

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Julia Veerhuis
Student number	4870123

Studio		
Name / Theme	Resourceful Housing – Adapting 20 th century heritage	
Main mentor	Uta Pottgiesser (design) Telesilla Brisotgianni (research)	Heritage & Technology Department Materials, Mechanics, Management & Design
Second mentor	Paddy Tomesen (BT)	Architectural engineering & technology
Argumentation of choice of the studio	The building industry is very polluting, therefore we need to rethink the existing building stock. I am very interested in rethinking the past and transform buildings while thinking about their heritage values and reviving it in modern times. Next to this, I have an interest in designing dwellings and connect with the human scale. This project is about 20 th century heritage in Amsterdam Nieuw-West, these post-war buildings are outdated and form a great opportunity for transformation.	

Graduation project	
Title of the graduation project	Future-proof porch flats: Design guidelines for the transformation of 20th century porch flats in Amsterdam Nieuw-West.
Goal	
Location:	Amsterdam Nieuw-West / Western Garden Cities
The posed problem,	Housing crisis, need for circular solutions and the poor quality of Western Garden Cities.
research questions and	What design guidelines can be employed for the transformation of post-war porch flats in the Western Garden Cities of Amsterdam while utilizing adaptability?

design assignment in which these result.	Transformation of a 20 th century porch flat in Nieuw-West where the provided design guidelines will be applied and will further support the research.
<p>The research will provide an overarching strategy to transform the 20th century porch flats in Amsterdam Nieuw-West, while assessing different aspects and implementing adaptability. These design guidelines, that form the conclusion of the research, will be translated to the design assignment. Where a series of 6 porch flats (and 5 smaller buildings) on the Johan Jongkindstraat will be transformed using these guidelines while thinking about the principles of the past and the current needs. Adaptability is important to meet with the changing needs and making the buildings future proof.</p>	
Process	
Method description	
<p>1. Literature review</p> <p>A literature review will be used in order to collect information about the historical development of Western Garden Cities and the history and background information of adaptability in buildings. The information will be collected from books, municipal documents and other public documents. This will gain insight in the different topics and gives a comprehensive overview.</p> <p>2. Site observation</p> <p>This research looks at the existing situation of the built environment and collects information about the current state. Also, how the spaces are being used will be observed. This will provide pictures and an understanding about the neighbourhood and the current state.</p> <p>3. Documentary analysis</p> <p>This documentary analysis will look at historical photos from the 20th century derived from 'Amsterdam Stadsarchief'. This will give insight in how the previous condition was and how this has changed over time. This will be a small addition to the research and implemented in the chapter about the principles of the Western Garden Cities.</p> <p>4. Comparative study</p> <p>A lot of buildings nowadays are built with modular systems, adaptable structures or are designed to be disassembled in the future. This provides an efficient and circular way of building. Through the comparison of multiple references, a matrix will be set up with some key aspects. This provides an overview of the use of adaptability in the building industry. The projects are renovation projects. Unfortunately, there is little knowledge about building with adaptability in renovations, thus we can also learn from other references like an office building that changed to a residential building. This expands the research. The research will also conduct a comparative study on two different buildings in the area. These porch flats represent the neighbourhood, as they have different construction systems, different parcel forms, and different roof shapes. They</p>	

will be assessed on their ability to transform. There will be looked at the architectural aspects and surroundings of the buildings.

Literature and general practical references

The transformation potential of Nieuw-West buildings will be assessed according to Bernard Leupen his approach from Yegenoglu et al., (2008). Leupen questions changeability of the permanent. Where a building is designed to last while society continues to grow. He identifies four functions in his framework to examine the layers of the building: the load-bearing structure, the skin, the interior and the serving elements. Yegenoglu et al. extend these functions by also looking at the surroundings, the framework is expanded to include the functions of parcel form, outdoor space and infrastructure. By applying Leupen's model at these two levels, it is possible to describe the transformation possibilities of the Western Garden Cities.

The adaptability of existing transformation projects also need to be reviewed, therefore different aspects of these project will be assessed in order see how circular their adaptable building system is. To find these key aspects to form a matrix, the determinants of Brinksma (2017) will be used. In his thesis, he defines aspects such as prefabrication, reversibility, resident participation and responding to household dynamics.

Also, material need to be collected about these projects. Weijer is specialized in renovations that have a form of adaptability and writes a lot of articles about it. These articles from RenovatieTotaal will be used to collect several projects and information about it.

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The heritage studio, adapting 20th century heritage: resourceful housing, has two challenges. The studio deals with the housing crisis and the circular economy. In doing so, heritage makes the connection between these two aspects. This research connects to these two challenges by partly tackling the housing crisis by giving a strategy of adding volume and increasing diversity. In addition, circularity is invoked by using the existing housing stock, thereby reducing the amount of construction material produced. Next to this, circularity is also about future-proofing buildings. Here, it is important to examine the heritage value, but also that interventions will not cause problems. These design strategies given in the study cope with the vision of the neighbourhood. But alongside this, they also have a form of adaptability in them which means that changes made will contribute to the vision of the future. Adaptability ensures that much can be done in the future with small interventions, thus promoting the circularity of the project. In conclusion, the research links to the question of the studio: How can circularity and heritage approaches join forces? Thus, the past meets modern times.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

There is little knowledge about renovations with the use of adaptability in the transformation of existing residential buildings. In the future, this can be very relevant in order to transform these buildings in an efficient and fast way. Also, local residents will be less inconvenienced by the construction work. Additionally, Amsterdam Nieuw-West recognizes the importance of the principles of the past, yet there's currently no overarching strategy for addressing the present condition comprehensively. Because this city district contains a lot of the same residential buildings (porch flats), there is an opportunity to establish guidelines for the neighbourhood to transform. This could help the city district transform to a liveable environment with the use of efficient interventions.