Reflection P5 Even for social housing?

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Relationship of the graduation topic to the master track (ARCH) and the master program (MSc AUBS).

One of the biggest problems The Netherlands is facing is the housing crisis. Housing prices are rising, the rents are rising and waiting list for social housing are in some cities more than 10 years, while social housing is being sold to private investors. While there is a tremendous need for more housing, the world is facing the climate crisis and the Netherlands the nitrogen crisis on top of that. The Netherlands has a really high population density and lack nature.

As architects, we can have a lot of influence on the world and society. That is what this master program is about. In the Architectural Engineering Studio technology will be used to solve a societal problem (in the build environment). Therefore this project is solving these issues with the build of high quality affordable housing, while taking the responsibility of building with a low ecological footprint and damage to the area in mind, building nature inclusive.

Influence of research on design and vice versa

To build buildings this size with the use of wood means using lots of mį of wood. Due to the yearly yield of wood in the area, the building might not been built in one go, but in multiple facing if only local wood will be used. This is something to calculate further. Apart from that, the used building method, timber framing, can be done with different kinds of wood as well as the window frames and other parts of the building. Therefore only in those details the design is óinfluencedôby using different kinds of wood/material for different purposes. But because of the flexibility of the building system this is interchangeable with other materials or other wood species. When looking at local labour, using prefab timber frame panels was a logical choice, because there are lots of Dutch companies specialized in prefab timber framing.

Value of the way of working

The research was done with some literature studies, but also with interviews and other contacts with contractors and housing corporations. This method showed very well what was going on in those companies, but it also meant that I was depending on the reaction time and their answers (of course). Because I was assuming (from the website) that the contractor (BGDD) used timber framing in their dwelling concept and they were trying cattail as new insulation material I really wanted to assess their projects and use it for the research. When I finally got drawings it became clear that their system was not so sustainable as they mentioned on their site and it still used a lot of concrete. This meant that the comparison of this system with the new system with local materials would not be so useful. In the end the choice was made to continue on it anyway.

During my design process I found out more about the local materials anyway and used it in the design. These findings are included in the design, but the scope of the paper was something else, so it is not included in the paper. When looking back, the focus of the paper should be more on the material side than on the emission side.

When looking at the design process, affordability and social aspects were key aspects of the design. Affordability turned out to be quite a difficult aspect to access when not studying MBE. With logical thinking and smart combinations of functions of multiple building elements the end result is in my opinion an efficient building with high living quality. The building blocks are situated well regarding heating from the sun, smart multiple purpose sun shading is used (constructive, usable, architectonic and shading) and the floor plans are efficient and common spaces really contribute to the housing quality.

A huge part of the project is spacing and designing high quality floor plans. With the feedback of the tutors and my own principles, I think the project really reflects the design principles, which resulted in a project with high quality housing.

Academic and societal value, scope and implication of your graduation project, including ethical aspects

With this project and research, multiple problems that the Netherlands is facing are taken into account and improved. Climate change, material use, housing shortage and biodiversity are all researched and designed for in this project. This project can be an example of how to use biobased materials in affordable housing projects and using community living principles to increase housing quality. Especially in an expensive area like Crailo, this can be an example of how social housing can also add quality to an area and that social housing can be placed on ópremiumôplaces.
An ethical aspect is building in a green area like this, while there is not a lot of nature left in The Netherlands. While this is true, the project can also be an example of building new, while building with as less impact to the area and environment as possible. With a nature inclusive design and a spacious layout it might even contribute to the area, instead of devaluate. Also, the area was not accessible before when used as a military terrain, while the area will now be open for everyone with beautiful housing projects.

Transferability of the project (results)

Although the project is influenced by and focused on using local materials, a goal of the project is/was that the same principles could also be used in different kind of settings. The building system, mainly prefab timber framing can be built with all kinds of wood all across the world. Also different kind of insulation materials can be used with the same insulation and environmental values.

When looking more in depth on the project, the overall plan (placement of the building blocks) is heavily influenced by the local environment of the plot. For example the foundation can be done without piling and using a slab (op staal), because of the sandy soil. The exact placement of the building blocks and the floor plans are influenced by sunlight, sightlines and the existing trees in the area. This is something that would not transfer very well to other locations, but the same principles can be used in every area of course. Also the use of community living principles, like a shared kitchen and a communal garden are perfectly possible elsewhere, but using all these principles would result in a different looking ensemble of buildings.