Crossing the IJ.

Research by design, in planning and technical measures to create a bridge over the IJ.

P4 reflection

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December 4th, 2015.
Reflection
This document contains my personal reflection about my graduation project up to the P4 evaluation. It includes the product, planning and process of the project. It is not part of my final graduation report, as the points and views described here are already included in the report.
The reflection is written from a personal point of view and it reflects my personal opinion.

Expectations, process and result
At the beginning of my graduation process, during P1 phase, I had contacted my main mentor Joris Smits to confer with him about my idea for a graduation project. The reason I had contacted Joris was the subject I had chosen to elaborate on during the MsC 3 project: S.W.A.T.; a bridge.
I had worked out a connection over a road in front of the Architecture faculty in Hanoi, which was an amazing project for me to do. It posed new challenges in the form of thinking about design, support structure and production technique. The clarity of thought about the essence of the design was what drew me to the project.
This was where I decided to do my graduation project on bridge design.
The thing what bothered me most, is the lack of information given in the P1 phase to students who have to choose a graduation project. An afternoon of lectures about graduating is not enough to educate a group of students on the brink of becoming graduates of the possibilities. A platform for graduation products should be created, so all students graduating at the AE&T studio know what research is going on and what their options are. I think this way a more constructive way of research can be set up for the studio of AE&T to gather information and be able to be more innovative.
My expectations where to research the structure of bridges, focusing on the structure of supporting geometry and material, to see what the limits of certain structures are.
After my P1 presentation, I altered my approach to the subject of my graduation. I had decided to change to a research by design, taking on a problematic existing project as my subject for design.
In retrospect, the problem I decided to use could have been chosen more wisely, as it is a big project, especially for someone who has never designed a bridge before. A smaller sized project would have allowed me to be more technical in approach, which is something I wanted to do more than I have up to now in this project.
In my P2 phase I did site research, and did analysis of predecessors, to get a feel of the possibilities available to design a solution on the IJ, presenting the results in my P2 presentation. I had also started to educate myself on the software necessary to create a parametric model, in order to use software to optimize the structure within the limits set by my design. This is where I had met my crossroads at that moment in the project.
In the start of P3, I had planned to research Amsterdam’s iconicism, landing placement, support solutions for spanning the IJ and technical measures. But I spent a lot of time designing my model, in which I had made many assumptions about big design matters, deviating a lot from my original planning. This, coupled with too little communication with my tutors, resulted in a less than optimal result on the P3 presentation. At that time we decided that it would be a good idea for me to take a step back to the research and review my design with an educated and fresh look on things.
During my following research phase I learned a lot about the design of bridges, the aspect of designing for use, and the difference in approach. I started to narrow down my design options according to my research results, conferring with my tutors as I progressed; which was an improvement relative to my previous take on the project. While designing, I was still building models and doing research on the side in order to be able to execute the necessary calculations on my model. I did this because here at architecture we get a basic education on structural mechanics, but in order for me to convince myself of a project, I had to prove its stability, at least on a basic mechanical level. Using software to create a simplified model I was able to do the calculations needed to satisfy my own need for proof. Although I had lost almost two months building models which were able to optimize themselves, after which they had shown the time taken for every iteration was about 2,5 days. This would mean if I were to be optimizing the structure using that script, my iterations of the first model would be done sometime in December. At the while, my
design was still changing, so the need for more optimizing would be necessary. I have now arrived at the P4 evaluation. I’m confident my research is solid and my design is well supported. Only during the last few weeks I have had the realization of having spent a significant time in architectural design of the bridge; while my planning was to aim more towards a technically themed project.

**Sustainable design graduation studio**

Of the three sections which make up the sustainable design studio (façade design, climate design and structural design), my graduation project is classified under the last section. It incorporates the idea of creating design from a structural aspect of the design. The sustainable aspect does not come from a technical point of view, but more of a social/planning point of view. The most interesting process for me was reaching a design from a different point of view and taking on the challenges from the actual site into the project. The disappointing factor for me is, as always in projects at this faculty, the timeframe. Some decisions are made with assumptions, because in order to reach a proposed goal, the timeframe doesn’t allow for more research.

**P4 Retake**

The first time I had my P4 presentation, I failed. At the moment I was given the outcome of the presentation I was not expecting that I would fail. A message which would not be received well by any student in my situation, I imagine. The most annoying thing about the moment, was that I had given notice to my tutor of having trouble with my report. Due to the fact that my graduation had steered more towards design than I would have hoped, writing a report about it proved difficult. After having received the message that I had failed my p4 presentation, I was angry, but most of all disappointed in my tutor. Being a tutor to someone, to me, means being involved in his work, showing interest in his work. And if that is not the case, there is an issue between tutor and student. After having a cool-down period, I made an appointment with my tutor to talk things through. Which turned out to be the thing to do.

From his point of view, he had not experienced a student with my way of working before. I can see what he meant, structure is not one of my strong suits. But this is an issue which had to be addressed earlier.

After talking to my tutor, I found another person to help me with writing my graduation report, because writing is simply not the tutors’ strong suit. He agreed with this method and I feel confident of having everything structured now.

**P5 Period**

During the period between P4 and P5, I have enjoyed working on generating the final products regarding my design. The completion of my project led to finishing the details and creating the drawings showing the technical solutions for some of the issues I encountered, those which were solvable during my time left before P5.

I’ve enjoyed creating my mock-up and taking the time to finish the project entirely.

**Conclusion**

For me, this graduation is not what I expected it to be, but I’m not disappointed in the work I have done. Although it is more aimed towards design, where I would have wanted to spend more energy on the technology and the materials, structure etc. It has been a good project to experience the research which is put into the design of a project which is based on structure instead of architecture. Although not yet finished, I can already predict the project needs a lot more work when I’m finished with it. The calculations done by me are not enough in building a bridge. Though disappointed in the process deviations I went through, I have learnt lots and had a lot of fun with the project.