

Swamped

Master classes in building flood resilience in Elwood

Thursday 23rd of June 2016

Venue

MADA: Monash Art Design & Architecture
Monash University, Caulfield Campus
900 Dandenong Road Caulfield

Link to register: <http://swamped-elwood-masterclass.eventbrite.com.au>

This is a full day event, although participants can attend individual streams (morning or afternoon) if preferred.

Cost: FREE

AGENDA		
Time	Topic	Who
Stream one – Design and engagement tools		
9:00 – 9:45	Shared visions - How to engage industry and community in innovative transition processes.	Briony Rogers
9:45 – 10:00	Break	
10:00 – 10:45	Design research & propositional methods - How to visualise alternative urban futures.	Nigel Bertram
10:45 – 11:00	Break	
11:00 – 11:45	Adaptation pathways - How to adapt to uncertain flood impacts.	Berry Gersonius Mohan Radhakrishnan
12:00 – 13:00	Lunch (provided)	
Stream two – quantitative tools		
13:00 – 14:30	Flood resilience – How to assess the flood risk and economic consequences of alternative urban planning interventions.	Berry Gersonius Carlos Salinas Rodriguez Karsten Arnbjerg-Nielsen
14:30 – 15:00	Break	
15:00 – 17:00	DAnCE4Water - How to assess the multiple benefits of a flood management strategy.	Christian Urich

Master class abstracts

Shared visions - How to engage industry and community in innovative transition processes.

Delivering water sensitive cities will require water systems management to become more collaborative, adaptive and responsive to local conditions and liveability aspirations. But how can stakeholders actively plan for this transition in policy and practice? Why is it so difficult for organisations to grapple with governance challenges and future uncertainties? What role can citizens have in long-term water system planning and short-term solution identification? Drawing on case studies of a community vision and pathways for Elwood and a sectoral vision and strategy for Perth, this session introduces participants to an innovative transition planning process that can help unpack these types of questions, and discusses how it can be applied in their context.

Design research & propositional methods - How to visualise alternative urban futures.

To work towards a positive and plausible future, careful analysis of past and present is required on which to build a more grounded and relative understanding of change. This session will outline the cultural-historical analysis that provides a framework for our Elwood approach, and the role of speculative propositions to both challenge the status quo and visualise alternative social and physical formations. It will explain the iterative cycle of observation, analysis, proposition, drawing/making, testing and critical reflection that underpins design research - and the value of this within an interdisciplinary structure that is engaged with the community.

Adaptation pathways - How to adapt to uncertain flood impacts.

This session will introduce a step-by-step approach for adaptive planning aimed at increasing resilience against floods and droughts. Central to the approach are performance thresholds, such as flood risk tolerability thresholds. When a performance threshold is reached, known as an adaptation tipping point, additional actions are needed to reach the defined objectives. As a result, an adaptation pathway emerges. The session will teach participants how to work with adaptive planning in general, and with the pathways generator of Deltares/Carthago in particular.

Flood resilience – How to assess the flood risk and economic consequences of alternative urban planning interventions.

Sustainable Drainage Systems (SuDS) are frequently considered as part of wider urban planning interventions for Water Sensitive Cities. This is because they provide a wide range of benefits beyond simply dealing with stormwater. This session will introduce a spreadsheet tool, known as BeST (Benefits of SuDS Tool, developed by CIRIA), to evaluate the benefits that SuDS provide. The benefits that BeST includes are linked with ecosystem services (ESS) categories and sustainability categories in terms of the 'triple-bottom-line' of financial, social and environmental.

Costing of impacts from flooding is very uncertain and yet critical in finding the right level of protection against flooding. Based on an international review of practices and models for costing of these impacts we suggest how to model the costs for the Elwood case study area and hence also give an indication of the economic costs of in-action in the area.

DAnCE4Water - How to assess the multiple benefits of a flood management strategy.

The session provides a hands-on application of DAnCE4Water, introducing its online modelling platform to set up an integrated catchment model for assessing the multiple benefits of adaptation strategies and testing their robustness under many climate change and urban development scenarios.

This includes:

- Setting up zoning regulation and population projections for the urban development module to generate scenarios of urban form
- Setting up adaptation strategies at different scales, for example staged upgrade of the urban drainage system or financial incentives for lot scale measures such as rainwater tanks
- Assessing performance of the integrated water system in terms of the multiple services provided (including the stochastic water demand model, the water cycle model simulating water quality and quantity from households to catchment or city scale, 1D flood simulation with SWMM and Mike-Flood, urban microclimate assessment, and stream erosion)
- Economic evaluation of the multiple benefits, including willingness to pay for improved water services, water savings, environmental benefits, and flood damage assessment
- Testing the robustness of proposed adaptation strategies by evaluating their performance under many climate change and urban development scenarios

City planning at the strategic level should be informed by changes in flood risk due to e.g. anticipated climatic changes and planned city development. This is the reason why the CRCWSC has integrated dynamic flood risk assessments into the DANCE modelling platform. This enables exploring the dynamics between different strategies for flood risk management as a consequence of different strategies for city planning by showing why will be affected by flooding, what the economic consequences will be, and what actions are suitable to mitigate the changes in flood risk.

Presenters



Briony Rogers

Briony is a Senior Lecturer with the School of Social Sciences, Monash Water for Liveability Centre and the Cooperative Research Centre for Water Sensitive Cities. Her research explores how strategic planning and institutional change can enable transitions in urban water systems to create more liveable, sustainable and resilient cities. Briony has an interdisciplinary background, with a PhD in Environmental Sociology, a Bachelor of Civil Engineering (Honours) and a Bachelor of Science.



Nigel Bertram

Nigel Bertram is a Director of NMBW Architecture Studio, Melbourne and Practice Professor of Architecture in the Faculty of Art Design & Architecture at Monash University. Nigel established NMBW Architecture Studio in Melbourne with Marika Neustupny and Lucinda McLean in 1997.

In 2010 Nigel completed his PhD through architectural project at RMIT University, where he taught for 11 years and was co-director of the Urban Architecture Laboratory research unit. From 2007-2010 Bertram was a member of the Sullivans Cove Design Panel, which advised the Tasmanian Government on urban design, planning and architectural matters within the highly sensitive Sullivans Cove precinct of central Hobart. In 2012 he was appointed as a member of the Design Review Panel established by the Office of the Victorian Government Architect. Nigel's current research with the Monash Architecture Studio is focused around new strategic development and contemporary living environments for Australia's transforming cities.



Berry Gersonius

Berry Gersonius is Senior Lecturer in Urban Flood Resilience at UNESCO-IHE. The scope of his work covers education, research and capacity building in the field of urban water and flood risk management. His research interests are the application of resilience to urban water systems, on the development of adaptation policy pathways, and on the delivery of water sensitive cities.

He has been involved as a project member in various national and international research projects and he participates in the CRC WSC project on Socio-Technical Flood Resilience, the ADB project MARE Indonesia, the WOTRO IP Dynamic Deltas, and the Interreg IVB project CAMINO.

He is also an expert on flood safety and stormwater for the City of Dordrecht. At Dordrecht, Berry is working on the development of an integrated flood risk management strategy for dike ring 22, based on the concept of multi-level safety (i.e. addressing protection, prevention and preparedness). He is a member of the regional Delta Programme Rhine Estuary-Drechtsteden



Karsten Arnbjerg-Nielsen

For more than a decade Karsten Arnbjerg-Nielsen has focussed on research that aims at understanding climate change impacts and how these should be integrated into the formation of sustainable and smart liveable cities, i.e. cities that uses water in an intelligent way to become more resilient to climatic extremes and provides ecosystem services to the inhabitants with minimal resource consumption.

The main research areas include use of statistics for process identification and modelling of precipitation extremes and urban drainage modelling, risk assessments and risk management of flooding, and climate change impacts.



Mohan Radhakrishnan

Mohanasundar is a Civil Engineer from India. He worked as a design engineer and was involved in the hydraulic design of drinking water distribution networks and bulk water transmission main in various water supply schemes in India. He worked with Arghyam, an NGO as a Project officer in an integrated urban water management project in Karnataka, India. He was then a Project Advisor for German International cooperation and contributed towards the preparation of City sanitation Plans and planning of a waste to energy project in Nashik, India. He is now associated with Flood resilience chair group of Water Science and Engineering Department as a full time PhD student, researching on embedding flexibility in Urban Flood Risk Management systems including the CRC project “Socio-Technical Flood Resilience in Water Sensitive Cities – Adaptation across spatial and temporal scales”.



Carlos Salinas Rodriguez

Carlos is a Bolivian Civil Engineer currently doing his PhD research in the field of urban flood resilience.

His working experience includes research, consultancy and teaching activities, mainly in the field of Geotechnics, water distribution networks and water quality. Carlos has international research experience in South Korea and now is part of the Collaborative Research Centres for Water Sensitive Cities.



Christian Urlich

Christian is a Research Fellow with Monash University’s Department of Civil Engineering, exploring the dynamics of integrated urban systems and their linkages between the city, its water infrastructure and socio-economic systems. His research focuses on how these dynamics and feedbacks can be modelled in an integrated way to explore scenarios for sustainable and robust adaptation strategies. Christian leads the CRC’s interdisciplinary work to develop decision support and benchmarking tools that integrate the biophysical, social and economic dimensions of a city’s urban water system to inform adaptive policy planning. His publication on “Modelling cities and water infrastructure dynamics” has recently been awarded the Trevithick Fund prize for best paper published in an international scientific journal ICE – Engineering Sustainability.