

DELTA IN PRACTICE SESSIONS: EXTENDED WORKSHOP DESCRIPTIONS

Theme 3: Urban design and infrastructure

DP 3.1 Developing multipurpose infrastructure for climate resiliency 1

DP 3.2 Creating floating cities: A dream or a new perspective for the future of the planet? 1

DP 3.3 Room for the River presents: Learning from flood resilient cities Nijmegen and Mainz, combining flood management and urban development 2

DP 3.4 Brisbane watershed design charrette 3

DP 3.5 Multifunctional water storage: Eendragtspolder 4

Deltas in Practice Theme 3. Urban design and infrastructure

DP 3.1 Developing multipurpose infrastructure for climate resiliency

Friday 26 September, 09.00-12.00

Goudriaan Room I

including break

This workshop will use simulated scenario planning to introduce practitioners to multipurpose delta infrastructure development. This new approach creatively expands narrow infrastructure planning to incorporate benefits from multiple related projects. It creates business cases for funding from multiple private and public sources, attracting new parties as shareholders. The resulting system of linked infrastructure and community assets offers more flexible and comprehensive solutions to climate change.

In one example, a dam needing renovation is converted to hydroelectric, with costs offset by road improvement funding across the dam, and also from electric generation. New water flow across the dam revives wildlife in the formerly stagnant water, creating economic and touristic potential while drawing public restoration funds. Development rights are sold on the dredged land for power facilities, drawing private investment.

Workshop participants will gain experience identifying multipurpose opportunities in delta settings.

The workshop will consist of 3 short, linked presentations from representatives of 1) AT Osborne and Deltares on environmental infrastructure, 2) Rijkwaterstraat on water/transport infrastructure and 3) City University of New York on urban infrastructure.

Afterwards the presenters will facilitate and learn from the participants as they design multipurpose solutions on a map containing common urban, mobility, and environmental challenges in delta environments.

The purpose of the workshop is to enable practitioners to use the strategies in their own local context, whether international or domestic.

Deltas in Practice Theme 3. Urban design and infrastructure

DP 3.2 Creating floating cities: A dream or a new perspective for the future of the planet?

Thursday 25 September, 13.30-15.15

Penn Room I

The idea of a Blue Revolution: Cities produce huge amounts of wastewater and CO₂. Most of the nutrients from wastewater and large parts of the CO₂ ultimately accumulate in the water system. A circular metabolism requires us to use these substances in a productive way. The most simple

and effective way to achieve this is algae. Floating algae and seaweed farms near delta cities can capture most of the nutrients and CO₂ and produce the basic resources for the cities' food and energy supply. Such a bio based circular economy will also include aquaculture, hydroponics and floating bio refineries. The 'blue' jobs that this new economy creates can be provided to people living in floating communities and on the shore near floating city expansions. This will create compact cities, reducing the need to commute. The objective is to create a symbiosis between communities on land and water.

Interesting web links and resources:

[Seasteading vision: http://www.seasteading.org/](http://www.seasteading.org/)

[TEDx talk Lasse Birk Olesen: https://www.youtube.com/watch?v=Tv5gBFqzQfY](https://www.youtube.com/watch?v=Tv5gBFqzQfY)

[The Floating City Project http://www.youtube.com/watch?v=rJvX_asWTg](http://www.youtube.com/watch?v=rJvX_asWTg)

[BlueRevolution](#)

<http://www.youtube.com/watch?v=0deiRRqWLgU>

[Measuring water quality impacts with underwater drones.](#)

<https://www.youtube.com/watch?v=0iePcW3qFGc>

[Floating School in Makoko, Lagos, Nigeria](#)

<http://www.nleworks.com/case/makoko-floating-school/>

<http://www.youtube.com/watch?v=cSnQfelYMWI>

Objectives of the workshop:

-Bring together global frontrunners from science, government, companies and ngo's, who are all working on floating cities.

-Exchange knowledge on recent developments with regard to floating urban developments.

-Integrate knowledge by looking at floating cities from different perspectives such as the global perspective, the development perspective and the governance perspective.

Outcomes:

To obtain insight in the global potential of floating urban developments in general and especially in developing countries. To gain more knowledge on obstacles and governance challenges with regard to floating Urban developments. Data and knowledge on water quality/ecological impacts and ways to mitigate these impacts.

Target group:

Designers, policy makers, scientists and engineers who are motivated to contribute to a future perspective of coastal delta cities

Deltas in Practice Theme 3. Urban design and infrastructure

DP 3.3 Room for the River presents: Learning from flood resilient cities Nijmegen and Mainz, combining flood management and urban development

Thursday 25 September, 15.45-17.30

Diamond Room I

The desired outcome of the workshop is to create a mindset for collaborative thinking between engineers and spatial designers. This workshop targets researchers, practitioners and policy makers both from on the technical as well as the design side.

After two central presentations we will spread into several groups and work on practical challenges with input from the group. The groups will choose a moderator amidst themselves.

Topics to be addressed:

- How to combine water safety challenges and sustainable city development in a coherent project

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- How are spatial quality and technical quality related
 - How to keep a sharp focus on the principal objectives
 - How to gain public support
 - How to involve (future) partners
 - How to cope with cultural differences, between nations, regions and people

Finally - in the wrap up session - Alex Nickson from the Greater London Authority will be asked to comment on the results of the different groups.

Urban design and climate adaptation seem contradictory at first sight, but the combination of the two can lead to tremendous opportunities. The Room for the River project in the city of Nijmegen and the Zollhafen project in the city of Mainz illustrate this. Room for the River is the largest Dutch water management program since the Deltaworks. Instead of fighting *against* water, the river will be literally given more space. The program consists of 38 different projects along the rivers Waal, Rhine and IJssel. One of the projects is situated right in the city centre of Nijmegen. In the project 'Room for the River Waal' in Nijmegen, there is not only focus on making the city flood resilient, but also on spatial quality. By creating a new river arm spin-off can occur for new nature, social and economical development.

In the municipality of Mainz a similar approach has been taken. From fighting *against* water towards living and working *with* water. The city of Mainz also embraced a new perspective on living with water. Flood risks are seen as an opportunity, not only to build a climate-resilient city, but also to improve spatial quality. The river Rhine is given room to flood the project area at extreme high waters. This requires special architectural solutions.

In the Netherlands there is an emphasis on flood prevention, whereas in Germany there is an acceptance of irregular floods.

Deltas in Practice Theme 3. Urban design and infrastructure

DP 3.4 Brisbane watershed design charrette

**Wednesday 24 September, 14.00-18.00,
including break**

Beurs Lounge

Thinking about climate change is more than repairing damage or solving problems. It is also about imagining how a great environment can be developed in a holistic way. This "imagining process" can yield new thoughts about who we are, who we want to be, what qualities we want to keep, which to create, what identities are permanent and which can be improved, and what solutions do we need to solve the problems?

Being a region half the size of the Netherlands, the Brisbane watershed in southeast Queensland, Australia, is subjected to flooding and drought events of increasing regularity. Since 1841 when records began, the city of Brisbane has experienced seven major and thirteen moderate flood events. In the most recent flood of January 2011 (which followed nine years of drought), 12,000 homes and 2,500 businesses were fully inundated, with another 16,000 homes and businesses partially flooded. Coupled with a growing population, the increasing frequency of these climatic events point to the need for a more holistic approach to climate change adaptation than is currently in action across the region.

One proven successful method to share knowledge and think about a collective future is the dialogue or charrette. Thus, in contemplating the invitation to organise a "Deltas in Practice" workshop, our team proposes the Brisbane Water Charrette.

The main idea is to set up a comprehensive workshop that builds on the conceptual interactions and connections between policy-makers, civil and hydraulic engineers, urban designers, landscape architects, city planners and soils/hydrology experts, and others attending the conference. Our interdisciplinary workshop will create an interesting interaction and spectacle between people of different walks of life with a shared interest, in working together on a specific important Delta in Practice issue.

Deltas in Practice Theme 3. Urban design and infrastructure

DP 3.5 Multifunctional water storage: Eendragtspolder

Thursday 25 September, 15.45-17.30

Penn Room I

The multifunctional water storage facility in the Eendragtspolder, the largest in the Netherlands, prevents the Rotterdam area from flooding during heavy rainfall... and more! It is also a new recreational area in this densely populated region and it houses a brand new rowing course that meets the Olympic standards. Special attention was given to water quality and ecology. Therefore, the area will become, and already is, a safe haven for many species of water bound plants and animals.

In this workshop, the Regional Water Authority of Schieland & Krimpenerwaard and its partners involved will inform you not only about the technological challenges of this project but also the fail and success factors in a successful collaboration will be discussed.
