Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

This graduation is a collaborative project between two students, one student from the track Architecture and one student from the track Management in the Built environment. Both students work on the same case and design location with one collective (general) question. The in-depth research and design will be individual outcomes. For further information, see *Process – Method description* (further in this graduation plan).

Personal information (Architecture)	
Name	**Marcella Wong**
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Information graduation partner (Management in the Built Environment)	
Name	**Lena van der Wal**
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Telephone number	
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Studio		
Name / Theme	Explore Lab	
Main mentor	Suzana Milinovic	Architecture
Second mentor	Hubert van der Meel	Building technology
Research mentor	Elise van Dooren	Architecture + research
Argumentation of choice of the studio	(1) To explore my own fascination of the subject 'Social Entrepreneurship' in both research and design (2) To be able to collaborate with a student, Lena van der Wal, from a different master track → both options are not offered or possible in other studios.	

Graduation project	
Title of the graduation project	**Design to Last**
Goal	
Location:	Wielewaal, Rotterdam, The Netherlands
The posed problem	***Collective problem statement*** Society is facing many environmental and social problems, to which the built environment contributes significantly: e.g. scarcity of materials, global temperature rise, segregation, and so on. For the necessary social and sustainable change, we need to act collectively and think from a long-term perspective. The current way we build our cities is from a short-term vision without close collaboration between different stakeholders. This results in a lack of understanding between parties, which eventually leads to society not being able to build cities that are inclusive, resilient and/or sustainable. Wielewaal, a neighbourhood in the South of Rotterdam, is one of the examples that shows the negative effects of (1) short-term vision and (2) misunderstanding

	of needs due to the lack of collaboration amongst different parties. The neighbourhood currently is facing the problem of displacement, unaffordable housing and a lack of sustainable ambition. For many decades this neighbourhood had a lot of social cohesion, but nowadays the liveability seems to get worse due to the current situation. For further explanation on this case, see *Design Assignment*.' ***Individual problem statement*** From the perspective of the designer, great ideas may not even be realised in projects due to different reasons such as different priorities/ambition from the client, higher costs that often comes with higher quality or a possible risk of a certain design solution that may or may not work out. Nevertheless a design should be made from a long-term perspective. Not only should it meet the current needs and requirements, but it certainly should last for future generations as well. As ideals change overtime, the principles behind a certain design should be timeless. Therefore general design principles behind a liveable urban area should be valued more. Projects can only prove themselves through time, and instead of only looking for new solutions and innovations, often already existing design principles behind successful urban areas are overlooked or forgotten in the design process. The challenge lies in choosing the right design principles that can act on long-term and to value these principles, e.g. to better communicate the need for certain design solutions to different stakeholders. The research part of my graduation partner, Lena van der Wal, looks into the perspective of urban area development (UAD) in which the main challenges lie in including societal impacts in the business case of a plan and in thinking long-term financially. Collaboratively, in tackling the same case, the challenge will lie in finding fitting solutions to this problem/design assignment from different perspectives and positions.

Research questions	***Collective question for both Lena and Marcella**** How can we design and develop urban areas in a way that incorporates long-term thinking and collective action towards societal impact, based on the case of Wielewaal? * This collective question is the part in which the collaboration between the two tracks (MBE + A) focusses. The individual researches will contribute to this overall question. ***Individual main question*** - What design principles create long-term societal impact? ***Sub-questions*** - What long-term design principles are known to literature? - Based on evidence, what can be learned from realised projects, in specific Bijlmer and Agnetapark? ***Main question (Lena)*** How can social ('societal') impact measurement be implemented into private-sector led urban area development? And how would this change the business case of the developer, based on the case of Wielewaal? ***Sub-questions (Lena)*** - What impacts can and should be measured in (Dutch) urban area development in general and Wielewaal in specific?

	- How can these impacts be verified and valued (monetarized), so they can be included into the business case of the developer? Who is willing to pay for the impacts generated? - In what ways would the business case of the developer be adjusted to work towards creating the necessary societal change?
Design assignment	***Wielewaal: problem statement*** Wielewaal (Rotterdam, NL) is characterised by low-rise housing and plenty of green areas, a type of garden city. It was donated to the Netherlands by Sweden in 1949 as emergency semi-permanent housing in times of a severe housing shortage. The neighbourhood exists of primarily social rental housing and is characterised by a very strong social cohesion between inhabitants. Recently, due to the lack of proper maintenance, Wielewaal was in need of redevelopment. For this purpose, the housing corporation that owned the houses, sold the land to a developer, who designed a monofunctional housing plan for the middle- and higher-income groups with housing prices starting at €600.000. As a result, about 70% of original inhabitants are displaced and of the remaining 30% inhabitants only 10% is able to actually return into the neighbourhood. People living in Wielewaal (the 'Wielewalers') have protested heavily against this plan and as a response they've developed an alternative plan with affordable housing for the social and middle-income segment. Their plan allows many of the original inhabitants to return. The 'Wielewalers' claim that their plan is more socially fair and sustainable than that of the developer, whilst also financially feasible. They blame the housing corporation for not listening to their ideas. The Wielewalers have started several lawsuits against the housing corporation and the developer. Court ruling is expected on the 21st of January 2020. However, what we see happening in Wielewaal is characteristic for many other areas in Rotterdam and other big cities in the Netherlands. Under the argument of gentrification, entire neighbourhoods are redeveloped resulting into the original, vulnerable inhabitants being relocated. ***Collaborative design assignment*** Collectively, an alternative plan for Wielewaal will be designed and developed: one that is based on long-term principles and societal impact. Both researches will lay the groundworks for this. Additionally, an analysis of Wielewaal and the different plans for this neighbourhood, by the 'Wielewalers' and the current developer, will give a good understanding of the specific context and potential solutions. The collaborative design will also lead to individual outcomes, that can be implemented in the specific disciplines. For Lena in UAD includes the development of an impact development tool, combining financial and societal impacts in one assessment tool. For me this will lead to a sustainable architectural toolkit with design principles that prove to also have different values. ***Individual design assignment*** From the perspective of the architect/designer it's important to stay objective towards the case study, neither leaning towards the Wielewalers nor the profit-oriented developer. The assignment on landscape and urban level therefore is to create a vision that will sustain for a longer time and not only meets the current requirements. The objectivity towards the case is crucial for the aim of making a plan that creates the most societal impact, including all stakeholders.

	The next challenge in the design assignment lies in the diversifying of the neighbourhood. Neither biased towards the Wielewalers nor the developer, a tactic and ratio should be well thought out for the infill of this neighbourhood. A different population and target group ratio will also mean different housing types and standards. This will directly influence the architectural decisions. The design decisions will integrate certain aspects to create the societal (both social and environmental) impact, such as: low-emission material footprint, mixed population, biodiversity, and so on. But mainly for the design part of this graduation the long-term design principles, found in research, are to be embedded in the location. And for this context I propose to design in a way that aims for a Wielewaal that will continue to exist for 200 more years. The given is that you don't know what will happen in 200 years, therefore the architectural design will be customizable over time. For the design I propose to design a housing type and a communal building, as the scale of this neighbourhood suggests for more functions and not only dwellings.

Process

Method description

The research will mainly consist of literature study and plan analyses. The outcomes of the research will be used as input for the (collaborative) design part of this graduation.

Literature study
Different design principles are researched through literature. Historical literature study is conducted as well to have a proper overview and context of existing design principles behind ideal urban areas/neighbourhoods. The principles that are found in older and newer literature are filtered and brought back to the essence and will be compared to each other to find similarities, certain patterns or maybe new insights and additions.

Project analyses
The design principles found in literature will be tested by projecting it on already existing projects through analysing the plans. To have comparison, two projects with opposite outcomes are chosen for the research. One project that has proven itself to be successful over time and the other project is one that has failed in functioning properly. Outcome will tell what design principles are essential to long-term functioning.

Collaboration

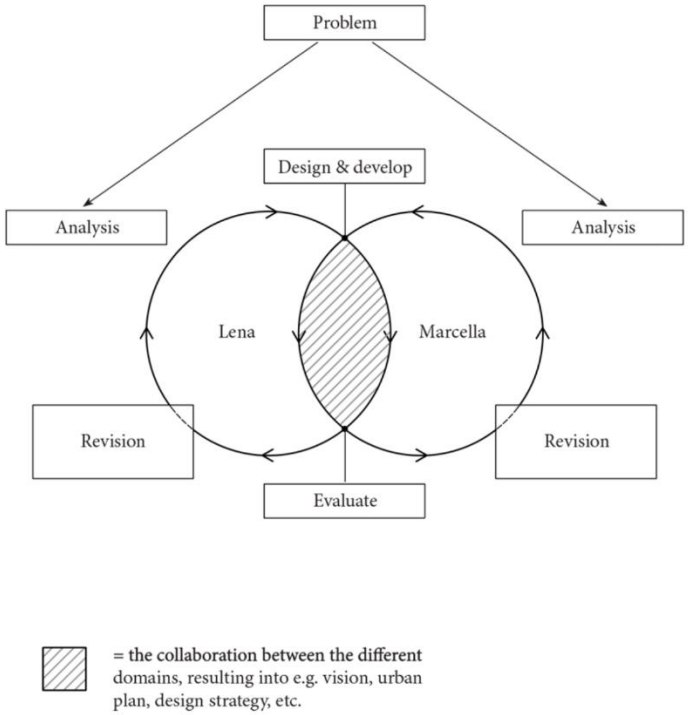


Figure 1: Iterative process of the collaborative graduation (own illustration)

To reach the *collective outcome*, the plan is to work in a collaborative and iterative way. By collaborating, we can benefit from the insights of both areas of expertise: combining designer's and developer's knowledge into one joint vision for the area, Wielewaal. By working iteratively, in a research through design kind of way, we can gradually develop the necessary knowledge, test design ideas and work towards a definitive urban plan, impact tool and long-term functioning buildings (see fig. 1).

The collective outcome is translated into a vision, urban plan and design strategy with possibly new solutions that arise from the collaboration. So to say, the scale on landscape and urban level is shared between the two students. But the main focus for the design on building and detail level will be on me. As it is my responsibility to translate this collective vision in an architectural design.

Literature and general practical preference

Literature

The following list is a selection of scientific and general literature that is consulted for the research.

Aalbers, M.B. (2016). *The Financialisation of Housing: A Political Economy Approach.* New York, NY: Routledge.

Adams, D. & Tiesdell, S. (2012). *Shaping Places: Urban Planning, Design and Development.* London: Routledge.

Arundel, R. & Hochstenbach, C. (2018). The Spatial Polarization of Housing Markets and Wealth Accumulation. *CUS Working Paper, 32*, 1-31.

Barbieri, U. & Duin, L. van (2008). *Honderd Jaar Nederlandse archietctuur, 1901-2000*. Nijmegen, SUN.

Brenner, N., Marcuse, P. & Mayer, M. (2012). *Cities for People, Not for Profit.* London: Routledge.

Dekker, D. (2016). *De Betonnen Droom.* Amsterdam: Uitgeverij Thomas Rap.

Eijkelboom, H. (2010). *Good Intentions and Modern Housing.* Rotterdam: NAi Uitgevers.

Fainstein, S. (2014). The Just City. *International Encyclopedia of the Social & Behavioral Sciences, 12(2),* 913-918.

Harvey, D. (2000). *Spaces of Hope.* Edinburgh: Edinburgh University Press.

Harvey, D. (2012). *Rebel Cities: From the Right to the City to the Urban Revolution*. London: Verso.

Jacobs, J. (1961). *The Death and Life of Great American Cities.* New York, NY, Vintage.

Korthals Altes, H. J. (2004). *Tuinsteden – tussen utopie en realiteit.* Bussum: Thoth Uitgeverij.

Massey, D. (1995). *Spatial Divisions of Labour*. London: Macmillan.

Massey, D. (2004). Uneven Development: Social Change and Spatial Divisions of Labor. In T.J. Barnes, J. Peck, E. Sheppard & A. Tickell (Ed.), *Reading Economic Geography* (1st ed., pp. 111-124). Hoboken, New Jersey: Blackwell Publishing.

Mast, J. van der (2015). *Agneta*. Amsterdam: Nieuw Amsterdam.

Meijer, M., & Adriaens, F. (2010). *Sustainable urban design: Examples and perspectives = Duurzame stedenbouw : voorbeelden en perspectieven : the next step*. Wageningen: Blauwdruk.

Mentzel, M. A. (1989). *Bijlmermeer als grensverleggend ideaal: Een studie over Amsterdamse stadsuitbreiding.* Delft: Delft University Press.

Park, Y. & Rogers, G. O. (2015). Neighbourhood Planning theory, Guidelines, and Research: Can Area, Population, and Boundary Guide Conceptual Framing? *Journal of Planning Literature, 30(1),* 18-36.

Smith, N. (1984). *Uneven development: Nature, capital, and the production of space*. New York, NY: Blackwell.

Smith, N. (1996). *The New Urban Frontier.* New York, NY: Routledge.

General practice

Case study Wielewaal
Current status: Visited; regular contact with residents, contacted developer and housing corporation for appointments.

Reference projects:
Agnetapark, Delft, NL (visited)
Kerckebosch, Zeist, NL
GWL-terrein, Amsterdam, NL

Reflection

Scientific relevance

Although the research is primarily focused on an application for design, the scientific relevance is primarily the identification of long-term principles from both older and newer knowledge. Instead of trying to reinvent the wheel, this research emphasises on the value of already effective, and therefore evident-based, design principles. By overlapping the similarities of the characteristics of these principles, the essence behind what makes a design solution long-lasting comes forward. This gives better insight on what values a well-functioning urban area should contain.

Societal relevance

The scientific/research part results into a framework/overview of long-term design principles. This can be a great starting point for a better communication towards different parties or stakeholders that do not necessarily understand the importance behind certain long-lasting design solutions. As stated in the problem statement, things need to change drastically as we face social and environmental problems in society. This can only be done collectively and from a long-term perspective, as eventually the aim is to survive for as long as possible. The framework as result from the research can be a toolbox that helps the communication towards other parties in order to work collectively for a better future. The long-term perspective is already in the toolbox itself, as the design principles are based on performing to last. By implementing and embedding these principles into a case study (Wielewaal), the realism comes forth as it will showcase the possibility of how we can build our cities as well: collaboratively, long-term and with positive societal impact.

Planning

Individual planning

2.9. / **P2 presentation**
- Urban plan and vision (draft)
- Program of requirement (draft)
- Sketch (architectural) design proposal (draft)

2.10. / Process and incorporate feedback, finalise research report

Holidays (1st week February)

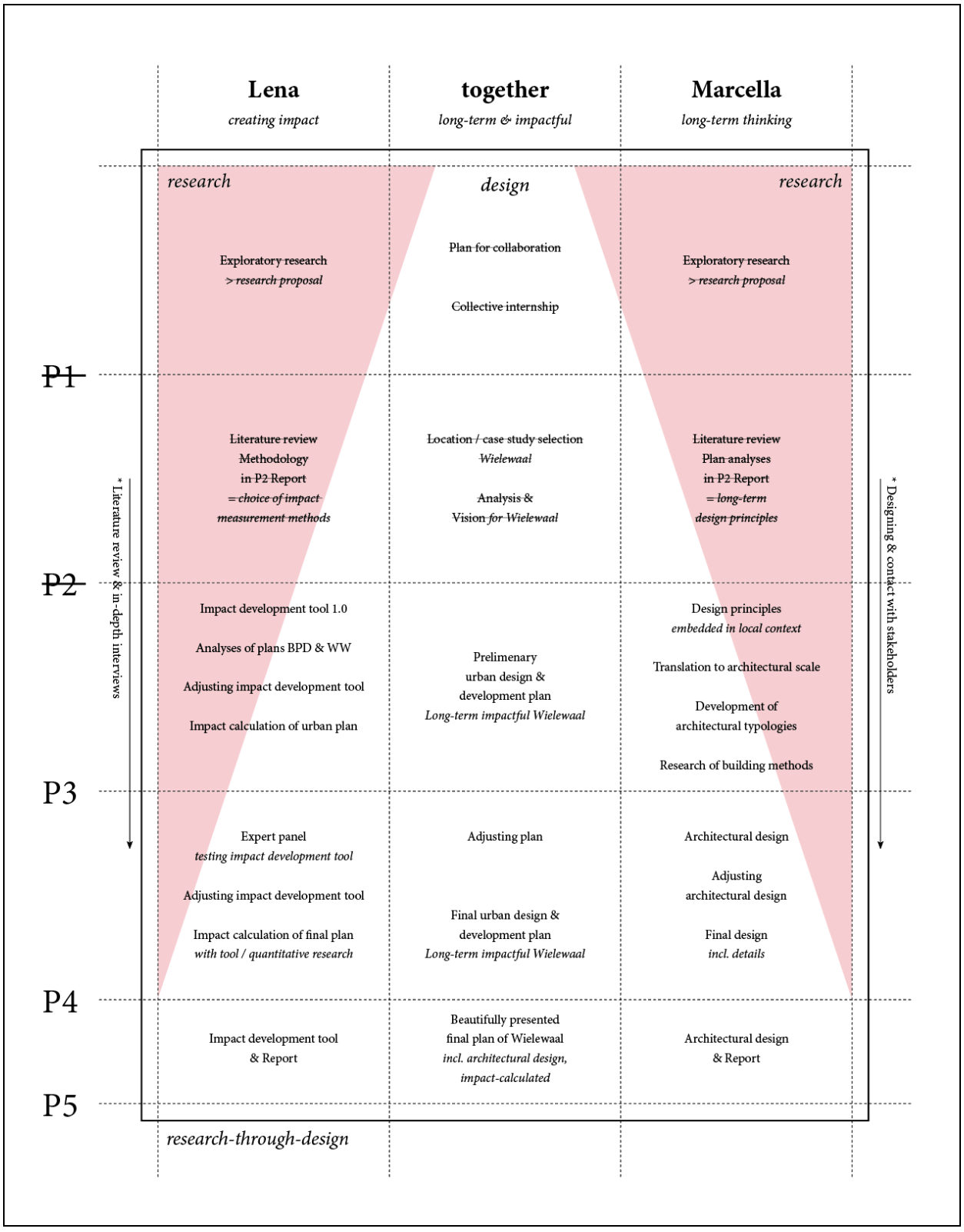
3.1. – 3.4. / Finalise research report
3.1. – 3.7. / **Preliminary Design**
- Urban plan (1:1000/1:500)
- Floor plans (1:200/1:100)
- Sections (1:200/1:100)
- Details (1:20/1:5)

3.8. / Preparation P3
3.9. - 3.10. / **P3 presentation**

4.1. – 4.4. / Process and incorporate feedback from P3, start with final design
4.4. - 4.5. / **P4 Presentation: Final design**
4.6. – 4.8 / Process and incorporate feedback from P4
4.9. - 4.10. / **P5 Presentation: Final design**

Collective planning

See next page


Lena
creating impact
together
long-term & impactful
Marcella
long-term thinking
research
design
research
Exploratory research
> research proposal
Plan for collaboration
Collective internship
Exploratory research
> research proposal
P1
Literature review
Methodology
in P2 Report
= choice of impact measurement methods
Location / case study selection
Wielewaal
Analysis &
Vision for Wielewaal
Literature review
Plan analyses
in P2 Report
= long-term design principles
P2
* Literature review & in-depth interviews
Impact development tool 1.0
Analyses of plans BPD & WW
Adjusting impact development tool
Impact calculation of urban plan
Prelimenary
urban design &
development plan
Long-term impactful Wielewaal
Design principles
embedded in local context
Translation to architectural scale
Development of
architectural typologies
Research of building methods
* Designing & contact with stakeholders
P3
Expert panel
testing impact development tool
Adjusting impact development tool
Impact calculation of final plan
with tool / quantitative research
Adjusting plan
Final urban design &
development plan
Long-term impactful Wielewaal
Architectural design
Adjusting
architectural design
Final design
incl. details
P4
Impact development tool
& Report
Beautifully presented
final plan of Wielewaal
incl. architectural design,
impact-calculated
Architectural design
& Report
P5
research-through-design