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	Jennifer Maria Elisabeth Lips
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Studio		
Name / Theme	Revitalizing Heritage / New Heritage	
Main mentor	N.J. Clarke	[Heritage/architecture]
Second mentor	Dr. E. Louw	[Planning/urbanism]
Argumentation of choice of the studio	The housing and sustainability challenge in the Netherlands are really relevant topics in nowadays society. Both include a harder and a softer side. Housing concerns people/residents, and is therefore quite soft, just like the valuation of the existing housing stock having to undergo the energy transition. The challenge lies within designing a future-proof match between the ultimately necessary, physical energy transition, the hard side, and this softer side, without either having to detract from the other.	

Graduation project	
Title of the graduation project	A Quantity of Quality: designing inclusive high quality living environments in existing housing areas
Goal	
Location:	Bijlmerplein, Amsterdam (Netherlands)
The posed problem,	The research consists of three problems, in addition to two main themes: - Housing shortage (problem) - Large scale energy transition/ sustainability task (problem) - Low quality of living environment at Bijlmerplein (problem) - Inclusive living environments (theme) - High quality living environments (theme)
research questions and	How can an inclusive high quality living environment be created at Bijlmerplein? - What is an inclusive living environment? - What is a high quality living environment? - How is quality defined in well-functioning proven living environments? - How does the current design of Bijlmerplein prevent a high quality living environment?

	- How does this defined quality relate to the socio-cultural values at Bijlmerplein ?
design assignment in which these result.	The design assignment is to create an inclusive, high quality living environment in an existing housing complex at Bijlmerplein. This area scores low on the Dutch national average quality of living environment (*leefbaarometer*). The research will result in a programme of requirements, as a toolbox aiming at improving this quality and the inclusiveness of the design. The results can be tested to the current housing situation at Bijlmerplein, concluding to a future design approach.

Process

Method description

To start off, the definition of inclusiveness in this study is taken from the Cambridge Dictionary: "the quality of including many different types of people and treating them all fairly and equally". For the research and design, that means, among other things, taking into account persons with mobility problems, life-proofing the living environment. Elderly, if they exist at all, are often included in this terminology. Not only might mobility be a problem at higher age, this group of people is also partly held accountable for the housing stagnation in the Netherlands. That's why the preferences of older people, in general called people from the retirement age and above (*pensioenakkoord,* Government), have to be studied to conclude how to possibly design inclusive living environments. Taking into account a high quality living environment by field research, being the preferences of elderly and stakeholders at Bijlmerplein, and academic findings. The results will function as a base for the case specific situation, being the *woondek* typology housing at Bijlmerplein, Amsterdam. As the quality of living is rated low in this area, the case is compared to a well-functioning *woondek* being *De Nieuwe Weerdjes* in Arnhem. The latter is related to the Dutch *hofje* or courtyard in previous analyses, which is an interesting addition to the case study analysis due to the often central location of this typology in the city, just like Bijlmerplein and *De Nieuwe Weerdjes*. Therefore, all three mentioned situations are analysed based on design elements influencing the quality of the living environment. The outcomes are compared to the results found in the theoretical research, followed by testing this final toolbox to the situation at Bijlmerplein. What are the current qualities? What is still missing according to the research?

This way, input is collected for the renovation of the living area at Bijlmerplein, being the design task. The task is divided in:

- Inclusiveness / life-proofing
- High quality living environment
- Energy transition / climate adaptation
- Supporting socio-cultural values

The design challenge lies in designing as comprehensively as possible by maximising each of these elements.

Literature and general practical preference

Older adults housing preferences

- Heren 5 Architects. (2016). *Stadsveteranen*. Heren 5 Architects.
- de Jong, P. (2021). *No place like home? Residential mobility and housing preferences of older adults in the Netherlands.* University of Groningen. https://doi.org/10.33612/diss.178356380
- ANBO. (2019, February). *Uw woontoekomst*. Retrieved from https://www.anbo.nl/
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High quality living environment

- Atlas Research & RIGO Research & Advies. (2019). *Leefbaarheid in Nederland 2018: een analyse op basis van de leefbaarometer.* Retrieved from https://leefbaarometer.nl/
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Site specific valuation

- Sacevičius, M. (2021). *Juxtaposition of notions: Adaptable housing through circular transformation*. Retrieved from https://repository.tudelft.nl/
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- Collective research Q1 studio Revitalizing Heritage 2021. TU Delft.

Case study *De Nieuwe Weerdjes*

- Barzilay & Ferwerda. (2019). *Casestudy De Nieuwe Weerdjes Revisited*.

Case study *hofjes*

- Floet, W. W. (2021). *Oases in de stad*. nai010 uitgevers.

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 topic of the graduation project, inclusive and high quality living environments, is related to the studio topic by means of creating these type of environments in existing housing complexes. The design question of the studio is as follows: 'how could renovation and densification strengthen qualities and help solve current problems, without compromising heritage values and identities?'. The relation lies within 1. densification and housing shortage as a focal point; 2. using and strengthening current qualities of the complex and area, but also upgrading weaknesses; and 3. keeping socio-cultural values and qualities of livability as a basis for the design. In addition, there's a serious sustainability task from within the studio, offering the opportunity to not only insulate energy-inefficient buildings, but upgrading the entire area and (possible) functioning as well. A renovation of the living environment. The relation to the master track Architecture lies exactly within this element: why just wrap the building in insulation? Why add straight and plain outdoor hallways? The architecture is within creating a place to stay and live, rather than a place of shelter. Creation of a living environment that is sustainable in a sense of energy efficiency, but above all the life extension of a building with potential heritage value. It turns the practical question of 'what is strictly necessary' into how can this 'strictly necessary' be of greater meaning than just keeping heat inside a dwelling or being able to reach to front door in an easier way, keeping the socio-cultural values of the complex and qualities in mind.

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

   Currently, there's a lot of discussion about the housing shortage and stagnation, which is claimed to be largely caused by the older people in our society (Obbink, 2020; Van der Parre, 2021). First of all, with this graduation project, hopefully the link between older people and causing a national housing problem is weakened. Secondly, it is claimed that there's a lack of suitable housing for elderly, but there's no real evidence of what this suitable housing would be (De Lange, 2021). There is a quantity of research about what elderly prefer to do or where to be at in their daily lives, about physical thresholds, indoor climate and housing types. (Wijk, 2013; Steenkamer et al., 2014; Heren 5 Architects, 2016; Mol, 2020). However, there's no real link to how this could be integrated in an existing living environment The results seem to be only a motivation to build new senior complexes or care homes, barrier-free as the new term for suitable housing. This graduation research clarifies that for a large part, the preferences of elderly are almost similar to any found quality of a living environment, which places this work as an intermediary between the qualities of a living environment and the wishes of older people. In the larger social framework, the outcomes of this research & design could work as a toolbox in creating inclusive, high quality living environments in existing (malfunctioning) living environments, as well as with new housing projects. Therefore this graduation work is not answering the question of how to build for older people, but how to create a living environment does not discriminate on age.

   Sources

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- Heren 5 Architects. (2016). *Stadsveteranen*. Heren 5 Architects.
- Mol, C.A.F.M. (2020). *Ouderen Langer Zelfstandig Thuis! Maar hoe dan?* Amsterdam: Ben Sajet Centrum
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Planning	
P3	- Comparing totally covering greenhouse with construction only covering separate cluster by means of complexity, material use, costs → is the combination of greenhouse buffer with cavity insulation sufficient in terms of insulation requirements + what's the influence on street level? (**sections, floorplans, impressions, details**) - Design outdoor hallways, staircases & circulation space on decks as places to stay above place for circulation (right dimensions for walking & sitting): especially in case of the outdoor hallways: how to maintain depth of façade? How do the new hallways interact with existing balconies? (**sections, floorplans, impressions**) - Placement of front door & impact on floor plan + functioning (**sections, floorplans**) - New possible gradation on deck of public/private transition (paths, front yards, greenery) (**section, impression, floorplan, scheme (?)**) - Decide what is the best place for the entrance in cluster 2 (**floorplans**) - Decide which elements need to be removed/adjusted to increase overview/safety experience? (**floorplans, impressions, photo studies**) - Determining whether densification is necessary within the clusters as a part of the problem of housing shortage, or densification in terms of upgrading the quality of the living environment. There's already a lot of densification on Bijlmerplein, but e.g. when merging dwellings, the goal is to finally end up with at least as many dwellings as before. (**volume study planned densification, densification in numbers, costs of adding on top vs new solitary)** - Investigate how the materialization of any new volumes connects to that of the existing, as it is highly valued. In view of the addition, there are the following questions: - how high/how many floors can the new addition be with ordinary bricks? (**calculation of weight vs. maximum load capacity**) - What is the difference with stone strips? Is it worthy enough to the existing materialization? (**calculation of weight vs. maximum load capacity**) - can the new materialization embrace the existing without imitating it? How? Like what happened in the beginning between the bank building and the residential complexes. (**façade views**) - façade parts in the building that are not part of the current valuation: opportunity for a relationship between new volumes and existing buildings? (**façade view, impression new/existing**) - How can depth of the façade like in the streets and at cluster 3, be integrated in cluster 2 as well: 1. more outdoor space, 2. better experience of courtyard, 3. better possibility of appropriation & expression (**floorplan, impression, section)** - Explanation of the design based on the daily routine of different inhabitants (**storyline**) - What are the possibilities of the glass roof in terms of water storage and energy production? (underground/streetlevel storage space) (**scheme**)
P4	- Facade, roof and floor packages, renovated and new construction (**detail, section**) - Height difference: the decks doesn't flawlessly connect to the front door (without a significant threshold), which will only increase when adding

	insulation, underfloor heating e.g.: what's the best solution? (or are existing radiators sufficient for heating on district heating?) Every front door a small ramp? Raising the entire deck by a few centimeters? Could this extra space be used for other functions, like planting or plumbing? (**sections, details**) - Places for greenery: at least half of current and possibly added stone surfaces (**floorplan, impression**) - Design of emphasized, recognizable entrance area: will the entrance be completely open? → removing all upper dwellings, how is this technically feasible? (when removing: **stability check; impressions**) - Investigate if there's a smarter way to enter bicycle storage e.g. from the main entrance (**floorplan, section**) - How can the exhaust air ducts from underlying shops become less present and disturbing, but more integrated in the design? Is the solution within lifting the deck? Or could they be integrated with benches e.g.? (**section, impression**) - Task of creating mutual interaction between clusters 2 and 3 by means of the footbridge, so that it retains its function and gains a more important role → shared/collective functions: what type and where to be placed? (community center, kitchen etc.) (**floorplan, 3D scheme/overview**) - What type of district heating/cooling is available at Bijlmerplein? If low/medium temperature, a booster heat pump is necessary (**scheme**)
P5	Adjustments and additions in response to comments in the P4