Delta Interventions

Graduation Studio

Prepare for Impact!
Climate Change Adaptation and Spatial Quality in the Dutch Urban Delta

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In the coming century, global urban deltas will be confronted with the effects of climate change. This graduation project handles the Dutch South West Delta, and aims to handle this challenge by establishing a novel relationship between the city and the delta, with an emphasis on spatial quality.

Over the last centuries, dikes protected the area on the South West Delta (image 1). The Delta Works started in 1953, and all water defence measures focused on the reduction of ecological quality in the same time. The Delta Works was primarily for structural levees and dikes protecting farmers, allowing to build up more and more sand on the landform. However, to the current day, no climate change has been taken into the table. The level of the North Sea was fixed, and even the dikes will not move over the next 100 years. This is not sustainable for the current and future generations, as well as for the future climate. The local effect of climate change are expected at well-identified urban development (images 2).

By case study research (image 3), three water safety principles (figure overview dashboard) form an urban climate change. These three principles form a climate change adaptation. These three principles form a well-identified urban climate change adaptation: 1) reduced urban development and spatial quality. This is tested (image 11). Newly constructed waterfronts fuel activities and local ecological quality (image 12).

Combining the outcome of the four principles, the Delta Works is perceived at the neighbourhood scale; a changed living environment is tested. This is a changed living environment that is tested (image 11) (figure overview dashboard). Newly constructed waterfronts fuel activities and local ecological quality (image 12). To make this even more impressive, the question can be asked: can the current living environment in the Delta Works (image 11) be the base for a new generation of delta rich of ecosystems and nature in general.

The result of this study is which climate change adaptation is applied to existing urban areas. A new water safety principle can lead to urban development and spatial quality. The outcome of urban development in the Delta Works can be noticed at three different levels: 1) delta scale: an open delta system for human, natural, and urban living 4) coastal scale: combining water safety and city through urban design.

The Delta Works could be an open delta with a green delta system, or a large urban system with green (adapted) water safety. A green delta system, or an open delta system will be one for the next century.