

## **Graduation reflection**

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### **Relationship between research and design**

The research was about to find alternative way of waste water treatment. The goal therefore was to come up with a waste water treatment system which is more integrated in the urban area and next to that solves the issues of the current system about the recovery of nutrients and the capacity of the system. As result a system was developed, which treats the water locally by separating the waste stream at the source, and uses green treatment systems. These green treatment systems, which purify the grey water, should be an added value to dwellings in which they are integrated.

In the design the combination of the green treatment systems and the dwellings has been the main focus. Three types of green treatment system create make different kinds of connections with the dwellings.

### **Relationship between the theme of the studio and the subject chosen by the student within his framework (location/object).**

The theme of the Architectural Engineering graduation studio is to integrate technical innovations and developments into the architecture. The main question is what effects the engineering has on the architecture.

My technical subject, the waste water has more a relationship with the function of the design than the location. Dwellings are the main contributor on the production on waste water which is been treated by the main system. There the function of dwelling makes sense. As the location does not have a direct relation with the technical theme, the location is chosen carefully. Many reference projects are mainly located in low dense urban areas where it is easier to create space for the green treatment systems. The choice to make a design for a dense urban area makes this an AE project. The integration between the architecture and the technique is really imported now. This is the point where the A meets the E.

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

The studio promotes a methodical approach in which the research is used for designing from the start, and vice versa. At the beginning the research has more priority than the design, but as the project evolves the design part slowly takes over. At the P2, the research part should have been mainly finished and the design is already in an advanced stadium.

During the research part it was hard for me to use directly the first of the research into my design. The main developments in the design parts started after making the choices for the location and function. Because of this, the focus of the design was really clear in the beginning. After the p2 presentation it was more obvious what the design challenge was about. After the p2 the design has the most priority. Since I was searching for the best methodology during the design part, the focus of the design something lost. But because the research part give good guidelines, it was not too hard to focus again. The research hereby helped me to stay on track in the design phase.

With all the experiences of this project will help a lot at the start of a next project. I believe in the methodology in with the research is used for the design from the start and vice versa, because I think that the design could help the research, and the research the design, by doing this. Next to this, it is a useful strategy to stay more focused on the important parts of the design and or research.

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

There are multiple relations between the social context and the project. There is a direct relation that this alternative treatment system has the ability to recover nutrients from the waste water. This is a main contribution to solve the scarcity of the natural reserves of nutrients like phosphate. And another direct relation to a wider social context of the project is a result of the capacity of the waste water. Because the capacity is higher than the demands of the project it is possible to also treat waste water from the neighborhood. The project has therefore a added value for its context.

But the main relationship between the project and the wider context is more about a different way of thinking. With the current system, the waste water problem in the city is transported outside the city where the hinterland is used to solve the problem. It is another philosophy to solve the problems at the source of it. When using fresh water in the city and treating it there, purified water is leaving the city, the water cycle will be more closed for a bit.