Delta Urbanism, Premises: Editorial

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Delta Urbanism Premises

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The title of this journal is the offspring of Han Meyer who started the interdisciplinary research movement Delta Urbanism about 25 years ago. The two words describe the concept that brings focus on an integrative and interdisciplinary approach in the planning, designing and engineering of urbanised deltas –*fragile and highly dynamic landscapes at sea, in deltas, and in estuaries*– facing extreme challenges from competing claims and interests. As discourse, it investigates the possibilities to combine flood resilience, soil regeneration and water management strategies with urban design, landscape architecture and spatial planning. Finally, as practice, it has the objective to improve spatial form, function, and performance and innovate urban systems in urban and metropolitan delta and coastal regions.

The urgency for this novel approach is seen in the quest for a new dynamic equilibrium between urban growth, port-development, agriculture, environmental and ecological qualities, flood-defence systems and fresh-water supply. Delta Urbanism, as a field of interest and action, positions itself in this search of a *new modernity*: planning, designing and engineering the co-existence and equity between different forms of life and inhabitation and their reciprocity within the natural environment as a whole. →

The design of transformative *(revolutionary)* change started here by documenting and deconstructing this new modernity. This analysis led to a critical reflection on the rationality and form of the technological apparatus that we are currently relying on and its impact on the natural environment, on the urban question, and on the changing climate. What follows is the continuous search for new design cultures, as material and ecological practices, capable of concretely providing climate adaptation, environmental regeneration, socio-ecological resilience and equality across spatial and temporal scales.

If the set of social, political, economic and intellectual frameworks previously and currently in place led to the overexploitation and consumption of land and oceans then, for the future, new frameworks are needed[1]. Balancing competing claims in deltas and coastal areas requires new relationships to be forged between design, engineering, science and governance. In this context, the research's discourse has the objective to ensure that urbanised deltas and coastal areas are more liveable, more robust, more resilient and more adaptive. Therefore, to start a change of perception and movement towards the delineation of novel frameworks, two critical questions were set at the core of Delta Urbanism Research Group work at Delft University of Technology (TU Delft):

What are the urgent and the strategic research premises needed to revise the existing and envision new knowledge frameworks and practices?

How an interdisciplinary framework where governance, planning, design and engineering – working as a set of collaborative and evolving ideas and actions – could support a more radical approach of the adage 'design with nature'?

The discourse evolves around the following research sub-questions:

How can a dynamic equilibrium between urbanisation, environmental quality and safety be made in deltas and coastal areas?

How can fruitful interdisciplinary approaches of design, engineering, science and governance be produced and maintained?

How can we define a new balance between planned, designed and engineered interventions in the system of the deltas and coastal areas and, at the same time, a freedom for self-organisation of natural and societal processes?

In order to document the legacy of the discourse and reflect on the proposed research questions, in March 2020 as a 25th anniversary, the celebration of 'becoming of age' of Delta Urbanism held the conference "*Delta Design in Times of Climate Crisis*". The conference brought together international scholars and practitioners ranging from different disciplinary backgrounds. Using the term *crisis* was important to bring about the urgency of present challenges but also the interest in the opportunities embedded in future pathways. By acknowledging the state of crisis, we were ready to envision the scope of *delta design* as leverage for transformative change.

The present crisis is not only seen in the changing climate, loss of biodiversity and ecosystem degradation but it is also seen as a crisis of representation. The conference discussed on the larger value systems in society and their materialisation in space, and on the urgency to address the predominant segregation between knowledge frameworks. The segregation between engineering and spatial disciplines leaves us currently unequipped to deal with the changing socio-ecological systems. The conference concluded with the claim for a more contextual, culturally sensitive and therefore situated approach in planning, design and engineering, going back to the balance and search for reciprocities with the natural system. Such an approach in the Netherlands is called the *Fine Dutch Tradition*[2], the result of the

coherence between water management and urbanism – as territorial and socio-ecological project[3].

The present and future of the discourse thus focusses on interdisciplinary design, which is delta design, the delta of planning, design and engineering. At TU Delft, the research group Delta Urbanism represents the disciplines of planning and design at the Faculty of Architecture and the Built Environment. Having a close cooperation with water management, hydraulic engineering, transport, infrastructure and logistics, and geo engineering, at the faculties of Civil Engineering and Geosciences and Technology, Policy and Management, the engineering of the delta is completed, in research and education[4]. This cooperation is literally the root of the Department of Urbanism at the Faculty of Architecture and the Built Environment. This close relation was self-evident when the department started after the World War II, when its first students followed hydraulic engineering and land surveying courses at the sister Faculty of Civil Engineering and Geosciences.

RESEARCH PREMISES

In the past five years, the work produced within the framework of Delta Urbanism Research Group focused on the changing nature of the urban and territorial project in deltas and coastal areas. By positioning Delta Urbanism as an interdisciplinary field of interest and action, delivering a multiscalar and situated approach[5], the group has been supporting the development of the Delta Urbanism discourse further, envisioning and deriving a new set of spatial conditions, identities and values in delta, maritime and riverine landscapes. Ultimately, the aim is to tackle the fragility and resilience of territories at risk. To do so, recent projects have documented interdependencies, synchronicities, and/or conflicts between environmental, technical, political, economic, and societal processes — from large, regional scales to architectural and procedural scales and subjects. As an outcome of Delta Urbanism ‘coming of age’ reflections initiated by the conference in March 2020, four research premises currently cluster the group work. The four premises have as common line of interest

the agency of design and technology and the development of specific methods of analysis, design, visualisation and interdisciplinary work.

Land-Water-Atmosphere Continuum

Changes in any system, whether spatial, legal, economic, or environmental, manifest themselves in consequences that are often unpredictable for other systems. This ecology of interactions is even more complex in a highly dynamic space characterised by risk and emergence such as delta, maritime and riverine landscapes. As an overarching premise, the objective is to research the agency of design at the territorial level – balancing the form, ownership, and performance of land, water and atmospheric systems.

Drawing the Delta

The explosive character of urban development, especially in delta regions, often leads to chaotic and fragmented urban patterns, combined with increased risk of flooding, land depletion, erosion and ecosystem deterioration. The question is how a new (and necessary) organisation of the transitional space between land and water can contribute halting the erosion of the territory and reducing flood risk, while improving spatial coherence and ecological quality.

Reversed Engineering with Nature

On the scale of the urban district, the city is considered as a hybrid performative landscape which requires careful re-balancing and fostering new cooperation between the indigenous landscape and the techno-sphere of the urban systems. Synchronisation (in time, space, technology and interests) is at the core of this research premise.

Extremes

The deep uncertainty on the acceleration and aggravation of extreme scenarios of climate crisis introduces a new level of complexity. This calls for ingenuity and letting go of what is considered to be established. By exploring the missing

means of political, cultural, economic, spatial and technological representation, light is shed on viable futures in spaces at risk.

The aim is to highlight the urgency for change and put forward visualisations which can drive transitions towards a new territorial order.

EDUCATION. TOWARDS A MORE RADICAL APPROACH OF THE ADAGE 'DESIGN WITH NATURE'

The development of interdisciplinary approaches is at the core of the academic education delivered by group members under the framework of Delta Urbanism. Such approaches deal with the transposition and translation of concepts between knowledge frameworks and disciplines, and the use of design as an explorative method.

As a pedagogical project, our efforts lie in the integration of urban design theory and methods with knowledge from the disciplines of engineering, policy and management for the making of future pathways and transformative practices in territories at risk. This T-shape education philosophy is dedicated to the domains of the TU Delft Deltas, Infrastructures and Mobility (TU Delft DIMI) and gives direction to educational programs, improving the employability of graduates for the professional market of associated sectors. Delta Urbanism Research Group related education activities are situated in the broader context of the Delta Futures Lab, which is an interfaculty TU Delft lab where multidisciplinary groups of students cooperate with professional practice on infrastructure and environmental topics to research interdisciplinary design.

The *research-by-design* graduation studio 'Transitional Territories' at the faculty of Architecture is the leading educational activity where students develop novel frameworks, narratives and the use of design imagination for territories at risk all around the globe. Next to that, the honours program and the master course both named 'Infrastructure and Environment Design' are securing and enhancing these approaches.

JDU

When overlooking the Delta Urbanism legacy and present efforts to develop this as a full-grown discourse the need for a platform was obvious: a dedicated space for the dissemination of ideas and construction, expansion and collection of an international body of knowledge. The platform as a place where to share academic innovation and critical theory, best practices and projects, and foster new dialogues and translations between fields of knowledge and their experts contributing to the Delta Urbanism discourse.

For this reason, this journal is started to build an integrative and interdisciplinary body of knowledge, connect and expand the international community around Delta Urbanism. There are other academic journals that express the merits of the Journal of Delta Urbanism premises, but most remain monodisciplinary or are interdisciplinary however not centred around the quest of a new design culture (a *new modernity*) as presented here.

With this understanding, TU Delft Delta Urbanism Research Group and TU Delft DIMI initiates this platform where knowledge and ideas are presented together, and a language is developed for the interdisciplinary community. The diversity in unity will also be expressed in the diversity of voices that the journal will accommodate. Besides the academic essays published in the section ‘Papers’, the journal introduces other four section types: ‘Practice’, taken into the policy and construction perspective; ‘Dialogue’ columns where different (complementary, agreeing and/or opposing) perspectives on a share topic are exchanged; ‘Project’ which is dedicated to frontier design research in competitions, prizes and research projects; and finally, ‘Dictionary’ building the Delta Urbanism language by slowly revealing, in every issue, the meaning of two terms important to interdisciplinary design.

This first issue is partly based on the conference Delta Urbanism in Times of Climate Crisis that was held at TU Delft on March 05 and 06, 2020.

The issue starts with the ‘Paper’ section, bringing as first essay the contribution of the opening speaker and founder of Delta Urbanism at TU Delft, Han Meyer, Emeritus Professor at the Department of Urbanism, TU Delft. He comprehensively and clearly explains the history of the concept Delta Urbanism. A close, familiar story, coming from his 25 years of dedicated work to this novel field of interest and action, summarising this involvement with research projects, education, and dialogues with experts in all levels that have contributed to the discourse. The second paper is from another keynote speaker of the conference, Richard Ashley, Emeritus Professor at the Department of Civil and Structural Engineering, University of Sheffield. Ashley argues on the fact that despite the present challenges and urgencies – the state of crisis – urban areas continue to follow the form set in the past by our industrial society, with little or no space for natural (blue-green) areas. He uses responses to the Covid-19 pandemic to reflect on the importance of those areas for quality of urban life and services and related changes in the way we live and value urban spaces.

The ‘Practice’ section brings the contribution of Daan Zandbelt, the Dutch Chief Government Advisor on the Built and Rural Environment. Based on his keynote speech at the Delta Urbanism Conference, he explores and explains the idea of Dutch designed ‘soft power’.

The ‘Dialogue’ column contains the contribution and exchange between Bas Jonkman, Professor of Hydraulic Engineering at TU Delft, and Henk Ovink, the Dutch Special Envoy for International Water Affairs. Critically reflecting on sustainable coastal adaptation and delta development in the Netherlands from respectively a civil engineering and a spatial planning and design and governance perspectives, they conclude that not only it is possible to develop a sustainable future for deltas, but that the integrated and inclusive approach involved will also create a pathway for reaching our global goals.

The ‘Project’ section is dedicated to introducing the explorative design work and research under development within the context of two Delta Urbanism research premises. They represent a fragment of ongoing theoretical and conceptual

design studies, casting light in (1) desirable/ possible synergies *by design* between atmospheric, soil and water systems and (2) the urgency of new methods and approaches towards the delivery of transformative change in face of extreme sea-level rise. The two contributions showcase recent projects lead by Taneha Kuzniecow Bacchin, Delta Urbanism, Assistant Professor Section of Urban Design at the Faculty of Architecture and the Built Environment (1) and Joep Storms, Associate Professor Section Applied Geology at the Faculty of Civil Engineering and Geosciences, TU Delft (2).

Finally, MaartenJan Hoekstra, architect, urbanist and historical linguist, Assistant Professor Section of Urban Design at the Faculty of Architecture and the Built Environment, sheds light on etymological origins, current meaning(s) and other interesting details of the *language* of Delta Urbanism. He takes off with the words ‘Delta’ and ‘Urbanism’.

We wish you an enjoyable and informative read and are eager to invite you for future contributions. Not only can you apply for all sections in this journal, but we are also open to well-considered experiments. Look forward to hearing from you!

Taneha, Fransje, Baukje, JDU Chief editors

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