

Reflection

Delta Interventions
Graduation Studio 2016-2017
TU Delft Faculty of Architecture,
Urbanism & building sciences

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Delta Interventions, as implicated, concerns an intervention in a delta zone. With this, many challenges arise for making the designated zone habitable by accounting for uncertainty in relation to water.

Delta related problems are ever present and relevant. Many metropolises as well as smaller cities are situated in the delta for multiple reasons. Some of which are trade, fishing and peoples natural longing for a connection with water. The delta is an essential part of modern life and knowledge of dealing with this environment is important. Especially the central theme of climate change shows that rising sea levels become a threat. In addition to the general sea level rise, hurricanes like Katrina and Sandy have shown their destructiveness in the US. While the San Francisco Bay Area is not directly exposed to the sea, the effects of such hurricanes will undoubtedly affect the inner bay. On a bay/ local scale this is an opportunity to address a community in a specific location, while simultaneously accounting for a global challenge. It is an opportunity to address a problem that is bigger than architecture itself. With the correct interventions in specific locations, a contribution can be made to the larger picture while the local design questions are answered.

In addition to the threat of climate change and changing sea levels, water is an element that can contribute to the experience of a building and be something positive. Take for example the Leça Swimming Pools by Alvaro Siza, that embrace the sea and let the tides fill its pools. Or a project called "Augmented Tides" by Rafael Berges and Jared Clifton that incorporates a system that uses sea water to filter wastewater to be reused or be further filtered to be released back into the sea. Delta Interventions is the studio that focuses on precisely these themes; designing with uncertainty in particular in relation to water but also to make this an experience. The first step towards a direction for my project was choosing the studio, the broad scope of Delta Interventions along with today's relevance of dealing with water made Delta Interventions a studio in which have chosen to develop my graduation project.

Delta Interventions in particular is a studio that requires an effort to formulate ones own project; city, site, master plan and program as long as it addresses dealing with the uncertainty of water related issues. The scope of the graduation project converges from a global generic scale to a specific building scale. In the initial stages, research is focussed on aspects as demographics, geology, water levels etc. From these results, challenges can be formulated. In my particular case the realisation struck that the surrounding neighbourhoods for Hunters Point(my project site) were all experiencing high unemployment, low education and a lack of community. Hunter's Point is vacant and big enough to support the surrounding neighbourhoods while being threatened by sea level rise. With this, I focussed my project towards the community and the relationship with water. My main research questions being; *'How can a building promote an accessible and lively community through architectural design.'* and *'How can the environment(water) become an asset to the architectural experience of the building.'* A well suited project to address in Delta Interventions.

The threat of sea level rise is present over the entire area of Hunters Point. Working with three other students on the same site, it made sense to address this challenge on a scale that affects all the buildings in the area; a master plan. In this, different typologies have been identified; where buildings with a lower urban density have to account for a greater uncertainty(i.e. building on stilts) and higher densities are better protected by the urban design. The master plan as a whole focuses on providing work, education and a network for the surrounding neighbourhoods. It is a water knowledge hub that brings together different disciplines to share knowledge regarding the changes in the water environment.

While requiring additional effort at first, this proved to be unburdening for the individual design of the building as a great deal of uncertainty had been dealt with and the the solcial relevance has a solid base.

The specific site within the master plan for my building is situated in the centre, over a dry dock. Inherently having a connection to the water and being the connection between the north and south part of Hunters Point, this is the ideal location for a community building. The present axis of the dry dock leads towards the bay, the building frames this view and guides the way to the bay and the more vibrant part of Hunters Point.

However, this does not address how water can be an asset to the architectural experience of the building.

Initially, inspired by the mentioned precedents, I explored to establish a physical connection with water through the building. As far as program goes, pools as in the Leça pools were less practical as a combination between a museum, community centre and library. Which has a more all-year round program and has more potential to cater to the population. The idea of filtering water and bringing this process to the visitor through the building as is something that could enhance the experience of the museum. However, working with this idea has proven challenging. As the design progressed the idea of filtration was just that, an idea.

The technicalities of filtering water proved to be complex and required time to be understood, while the design progressed. Not directly stated in my research questions, as it is inherent to architecture, sustainability came to be an important motivator for the choice of main material in my project. Which is, wood. Priorities shifted from exposing the process of filtering water, to a building that represents a community. A community that deals with the effects of climate change, and thus should be reflected in its sustainable endeavours. Eventually, research for the filtration of water pointed out that at most one third of the building's waste water could be filtered over the roof with a weight of one tonne per square meter. In combination with the wood structure, this proved to be more of a gimmick than an honest sustainable feature.

With this, the buildings' focus was directed on a visual, emotional connection to the water, rather than being a platform for interacting with water. From the start, I can see filtering water was a forceful effort to incorporate an experience into the building that does not necessarily add to the core principles of facilitating a connection to the water for the community. As a metaphorical gate (Fig. 2), the building provides the way to the water and acts as a catalyst for interacting with the environment. From an urban scale in which the building frames the view and guides the paths, to a building scale in which the connection to the bay is established every time a visitor moves to a different room.

In relation to the community part of the question, this was established initially on an urban scale. The location of the project was key to good accessibility for the inhabitants. On a building scale I lost sight of catering to the community. The program had been defined but by focussing effort on trying to incorporate the connection to the water, the floor plan did not develop in providing an architectural experience for accessibility.

At this point I felt like the project was not moving forward, things did not fit. By looking at references I got inspired and realised my building was not only about the connection to the water, but about connecting the community. I had been working from too much of a pragmatic point of view, being efficient with the floor area. The architectural experience of the building was constricted to the relationship with water. A clear and transparent route through the building with grand open spaces, however, changed this. Finding inspiration in the new design for the Naturalis museum by Neutelings & Riedijk, uses stairs to create a cascade of public space. By taking this idea and extending it from one footprint to the other, a transparent route was realised where a relationship with the environment is ever present.

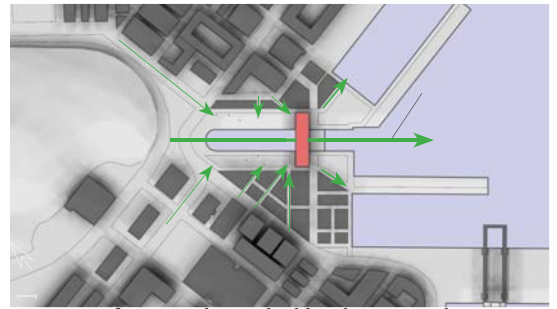


Fig. 1: specific site on the top, building location on bottom

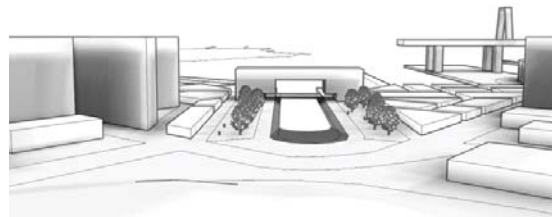


Fig. 2: Building as a metaphorical gate

a visitor moves to a different room.

What this illustrates is a way of working with research. Research by design. The goal has been set by the research questions, a direction to work towards. Answers for this are partly found in literature, as is the case for the filtration of water. Otherwise, possibilities are found by comparing different options, looking at precedents, deducing and setting technical constraints. Eventually, a coherent balance of possibilities come together to the designers best knowledge, having weighed off experience, construction, façades, urban setting, colour, light, material and every other thing that is beyond the scope of this reflection.

Though initially motivated to, for example, establish a connection with water within the building, research by design has revealed that in this case the connection from within the building to the water makes more sense. By personal judgement, based on the research, the design is formulated. Relating back to the overall scope of the studio and the research questions, I realise it is important to design through scales. Meaning that the answer for accounting for uncertainty lies for the most part in the urban scale but might as well have been addressed on building scale by elevating it for example. It is important to manage what is addressed on what scale, ensuring a clear design. Addressing everything on every scale would of course be desirable, but it is not realistic, while addressing everything on one scale would not be an integral design. There is no one answer and thus choices have to be made on the hierarchy of the aspects.