Sustainable Urban

Deltas

9 May 2016

at
IABR-2016THE NEXT ECONOMY
Fenixloods II Rotterdam

CONFERENCE REPORT







Call For Action

Sustainable Urban Deltas: Next Steps

How can we make deltas inclusive, productive, resilient, and livable for everyone? And how can we transform ideas, recommendations, and policy into alliances, programs, and projects? These were the key questions during the conference on Sustainable Urban Deltas that took place on 9 May at the 7th edition of the International Architecture Biennale Rotterdam (IABR).

The conference was a kickoff for the official program of the Delta Coalition on the 9th and 10th of May. It was a day of in-depth deliberation with a group of international experts with different backgrounds. Policy makers, politicians, NGOs, academics, engineers, designers and consultants worked and talked together about the challenges and opportunities of the world's urban deltas. The aim of the day was to create an ambitious agenda for action. If we explore the challenges together and learn to identify keys to solutions, how can we subsequently start working together in practice? What's Next?

The rich and varied results of the day are reflected by this publication. We believe it is important to highlight a number of conclusions specifically. Points that play a decisive role in what comes next and that are conditional to the success of sustainable urban delta development and the supportive role the Delta Coalition could play.

40.

A Strong and Bonding Narrative

Change always begins with the development of a strong and bonding narrative, a positive, forward-looking and action-oriented narrative about resilient deltas that binds all stakeholders together, that evokes recognition and that the parties involved jointly propagate: myth is the motor of change.

↓1.

A Clear Agenda

The Delta Coalition needs a clear, substantial and focused agenda that states what the Delta Coalition will work on in the following years and what the intended outcomes are. Water is a central issue in all urbanizing deltas: water as a big divider as well as a great connector with regard to added value, equity, and prosperity.

42.

Collaboration Is Key

It is essential to create interdisciplinary, multilevel, and cross-sector (multi-stakeholder) alliances between parties such as governments, NGOs, private sector, researchers and designers to connect the local to the (inter)national.



↓3.

The Delta Coalition as a Broker

Often an outside partner is needed to set things in motion, to catalyze a transformation and action. The countries gathered in the Delta Coalition can be each other's outside partners and use their networks, like the IABR, to create and facilitate opportunities for reform.

4.

Reinvent Finance

The realities of financial institutions and their processes often fail to align with the implementation of innovative and comprehensive projects. Use pilot projects to pave the way to finance, to design innovative financial development models, and to enhance financial mechanisms.

45.

Make Projects!

Good examples are essential. Working on actual projects will inform the agenda and vice versa, creating a continuous feedback loop between ambition and implementation. This will build capacity among all stakeholders and, combined with monitoring and evaluation, increase impact and create opportunities for replication and upscaling.





We would like to take this opportunity to add an extra point of action, and that is about the need to

Presenting. The activities mentioned above need a context from which and in which they can be further developed and shaped. A context for the co-development of new insights and best practices in which there is room for failure – to allow learning-by-doing, and for boldness – to allow leapfrogging. Such a context contributes to the process of collaborative capacity building, and to the transformation of agendas, ambitions and plans into applicable pilot projects and real-world change. Also, the sociocultural role of transparent public discourse and presentation cannot be underestimated: 'show and tell' to help inform and commit the world community, and ensure an open and participative trajectory to build capacity and strengthen approaches that fit in with Global Agendas, like the implementation of the Sustainable Development Goals, the COP21 agreement, the New Urban Agenda, and so on.

Design can inspire, connect and strengthen an integrated and participative approach by imagining the future, by visualizing what can be done. Design is key for showing the added value of investments across sectors, scales and through time, in a comprehensive way, informing both the 'cultural' process and the 'economic' outcome.

We must use the Delta Coalition and the ongoing collaboration to test, reflect, learn, imagine and present.

The Delta Coalition (represented by the Ministry of Foreign Affairs and the Ministry of Infrastructure and the Environment of the Kingdom of the Netherlands), the Special Envoy for International Water Affairs for the Kingdom of the Netherlands, and the IABR will investigate whether it is possible to set up such a space for experiment and development.

May 2016 has proven to be a month brimming with ambition towards more resilient and socially inclusive urban deltas. UN HABITAT III presented the Zero Draft of the New Urban Agenda, calling for a paradigm shift in the way we plan, develop, and manage urban delta development and taking the Dutch Urban Delta approach as one of the drivers for sustainable delta development. The United Nations and World Bank's High Level Panel on Water gathered in Rotterdam to develop their work plan, urging for a new and integrated narrative for water connected to real action, implementation, and better finance. And the twelve ministers of the Delta Coalition launched their collaborative agenda, underlining the need for international collaboration, exchange and practical implementation.

Let us use this momentum to actually start the work: Next begins Now!

Vana Dada

Netherlands

kees kade	George Brugmans	Henk Ovink
Director Inclusive Green	President	Special Envoy for
Growth / Ambassador	International Architecture	International Water Affairs
Sustainable Development	Biennale Rotterdam	for the Kingdom of
Ministry of Foreign Affairs of		The Netherlands
The Kingdom of the		

Hank Ovinle





Conference Sustainable Urban Deltas

9 May 2016

IABR-2016-THE NEXT ECONOMY



How can we make deltas inclusive, productive, resilient, and livable for everyone? And how can we transform ideas, recommendations, and policy into alliances, programs, and projects? These questions were the focus of the conference Sustainable Urban Deltas that took place on 9 May at the 7th edition of the International Architecture Biennale Rotterdam (IABR).



Introductions

"It is clear that we can only solve the world's environmental problems if we solve the problems of our cities first. And this is nowhere more urgent than in urbanizing deltas – the most challenging regions of the world."

"The cultural space as a conceptual space can help us create the new narratives, cement the new alliances and foster the new knowledge that we need."

→ ① GEORGE BRUGMANS (PRESIDENT IABR)

There is one thing we know for sure about the Next Economy: it will be an Urban Economy. Half a century from now, up to 80 percent of the world's population will be living in cities – about half of which has yet to be built. The bulk of our wealth will have to be produced there, while cities already represent over 65 percent of all energy consumption and about 70 percent of all CO2 emissions. It is clear that we can only solve the world's environmental problems if we solve the problems of our cities first. And this is nowhere more urgent than in urbanizing deltas – the most challenging regions of the world. They contain large concentrations of people, they play a crucial role in the world's ecosystems and their significance to the world's economy is quite substantial.

The Next Economy = old + new + what we don't know: disruptions, technological breakthroughs, and whatever catastrophe nature has in store for us. Next is what always escapes us. And yet we have to plan for it. However, business as usual is no longer what it used to be. Alternative, innovative, and even experimental approaches are becoming essential in order for us to do whatever it takes. The cultural space as a conceptual space can help us create the new narratives, cement the new alliances, and foster the new knowledge that we need. The cultural space is where we imagine. It is where we create the new narratives that bind us together and that enable us to look forward as a society, as a civilization.

The Delta Coalition is the world's first international coalition of governments that have formed a partnership to deal with inclusive sustainable development in urbanizing deltas. Crucially, the coalition will allow delta countries to join forces to encourage sharing best practices and innovation. Biennales like this one, and meetings like we are having today, both stemming from years of research by design and the advancement of the urban agenda, are extremely important as hubs for the sharing of knowledge, innovation, and best practices.

"It is significant that so many mayors were present at the signing of the Paris climate agreement: cities play a huge part in realizing these climate goals."

"The Netherlands wants the theme 'Sustainable Urban Deltas' to be part of the New Urban Agenda."

→ ② KEES RADE (DIRECTOR INCLUSIVE GREEN GROWTH / AMBASSADOR SUSTAINABLE DEVELOPMENT OF THE KINGDOM OF THE NETHERLANDS)

Due to climate change, water is now the subject of close scrutiny. The urbanization of river deltas has to become central to the international agenda because worldwide, it is places like these that will first feel the effects of climate change. It is significant that so many mayors were present at the signing of the Paris climate agreement: cities are often much more progressive and action-oriented than national governments and play a huge part in realizing the climate goals. These are all the more urgent now that over half the world's population is living in cities, their numbers only increasing.

The United Nations adopts a New Urban Agenda once every 20 years. We are currently in the run-up to the Habitat III Conference in Quito, where the next New Urban Agenda will be adopted. The EU and the Netherlands want the pursuit of inclusive cities that are green and resilient, prosperous and innovative to be on the agenda. With governance geared to include local residents in decision-making processes. The Netherlands wants the theme 'Sustainable Urban Deltas' to be part of this New Urban Agenda.









"We cannot go on like this. To really work effectively on smarter and better solutions, we need a paradigm shift."

"This is the biggest challenge: get to work! No time to waste and no excuses."

→ ③ HENK OVINK (SPECIAL ENVOY FOR INTERNATIONAL WATER AFFAIRS

FOR THE KINGDOM OF THE NETHERLANDS)

We cannot go on like this. Disasters all around the world

-recently in Europe, but almost weekly in Asia and the

Americas – underline the urgency. And look at the trail
of extreme droughts caused by El Nino in large areas
of Asia and Africa earlier this year. Mismanagement,
magnified by climate change, amplify the devastating
power of water. This turned water in Syria into a weapon
of mass destruction. Figures show that 50 percent of the
African population has no access to clean drinking water
and the rising sea level has already left some Pacific
islands uninhabitable and in some cases even made
them disappear. In short, we are on a collision course.
Unsurprisingly, the World Economic Form has called water
the most severe risk of the coming decade.

To really work effectively on smarter and better solutions, we need a paradigm shift. Together, we have to draw up an agenda for action, working on real change. This is our biggest challenge: How do we get things going? The hesitation to get to work comes from distrust and inability. But we have to deliver results because there are no excuses and there is no time to waste. Will this be difficult? Of course, but transparency, accountability and inclusivity demand a process of learning by doing, of trial and error, with real change on the ground. It will take a comprehensive, design-driven approach that, using design as a driving force, (as a framework and a connecting factor), brings together programmatic methods, capacity building on all levels, funding, and a working process that is truly inclusive. That is how we can connect longterm analyses and plans to short term action in innovative projects. We have to be innovative in the short term to be able to make decisions that are transformative, clear and ready to deal with the future's complexity in the long term.

Key Notes



The Next Economy

Maarten Hajer (Chief Curator IABR-2016)

Within half a century, the number of people living in cities worldwide will have doubled. When that happens, the city will truly have become the engine of the world economy. But what does that Next Economy have in store for us? No one can predict what the future will hold, but one thing is certain: more of the same is no longer a sensible option. Climate change, global urbanization, emerging new technologies, increasing migration, and growing inequality urgently demand real solutions. We have to rethink the way in which we live, work, and learn, and where and how we consume and produce. And we do have a say in the future we want: we want our cities to be clean, productive, and inclusive.

"The oftenheard concept of 'smart cities' is representative of the confidence that technology will be able to solve the problems of our cities. But what is actually the problem?"

→ ① MAARTEN HAJER CHIEF CURATOR IABR-2016

The creation of a more sustainable built environment is high on the agenda these days. Once again, the oftenheard concept of 'smart cities' is representative of the confidence that technology will be able to solve the problems of our cities. But what is actually the problem? Buzzwords like 'urban science,' 'big data,' '3D printing,' and 'home electronics' obscure the real urgencies.

We need a new paradigm, one that results from careful planning rather than 'smart technology,' and that requires imagination. We have to learn from each other and unlearn old, ingrained habits at the same time. The Delta Coalition and the C40 comprise new forms of governance that are organized horizontally rather than hierarchically, that are integrated rather than sectoral, and that are based on learning by doing. To transform and increase our capacities, we have to invest in the learning capacity of cities, we have to experiment and join networks. Create new, positive urban visualizations towards a productive, clean and socially inclusive city. And appreciate the contribution that design can make.







Radical Social Inclusion and the City

Edgar Pieterse
(Director African Centre for Cities)

Urbanization is less and less associated with well-being but rather a prospect for increasing marginalisation and vulnerability to systemic risks that may stem from climate change in combination with other overwhelming dynamics.

As cities continue to proliferate and expand in Africa and Asia, policy leaders have to reckon with the dislocating impacts of technological change, the crisis of work, intensifying social strife, polarisation, and public and private institutions that are out of step with emergent economic-cultural systems. The specific drivers of social fragmentation and exclusion in many African cities will be explored to illustrate the argument.

The second half of the keynote proposes a framework for radical social inclusion, based on three dimensions: place-making through the articulation of work and service delivery within a social enterprise model; the centrality of imagination to drive genuine innovation and ensure the cultural embedding of reforms; and institutional investments that can fuel new kinds of alliances, networks, delivery capability and democratic oversight.

"Expectations are that the number of residents in informal urban areas will grow from 1 to 3 billion between 2010 and 2050. This growth will predominantly result in even more slums."

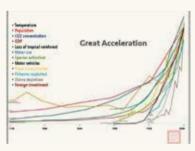
↓ ② EDGAR PIETERSE

DIRECTOR AFRICAN CENTRE FOR CITIES

The world population is booming toward 10 billion due to rising numbers in Africa in particular. The result is a hugely accelerating consumption of natural resources, especially by the vastly growing middle classes. But the earth is limited and we therefore need a new paradigm.

The urban economy is growing faster than the rural economy, especially in developing economies. However, only 28 percent of the work force has signed an employment contract and more than 60 percent of the economy is informal. Without a formal salary, no tax is paid, no government revenues received and, therefore, no services can exist.

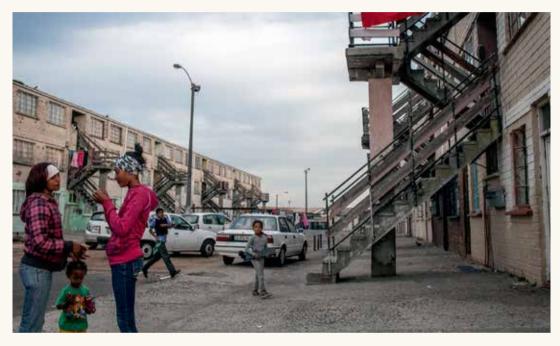
In southern Africa, the absence of formal employment is leading to the growth and sprawl of informal cities. Expectations are that the number of residents in informal urban areas will grow from 1 to 3 billion between 2010 and 2050. This growth will result predominantly in even more slums.







"Urbanization can be used as a creative driving force to encourage innovation." Where do we go from here? To a framework for radical social inclusion that prioritizes the urban majority, that focuses on services and employment and on giving people more control over what happens in their own neighborhoods and cities. Urbanization can be used as a creative driving force to encourage innovation in services and employment and, at the same time, foster citizenship and sustainability.





Designing Resilient Landscapes

Adriaan Geuze
(Director West 8 Urban Design and Landscape Architecture)



Once we understand that the world will continue to urbanize, how do we ensure that rather than merely accommodating development, we productively use it to achieve the future that we want? Design, therefore plays a crucial role in the exploration and representation of the future that we (may) want. Taking the Dutch Rhine-Meuse Delta as one example, this keynote will explore the role that design can play in guiding development by anchoring it in resilient urban landscapes.

Quality of life will be a key success factor in the global battle for talent in which all major urban regions and deltas are engaged. Although the Dutch Rhine-Meuse Delta is a rich man-made landscape, formed by centuries of agriculture and trade in the estuary of the river Rhine, the region doesn't take full advantage of its landscapes in the global battle for talent. The metropolitan landscape of this Delta Metropolis has the potential to offer the quality of life that is needed for a competitive knowledge economy. At the same time, more intensive use, access, and development of the landscape might be an important step in its financial sustainability and its future reason for being. How can we use the landscape of our deltas and metropolises to our economic advantage without destroying them? And do we invest enough in their development and conservation? How can design, planning and governance be of help?

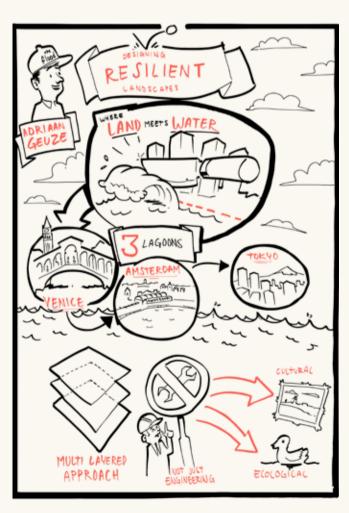
"Look for local, independent, critical thinkers that will interrogate and promote the project on the basis of a cultural approach and their familiarity with the location."

→ ③ ADRIAAN GEUZE DIRECTOR WEST 8 URBAN DESIGN AND LANDSCAPE ARCHITECTURE

Never leave water issues entirely to the engineers, but approach spatial challenges multifunctionally, in combination with ecology and urban planning, and celebrate intervention. A second lesson: be careful with things produced by the past, for these may be based on a certain logic that is easy to overlook.

Always combine work on large-scale spatial and infrastructural tasks with other programs and different disciplines and – if the opportunity arises – combine as many of those tasks as possible. Look for local, independent, critical thinkers that will interrogate and promote the project on the basis of a cultural approach and their familiarity with the location. And involve international partners: at this time, the Delta Coalition comprises 12 partners that can all learn from each other and their number will likely grow in the near future.





sreakout Sessions

Balancing Economic, Ecological and Social Agendas

This breakout session searches for a functional balance between economic, ecological, and social agendas. Can the development of more productive deltas be the key to the safeguarding of vulnerable ecosystems? And how can making a territory more productive contribute to regional and local social challenges?

The starting point for this session is the project 'New Meadowlands: a productive city and regional park for New Jersey and New York' – one of the winning projects of the international design competition Rebuild by Design, set up after hurricane Sandy hit New York and New Jersey. Integrating transportation, ecology, and development, the project transforms the Meadowlands basin to address a wide spectrum of risks while providing civic amenities and creating opportunities for new redevelopment.

The project proposes a new balance by rebuilding ecosystems as landscapes for

water storage and recreation, creating new development opportunities between natural and urban systems. The new kind of programs that can be developed provide the region with high quality natural and recreational areas and foster a closer connection between inhabitants and the natural and urban environment.

Focusing on the next steps, this session explores how these types of integrated visions and long-term strategies can be translated into projects. What does this require from the process and from the parties involved?







"Rebuild by Design is a new approach that embraces uncertainty as an asset."

1/ Balancing Economic, Ecological, and Social Agendas

The Hurricane Sandy Task Force, established after hurricane Sandy inundated New York, is a separate organization that sides with existing institutions to, open-mindedly and with new confidence, come up with innovative proposals. Initially, the international design competition Rebuild by Design mainly focused on the identification of relevant questions and the carrying out of research - a new approach, which embraced uncertainty as an asset. The research showed, for example, that there is a need for a new coalition comprising the community, citizens, and institutes, rather than for a new plan.



New Meadowlands is one of ten selected Rebuild by Design projects that are currently being developed. The plan proposes an integrated approach regarding the existing wetlands east of Manhattan and aims to restore the ecosystem and open up the wetlands for the general public to experience it as a park. It is now an enclosed area surrounded by private properties owned by mostly logistics companies. So besides damage, the hurricane has also created unique opportunities,

demonstrated the importance of flood resilience, and revealed opportunities for economic benefits.

An important lesson that was learned is that consulting with the community and explaining why action is necessary will result in a conversation rather than arouse resistance. Show people that they can also enjoy the water, rather than see it only as the enemy!

"Show people that they can also enjoy the water, rather than see it only as the enemy."





Risk and Resilience

This breakout session will explore the role of risk in spatial projects and the possible agency design can have at the risk-management table. Using examples from New York and Rotterdam, the session will examine risk from three perspectives.

- 1. The ontology of risk
- 2. Mitigation, resilience and adaptation
- 3. Global risks and project risks

The ontology of risk

The notion of risk has traditionally been formulated in the technical and financial domains, with a defined set of metrics. More recently, we have become more and more aware of the psychological and sociological aspects of the production, assessment and management of risk. This has led to the inclusion of many new actors in the risk conversation, with many repercussions on the way we plan.

Mitigation, resilience and adaptation
Mitigation (lessening the effects), resilience (learning to cope) and adaptation (reducing the vulnerability) are distinct approaches for managing risk, each with their own realm of possibility and their own timescales. Understanding when each approach is opportune, and how the different approach build on each other, is important in designing with risk.

Global risks and project risks

Designing for 'global risks', such as those resulting from climate change, economic

inequality or terrorism, can often be in conflict with 'project risks', those related to the feasibility of a project. Successful implementation of mitigation, resilience or adaptation projects depends on designing the right balance between the two.

Participants in the breakout session are welcome to submit their own risk problems for discussion during the session. The aim of the session is to get a clearer understanding of possible strategies for the management of global risks and project risks in resilience projects.

WITH A CONTRIBUTION FROM ARNOUD MOLENAAR (CHIEF RESILIENCE OFFICER, CITY OF ROTTERDAM)

Making urban landscapes and deltas more resilient puts new questions on the table of policy makers. How can we put complex issues such as resilience into practice? What new strategies, methods, and development models can effectively contribute to these major transitions? Being part of the 100 Resilient Cities Program of the Rockefeller Foundation, the City of Rotterdam will share their newly developed Resilience Strategy.

BIG Team







"Using design to start a dialogue with the community will raise everyone's consciousness. Use design as a tool to integrate, innovate, and communicate."

2/ Risk and Resilience

For over ten years, Rotterdam has been actively reflecting on the best way for the city and the water to coexist. Doing nothing is not an option. Rotterdam presented its first integrated water plan in 2001. This was followed by a second plan in 2007, which build on the results of the 2005 edition of the IABR called 'The Flood', and which addressed climate change and spatial planning. The most recent update also includes social and climatological resilience. Rotterdam now uses a comprehensive perspective on resilience that includes taking advantage of opportunities: water is more than a threat, it also has good qualities and is a source of inspiration.

Besides on the scale of the city and its various neighborhoods, Rotterdam is also active at the level of the metropolitan region (with The Hague), Europe (collaborating on social resilience with 11 other cities) and globally as one of the Rockefeller Foundation's 100 Resilient Cities.





"Creating resilience poses not only a technical, but a social and administrative challenge as well."



Rebuild by Design is an international design competition set up after hurricane Sandy hit New York and New Jersey. Taking measures – making infrastructure and citizens resilient – was absolutely necessary. This required tailor-made, rather than standard technological solutions.

An important lesson learned was that using design to start a dialogue with the community by visualizing proposals and working together on solutions was a good idea. It raised everybody's consciousness, even after the managers and the consultants had left. Resilient citizens make a resilient city and that is why it is so important to involve citizens in planning. Creating resilience poses not only a technological, but also a social and administrative challenge. Work in both social and physical contexts; work at different temporal and spatial scales at the same time. A high degree of adaptability is necessary. Work iteratively, take risks, and learn as you go. Use design as a tool to integrate, innovate, and communicate.

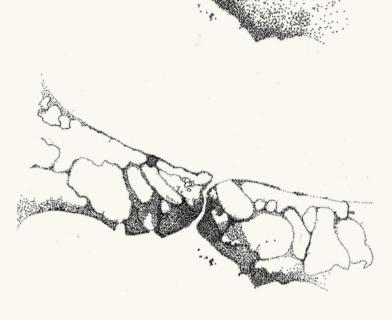
Blue Space: Mobilizing Territories and Coalitions

Looking at three experimental case studies in Istanbul, Belgium and The Netherlands, this break out session focuses on visions and working methods that turn recurring peaks and growing shortages of water into building blocks for shared rural and urban (re)development strategies. The session presents and discusses how to reverse the logic: from trying (mostly in vain) to restrict or limit the negative influences of urbanisation and food production on the water system, to using the water system as backbone for urbanization.

Urban deltas are built around water and on fertile soils. Their success is built on the interdependence between natural qualities and resources, intensive food production, and the concentration of human activities and trade. Today however, both massive urbanization and climate change destabilize the fragile synergies and equilibriums in deltas. As rapidly growing cities consume more and more land, the need for food provision, for irrigation and for drinking water increases likewise. On top of that, climate change accelerates and magnifies the peaks and shortages of water throughout different seasons. The battle for space between water, food production and urban living and activity, becomes untenable and a major design and policy question.

Based on the results of IABR-Atelier Istanbul, IABR-Atelier BrabantStad and the project Metropolitan Coast Landscape 2100, the session discusses how to explore different scenarios to make more rather than less space for water buffering and infiltration, both in times of inundation and drought. Can a productive conversation around these scenarios lead to new collaborations between different fields of policy-making and expertise, between land owners, real estate developers and farmers? And how can we use design to visualize the space needed for the water system, and its connections with economy, food production and living?





WITH A CONTRIBUTION FROM JANE MADGWICK, (CEO WETLANDS INTERNATIONAL)

Urbanisation in delta's can only succeed if short-term development aims are implemented as part of a longer pathway towards social and environmental sustainability. Development of infrastructures such as coastal defences and real estate should therefore always be implemented as part of a continuum of development interventions, which also include ecosystem management and local community-level action. Experiences from major cities such as Rotterdam and New York have demonstrated that Building with Nature can offer such integration. Bringing Building with Nature to scale requires knowledge sharing, dialogue, brokering of inter-sectoral solutions and joined up action, between key players such as humanitarian and environmental organisations, private sector, government agencies and communities. The importance of natural infrastructure for urban resilience is illustrated trough case studies from Indonesia and Senegal.









"We need new platforms and practices to design alternatives and create a shared agenda of all parties involved"

3 Blue Space: Mobilizing Territories and Coalitions

Water is a growing problem. We need new platforms and practices to design alternatives and create a shared agenda for all parties involved. We need the far-reaching integration of water management and urbanization. The concept of 'blue space' represents the overarching importance of water to urban planning, agriculture, and nature.

Water is a growing problem. We need new platforms and practices to design alternatives and create a shared agenda of all parties involved.

In Istanbul, urbanization and the construction of infrastructure swallow up agricultural land and infringe on areas that are actually protected in connection with the supply of drinking water. IABR-Atelier Istanbul developed a proposal that productively couples water,





agriculture, and urbanization by planning the latter on higher ground. Thus, the areas around the basins are left vacant and can hence be used for agriculture as well as to create buffers as protection against flooding.

Water is also central to the IABR-Atelier BrabantStad: Reweaving the Carpet Metropolis. Using research by design, the Atelier has been looking for economic and spatial coherence in the area and for the synergy in value chains between end users and public sectors. Not in the form of a large, overarching plan, but by searching out the internal logics that will help solve problems in the region in the long run.

The north coast of Java is subject to erosion. First. authorities tried to stop the erosion using traditional solutions. When this did not work, they subsequently developed other solutions under the motto 'building with nature.' Attuning design to local conditions also laid the foundation for a sustainable and resilient community. Three years of on-site investment in citizens' confidence has resulted in a solution that also benefits the local economy.

Working together with local populations in workshops is still new to many countries. It requires different forms of participation and flexible

forms of consultation.
There is a risk that cities
and governments prefer
traditional, technological
solutions over more natural
and low-tech solutions.
Knowledge is the key and
fosters confidence in the local
population.



"There is a risk that cities and governments prefer traditional, technological solutions over more natural and low-tech solutions."

The Urban Metabolism

This breakout session focuses on how knowledge of the urban metabolism of our cities and deltas can help us make them more sustainable and resilient. Housing more than half the world population and responsible for three-quarters of the industrial production, urban regions are the primary consumers of natural resources such as water, food, and energy. Though urban regions only cover 3 percent of the land surface, they are responsible for 75 percent of the harmful greenhouse gasses. On the other hand, as main consumers of the world's resources and main producers of waste, urban regions offer the best opportunities to reduce the environmental impact of mankind on the world.

The urban metabolism is a promising approach that can couple economic development with sustainability and provide opportunities for a transition to a more circular use of materials and resources. It assumes that the city is a complex and dynamic system that can be described in not only technical, but also organic terms. As such urban regions, like a human body, have a metabolism through which vital flows of materials such as water, food, energy, people, and cargo run. The mapping, analyzing, and interrelating of these material flows provides insight into how the urban system functions and shows where improvement is possible.

development is complicated. In this session, we will address the opportunities that the metabolism approach provides for a more sustainable development model for urban regions and deltas and the obstacles that it raises on the basis of case studies from IABR-Ateliers in Albania, Belgium and the Netherlands.

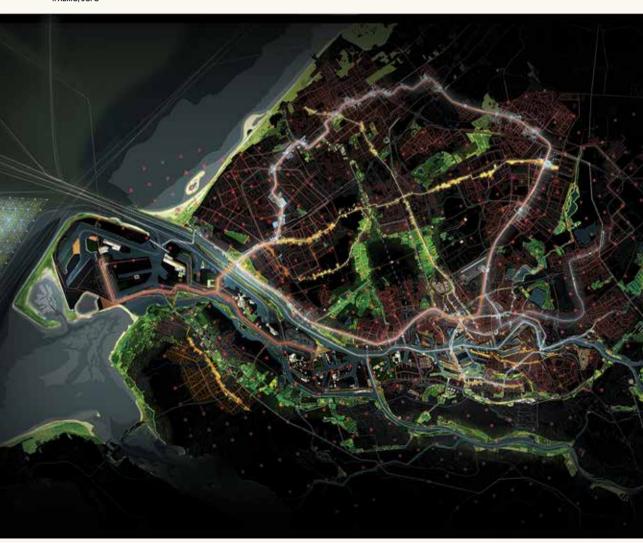
The session will also zoom in on the specific characteristics of international deltas. A panel discussion with representatives from different countries and planning contexts will elaborate on the ways in which the metabolism approach can take place in practice.

The practical implementation of the concept of urban metabolism in spatial

WITH A CONTRIBUTION FROM LEO POLS, (ENVIRONMENTAL DESIGNER AT PBL NETHERLANDS ENVIRONMENTAL ASSESSMENT AGENCY)

The rapid and ongoing urbanization puts an enormous stress on our urban landscape, and urban deltas are among the most vulnerable areas in the world. In order to be able to proactively anticipate developments and make our deltas more sustainable and resilient, we need to know more about how deltas function as urban systems. Based on ongoing research into the spatial, social and economic flows and characteristics of the urban deltas of Ho Chi Min City (Vietnam), Beira (Mozambique) en Barranquilla (Colombia), a preliminary overview is given.

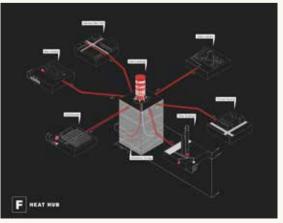
IABR-Atelier Rotterdam: Urban Metabolism .FABRIC, JCFO





"A better understanding and optimization of the system and the infrastructure makes them more transparent, accessible, and democratic."





©IABR–Atelier Rotterdam: Urban Metabolism .FABRIC, JCFO

4/ The Urban Metabolism

Sustainable, qualitative spatial development begins with an understanding of the functioning of the city. Urban systems consist of a series of interacting material flows (of, for example, water, food, energy, cargo, and people) that all have their own specific infrastructure. A better understanding and optimization of the system and the infrastructure makes them more transparent, accessible, and democratic. Data collection and analysis are indispensable.

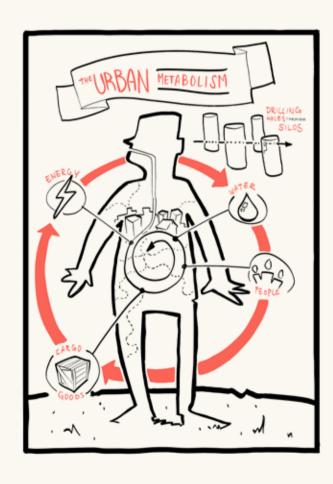
The role of the designer is to make these systems and interrelationships visible, relate them to each other, and facilitate the process, from analysis and concept to concrete and applicable projects.

"Manifestations such as the IABR provide a platform for the discussion of experiments with other parties." There is a huge difference between planning based on data models and people that experience their city. It is therefore very important to also take the social side into consideration. The translation of matters of fact into matters of concern is crucial in order to achieve valuable and relevant projects.

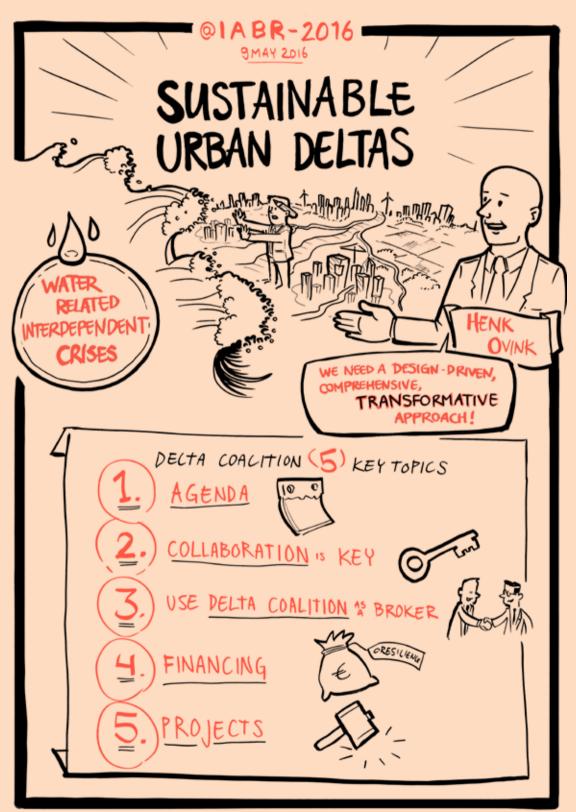
The functioning of our cities and that of their underlying structures is too complex for current computer models. We analyze global developments, but how do these relate to specific cities? What solutions to local, specific problems does generic knowledge produce? How do citizens themselves perceive the problems of their own city?

The same principle applies here: test on a small scale and subsequently upscale. Also, include both public and private parties in projects. Communication and coordination with local governments poses a major challenge. Manifestations such as the IABR provide a platform for the discussion of experiments with other parties. Knowledge institutes can play a unifying part in the process as well.

"It is very important to also take the social side into consideration. The translation of matters of fact into matters of concern is crucial in order to achieve valuable and relevant projects."



Wrap up



Determining an ambitious action agenda is a complex process and cannot be arranged overnight. Where do we go from (here and) now? What is the next step the Delta Coalition has to take?

Some concrete lessons from the afternoon sessions:

Starting with the right questions is crucial to getting the actual problems out in the open. This requires courage from commissioners, for they have to insist they want better understanding and an integrated approach rather than technological solutions.

Couple major water challenges with the urban planning domain. The actual questions about the overarching system precede planning. **The system approach is crucial.** It needs a broker of ideas rather than a designer of technological solutions.

The institutional framework is essential. Begin working on small tasks with small projects and gradually learn from concrete examples. The practice of compartmentalized knowledge has got to make way for a more integrated approach that involves end users as experts, sharing knowledge and data. Start small, do it together, build capacity collectively, stimulate learning by doing, and large-scale implementations will come later.

Resilience is often considered a technological and financial matter, but it is really a social matter. Indeed, the consequences of climate change are mostly social and financial. In order to effectively act on climate change challenges, the social component should not be underestimated: people have to be willing to participate. To implement projects, it is necessary to use the same knowledge as a foundation.

The goal of Habitat III is to establish a 'New Urban Agenda' for cities, which according to the UN have to be both sustainable and resilient. More than merely a declaration, this has to be a concretely applicable action agenda. The intention is to add the specific tasks of cities in river deltas to the action agenda. The Delta Coalition can be instrumental in this.

SUMMING UP:

The above examples show that an **outside partner** can help find the right plan. The Delta Coalition now includes 12 partners who can help each other, sharing knowledge and raising awareness. The Delta Coalition acts as a knowledge broker in this process.

Another task that is reserved for the Delta Coalition is the formulation of a **clear business case.** It is important to properly express the added value of an integrated approach of climate change and urbanization.

Developing a **strong narrative** on water challanges – positive, forward-looking and action-oriented – is of great importance in connecting stakeholders and motivating action around the same agenda.

The Delta Coalition is of great value with regard to the formulation of a concrete action agenda. The collaboration can introduce the necessary outsider view to the different partners' projects and allow for the outcome to be greater than the sum of the parts.

Together, it is easier to organize funding for projects and collaboration can also make concrete projects possible that would have been unachievable for individual countries.

The Delta Coalition not only unites 12 countries, it unites a much greater number of cities and their citizens and organizations. All of them face climate change and urbanization. The solutions to these problems will vary, but their cause is the same. The Delta Coalition unites in diversity and members must continue to share their experiences, learn from each other and, together, write an ambitous action agenda which makes urbanising deltas more resilient to future impacts.







THE NEED FOR A BONDING NARRATIVE

"Among citizens, there is a lack of confidence in the parties responsible for spatial planning. That is why citizens and "businesses" must be involved from the very beginning. Rather than a single solution, risk and resilience require a series of instruments that are formulated in participation, that is, together with citizens."

MS. RAISA BANFIELD
DEPUTY MAYOR OF PANAMA CITY

GOVERNMENTS SHOULD TAKE THE LEAD

"It is crucial that the government starts with the initial investment. In New York, the investment for the launch of the program came from the federal government. Rotterdam investigated the impact of climate change on social resilience and the investment was made by the city."

MR. KUMARESH C. MISRA
DEPUTY SECRETARY GENERAL HABITAT III











THE NEED FOR COLLABORATIVE CAPACITY BUILDING ON ALL LEVELS

"An important question is how we can organize the participation of citizens. It will take the collaboration of the Delta Coalition to exchange "knowledge", create awareness, and take action against concrete risks. We need to begin on time, and not only after risks have already turned into disasters."

MR. MOHAMMED ABDELATY
MINISTER OF WATER RESOURCES AND IRRIGATION OF EGYPT

THE NEED TO SHOW AND TELL

"Although each of the 12 countries united in the Delta Coalition has its own specific issues, they should work together towards a collaborative agenda. We have to gain the confidence of the people by promoting resilience. That is what we have learned from the big floods in 2000. During the past few years, we have been dealing with severe drought and we have to explain to the people what the risks are. Being a member of the Delta Coalition is beneficial in this."

Bio Speakers



FLORIAN BOER

is founder and director of DE URBANISTEN. He is an expert in connecting complex environmental issues to spatial potentials. His specialism is design on urban landscapes and transformations related to flood resilience and urban water management systems. With DE URBANISTEN he is deeply involved in climate proofing Dutch cites like Rotterdam, Dordrecht and Zwolle. Internationally he is working on water sensitive design for several Danish cities and Mexico City. Florian teaches at the Amsterdam and Rotterdam Academies of Architecture.



MATTHIJS BOUW

is a Dutch architect and urbanist and founder of One Architecture (est. 1995), an award-winning Amsterdam and New York-based design and planning firm. He currently is the Rockefeller Urban Resilience Fellow for PennDesign at the University of Pennsylvania.

A leading voice on designing for resilience, he has published many articles and given talks to both students and professionals on incorporating resiliency into design practice. Bouw's own practice is known for its unique approach in which programmatic, financial, technical and organizational issues are addressed, communicated and resolved through design. Bouw has been a pioneer in the use of design as a tool for collaboration, for instance through the development of 'Design Studios' as an instrument to support the Netherlands' Ministry of Infrastructure and the Environment with its long term planning.

In New York City, the office co-leads the BIG Team that won the Rebuild by Design competition for the flood protection of Manhattan, and is currently part of the multidisciplinary teams executing the first phase of the East Side Coastal Resiliency project for Lower Manhattan, as well as planning the Lower Manhattan Coastal Protection project. In the Netherlands, One are part of the 'Hackable City' team for Buiksloterham, a large scale brownfield redevelopment in Amsterdam-Noord based on the principles of the circular economy.



GEORGE BRUGMANS

has been the executive director of the IABR since 2004, and its president since 2014. He chaired the Curator Team of the 5th IABR: Making City. He is also the executive director of iabr/UP, and as such responsible for the IABR-Ateliers. Before coming to the IABR, in 2004, Brugmans built up an extensive expertise as a producer in the arts and the media. He was editorin-chief and commissioning editor at the VPRO, a Dutch public national broadcaster, where he produced over 200 documentaries, thirteen of which he also directed. As chairman of Bergen, a Dutch film production company, he was one of the producers of Antonia's Line - Academy Award® (Oscar®) for Best Foreign Film (1995). He (co-) wrote scenarios for feature films, including De Wisselwachter/The Pointsman (released in 1986), and De Vliegende Hollander/The Flying Dutchman (1995). Before moving to film Brugmans had an international career in the performing arts, including being co-founder

and the first director of the Springdance Festival in Utrecht (1986-1992), artistic director of the Summerfestival of Salzburg, Austria (1990-1992), and co-founder and artistic director of the **Encontros Acarte Festival in** Lisbon, Portugal (1987 - 1990). He was a member of the Committee of Cultural Consultants of the European Commission in Brussels (1988), advisor to the Dutch Government on international cultural policy as a member of the National Art Council (2004 - 2007), and the vice-chairman of the Board of Governors of the Amsterdam Art Council (2003 - 2009).Brugmans graduated in

Brugmans graduated in History at the Universities of Utrecht and Florida.



JOACHIM DECLERCK

is co-founder and partner of the Architecture Workroom Brussels, Educated as architect and urban designer at Ghent University (BE) and the Berlage Institute (NL), Declerck's activities focus on innovation within the disciplines of architecture and urban design, while exploring their role within the transformation of the built environment. From 2008 to 2011 Joachim Declerck was head of the professional development program at the Berlage Institute. Complementary to the postgraduate, PhD, and public and publications programs, the professional development program broadens the institute's research activities to the professional sector and opens its laboratory to architectural practitioners, practices, and other related organizations (public and private). Before taking this position, Declerck coedited the Berlage Institute publication Brussels-A Manifesto:

Towards the Capital of Europe and was curator of the exhibition A Vision for Brussels.

Together with Vedran Mimica, and representing the Berlage Institute, he curated the 3rd International **Architecture Biennale** Rotterdam, POWER -**Producing the Contemporary** City, in 2007. Since the founding of the Architecture Workroom, Declerck was curator of the exhibition **Building for Brussels:** Architecture and Urban Transformation in Europa in BOZAR (2010), and he directed the project The **Ambition of the Territory** that was presented in the Belgian Pavilion at the Venice Biennale (2012).

He was part of the Curator Team of the 5th IABR: Making City (2012) and of IABR– 2016-THE NEXT ECONOMY.



ERIC FRIJTERS

is founder and director of .FABRIC, and Professor **Future Urban Regions (FUR)** at the Dutch Academies of Architecture, Eric has over 15 years of experience in the design and implementation of projects in architecture, urban planning and regional strategy in the Netherlands and abroad. He has a background in architecture at the Karlsruhe Institute of Technology, Philosophy at the University of Amsterdam and graduated Cum Laude at the Technical University of Eindhoven. His research has been published in several books (including 'Tussenland', 'Station Centraal' and Urban Metabolism) and various magazines.

His work was recognized with various prizes (Prix de Rome, lakov Chernikhov International Architecture Prize and recently Eo Wijers Prize) as a designer in the field of innovative experimenting in architecture and urbanism. Starting from June 2013 he leads the research group FUR focused on healthy urbanization, design thinking methodology and test results of productive strategies for urban metabolism at the Dutch Academies of Architecture.



ADRIAAN GEUZE

is co-founder of West 8 urban design & landscape architecture. Geuze together with his office West 8, developed a technique of relating contemporary culture, urban identity, architecture, public space and engineering within one design, while always taking the context into account.

With offices in Rotterdam,
New York and Brussels
West 8's international team
of 70 architects, urban
designers, landscape
architects and industrial
engineers has implemented
award-winning projects
all over the world. Gaining
international recognition
with projects such as
Schouwburgplein in
Rotterdam, Governors Island
in New York, and Madrid
Rio (ESP).



MAARTEN HAJER

is the Chief Curator of IABR-2016, the seventh edition of the International Architecture Biennale of Rotterdam. Maarten Hajer is internationally renowned for his exploration of the relationships between public policies, urban development and environmental issues. He is Professor of Urban Futures at the University of Utrecht and until very recently served a 7-year term as Director-General of the PBL **Netherlands Environmental** Assessment Agency. As director of the PBL, Hajer was one of the prime advisers to the Dutch Cabinet on issues ranging from land use, planning, environment and nature, to water and transport.



JANE MADGWICK

has been CEO of Wetlands International since 2004, leading a network of 18 offices operating in over 100 countries. Over this period the organisation has tripled its capacity to safeguard and restore wetlands for people and nature. Previously Jane worked for WWF internationally. She has carried out ecological research and multiple use conservation programmes in the UK, Somalia, Belize, Yemen and Australia. Her technical expertise is primarily in ecological restoration of wetlands and water policy.



ARNOUD MOLENAAR

is Chief Resilience Officer Gemeente Rotterdam, After attending the University of Utrecht, graduating in Physical Geography, Arnoud Molenaar started his career with several ambitious trainee posts and jobs in France, New Zealand and the Netherlands. As deputy head of the Rotterdam Water Management Department he was responsible for Rotterdam s urban water management and the Waterplan2Rotterdam. In 2008 he was appointed Manager of the ambitious **Rotterdam Climate Proof** program. In this context he initiated the international **Connecting Delta Cities** network, became regional coordinator within the Dutch research program Knowledge for Climate and responsible for the design and implementation of the Rotterdam Adaptation Strategy.

He successfully led the City of Rotterdam towards a leading position on innovative urban water management and climate adaptation, which resulted in 2013 in an European Peer City status. Arnoud is first editor of the third Connecting Delta Cities book Resilient Cities and **Climate Adaptation Strategies** which was launched early 2014, he also was member of the Steering Committee of the international conference **Deltas in times of Climate** Change 2014. In September 2014 he has been appointed as Chief Resilient Officer at the City of Rotterdam supported by the Rockefeller Foundation.



HENK OVINK

was appointed by the Dutch Cabinet as the first Special Envoy for International Water Affairs (2015). As the Ambassador for Water, he is responsible for advocating water awareness around the world, focusing on building institutional capacity and coalitions amongst governments, multilateral organizations, private sector and NGO's to address the world's stressing needs on water.

Henk is Principal for Rebuild by Design, the resilience innovation competition he developed and led for the US Presidential Hurricane Sandy Rebuilding Task Force where he was Senior Advisor to the Chair.

He has been Director General for Planning and Water Affairs and Director for National Spatial Planning for the Ministry of Infrastructure and Environment. He teaches at Harvard GSD and is member of the International Advisory Board for the City of Rotterdam. He was Curator for the 5th International Architecture Biennale Rotterdam 2012 'Making City', curates the debate series 'Design and Politics: the next phase' for Aedes network Campus Berlin and initiated the research program and is chief editor of the series of publications with NAI010 Publishers on Design and Politics.



EDGAR PIETERSE

directs the African Centre for Cities at the University of Cape Town and holds the South African Research Chair in Urban Policy. His research and teaching gravitates around urban development politics, everyday culture, publics, responsive design and adaptive governance systems. He is consulting editor for Cityscapes—an international biannual magazine on urbanism in the global South. His most recent co-edited books are: African Cities Reader III: Land, Property & Value (2015), Africa's Urban Revolution (2014) and Rogue **Urbanism: Emergent African** Cities (2013). He is co-lead author of

the Urban Chapter for the International Panel on Social Progress—an international collection of over 200 scholars focused on providing research-based, action-driven solutions to the most pressing challenges of our time. He is also the Chairperson of the Panel of Experts supporting the Integrated Urban Development Framework of South Africa.



LEO POLS

is environmental designer at the PBL Netherlands Environmental Assessment Agency. He has a background in urban and landscape planning. He is Master of Urbanism (Rotterdam Academy of Architecture) and had an education in landscape planning and design (School of Garden and Landscape, Boskoop, the Netherlands).

Leo Pols has a wide experience in landscape, urban and environmental design, spatial policy for town and country and 'research by design.

He made plans for 'new forests', spatial policy for new 'country-seats' and relations between city and country-side. The long experience in landscape and urban design, research and policy makes that Leo is strong in connecting people and issues.

He developed the Delta Envisioning Support System (DENVIS), which is set up as a serious design game with the use of decision support techniques, to overcome contradictions between ecological, economic and social values. The last few months he is researching complex spatial problems in the Delta Cities Barranquilla (Colombia), Ho Chi Min City (Vietnam) and Beira (Mozambique).



KEES RADE

is Director of the Inclusive **Green Growth Department** at the Ministry of Foreign Affairs of the Kingdom of the Netherlands and Ambassador for Sustainable Development since 2014. He is responsible for the implementation of the Dutch international strategy for sustainable development and the interdepartmental coordination in this area. In April 2016, he became the new Arctic Ambassador of the Netherlands. In this position, he will represent the voice of the Dutch Arctic policy and will work together with other Arctic stakeholders in the Netherlands to implement the Dutch Arctic Strategy and reach its aims to tackle the challenges that are faced in the Arctic.



ZUS

Tim Peeters is Architect at ZUS.

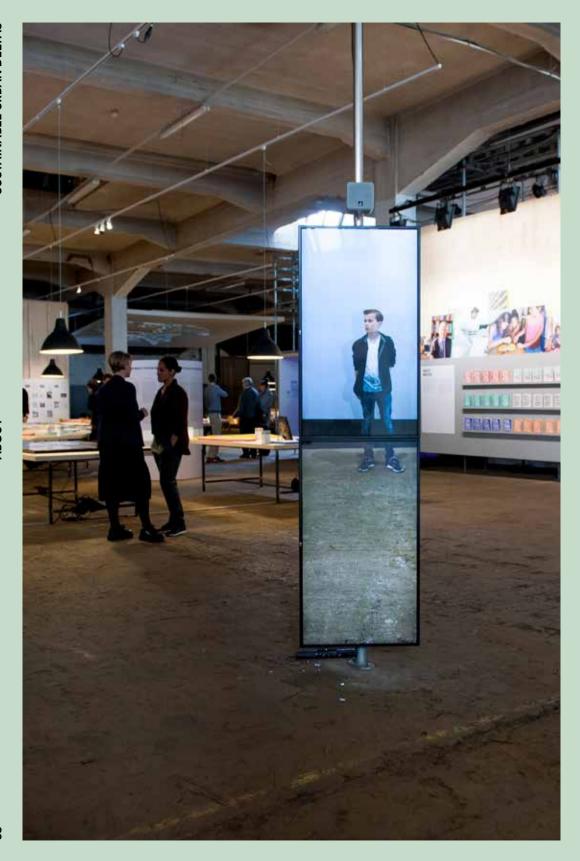
The duo Van Boxel and Koreman and their office ZUS are working on solicited and unsolicited design and research in the field of architecture, urbanism and landscape design. With a strong belief that an architect has to claim a strong position in the public debate on the future of our cities, van Boxel and Koreman see a large share of their pro-active work as urban politics.

Van Boxel and Koreman lead an international and multidisciplinairy team consisting of architects, urban planners, landscape architects, with offices in Rotterdam and New York. The list of ambitious projects ZUS is working on expands rapidly.

ZUS is currently working with an international team on the metropolitan vision for Marseille (FR), a plan for the New Meadowlands in New Jersey (US), the design for a music venue in Rotterdam (NL) and on the design of the world's largest sea lock in Amsterdam-IJmuiden (NL). Their unsolicited advice and activist attitude saw them win the Maaskant Prize for Young Architects and the Berlin Intervention Award in 2015. They were selected as Architect of the Year 2012. Currently they are professors at Syracuse University School of Architecture in New York City, were they are leading the Gentrification Lab, and are working on their new book 'City of Permanent Temporality' (2017, NAI010 Booksellers).



About



ABOUT THE DELTA COALITION

The Delta Coalition is the world's first international coalition of governments that have formed a partnership to get things done to make deltas more resilient. Bangladesh, Colombia, Egypt, France, Indonesia, Japan, Korea, Mozambique, Myanmar, the Netherlands, the Philippines, and Vietnam have already joined. Fast, informal, and flexible, the coalition facilitates discussion, exchange, innovation, and creativity between the participating members and observers. Government led and multi-stakeholder, the initiative aims to get things done to improve and protect lives in urban deltas. The coalition will facilitate knowledge exchange on deltas, adaptation, resilience, and sustainable urban development. Most importantly, it will allow delta countries to join forces to stimulate best practice, innovation, and to increase opportunities for financing in order to facilitate implementation of projects that will reduce vulnerability to climate change.

ABOUT IABR and IABR-2016-THE NEXT ECONOMY

The International Architecture Biennale Rotterdam (IABR) was founded in 2001, in the conviction that architecture is a public concern. It is therefore that it focuses on (the future of) the city. To make our future cities resilient and livable for everyone, the transition has to be planned, and the IABR holds that design can and should contribute. Given the urgency, cities need to learn from each other as fast as possible and explore the road to a resilient future together. The IABR therefore connects the Netherlands to the world, and brings the world to Rotterdam. It brings designers, academics, and thinkers together with decision-makers, politicians, the private sector, and of course the public, or rather citizens. The IABR produces exhibitions, conferences, films, books, lectures, and debates, but it is also, and more and more, an incubator for innovation. Its long-term research by design-programs promote knowledge exchange between cities and tangibly contribute to the making of the city. The IABR-Ateliers are co-produced together with local and/or regional governments and other stakeholders in Holland and abroad. They connect the research by design-methodology to real world problems. They are solution-oriented and insist on applicable results. visions and strategies, toolboxes for governance, (financial) development models and pilot project proposals; results that are actionable and designed to change the status quo.





In the weekend of 23 and 24 April 2016, the International Architecture Biennale Rotterdam launched its seventh edition: IABR-2016-THE NEXT ECONOMY: a main exhibition and a 12- week long program of activities, conferences, and workshops in and around former warehouse Fenixloods II in the Rotterdam district of Katendrecht. Under the guidance of IABR-director George Brugmans and IABR-2016 chief curator Maarten Hajer an international Curator Team focussed once again on the future of the city, exploring the relationship between spatial design and tomorrow's economy.

IABR-2016 was a platform for creative coalitions of designers, academics, artists, administrators, entrepreneurs, citizens, and all other agents of change with fresh ideas and productive imaginations of the twenty-first century city.

Sustainable Urban Deltas Conference was set up and produced by the International Architecture Biennale Rotterdam (IABR) in close collaboration with the Ministry of Foreign Affairs and the Ministry of Infrastructure and the Environment of the Kingdom of The Netherlands, and organized as part of the official Delta Coalition gathering in Rotterdam.

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Tuijtel

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Adriaan Geuze (Director West 8 Urban Design and Landscape Architecture)

BREAK OUT SESSIONS

Florian Boer (Director De Urbanisten) and Tim Peters (ZUS architecture office)

Matthijs Bouw (Director One Architecture), with a contribution from Arnoud Molenaar (Chief Resilience Officer, City of Rotterdam)

Joachim Declerck (Director Architecture Workroom Brussels), with a contribution from Jane Madgwick (CEO Wetlands International)

Eric Frijters (Director of .FABRIC), with a contribution from Leo Pols (Environmental Designer PBL Netherlands Environmental Assessment Agency)

MASTER OF CEREMONIES

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CONFERENCE SUMMARIES Jeroen Mensink (JAM*)

DRAWINGS

De Jongens van de Tekeningen