

## Redesigning Deltas design study and a manifesto for the 'new Dutch delta'

Hooimeijer, F.L.; Kuzniecowa Bacchin, T.

**Publication date**

2023

**Document Version**

Final published version

**Citation (APA)**

Hooimeijer, F. L. (Author), & Kuzniecowa Bacchin, T. (Author). (2023). Redesigning Deltas design study and a manifesto for the 'new Dutch delta'. Web publication/site, Flows. [https://flowsplatform.nl/#/redesigning-deltas-design-study-and-a-manifesto-for-a--new-dutch-delta--1677063227312\\_\\_\\_\\_\\_](https://flowsplatform.nl/#/redesigning-deltas-design-study-and-a-manifesto-for-a--new-dutch-delta--1677063227312_____)

**Important note**

To cite this publication, please use the final published version (if applicable). Please check the document version above.

**Copyright**

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

**Takedown policy**

Please contact us and provide details if you believe this document breaches copyrights. We will remove access to the work immediately and investigate your claim.

Source: Hooimeijer, F., & Kuzniecowa Bacchin, T. (2023, February). *Redesigning Deltas design study and a manifesto for the 'new Dutch delta.'* Flows Platform. Retrieved January 17, 2024, from <https://flowsplatform.nl/#/redesigning-deltas-design-study-and-a-manifesto-for-a-new-dutch-delta--1677063227312>

## **Redesigning Deltas design study and a manifesto for the ‘new Dutch delta’**

The power of design is to be able to see beyond the existing reality and push its boundaries to new sustainable futures. It enables change in ways of doing that created the existing reality in the first place. It creates change. Redesigning Deltas investigates this power of interdisciplinary design in which urban, landscape, and engineering disciplines project a future on the basis of the natural and spatial qualities of the Dutch Delta. Redesigning Deltas is a collaboration involving the Delta Urbanism group and various faculties of the TU Delft, the Delta program, Deltares, Resilient Delta, Erasmus University, Wageningen University, and PBL. Redesigning Deltas employed several activities in 2022 of which one is the design study.

### Study of design

The aim of the RDD Design Study was to explore the potential of the synergy between spatial design and engineering (design) of the Delta territory to create a sustainable and safe Delta. The knowledge gap addressed is the lack of understanding of the mechanisms design thinking has to offer to generate interdisciplinary approaches. The scientific research question of the study was “How can spatial design support a transformative ‘prospect for action’ (handelingsperspectief) in delivering pathways to a resilient Delta future in which assertion (beweren/tekenen) and proof (bewijs/rekenen) are synergised?”

To this end 15 practice partners from the domains of urban design, landscape architecture, and engineering were invited to work on 5 design challenges specific to the Dutch Delta system. The teams of urban designers, landscape architects, and engineers worked on five challenges, or so-called moments in the Dutch Delta, were: Defacto, Vista, and Arcadis (Limburg); Fabrications, Bosch Slabbers and Tauw (River Corridor, Waal); Urbanisten, Lola and Royal Haskoning DHV (RTM Port); Zus, Flux, and Sweco (RTM Polder); and Studio Hartzema, Fedded-Olthof and Witteveen & Bos (Zeeland).

The teams were supported by experts representing various domains (covering social sciences and economics) to work in multidisciplinary groups delivering an interdisciplinary strategy that addressed the design question: What is a visionary future (and pathways to get there) for the Dutch Delta where life, work, and recreation can be safe and sustainable in a climate-responsive territory from a systems perspective, considering the environmental and socio-economic challenges? How to envision and support this with plausible arguments on the basis of sound principles and design strategies? The Design Study consisted of masterclasses, local ateliers, public presentations, and methodological workshops with the aim to reveal the impact of design thinking in creating new research directions and governance challenges.

### Interactive approach

The design study is at the centre of the RDD movement in which practice was involved in a methodological approach with clear steps. They were given a shared scope: to deal with 2-3-meter sea level rise, climate adaptation, subsidence, sustainability transitions, housing shortage, and boundary conditions of the context (social/economic/ climate scenario) for current and desired society.

The scope was explained further over the course of four masterclasses, organized to give participants specialized knowledge relevant to their challenge. Topics included the Dutch delta, international deltas, delta governance, and delta economy. This scope was first explored in a Sandpit setting. Sandpit is an (interdisciplinary design) methodology that is used to create a body of knowledge to be able to integrate and utilize knowledge of different natures. In the two-day ‘Sandpit’, the participants from engineering, urban design, and landscape architecture firms worked together in defining the challenges and needs in the five geographical ‘challenges’, each representative of a different part of the Dutch (delta) territory.

Starting in disciplinary groups to discuss these challenges, the practical experience from professionals in the field was gathered and used to build a preliminary understanding of the design-challenge(s) at hand, to further define the design brief and preliminary proposition.



Visit to the Deltares water lab during the first day of the sandpit.

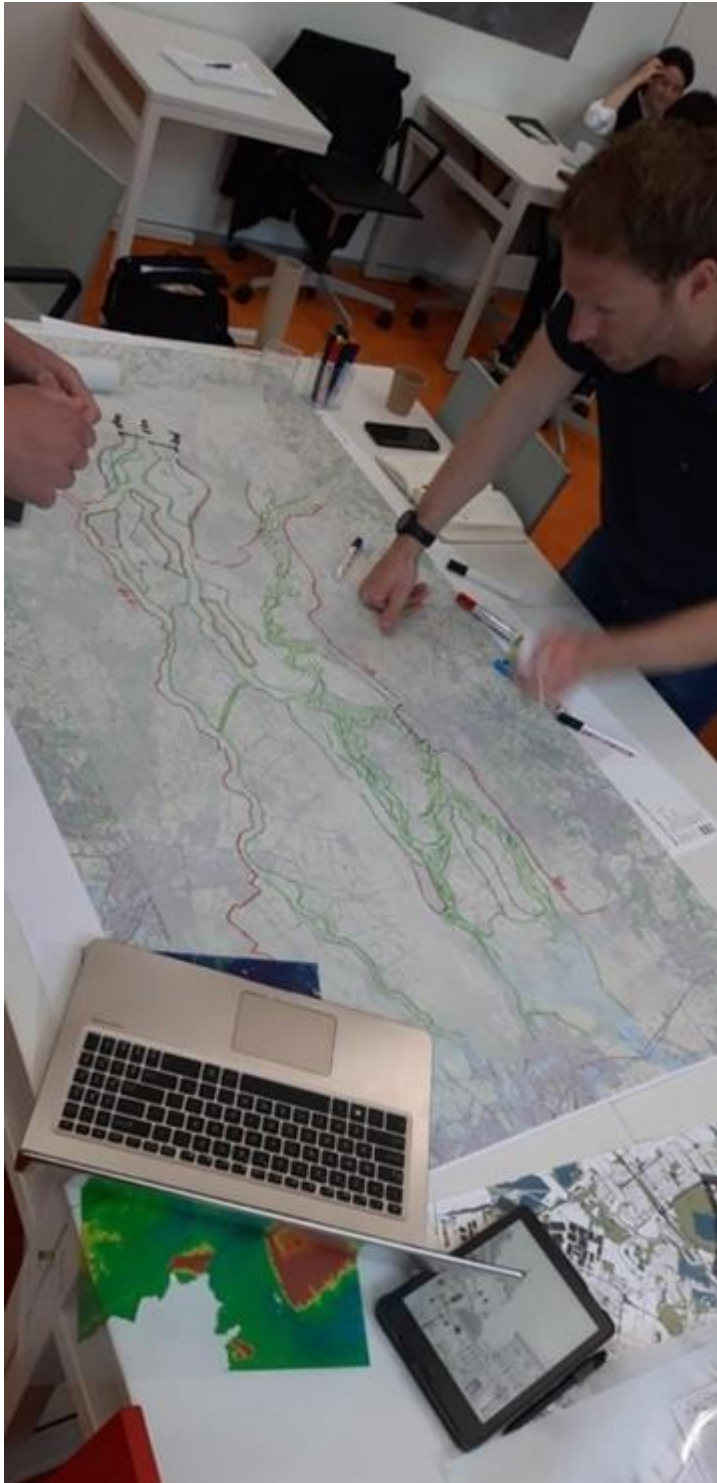
The conclusions of the first day resulted in the assembly of 5 aforementioned teams, each featuring an urban, landscape, and engineering firm, and division of the (defined) challenges across the teams. On the second day, the developed strategies were presented and disciplinary groups worked to draw conclusions at the overall scale, connecting all 5 propositions.

The groups' appreciation and enthusiasm for the collaborative approach were made clear through their request to create a manifesto as a group. This was carried out in an iterative approach by translating their position on the challenges to the system scale and unifying them as a single manifesto.

Redesigning Deltas is focused on integration and academic consolidation of what is learned in the design study and to feed the study with the other lines of inquiry. The Synergy line of the program describes the outcomes of deliverables for their scope and validity, but also analyses and develops methods. H+N+S Landscape Architects has been commissioned to review the instruments of the Dutch Layers approach (a planning instrument) and the Casco Model (an instrumental elaboration of the Layers Approach). Although both have become mainstream over the last decades, the question remains how they can be made instrumental for the design of future deltas. H+N+S analysed the instruments (that originated from their offices) on their perspective and how they were used at the national (Belvedere, Ecological Main Structure, Room for the River), regional and local scale (VINEX and the Green-Blue Buffer in DELFLAND, with the design of Berkel-Rodenrijs).

The outcomes of the analysis of H+N+S were used in the methodology workshop of the Design Study, where a new interpretation of the Casco Model was used by the design teams. This workshop had a

visible impact on the constitution of the 5 propositions of the teams and brought them together in an overall approach formulated in a manifesto.



Casco workshop with H+N+S

#### Design of moments

Next to the scientific question of the project the “design” question to the teams was: How, from a system perspective, considering the environmental and socio-economic challenges, to capture the potential of the Dutch Delta in a visionary future where life, work, and recreation can be safe, inclusive, and sustainable in a climate responsive territory? How to envision and support this with plausible arguments

based on sound principles and situated design strategies? Each team tuned their studies on the base of this question and the specifics of their challenge. The results were strategic proposals and approaches.

## 1. Zeelandia

*Studio Hartzema, Feddes-Olthof and Witteveen & Bos*

Zeelandia proposes a new symbiosis between land and sea. Housing, nature, ecology, agriculture, aquaculture, energy, and other forms of land use find space in the powerful landscape of the Southwest Delta. For this, the team sees the area as an ideal laboratory. Three different water scenarios were studied for a sea level rise of 3 meters and the consequences for spatial planning were calculated. Scenario Zeewaart creates a large fall lake off the coast of Zeeland that protects the land and also helps generate energy. A Superdelta scenario was also designed in which, on the contrary, space is given to the water and the sea can penetrate our country as far as the German border.

*Casco drawing for Zeeland © Studio Hartzema, Feddes-Olthof and Witteveen & Bos*

## 2. Rotterdam spongecity

*Urbanisten, Lola, Royal Haskoning DHV*

In this design, by expanding ring 14, Rotterdam becomes a sponge city with its own fresh water supply as the Meuse becomes a fresh inland lake. Collected rainwater can be buffered locally in the city. This allows the city to meet its own water needs. The port falls outside the ring road and will be raised in the future, entirely in the existing tradition, to keep the economic engine running permanently. Every thirty years a plot will be raised and redeveloped in balance with nature.

*System design for the Rotterdam Area Urbanisten, Lola, Royal Haskoning DHV*

## 3. Midden-Delfland as Nationaal Productief National Park

*Zus, Flux en Sweco*

This team sees Delfland as a National Productive Park. Warmer summers will increase drought in surrounding cities, population growth makes surrounding cities denser and increases the need for surrounding nature, water, and air. Midden-Delfland must become a green lung and a sponge for the livability of surrounding cities. This design assumes a simplified water system with fewer dikes, pumps, and sluices, with opportunities for increasing biodiversity, providing raw materials such as wood and food, and offering a solution to flooding, subsidence and the threat of salinization. The urban edges of Rotterdam and Delft will form a high urban framework for Midden-Delfland and stay within this boundary to protect the area as a green lung.

*System design for Midden Delfland © Zus, Flux en Sweco*

## 4. Limburg: in de capillaries of the Delta

*Defacto, Vista and Arcadis*

How can the gully valley in Limburg better retain water to prevent flooding during extreme precipitation events? This team's design aims to give space to water and includes many interventions to capture, slow down and drain water. This means restoring the entire landscape as a sponge with traditional grafts and forests. The design also highlights changes to the landscape needed to make it more productive, such as for storing CO<sub>2</sub>.

*Redesign of Valkenburg © Defacto, Vista and Arcadis*

## 5. Maas-Waal corridor: Breakthrough!

*Fabrications, BoschSlabbers, Tauw*

The premise of the Waal River Corridor team is an extreme scenario. They argue that in the long run, our water system with dikes and Delta Works will not work. Eventually, the inevitable system crash will occur: the river system will return to its natural flow in an open route between the hinterland and the sea. The only thing we can do is to guide this "crash," betting now on a semi-open system and managing this disaster-in-slow-motion. The design includes evacuation scenarios, retreat strategies, and ways of rebuilding in which we re-learn to live with the seasons and the dynamics of the natural system, for example, on sandy islands in seasonal homes.

*Section over the river area © Fabrications, BoschSlabbers, Tauw*

## Manifesto

The manifest is the conclusions and overarching analyses of the design proposals for the five challenges or delta moment. As a collective effort, the five projects formed a 'new Dutch' design approach to flood risk management:

**#WE ARE HERE TO STAY, AND WE TAKE RESPONSIBILITY, WE CAN CHANGE**

There is a state of paralysis, doubts on who, what, how and when responsibility and steps towards a safe and secure future should be taken.

**#WE NEED TO KNOW MORE**

There is a lot of sectoral knowledge and experience on the delta system, but it lacks integration and evaluation.

**#WENEEDTODARETOMAKEPAINFULDECISIONS**

To design with uncertainties and without 20 years of research, and without trusting 'protection' only.

**#WE UTILIZE THE DELTA-PARADOX: REGULATION WITHIN THE DYNAMICS**

We are now regulating the delta system top down and controlling its dynamics. With a set of 'measures that fits all' - approach whilst there are many morphological, social and economical differences in the Delta.

**#WE DESIGN THE DELTA BOTTOM UP**

The design of the Delta is done by the natural system. This is the first boundary condition for an approach wherein the natural - ecological, soil and water - system comes first. Soil and water systems are setting the stage for the occupation.

**#THE DESIGN OF THE DELTA STARTS WITH THE SECTION**

There is still a silo approach to the management of the territory. The interdisciplinary design of the delta should be done through scales and disciplines from the section to the international situation.

*Building the plans in a 1:10.000 sand model at the International Architecture Biennale Rotterdam © Maarten Laupman*

The five projects each illustrate the manifesto in the merits of the typical location they worked in. The Limburg team (Defacto, Vista, and Arcadis) enforced the landscape as a buffer and quality of life balance in the valley of the Geul. The team of the river corridor, Waal (Fabrications, Bosch Slabbers, and Tauw) define a new border condition of the river area in which there is a new form of living with the natural and dynamic river system. The team that worked on Rotterdam as a port city (Urbanisten, Lola, and Royal Haskoning DHV) enlarged and enforced dike ring 14 to create Rotterdam as a lake city and proposed economic protection in raising the port systematically over time. The Rotterdam polder team (Zus, Flux, and Sweco) created a clear definition spatially of the relation between the city and the hinterland by protecting Delftland as a productive landscape. The team that worked in Zeeland (Studio Hartzema, Feddes-Olthof, and Witteveen & Bos) did an extensive study by using three parallel futures that present a range between enforcing and letting go.