

# Reflection Report

## Advances Housing Design

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### **1. What is the relation between your graduation project topic, your master track (Ar, Ur, BT, LA, MBE), and your master programme (MSc AUBS)?**

In my master program I did projects that focussed on urban farming and smaller living. The sustainability of the project has always be important for my designs. The research paper that I wrote about densification with low-rise typologies, created more interest in designing self-sufficient buildings, which has come back in different aspects of my design. My knowledge in urban farming came forward out of the BK-launch elective that I did, wherein I designed mini-farms for on the roof, similar to solar panels. The experience that I gathered from these projects are present in important aspects of my design.

### **2. How did your research influence your design/recommendations and how did the design/recommendations influence your research?**

The most important aspects of my building, comes forward of the case-studies that I analysed in my research. This has been a back and forward development that has both influenced my building design and my research paper.

Firstly, The typological concept. Because of the rather large building size of the created masterplan, the early design was already focused on placing the industry in the core of the building, since dwellings were not suitable for that placement due to the lack of daylight within the dwellings.

I did not just wanted to create a plinth that places the industry on the ground with dwelling on top, which seems to be more common. But really work on a concept that connects the industry and dwelling on the same level. The ideal choice for the industry was very important for my design and therefore also for my research, almost as a starting point. Through the analysis of The New Farm in Den Hague, urban farming turned out to be the most suitable.

By analysing different case-studies that combined dwelling with urban farming, I noticed that these design usually struggled to create enough daylight in

the dwellings, since both functions preferred an orientation on the sun. To increase the production for the urban farming I worked on indoor greenhouse areas, wherein the daylight was eventually completely phases out. Urban farming became reliant on artificial lighting and fully controlled conditions to optimize the production of the industry.

This resulted in the core typology that uses the dwellings to create a buffer zone, like an insulated greenhouse. This energy efficiency was also very important to compete with the traditional greenhouse farming in the Netherlands, that struggle with the high energy costs. This was later further optimized by changing the building from two towers to one more compact form.

At some point I tried to create a stronger connection between the communal farming and industrial farming. However, for the success of the industrial farming, the production needs to be optimized, so further connections were limited. This led to further research at looking how urban farming can be made successful. This was usually through dedicated restaurants or markets that sell products locally or further manufacture these products, which has been main reason to create the food market that goes through my building.

The circulation concept came forward from analysing several case-studies at the beginning of the research. However, the Kalkbreite circulation concept was the most interesting for me and became an important basis for the further developing of the circulation concept. In addition, I read several research papers that focussed on improving circulation and promote social interaction within a building, which led to final development of circulation concept. Wherein designing the building as a 'mini-city' became an important motive.

A place of significance was also important to promote the use of the circulation spiral with a final destination, this became the placement for the communal garden, that has been a prominent aspect to create a form of community living within the building. To further research the benefits of the communal garden to create the community, I analysed the Afrikanerplein Communal garden in Amsterdam.

This placement at the end of the spiral at the rooftop of the building ensured a more private area for the residents to come together. At first the circulation was only visible indoors, but later the decision was made to create a more prominent circulation visible from outside.

The dwellings I created for my design has also been influenced by my research of the Kalkbreite. This has been used as a basis to create the connection

between the dwellings and the circulation. The open floorplan of the first floor, that is focussed on seeing people and being seen within your dwelling, which will be especially important for my target of people struggle with social interaction and feel struck within their houses.

The double height of the buildings, the duplexes where also used to simulate the standard houses on the street, with the more private areas such as bedrooms on the second floor. To really promote this 'mini-city' motive.

### **3. How do you assess the value of your way of working (your approach, your used methods, used methodology)?**

Since my research is often linked to architectural design, I prefer to analyse different case-studies for inspiration for the development of new concepts. These case-studies are often the main influence for my design, wherein literature does more so function as a confirmation of the findings I get out of the case-studies.

I always try to link my research to my design. Often looking for literature papers that is directly related to what I'm currently working on for my design. This could however create a somewhat unfocussed research, when I try to find solutions for a design problem that might not always fit perfectly within the scope of the initial research question. Therefore the topic and research question of my research has changed many times during the research process.

I do not often make use of interviews or observations by visiting the case-study, but try to see the larger picture of the ideas. I usually look at what is already known of the case-study itself, take out the most important aspects and translate these to the context of my design.

However, interviews with the users of the Afrikanerplein communal garden case-study might have been beneficial to fully understand, what made the place so important for the residents.

In my initial ideas about this research, I had a stronger believe that the industry and residents could work together. However, it was never my goal to create a building that enforces community living or any types of chores, that was often used in the social studies of the literature. But give the residents these options and not makes them feel like, some type of problem group, that needs special attention. This made me sometimes struggle with the social aspects of the paper, wherein the architectural design elements took the overhand. While I think

the architectural design is quite strong, I'm not fully satisfied with the conclusion of my research.

#### **4. How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?**

The design aims to tackle major societal problems, such as social isolation and loneliness of mainly young adults, the solo-dwellers. The solo-dwellers also struggles to afford housing when dependent on a single loan.

My project focusses on the creation of dwellings that are more in line with the needs of this target groups. By the design of dwellings, that have an attractive connection with the circulation and collective spaces of the building, to create more social interactions that are limited in most large residential buildings. As well as co-housing units and different elements to promote the forming of communities within the neighbourhood. The consistent form of social interaction through communal activities helps to create sense of belonging.

Another impact is the creation of local industries within living areas. This reduces both the dependence of resources and product from distant countries and the reducing of transportation which will majorly reduce CO2 emissions.

The projects was incorporated this ambition through its unique typology that connects residents and industry on the same level and can meet in public areas where locally produced products can be sold. The typology does also add sustainability benefits for all parties of the building, though its compact form.

#### **5. How do you assess the value of the transferability of your project results?**

I believe my project is easily transferable to other areas and can be beneficial for other city in the Netherlands. The building typology is focussed inwards and on local benefits, which can work well in different contexts as long as the goal and scale of the building is similar.

The greenhouse farming in the Netherlands is already quite optimized with important areas quite close to the city of Rotterdam. For cities in other countries that are more reliant on food import this form of artificial food production within urban environments can be even more beneficial, however due to its climate design, countries with a colder climate might be more suitable.

While the industry of urban farming turned out to be the most favourable for my design, the application of other forms of industry is still a possibility with some adjustments. The core concept can also be used as a new method to design sustainable or even energy neutral buildings.

A standardization of the core concept for the whole area might overcome its function. If this would be used as a sample building that can be copied multiple times over a neighbourhood, their needs to be worked on further diversify the different types of industries that can be placed in the core.

This can help to develop an own identity for its residents on building scale and further create strengthen the connection between residents and industry on neighbourhood scale.

The circulation concept can be used as an example to create more attractive circulation for high-rise typologies. However, this concept would fail to work for much larger projects. Small-scale is important for the residents to get to know each other, the project already gets close to its maximum size for the building concept to work.