

Graduation Plan: All tracks

Personal information	
Name	Balthazar Kiewiet de Jonge
Student number	5240123

Studio		
Name / Theme	AR3AE100 Architectural Engineering Graduation Studio	
Main mentor	Anne Sniijders	Architecture, Urbanism and Building Sciences
Second mentor	Mo Smit	Architecture, Urbanism and Building Sciences
Argumentation of choice of the studio	I have always had a technical fascination. In addition, the topics really appealed to me. In my opinion, the two biggest challenges we are facing are minimizing CO2 and creating more living space. During my studies, I asked myself the following question: How are we going to build more and at the same time emit less CO2? It seemed (almost) impossible to me and that is exactly what makes it so interesting.	

Graduation project	
Title of the graduation project	Trots Mienskip (meaning, proud community)
Goal	
Location:	Tesselschadestraat 4, Leeuwarden
The posed problem,	The buildings situated on the site, are vacant and unsustainable. The municipality and Rijksvastgoed are seeking strategies to transform the site into a livable area. Due to the big parking space, there is an unsafe feeling at the site according to the people living in the area.
research questions and	How can biobased materials be applied in add-in, wrap-it and add-it retrofitting external wall strategies?
design assignment in which these result.	Trots Mienskip reflected in: <ul style="list-style-type: none"> - Context: exposing communal area, adding housing and positioning the design. - Use: connecting target audiences, adding art where target audiences can be proud of - Technic: using local materials, expressing sustainability

Process

Method description

This topic of the research is considered under-researched. By giving the research an extra layer, such as CO2 sequestration through fast-growing materials, the research is exploratory. This required quantitative information which was then applied experimentally. To get the information needed, desk research is applied and directly getting in contact with material suppliers.

The design assignment is addressed differently. By first talking to stakeholders, reading municipality documents and analysing area statistics the project goal is determined. To achieve this goal, experiments are done. These experiments are carried out through sketches and modelmaking. The technical goal is reached mostly through the information gathered from the research. This is where the research and design assignments come together.

Literature and general practical preference

Most important research literature are:

"Facade Refurbishment Toolbox" of PhD graduate at TU Delft Konstantinou

ICE & Nationale Milieudatabase

Technical product sheets of materials

Ruimte voor Biobased Bouwen - Studio Marco Vermeulen

Reflection

1. The research and design topics are relevant to the topics of Architectural Engineering studio on different levels. For example, one million homes is relevant because of the way in which densification of the city is organized in the design and how the research helps to provide technical solutions while doing this. Second life, how the existing buildings are transformed and made more sustainable in the research which is applied in the design assignment. And Harvest, because of the way in which attention was paid to the locality of the materials during the research and the design assignments. So it turns out that the design assignment, as well as the research, can fall within all subjects of the studio, but Second life is the most appropriate because that is where most of the focus is.
2. The research serves as promotional material for the use of biobased materials. This is informative and insightful. It can be used as a tool to make it easier for architects, project developers and contractors to choose sustainable construction methods. The design brief shows how this can be done and is therefore very relevant. Showing how the toolbox developed during the research can be used possibly will lead to its use. If used, it will bring us and the built environment one step closer to our climate goals.