

# P4 Graduation Reflection

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## AR3AE015 Graduation Studio

### Architectural Engineering

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Living and working spaces are enclosed by facades, floors, roofs and the indoor conditions are regulated by the building systems. Our built environment is present thanks to the existence of architecture, but architecture would be nowhere without engineering, hence engineering is the foundation of all that is here. To design light, healthy working and living spaces we should master engineering first.

### Introduction

This reflection paper is an attempt in looking back into the process of doing research and its impact on the the final design. By reflecting on the initially set goals, the method and the final result one can get insight into his own design process. By comparing a generally followed research path with the very own one, new insights will arise which can be used in future design projects.

### Location, Objective and the Social Context

At the very beginning of the Graduation Period, the phenomenon of circularity came across and as a matter of fact I was quite facinated by it and even more by the architect Thomas Rau that had been applying this new way of thinking in material use into practice. Yet, even though I was really fascinated by a method, a theory (that possibly may help in saving our planet) I didn't want it to be my only starting point, I had to find a good practice.

Therefore the first thing I did researsch on was what advantages of circular material use. I found out that it was all about re-using, designing buildings and parts not only for the now, but also taking next life stage into consideration. Building parts had to be designed in a way they can be easily dismantelled, formulated alternatively, highly flexible in terms of bulding up, dismanteling and building it elsewhere. During thinking about the social significance of this new method of thinking, the recourse of refugees towards Europe started and the Nether-lands had to give shelter to everyone that was in need, not only then, in the present this is still the case.

A big issue within this case is the uncertainty of the period the shelters would be necessary since when peace returns to the country of origin, the refugees would want to return. This would mean the housing that would be built may not be necessary permanently. Therefore this uncertain housing challenge made an excellent case for applying circular building practices.

Another aspect of this graduation project has been in the social realm, even though this was also a major thing to take into consideration, since I have always been fascinated by people and relations, I was looking into what role it could play and what aims I should set when designing for refugees. I did a lot of research into their backgrounds, how their homeland is, and what their cultural backgrounds are. During this research I noticed in newspapers and other media that there was a huge negative sentiment against letting these people in. In most cases this was caused by the fact the Dutch citizens had the idea they were neglected by the government and all the money, effort and attention was given to the refugees. Therefore the following step in my research was if these ideas of neglectance were also noticeable in the statistics. I saw that there already was a huge shortage in social housing before the residence permit holders (refugees that are allowed to stay in the Netherlands) which are housed in social housing as well as to the Netherlands.

Another sentiment is less tangible and insightful, namely the fact the cultural background of refugees is not corresponding with the Dutch cultural background. In my opinion this is mainly caused by isolation of both groups, when they do not interact (as the current situation is) they won't get familiar with each other and they will stay unknown and scary.

Stated above has been the reason to look for a location where the reputation of refugees and residence permit holders could be fixed, by seeing them as of added value for the Dutch society instead of a burden. This can only be done if the Dutch government intervenes in common interest instead of only for one of both groups. Therefore this needed to be a showcase for how building for both groups could generate added value by first building a sufficient amount of housing that is highly flexible (hence the Dutch society is highly dynamic as well) and in addition in a way that would make people interact with each other. For the exact location I have been looking into a location in need of acute attention. During looking into the national livability index I saw the south of Rotterdam is the least livable in the Netherlands. The livability of some areas in Rotterdam has only been declining since they are declared as attention needing neighbourhoods. Most of these areas needing attention are known for being in post-war neighbourhoods. Picking such a neighbourhood in the south of Rotterdam would make this intervention a possible generic solution for other less livable post war neighbourhoods as well.

## Relation between research and design

In the very beginning of the project it was really hard to find a starting point, it was everything except clear where to begin. I found myself altering in different principles and simultaneously doing research in different disciplines. It was a quest for the right design question and due to personal circumstances I lost focus several times. Looking back, my biggest goal was to narrow down the research question so every subsequent question had the least amount of logical answers and solutions. By combining several design questions connected to our time of living and the design challenge of housing refugees and connecting people, I had the feeling there was only one possible way despite a lot of side-branches. It was very difficult to not deepen into subjects that were not really significant for the design, even though the concerning information gave me the feeling of self-development.

After the location became clear I looked into literature and set up case studies to see what the scientific approach to transform less liveable areas should be, and in practice what had changed in the areas that were doing better now. In this way I found elements such as diversity, identity and mixed use which should be (re)introduced in those areas (again). Not only did I want those areas to become more liveable, I also wanted to connect people and densify the location to meet in the housing demand. What I was looking for was overlap in the needs of these areas, the residence permit holders and the dutch citizens, after finding these overlapping needs I combined them to strengthen the effect on people in programmatic sense.

When looking for the right dimension and configuration of the program and the amount of housing I took the restrictions of the location, average surface areas of the needed housing and the transportation into account. The circular approach helped me in choosing for a modular and demountable building system and considering materialisation the decision was made fastly. Since timber is renewable and has (including transportation) the smallest carbon footprint I decided to as far it was possible built everything in timber. The subsequent step was designing the structure and facade elements. Because I also wanted to attract new groups, namely the middle class (diversity in income and diversity) I needed additional qualities. It was evident to not only make the amount of houses flexible but the appearance of the facade elements as well, so residents would have maximum freedom, not only concerning internal plan, also facadewise.

Relation between theme of the graduation lab and the graduation subject chosen by the student.

The Architectural Engineering studio demands a position towards technology and building engineering within our contemporary timeframe. Since a while ago worldleaders have signed a pact to prevent further heating up of the earth now it is time more than ever to start every design challenge with the question of materialisation and energy use. What is available? How can we minimize our impact on the climate? and how can we turn around this problem, in every step of my research and every part of my design I tried to take those questions into account as integrated as possible. The result is that the project resulted in a circular, modular and passive residential mixed use block. that can adapt to future changes and can facilitate in housing within the dynamic of systems we are living in such as politics and economy. My definition of engineering would therefore be a quest for a solution that suits best for people in a short and long term, considering social, environmental and technical while simultaneously keeping is economically feasible.

Relation between the methodical line of approach of the graduation lab and the method chosen by the student.

Generally seen within our studio, most graduation project are tailored to a location and to the problems and challenges posed on this location. Because I did not want to experience any restrictions from a direction within our studio I decided to drop the direction after a short while. What I wanted was to absorb the social tendencies of the moment and to combine these, to add value to the solutions and they could strengthen each other. That's why, as far as I know, I had a totally different graduation path than most other students. A research is done following a certain structure, perhaps I followed the same path but in a multi disciplinary way because for me the social aspect of my project is as important as my technical approach. In a way it was a very intuitive process. Looking back though, my project could be described as a project that lays between most of the disciplines within our graduation lab.

## Overall

In general I can say I have learned a lot during my graduation, within the theme of the graduation studio also, but in the social aspect as well. What I learned the most is that there is limited amount of time and it needs to be divided sufficiently. The reason it took me so long to graduate is on one hand the fact I had a really rough time considering family matters and I did design projects for my own and on the other hand I was working (especially during the final period) for the project instead of drawings and product, sometimes I lost sight on the bigger picture and I wanted to resolve every corner, detail and every part of the project which is not always necessary. I had the feeling I had to do this because I am a fundamentalist thinker and this gave me enlightenment and I had the feeling I was developing myself more. In the end this all resulted in a project where I stand for feel proud about, every detail of the project became me.