

Reflection Paper

AR3AE100 Architectural Engineering _ Second Life

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Thesis "Formulating Circular Business Models for Transforming Office Building
into Collective Self-Organized Housing"

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Introduction

The studio 'Second Life' especially focusses on the 'not so desirable buildings' of the existing stock. Apart from their non-present architectural quality, most of them also can-not meet the current energy standard. Leaving the buildings vacant is a waste in form of material waste and energy consumption. The adaptive reuse of these building stock is a complex issue. It brings together many aspects: the history of the building, the place in the city, architecture, the life cycle of buildings, management for planning, investing and organizing, and so on. An adaptive re-design of these buildings is a challenging subject that requires creativity, inventiveness and visionary thinking from a broad spectrum.

The graduation topic 'second life' focused on adaptively reuse vacant office building. Apart from the aesthetic aspect, the nature of redesigning an existing building means it will eventually lead to a solution that requires high level of architectural engineering skills. Additionally, my personal thematic research focusses on management issue, which will coordinate the design from top-down. Coordination from top-down while providing bottom-up answer, this kind of integral approach is what I think distinguished architects from other tracks.

Looking Back

I start my graduation project with the intention of giving an old building a beautiful new life. I saw a great potential in the chosen site former office building in Leeuwarden, a listed national monumental building. It was elegant, pure, quiet yet powerful, what the building needs is a modest and efficient transformation to help it fit in the energy-efficient new world.

It took me some time to made up my own position toward both circularity and the project. Fortunately, reading and thinking about how others have done this have been a very helpful and efficient way. Started with an overall background study on circularity, I managed to developed a rather comprehensive understanding of the technical and social aspect of what is the state of the art of the circular built environment. I have come across a lot of theories and frameworks. The combination of literature study and case study have been very useful to help me understanding how to put theory into practice. However, it was not easy to form a sharp mind with clear focus of my own project with the overwhelming information I have took in in a short period. Apart from the research thesis paper focusing on revealing the connection between co-housing and circularity, the existing building is also thoroughly studied. Thanks to the supportive collaboration of the current owner of the building, we are provided with relatively comprehensive and precise documents of the building including digital drawings, scanned drawings, historical report, asbestos demolition report and an insightful guided site tour. After all the readings and experiencing of the building and its surroundings, very slowly pieces are falling together.

The process was not easy but rewarding, I was able to develop a sober and practical story, this was an extended enjoyment. With a sharpened mind, I was able to continue my project by design. I have discovered it was particularly handy to make physical models and sketches when it comes to study the relationship between existing building and the additional structure.

Forward

As slowly pieces are falling together, in my opinion, a few steps are still ought to be made. I find that my concept, my position towards the project is well established.

The design principles are likewise well researched and connect in a satisfying way to the concept, however in the outcome of the spatial design there are still a number of issues to be resolved. These last steps will be necessary in order to create a coherent story that can be convincingly narrated to the wider public. As the power of a project, in my opinion, lies in the technical detailing of the concept throughout all scales, I find that on the smallest scale (1:5/1:1) the concept is not yet fully integrated to a rewarding proportion. Yet the last few weeks are there to discover what the necessities are to communicate my thoughts through the multi-scalar design.

The issues need to be studied more are:

- Reuse timber (secondary timber resource)
- suspended flooring system (piping/flooring)
- reuse greenhouse glass
- reinforce basement
- Main focus now is to work out the in-between space on a conceptual and social level, taking into account context such as different seasons. Can you bring in some extremes?
- which value brings re-use in architecture/ architecturally?
- Reflect back on circularity as a conclusion, what does your project bring, can you give insight in the achievements on the level of circularity.
- Detail that is coherent with the whole storyline
- Greenery and planting planning
- Greenery integrated with the modular façade component
- modularity and flexibility of the in-between space as well as the private room
- How does the concept translate into programme and then further into the space

Relevance

Building industry need to act on the Sustainable Development Goals (SDGs) call to reach the goal by 2030. Built environment need to transform into a resource-effective one to address these challenges. With a big building portfolio offered by studio 'second life' and a nearing deadline of 2023, with the problem of material scarcity and the depletion of scarce sources, the problems are piling up. The research is a supplement for the research field that needs more attention from the designers: conversion from non-residential to residential buildings. The result of this research is case-specific yet widely applicable, since the construction materials used in buildings in the Nederland are similar during a certain time period (1960-1990). Moreover, it shows a way of how can architect contribute to a more circular world and architects should start to realize their radically changing roles and responsibilities.