineering at the University of Tsukuba. His works as an architect have received numerous awards, including two BCS Awards, one of the most highly regarded awards in Japan.

Since 2000, his designs have focused on sustainability and urban structure, and have won the ASHREA World best Place Award. He has also served as a juror for the Architectural Institute of Japan's Best Work Award and the Tokyo Architecture Award, and has participated in architectural education at Harvard University and Waseda University.

Helen Lochhead is cross-disciplinary, an architect, landscape and urban designer combining academic and advisory roles with practice. Her career has focused on the inception, planning, design, and delivery of complex urban projects ranging from city improvements programs to major urban waterfront regeneration projects both in Australia and the US.

Her projects have received numerous awards including AIA and AILA Urban Design and Sustainability Awards and most recently, for the Master Plan of Sydney's Harold Park Precinct, she was awarded the AIA Lloyd Rees Award for Urban Design and the City of Sydney Lord Mayor's Prize for urban design excellence in 2019.

Helen has held numerous influential roles in government, industry and universities including Dean, Faculty of Built Environment and Pro Vice-Chancellor Precincts at UNSW Sydney 2016-21, Deputy NSW Government Architect and National President of the Australian Institute of Architects.

Raffaele Pernice is an architect and Senior Lecturer in Architecture and Urbanism at the University of New South Wales (UNSW Sydney), Australia. He received a PhD in Architecture from Waseda University in Tokyo and a M.Arch from the University IUAV of Venice in Italy.

Dr. Pernice's research concentrates on modern and post-modern urban and architectural theories and history, with a focus on the contemporary urbanism of Japan and the Asia-Pacific region. He is editor of *The Urbanism of Metabolism. Visions, Scenarios and Models for the Mutant City of Tomorrow* (Routledge, 2022) and has published articles and essays in academic periodicals and journals, including *the Journal of Asian Architecture and Building Engineering*, *Town Planning Review*, *the Journal of Architecture and Planning*, *the Journal of Civil Engineering and Architecture*, *Urbanie and Urbanus* (*U&U)*.

Dr. Pernice has been recipient of competitive international grants and fellowships from the MEXT (the Japanese Ministry of Education), the Italian Ministry of Foreign Affairs, the Japan Foundation, the Australian Department of Foreign Affairs and Trade (DAFTA), the National Foundation of Australia-China Relationships (NFACR), the Japan Society for the Promotion of Science (JSPS), among others.

Ryoko Iwase. Born in 1984, Principal of Studio Iwase and Assistant professor, Graduate School of Engineering, Kyoto University, where she also graduated from the Faculty of Engineering and completed her master's program. After working for EM2N Architects in Switzerland and at Kengo Kuma and Associates, she established her own office after winning the 2013 Kizu River Waterfront Competition held by Osaka Prefecture; her prizewinning waterfront renovation,

Tocotocodandan, was completed in 2017. Her practice covers multiple areas from architectural spaces to public-works infrastructure and public space design. In 2021, she exhibited her work at Venice Biennale as one of the main exhibits of the Japan Pavilion. She has received the grand prize of The Japanese Institute of Landscape Architecture Award, the Good Design Gold Award, the Tokyo University of the Arts Emerald Award, and the Best Debutant Award,AIJ *Young* Architect Award for Selected Architectural Designs 2022.

Shaowen Wang is an active tutor and Lecturer in Architecture at UNSW Built Environment, Architecture Program. Before moving to Australia, she undertook research courses at Columbia University, and the City University of New York. Her main interest is in architectural history, theory and criticism with the focus on cosmopolitanism since the mid nineteenth century and architecture design pedagogy.

Tetsuya Yaguchi has over 20 years of professional experience as an architect/ urban designer working on a wide range of projects for private and public clients. He worked at AECOM San Francisco office as an associate Principal and worked on various types of projects in the United States, Asia, and Middle East countries.

Mr. Yaguchi currently holds a tenured-faculty position at Waseda University and conducts theoretical research and urban design exercises that focus on sustaining and enhancing the built environment through understanding the physical, social, ecological, and technological underlying system of the cities as a whole. Mr. Yaguchi is a certified planner in the United States and a registered architect in Japan and California.

Will Galloway is trained both as an architect and urban planner, and is interested in how to manage massive change in the built world. He is a principal of the design firm frontofficetokyo and Assistant Professor at Toronto Metropolitan University. After graduating with a Master of Architecture degree from the University of Manitoba Will practised architecture in Japan and in the UK before earning a PhD in urban planning at the University of Tokyo in 2008.

Since then, he splits his time between professional practice and education. In both realms the focus is on building resilience and uncovering opportunities for innovation through analysis of existing conditions. He recently co-edited a book on resilience that includes a close look at the disaster in Japan, called “Rethinking Resilience, Adaptation and Transformation in a Time of Change”. He is currently researching ways to manage food water and energy in Tokyo in response to a period of extreme demographic change.

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