

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	Messinger, Maximilian Karl
Student number	5018870

Studio		
Name / Theme	New Heritage	
Main mentor	Nicholas Clarke	Heritage&Design
Second mentor	Lidwine Spoomans	Heritage&Design
BT mentor	Ger Warries	AE+T
Argumentation of choice of the studio	<p>I believe that new construction cannot always be the best solution to solve densification and/or ecological issues of the existing building stock. Bijlmer, as the area of intervention, shows a gradual decline in identity while facing other severe (i.e., social) challenges. A project, that deals with the original and current identity of the neighbourhood, while offering a solution to the housing shortage and climate goals of the Built Environment can propose solutions to similar neighbourhoods from the 70's and 80's. During my involvement in SUM (Solar Decathlon Team of TU Delft, I got curious about post-war neighbourhoods, their identity and how to deal with those existing buildings to make them not only future-proof but also to see them as opportunity rather than a challenge we, as architects, can build up on. I personally see the challenge of dealing with existing buildings in the confrontation with limitations in transformation. Therefore, 'New Heritage' is a great possibility to work with the existing while creating new at the same time.</p>	

Graduation project	
Title of the graduation project	I Dencity – Reuse the Non-Used
Goal	
Location:	H-Buurt, Amsterdam Zuid-Oost, NL
The posed problem,	<p>1. The Change of area-specific identity due to demolition: The original intention of Bijlmermeer as a "CIAM-city" has been blurred over the last decades. Different architectural approaches created distinctive neighbourhoods with</p>

	<p>different identities and a monofunctional neighbourhood. Furthermore, the demolition of more buildings might result in the complete loss of both its original and its current identity.</p> <p>2. The Housing Shortage in the Netherlands: The Netherlands is facing an enormous lack of dwellings and needs to build 1.000.000 homes until 2030 to keep up with the growth in population (Government, 2020). Therefore, finding new ways of densification is crucial to tackle the housing shortage.</p>
<p>research questions and</p>	<p><u>Main Question:</u> How can the (re-)use of the Parking Garage Hakfort support the urgent need of housing while enhancing the existing identity of the neighbourhood?</p> <p><u>Sub-questions:</u></p> <p>Social: How can the societal benefit be translated into an integrated design?</p> <p>Ecological: What opportunities does a symbiotic design of old and new offer towards a sustainable development?</p> <p>Economical: How can a viable financial framework support a socially beneficial and symbiotic design?</p>
<p>design assignment in which these result.</p>	<p>Adaptive reuse of the Parking Garage Hakfort through multiple land use (Van den Dobbelsteen, 2004):</p> <p>1. Introducing multifunctional use to the existing building (i.e., small shops, office space and a community centre) – <i>2layers</i>: The existing structure will be reused and repurposed to provide space for public functions.</p> <p>2. Densifying by adding different types of housing on top – <i>2-5 layers</i>: Modular and (mostly) bio-based construction methods offer space for around 100 apartments of different sizes.</p>

3. Connecting the neighbourhood through sensitive urban interventions that are based on the current urban plan: The idea of a boulevard connects multiple districts and introduces different functions to the neighbourhood.

Process

Method description

Both research and design will be based on “needs” rather than “wants”.

Social Research

1. Attribute and value matrices of stakeholders (i.e., combined through interviews, questionnaires and other assessment types of perspectives)
2. Literature: Governmental analyses on gentrification and other social analyses that give an understanding of what is needed by the society.

Urban Research

1. Literature: Theories on city planning like *A Pattern Language* by Christopher Alexander and Jan Gehl’s *Life between buildings* can give direction to develop urban and social functioning patterns.

Ecologic Research

1. Literature: Studies into innovative and bio-based construction materials, as well as systems and construction methods can support the design to move towards a healthy society through smart construction as spatial use (Van den Dobbelsteen, 2004). *Sustainable Building Adoption* by Sara J. Wilkinson can provide insights into the reuse of existing structures.

Economic Research and Design

1. Literature: Studies into innovative financing methods to find a sweet spot between added value for residents (identity) and profit for owners/investors (densification).
2. Financial Model: Is supposed to combine social and ecologic needs with economic needs to form a real integrated project. The economic framework is supposed to support design decisions rather than revise them!

Urban Design (additionally to literature research)

1. Urban ID: Extracted Values (subjective) are going to be combined with spatial characteristics (objective) to create an urban toolbox that can help to translate the current urban identity into a new masterplan that spreads the enhanced identity further.
2. Research by Design: This can help to introduce urban interventions that connect different city planning approaches into one main concept.

Building Design (additionally to literature research)

1. Heritage assessment loop: Harold Kalman describes a very efficient evaluation method in *Evaluation of Historic Buildings* to assess the current value of a building. This offers opportunity to set up a starting point (state before intervention). In later

steps the same evaluation shall reveal, if the interventions have a positive effect on the building and its surroundings (state after intervention) and shall be used for further improvements.

2. Building ID: Extracted Values (subjective) are going to be combined with spatial characteristics (objective) to create a building toolbox that can help to translate the current building's identity into a new design. The Building ID will be based on Brand's "six Ss" he defined in *How Buildings Learn* and will cover one fundamental element from each S.

Literature and general practical preference

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Kalman H. (1980). *The Evaluation of Historic Buildings*. Ottawa, Canada: Ministry of the Environment.

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Mumford, E. (2002). *The CIAM Discourse on Urbanism, 1928-1960*. Cambridge, Massachusetts: The MIT Press. Norberg-Schulz, C. (1980). *Genius Loci – Towards a phenomenology of Architecture*. London, United Kingdom: Academy Editions.

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Ungers, O.M. (1977). *Die Stadt in der Stadt*. Cologne, Germany: Summer Academy

Van der Dobbelen, A. & de Wilde, S. (2004). Space use optimization and sustainability – environmental assessment of space use concepts. In *Journal of Environmental Management* 73 (p. 81-89). Amsterdam, The Netherlands: Elsevier.

Gemeente Amsterdam (n.d.). *Woonvisie 2020*. Retrieved from: <https://www.regioplan.nl/wp-content/uploads/data/file/rapporten-1600-1699/PUBLICATIE-WOONVISIE.pdf>

Wassenberg, F. (2003). *Large housing estates: ideas, rise, fall and recovery – The Bijlmermeer and beyond*. Amsterdam, The Netherlands: IOS Press BV.

Wilkinson S.J., Remøy, H. & Langston, C. (2014). *Sustainable Building Adaptation: Innovations in Decision-Making*. London, United Kingdom: Wiley Blackwell.

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 studio New Heritage focuses on the existing housing stock within Amsterdam Zuidoost:

„Many neighbourhoods face social problems of liveability and demographic changes. Moreover, this housing, like all of our stock, should meet the future standards of energy performance, which leads to an urgent need for energy upgrading. The question arises if keeping this housing is feasible, when taking into account the complexity of technical, social, economic and aesthetic issues.“ (New Heritage, 2020).

Combined with the current housing shortage in the Netherlands, the re-use of the existing building stock offers opportunities for both the short-term need for housing and the mid-term need of a sustainable built environment. IDensity stresses how to deal with the change of living habits (i.e., reduced car usage, smaller apartments and communal facilities) while keeping and working with existing buildings rather than their demolition. Therefore, the project can offer insights into future project developments for more identifiable neighbourhoods and a more sustainable built environment.

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

The existing housing stock – rental and owned – counts around 8.000.000 homes in 2020 (CBS, 2020). Around 70.000 new homes have been built in 2019 (CBS, 2020), but space for new housing is getting rare. The solution for the housing shortage, especially in metropolitan areas, cannot be to rely on new built homes only. Change to the existing housing stock is unavoidable to be able to house the increasing number of citizens. Both redevelopment and renovations can offer a sustainable solution to tackle the short-term housing shortage and improve both social and spatial quality (Van den Dobbelen, 2004 and Ungers, 1977).

Nowadays, we know that the construction of anonymous high-rise buildings, like the Bijlmermeer, was only the solution to the extreme housing shortage but resulted in other – also severe social – problems (Wassenberg, 2003). On the other hand, the innovative (contrasting) approach of the 80's part of H-Buurt didn't solve all problems at once but introduced new problems to the area that needed to be solved and changed the intended use and function of buildings (Wassenberg, 2003). Therefore, the current topic of new housing needs to be addressed on basis of mistakes that have been made in the past, while using the past's identity to build up on.

The history of the Bijlmer derives mainly from ideology of "the functionalist city" that has been defined during the 4th CIAM convention in 1933 (Mumford, 2002 and Wassenberg, 2003), which put the car as the central element of a city and strives for a strict separation of functions within the city (Gemeente Amsterdam, 2007 and Wassenberg, 2003). This functional approach on city planning is still visible in the current layout of the Bijlmer. Elevated streets and the huge housing complexes still define today's urban tissue, which gives the district identity on the one hand, but lacks in today's relevance of multi-functional buildings and an integrated urban plan, which connects various elements of the city on different levels (Alexander, 1977).

Identification plays a major role in the development of new housing, since the genius loci needs to be taken into account to merge old and new (Moore, 2003). The placement of new buildings can enhance identity but can also result in disorder. Therefore, it is key to define a clear identity of an area before intervening in the existing or non-existing building stock to make sure that redevelopment projects unite areas instead of dividing them.

To sum it up, the reuse of existing structures and its embodied carbon in combination with sustainable building solutions can help achieving both goals of one million homes by 2030 and carbon neutrality by 2050.