

# 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](mailto: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                                  | Maaïke Waaldijk   |                      |
| Student number                        | 4371488   |                      |
| Studio                                |   |                      |
| Name / Theme                          | AR3AH115 Revitalising Heritage: New Heritage  |                      |
| Main mentor                           | Nicholas Clarke   | Architectural Design |
| Second mentor                         | Wido Quist  | Building Technology  |
| Argumentation of choice of the studio | <p>I chose the New Heritage studio because of my interest in Post-65 heritage and in how to deal with existing buildings in (re)designs. Prior to this master's programme in Delft I studied architectural history at Utrecht University. During this time I also chose to research Post 65 architecture. During my research internship at the Jaap Bakema Study Centre<sup>1</sup>, I looked into the archives at the Nieuwe Instituut that contained documentation on the urban renewal ('stadsvernieuwing') in Amsterdam during 1968-1989. For my thesis I continued to study this architecture but through a different perspective. The aim of my research was to study the development of the contextual approach in the designs, not only their 'stadsvernieuwing' projects, of the influential architects from this period, Aldo van Eyck and Theo Bosch.</p> <p>In this graduation studio called Revitalising Heritage there is room to continue to pursue this interest of Post-65 architecture from a different perspective. At the same time as the aforementioned urban renewal in Dutch city centres during the 1970s and 1980s, entire new neighbourhoods in so called 'groekernen' were built all over the Netherlands. And in the case of Almere, an entirely new poly-nuclear town was created.</p> <p>I was curious to discover the differences and similarities between these two types of architecture. In addition to this, I feel motivated to deal with such a current topic. On the one hand, the uncertain future of Post 65 buildings and neighbourhoods and having to determine what</p> |                      |

<sup>1</sup> The Jaap Bakema Study Centre is a collaboration between Het Nieuwe Instituut and TU Delft's faculty of Architecture and the Built Environment.

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|  | exactly would make Post 65 buildings heritage. And on the other hand the urgent need to make all these homes, approximately 31% of the total Dutch housing stock, more energy-efficient and ecological friendly. |
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| <b>Graduation project</b>                |   |
|--|---|
| Title of the graduation project          | Urban Renewal 2.0<br>Rethinking 'Nieuwe Truttigheid'  |
| <b>Goal</b>                              |   |
| Location:                                | Goedewerf (Almere Haven)  |
| The posed problem,                       | <p>The graduation studio aims to research how renovation and densification could strengthen qualities and help solve current problems of Post 65 neighbourhoods, without compromising heritage values and identities, but possibly even utilizing and strengthening them. In this graduation project Goedewerf in Almere Haven is chosen as design location.</p> <p>This research will address the danger of unsustainable renovation of younger mass housing (1965-1985) because potential heritage value could be compromised. Currently, the aesthetic fundamentals of this housing are often unacknowledged. This is due to the body of knowledge about Post 65 architecture still being created and by the lack of public appreciation of 1970s housing. In addition to this, existing 1970s aesthetics are often disregarded in the current renovation practice due to the urgency of energy-driven renovation which often consists of exterior insulation.</p> |
| research questions and                   | <p>What criteria should guide energy performance driven housing renovation of 1970s housing, tested on the case of Goedewerf (Almere Haven), that acknowledges the 1970s aesthetic fundamentals?</p> <p>Subquestions:</p> <ul style="list-style-type: none"> <li>- What are the demands for energy performance driven renovation?</li> <li>- What are the aesthetic fundamentals in Dutch 1970s mass housing?<sup>2</sup></li> </ul>  |
| design assignment in which these result. | <p>In the renovation of Goedewerf improving the energy efficiency in combination with the acknowledgement of its 1970s aesthetic fundamentals are the main goals. The hypothesis of this project is that heritage values and the life span would be compromised if the aesthetic aspects would stay unacknowledged and in the worst case would get wiped out. Recently, this has been done in renovation projects, under the guise of '1970s architecture is ugly' and needs to have a different aesthetic identity.</p> <p>This is part of the persistent negative aesthetic associations that come with 1970s and 1980s architecture. In 2007, FARO architects put up the</p>   |

<sup>2</sup> Because Goedewerf is designed from 1976-1978, the research is limited to the 1970s.

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|  | <p>so called Smaaktest on the internet. From the results we can learn that post-war high-rise and housing from the seventies and eighties are the least aesthetically favoured of all the categories.</p> <p>I am posing the question to see if there is way to combine improving energy efficiency and using the existing aesthetic identity to our advantage. The design assignment will find out if these two can go hand in hand.</p> <p>The larger studio design assignment not only consists of renovation but also densification. The degree of densification is determined by how many new extra dwellings each neighborhood from the 1970s and 1980s would need to incorporate to solve the housing shortage. For the <i>Metropoolregio Amsterdam</i><sup>3</sup>, that would mean at least 1 new extra house for every 14 existing dwellings. Instead of building new suburban neighbourhoods , the housing shortage would be solved by smaller infill development of these 1970s and 1980s neighbourhoods while at the same time future-proofing as many as possible of the existing dwellings. In the case of Goedewerf it would need to incorporate 11 new dwellings.</p> |
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## Process

### Method description

The first part of the collective studio work was dedicated to developing renovation models. In preparation for this an analysis of Goedewerf in the domains of architecture, building technology and culture was made collectively by the New Heritage group. In addition to this, the results of the 'Speurtocht' survey for the research project 'Renoveren met Respect' were examined. The 'Speurtocht' results consist of what different stakeholders mention they think is valuable about the neighbourhood, public space and complex. Based on the knowledge gained, a preliminary value assessment of Goedewerf was made using our own adapted version of Kamari's 'Holistic sustainability decision-making support framework for building renovation' (2017, p.344).

Investigation of the current demands for energy performance driven renovation was done through comparative analysis of targeted energy labels in current renovation practice, existing guidelines and future goals (Rijksoverheid, n.d.), energy performance indicators BENG (Rijksdienst voor Ondernemend Nederland. (n.d.), NOM (Rijksdienst voor Ondernemend Nederland, n.d.) and Passive House (Rijksdienst voor Ondernemend Nederland, 2012). For the context of current renovation practice and viability of aforementioned demands in younger mass housing renovation case studies of the programme 'De Stroomversnelling' were studied (Stroomversnelling, 2021). Secondly, models by Konstantinou (2021) on updating and upgrading the

<sup>3</sup> City region around the city of Amsterdam, member municipalities: Aalsmeer, Almere, Amstelveen, Amsterdam, Beemster, Beverwijk, Blaricum, Bloemendaal, Diemen, Edam-Volendam, Gooise Meren, Haarlem, Haarlemmermeer, Heemskerk, Heemstede, Hilversum, Huizen, Landsmeer, Laren, Lelystad, Oostzaan, Ouder-Amstel, Purmerend, Uitgeest, Uithoorn, Velsen, Waterland, Weesp, Wijdemeren, Wormerland, Zaanstad and Zandvoort

building envelope were collected. Finally, 'Architectuur als klimaatmachine' (Yanovshtchinsky, Huijbers, & van den Dobbelsteen, 2012) was consulted to identify the more general requirements for energy performance driven renovation are (e.g. insulation, detailing, ventilation).

The identification of 70's architectural aesthetic fundamentals was done through listing the architectural aesthetic fundamentals mentioned in the relevant existing literature (Bosma et al, 2007; De Vletter, 2004; De Vreeze, 1993; Idsinga, 2009; Berg & Kerkhof, 2004; Ibelings, 2004; Abrahamse, 2019; Abrahamse & Rutte, 2020; Van den Biggelaar, 2018; Blom et al., 2019; Somer, 2020). This study was supplemented by a research using *Funda*, where all 1970s housing was scanned on their aesthetic fundamentals. The relevance and validity of these research results is enhanced by identifying the fundamentals from different perspectives.

The findings of the two sub-studies have culminated in general design strategy criteria that should guide energy performance driven housing renovation of younger mass housing complexes that acknowledge the 70's aesthetic fundamentals.

Criteria:

1. Design strategy that offers room for change of existing features and structure

To improve the energy efficiency to such an extent that is needed, changes to the building envelope are unavoidable. A certain tolerance for change is needed to ensure a future-proof building envelope.

2. Design strategy that is suitable to acknowledge existing aesthetic

The findings from the aesthetic fundamentals research tells us that 1970s housing has countless aesthetic fundamentals, of which some have not often been used since this period. The 1970s architecture is often described as typical, but the research shows that there is actually an enormous diversity in 1970s architecture. A distinction can be made between almost 15 'aesthetic families'. Generalisations about the aesthetics of the 1970s are therefore inappropriate. It is time to change the reputation of 1970s housing and to open our eyes to the beauty that is to be discovered.

# Design strategies



Conservation

protect and preserve  
heritage attributes

'tolerance for  
change'



'suitable to  
acknowledge  
existing  
aesthetic'



Renovation Het Schip,  
Architecten



What could  
have been

inspiration from  
unrealised design ideas  
or personal design  
associations



Kasteel de Haar,  
Pierre Cuypers



Make-over

changing  
aesthetic identity



Renovation Stadsplein Noord,  
Wiel Aalder



Supersizing

emphasizing design  
fundamentals by  
increasing them in  
size, quantity or  
density



Hotel Hotel Zaandam,  
WAA architecten



Shopping

cherry-picking  
architectural  
fundamentals from  
certain architectural  
style or period



Housing Strip R,  
Hilberink Bosch Architecten



Sustainabilism

design decision purely  
based on technology



Pré-à-Lager  
TU Delft

Different design strategies were tested how they score to the criteria. The strategy that scored the best was chosen. -> Shopping

A draft design will be presented at the P2. After P2 the draft design will be developed into different design variants. The best variant will be further developed in a final design. For evaluation, the final design will again be assessed on the criteria set.

## Literature and general practical preference

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## 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)?**

Because of both my interest in architectural history and architectural design I decided to choose the Architecture master track, and within this I chose to follow the heritage and architecture design studios and courses. I think these courses have given me a lot of insight in dealing with existing buildings and offer a great preparation for this graduation studio.

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

The graduation project addresses the societal relevance of the increasingly urgent sustainable renovations of a significant part of Dutch housing stock (31%). The combination of aesthetics and building envelope renovation is particularly relevant in the light of the necessary improvement of energy performance (e.g. insulation, detailing). Through formulating guidelines and research by design for using 70's aesthetic fundamentals in renovation of younger mass housing this research creates know-how and guidance for future-proof renovations for a lower probability of compromised heritage values, especially 1970s aesthetic values.

Goedewerf has a broad validity and is therefore suitable as a case study. Goedewerf represents the 70s architecture that strived for small scale and complexity.

The academic relevance of this project is characterised by the critical historiographical perspective on existing literature that discusses Dutch Post 65 architecture. The research output is a contribution to this still developing body of knowledge on Dutch Post 65 architecture. Only brief summaries of architectural aesthetics can be found in the existing literature (e.g. exploratory research reports by the RCE). These publications do not delve into the origin and refrain from explaining on what basis the lists of aesthetic elements was compiled. Furthermore, the literature that presents overviews of Dutch architecture through the past centuries (e.g. Bosma et al, 2007), only give brief general descriptions of 70s architecture. And in the available monographs of prominent Dutch Post 65 architects only background on individual developments of architectural aesthetics is outlined. This research aims to solve this problem by combining the existing knowledge together with new additional analyses, and creating a more complete picture and knowledge of the 70s aesthetic fundamentals.

## Planning

### **Q3**

|     |           |  |
|-----|-----------|--|
| 3.1 | 7-11 Feb  | Focus on building technology<br>- Further defining design goals, aims, criteria and dilemmas<br>Research: detailing principles 1970s, removal of parts of load bearing structure |
| 3.2 | 14-18 Feb | Design variants  |



|           |                    |  |
|-----------|--------------------|--|
| 3.3       | 21-25 Feb          | Design variants  |
| 3.4       | 28 Feb – 4 March   | Conceptual Design  |
| 3.5       | 7 – 11 March       | Conceptual Design  |
| 3.6       | 14 – 18 March      | Consult Research Mentor<br>Present:<br>- Heritage Evaluation and Design Impact           |
| 3.7       | 21 – 25 March      | Prepare P3 presentation  |
| 3.8       | 28 March – 1 April | <b>29.03 P3 Progress meeting</b><br>Present:<br>- Design process<br>- Reflection (draft) |
| 3.9       | 4 – 8 April        | Develop conceptual design  |
| 3.10      | 11 – 15 April      | Develop conceptual design  |
| <b>Q4</b> |                    |  |
| 4.1       | 18 – 22 April      |  |
| 4.2       | 25 – 29 April      | Elaborated Design  |
| 4.3       | 2 – 6 May          |  |
| 4.4       | 9 – 13 May         | <b>12.05/13.05 P4 Exam</b><br>Present:<br>Final design                                   |
| 4.5       | 16 – 20 May        |  |
| 4.6       | 23 – 27 May        |  |
| 4.7       | 30 May – 3 June    | Studio tutoring  |
| 4.8       | 6 June – 10 June   | Studio tutoring<br>Submit:<br>- Project Report<br>- Studio book                          |
| 4.9       | 13 June – 17 June  | <b>13.05/14.05/15.05 P5 Exam</b><br>Present:<br>Full project                             |
| 4.10      | 20 June – 24 June  |  |
| 5.1       | 27 June – 1 July   |  |