

Reflection

In this reflection, an attempt is made to look back at several subjects concerning the research and design process and to evaluate them. Four themes can be identified:

- the relationship between the research and the design
- the relationship between the theme of the graduation lab and the graduation subject
- the relationship between the methodical line of approach of the graduation lab and the method chosen by the student
- the relationship between the project and the wider social context

These themes will be discussed further on. First a short introduction of the research and design is in order.

INTRODUCTION

Within the graduation studio of Architectural Engineering, the starting point is choosing a fascination from which the students want to build their research, choose a fitting location and create their design. The larger theme that I chose is urban farming, with a more specific subject of aquaponics. When I dug into the subject of food, I found out that for example the Netherlands needs 3 times its area surface purely dedicated to food production to provide for its population. While the population kept getting denser and denser per square meter due to vertical housing, the agricultural sector had to expand horizontally or even rely more and more on import to provide for all the people. One option to keep up with the populations needs is adapting farming vertically and integrating it back into the cityscape structure.

Within the research I observed that there are a few possibilities to achieve this re-integration, but I went for a soilless direction: that of hydroponics and aquaponics. Hydroponics is growing produce in soil alternatives (such as coconut fibre blocks, clay aggregate, rockwool) and adding the needed nutrients to the plants water supply. Aquaponics is a combination of hydroponics and aquaculture (fish farming), where the needed nutrients come from the fish waste, therefore creating a closed nutrient loop. From these two options, I went for aquaponics because of the added product (fish) and the closed nutrient loop aspect.

The research paper that I wrote presents a test case of an aquaponic farming system in the Van Gendt halls in Amsterdam. I chose this site/location because it was the more urban setting of the choices that we had, and I was intrigued by the industrial aspect the building has. Within the test case, the following subjects are discussed: produce, water, fish, waste and energy. For these subjects calculations were made to give the aquaponic system a tangible and understandable quantification.

For the design, the aquaponic farming system is implemented in the Van Gendt halls together with other functions to create a hub of local produce.

RELATIONSHIP BETWEEN RESEARCH AND DESIGN

I loved being able to choose your own fascination and being able to really dig into that subject. As said before, my fascination was aquaponics, and it really was something different than the subjects I have been tackling the previous years, in previous projects.

However, I did find it very difficult to relate the research theme to an architectural design. Not in the sense that it was hard to connect the two, but because my approach ended up being very functional and sometimes I missed out on the more architectural attitude. I admit that I might have viewed the project in a narrow sense sometimes, restricting myself to the functional instead of creating a cooperation between the functional and architectural. Later in the design phase, I was able to let go some of these “imagined” restrictions, but it could have happened earlier or I simply should not have applied these restrictions to myself. In retrospect, I still would have chosen this location, this subject, and because I am me, I probably would have

still viewed it quite functional – the switch to architectural simply should have occurred more naturally. And that is totally on me.

RELATIONSHIP BETWEEN THE THEME OF THE GRADUATION LAB AND THE GRADUATION SUBJECT

As said in the paragraph above, the AE graduation lab allows students to completely formulate their own ideas and approach, whilst offering a few different settings (locations) where the student can apply their ideas. These can be wider viewed within a more urban setting (Parkstad Limburg) or slightly more defined within a building (Van Gendt halls). I think this approach is fantastic and really allows for a lot of variety and creativity. It also creates an environment of complete self-definition, and during this project I have certainly learned that at this point in life I am very unable to make clear decisions. I keep wondering, “what if something else works better? Or what if it is not good enough?” This resulted in the fact that I kept pushing design decisions ahead of me, to the point where in the given timeline of the studio, I simply did not have the right level of progress to complete the checkpoints. One thing I have definitely gained from this experience is the fact that I have to defend my decisions, and stand behind them, and somehow during the previous years at this faculty that indecisiveness has never been a problem – I think because we always worked in a group, presented in a group, and presentations were very short. So even though it was an unpleasant moment of learning, it was a necessary one and in the future I will definitely keep improving on the confidence in my own projects.

The theme of the studio is architectural engineering. I felt I had a part of the engineering within the aquaponic research because of all the calculations and research on the subjects within the test case. Because of this, I got a bit lost concerning the fact that architectural engineering concerns mostly construction and climate. Later in the project, I struck a better balance between the engineering of the aquaponics and the engineering of the building itself, mostly concerning the subject of climate - to create and maintain the climate needed for aquaponic production with climate and construction solutions.

RELATIONSHIP BETWEEN THE LINE OF APPROACH OF THE LAB AND THE METHOD CHOSEN BY THE STUDENT

There is only one thing I can really say here, and that is that I did not at all adhere to the planning of the studio. I worked really chaotically, and I made it sometimes very unpleasant for myself and I can imagine also for my mentors. This is not something that I am proud of, and if I could go back and redo this, I would plan a lot better, and create smaller and more approachable moments/deadlines compared to the planning I had now: simply work towards a “P4”. Not defining what subjects needed to be tackled, or have certain bigger drawings ready before going into the smaller ones. I simply had this huge task load, and I should have compartmentalized it. I should have defined larger subject themes and broken them down into smaller subjects which would be better to manage. But I always just had “the project” in my head, and not things such as “research”, “architectural design”, “construction and climate”, “presentation” or other things. Organisation was a big problem within my method.

THE RELATIONSHIP BETWEEN THE PROJECT AND THE WIDER SOCIAL CONTEXT

Whereas in the previous paragraphs I have mainly reflected upon myself and my own chaos or mistakes, this part will be solely about the chosen subject of the graduation. For the course “Lecture series on research methods” we had to write a position paper. I wrote a position paper on urban farming and the relevance of it, and I think that that answers this question very well. So, if you want to know more, please do have a look at it. If not, I simply quote a part of the conclusion of that paper:

“Urban farming is not a trend happening now. It has been in our society for a long time and is making a comeback. I do not plead for agricultural independence, but agricultural interdependence. This means that urban agriculture could take away part of the strain on the rural agriculture, thus ensuring a more effective and stable food situation. The goal for the future is to not let it fade into the background again but to make it an active part of our city-lives again and to ensure food security and prosperity for our growing population.” Aquaponics is an intensive form of urban farming, in the sense that it has a high output. In this project, I wanted to explore the possibility of this type of intensive farming. It does not exclude the other forms or

implementations of urban farming, but I saw it more as a farm in the city, a factory farm in the city, therefore the intensive high yield version of urban farming.

So, yes, there is definitely a relationship between the project and the social context, and I think that urban farming can and should play a role in the future of the city.