

# Reflection P5

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Graduation studio: Delta Interventions

Track: Architecture

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## Broad Channel - stepping up

Architecture as a connecting element in flood resiliency

*This paper is a reflection on the relationship between research and design conducted during the graduation phase. It reviews the goals and approach to see if they worked out as planned and the reason for it. It also defines the position of the graduation project within the Delta Interventions studio and in a broader social context.*

The generic goal of the Delta Interventions graduation studio is to make a water related architectural design in the New York region on a location affected by flooding during super storm Sandy. This requires extensive research and understanding on both architectural as urban/landscape level as their mutual relation is key to the functioning of the project in a practical way; to be resilient against future flooding. It is also apparent that flood resilient architectural projects in delta regions have the potential to be of bigger meaning for the already existing and often vulnerable urban fabric in a dynamic region. This underlines the advantages of an interdisciplinary starting point that can widen the range of interventions beneficial on a bigger scale.

The potential that an architectural project can have for its surrounding became more and more clear through the initial research. Therefore I set the goal to make the Broad Channel community in Jamaica Bay more flood resilient. This challenged to explore less obvious possibilities than for example rebuilding, relocating or physically protecting an entire neighbourhood. Here for I developed the strategy 'seeing, understanding, acting' as a leading strategy throughout my graduation project. It aims at providing communities with knowledge and tools to improve their resistance, resilience and adaptability against future storms in respect to the natural environment.

The first step of the project is improving the possibility to experience the qualities of Jamaica bay by creating an ecological leisure network. It generates public interest to strengthen the ecological values of the bay. As a healthy ecological system contributes in mediating the impact of flood risk.

Second step is to link experience to an understanding in how the build environment can relate to the bay and in the same time be more flood proof. This is done by an educational function and visible in the architecture. The nodes of the network are architectural examples of building in a durable relation the bay, so is the educational function.

To support the last step, acting, the educational function needed to become part of the Broad Channel community's daily activities. Therefore the educational function is combined with multipurpose hall for indoor sports and events.

Result is a flood proof multifunctional center that engages the public and the Broad Channel community in establishing a more resilient living environment in respect to the environmental qualities of Jamaica Bay.

## **The relationship between research and design**

A research of the New York region with the Dutch layer approach formed the starting point of the studio. This created insights on urban and landscape level and on the overall coherence of the region. Due to the scale of the region it was difficult to distil an architectural project and location from this rather abstract information. With the actual visit of the various locations affected by flooding, several meetings and on site discussions the abstract information became helpful in understanding specific challenges. It as well proved to be essential to visit the design location as it provides impressions and insights that cannot be obtained in any other way. Further research, using the layer approach, on the design location could be linked to this experience.

The two main directions of the thematic courses backing the graduation project were architecture in relation to fluctuating water levels and the influence of water on the build environment. Especially the second proved helpful in understanding the meaning a single architectural project can have when the aspiration exceeds a flood proof building that simply answers to its programmatic brief. It once more underlined the potential of interdisciplinary strategies.

More specific architectural aspects became important with the development of the design. I wanted to improve the understanding, and literally change the perspectives of the visitor by giving them an overview over Jamaica Bay and surrounding, without disconnecting them from the direct natural environment. Therefore I designed a continuous sloped roof as leading concept for the center. The roof anchors the building to its location and keeps the visitor in contact with the natural elements while they can freely explore the various perspectives from off the roof. Case study research proved helpful in understanding the typological challenges of a continuous sloped roof. So did reference projects by visualizing conceptual ideas where the design could relate to.

Looking back, the big scale and start without a location or other fixed points proved both beneficial as challenging. Beneficial as theoretical and thematic research could influence the design approach and direction. Often the design is already developed to a certain level whereby research is merely a steering tool. Projects that explore new approaches on unknown terrains are more likely to come up with less obvious solutions. As well in the case of this graduation project research should be used as a starting strategy for an architectural design with goals that exceed the building scale. As this different relation between research and design was unfamiliar to me it also proved to be challenging. With the large scale and range of possibilities it took more steps to come down to an architectural design. Partly because research findings on a multidisciplinary scale do not necessarily lead to an architectural project.

## **The relationship between the theme of the graduation lab and the subject/ case study chosen by the student within this framework (location/object)**

Binding elements within the Delta interventions graduation lab are the location; New York and the impact area by hurricane Sandy. Thus allowing for a large variety of approaches and projects. The initial starting point on the P1 was to develop an architectural project with the same strong relation to Jamaica Bay as present houses on the bays edges but to design them in a resilient way with various methods of flood proofing able to sustain flood events. This interest remained but the aim was set to a project that could make a difference on a bigger scale. Instead of seeing flood risk as a merely technical problem the focus shifted to the social and environmental impact a single architectural project can have on its surrounding. With the aim of the project shifted to improve the resiliency of a neighbourhood this potential is used by adding social functions, educational and public functions. Whilst maintaining the goal of building flood resilient architecture.

As the Delta Interventions studio aims to look for new strategies in reacting on the ever changing elements within the delta, this project positions itself within this scope and brings one of the many possible interventions to light.

### **The relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework**

The Delta Interventions studio is well connected to various design practices, organisations and research institutes. The master classes, seminars and events with these relations provided an interactive way of exploring the multifaceted design challenges and the growing importance of water related design. It created an awareness that our ideas did matter and could make a difference in an ever changing environment that challenges more and more urban regions in the coming years.

Within the graduation project, I undertook attempts to contact local parties related to the design location. This gave insight in the organisational culture of local politics. It showed that there's quite a different consensus on how to address flood risk when compared to the Netherlands.

All graduation projects within the studio had a common methodological start with the Dutch layer approach. Where substratum, networks and occupation patterns are analysed. I used this methodology on the regional scale and analysis of the direct surrounding. Further on in the design process other more architectural methods were used. Typological research within the water related design course and within the graduation project itself made it possible for me to extract various design tools. Phenomenological research, the study of perceptual experience, kept the focus on how the various users can perceive the architectural project and how it places the user in a specific relation with the landscape.

### **The relationship between the project and the wider social context**

In this graduation project I explored a rather unfamiliar way of improving the resiliency of a neighbourhood. Instead of physically protecting the neighbourhood, which is often the first reflex after a flood, the project aims to link various networks through architecture to foster the exchange of knowledge in living with water. Connecting everyday functions with water related institutes generates a growing awareness and strengthens the relation of a neighbourhood with its direct surrounding over time. By linking the experience to an understanding and providing the knowledge how to take action, a durable relation to the natural surrounding can be achieved. The project shows that architecture can have an extensive meaning in addressing water related challenges through function, architectural expression and technical solutions.