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	**Lena van der Wal**
Student number	4312171
Telephone number	
Private e-mail address	

Studio		
Name / Theme	Explore Lab	
Main mentor	Erwin Heurkens	Urban Development Management (MBE)
Second mentor	Philip Koppels	Real Estate Management (MBE)
Research mentor	Elise van Dooren	Architecture
Argumentation of choice of the studio	(1) To explore my own fascination in both research and design (2) To be able to collaborate with a student from a different master track: both options are not offered or possible in other studios.	

Graduation project	
Title of the graduation project	**Impact Development** *(in close collaboration with: Design to Last, by Marcella Wong)*
Goal	
Location:	Wielewaal, Rotterdam, The Netherlands
The posed problem	*Collective problem statement (Marcella & Lena)* 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 with a long-term vision. The current way we build our cities is often the other way, with short-term vision and 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 is currently facing problems of displacement, unaffordable housing and a lack of sustainable ambition. For many decades this neighbourhood had a lot of social cohesion, nowadays the liveability seems to get worse due to the current situation, see *Design Assignment*. *Individual problem statement (MBE, UDM)* Although urban area development is characterized by many negative impacts, also known as externalities, to date barely no impact measurement and management (IMM) is implemented into the practice of urban area development.

	This results in a lack of collaborative long-term strategy towards creating societal impact from the main actors involved and in cities that are not inclusive, resilient and sustainable.
Research questions	*Collective question (Marcella & Lena)* - 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? *Individual main question* - 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? *Individual sub-questions* 1. What positive and negative impacts are most important in Wielewaal, in order to develop a long-lasting and sustainable urban area development? 2. How can these impacts be measured, verified and valued (monetarized)? 3. How to include the measured impacts into the business model of the developer? Who is willing to pay for the impacts? 4. In what ways should the business model of the (social entrepreneurial) developer be adjusted in order to work towards creating positive societal impact?
Design assignment	*Wielewaal: problem statement* Wielewaal (Rotterdam) 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 neighborhood 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. 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 neighborhoods are redeveloped resulting into the original, vulnerable inhabitants being relocated. *Collective design assignment* Collectively, we want to design and develop an alternative plan and vision for Wielewaal: one that is based on long-term principles and societal impact. Our

previous research 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 us a good understanding of the specific context and potential solutions.

Individual design assignment
Individually, from the perspective of private-sector led urban area development, this entails rethinking the business case of the developer. How should this be changed in order to put 'impact first'? What impacts should be measured to work towards a sustainable, long-term development and how can these impacts be measured and monetarized, for inclusion into the business case?

Research outcome
Individual: this will lead to the development of an adjusted business case or impact development tool.
Collective: a vision and urban plan for Wielewaal.

[This should be formulated in such a way that the graduation project can answer these questions. The definition of the problem has to be significant to a clearly defined area of research and design.]

Process

Method description

Collective methodology

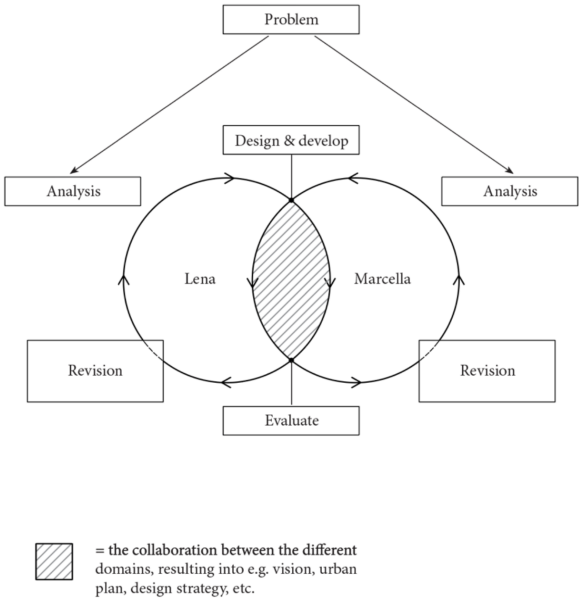


Fig. 1: collaborative research process

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. 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 building design (see fig. 1).

Individual methodology
For the first part of the research (until P2) a literature review has been conducted. For the second part (until P5) a research-through-design methodology will be adopted (fig. 2).

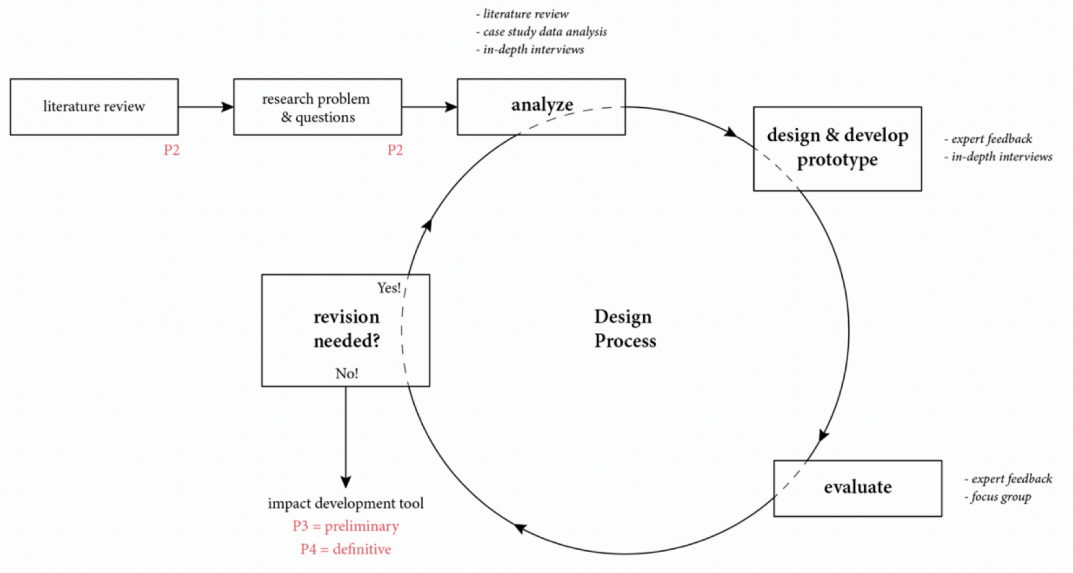


Fig. 2: individual research process (RtD)

Based on the formulated research questions, a design process is started, iterating between analysis, design, evaluation and revision.

- *Analysis* includes extra literature review, a qualitative and quantitative analysis of case study materials (the different plans developed for Wielewaal) and in-depth interviews with stakeholders.
- *Design* includes actually drafting the new business case / impact development tool, in close collaboration with Marcella Wong and responding on the urban plan/vision that's developed together. Designing the tool will be assisted by conducting in-depth interviews with impact experts and with the help of expert feedback (through internship about the developer's business case and with other experts when necessary & possible)
- *Evaluate* includes reflection on the tool, based on collective work done or expert feedback. When the tool is almost ready (after a number of revisions/cycles), a focus group will be organized for final feedback on the tool.
- Based on the evaluation, *revisions* will be made until the tool is good enough to present. The plan is to present a preliminary tool at P3, and a final tool at P4.

Literature and general practical preference

Scientific literature

In general, research published in journals is used or scientific (hand)books. Multiple sources are combined to present a general way of working and to give an overview of different impact measurement approaches. The key theory related to the impact measurement and management (IMM) approach used comes from Epstein & Yuthas (2017). For the second part of the research, also more UDM related sources will be used to analyze the main impacts occurring in urban area development.

General literature

In addition to scientific literature, reports from practice are studied, as practice seems to be a little bit ahead on the topic of IMM. Also reports from practice tend to formulate knowledge in a way that's easier to implement in practice. When necessary, additional research will be done on how to translate impacts into monetarized values.

Design & expert feedback

Knowledge will be developed during the design development of the tool.

Interviews

Interviews will be conducted with:

- Stakeholders related to the case Wielewaal (municipality, developer, residents, housing cooperation)
- Impact management & measurement experts (Impast Institute, Impact Center Erasmus, etc.)

Reflection

Relationships graduation topic, studio topic, master track and master programme

Relationship graduation topic and master track/programme

The graduation topic aims to bring the latest knowledge from the domain of social and sustainable business / business ethics into the practice of urban area development. In that way, it adds to the latest knowledge on sustainable urban area development, an important theme of both the master track as the master programme. Elements involved in IMM connect also very well with content learned in the master track of MBE: strategy formation, stakeholder management, performance measurement and managing for change.

Value for master programme

Furthermore, by working in a collaborative manner and being able to combine knowledge of both the architecture track and the MBE track, we aim to bridge these different master tracks and create knowledge that transcends both disciplines. As the built environment is characterized by fragmentation, this is something highly relevant. By working together, we might be able to not only design for service, but also design for social innovation (Irwin, 2015) as together we can grasp the complex socioeconomic and political context of Dutch private-sector-led urban area development (MBE) and design within and beyond it (architecture) – *working towards a realistic utopia.*

Relevance

Scientific relevance

As to date there is no clear link between impact measurement and management and urban area development, this research hopes to set the first steps towards creating this link. Furthermore, from the topic of impact measurement and management, to date little research is done on how to actually implement the knowledge on different approaches and methods in in specific sectors, industries, geographies and practices. By researching how IMM can be implemented in the urban area development Wielewaal, this research aims to do just that.

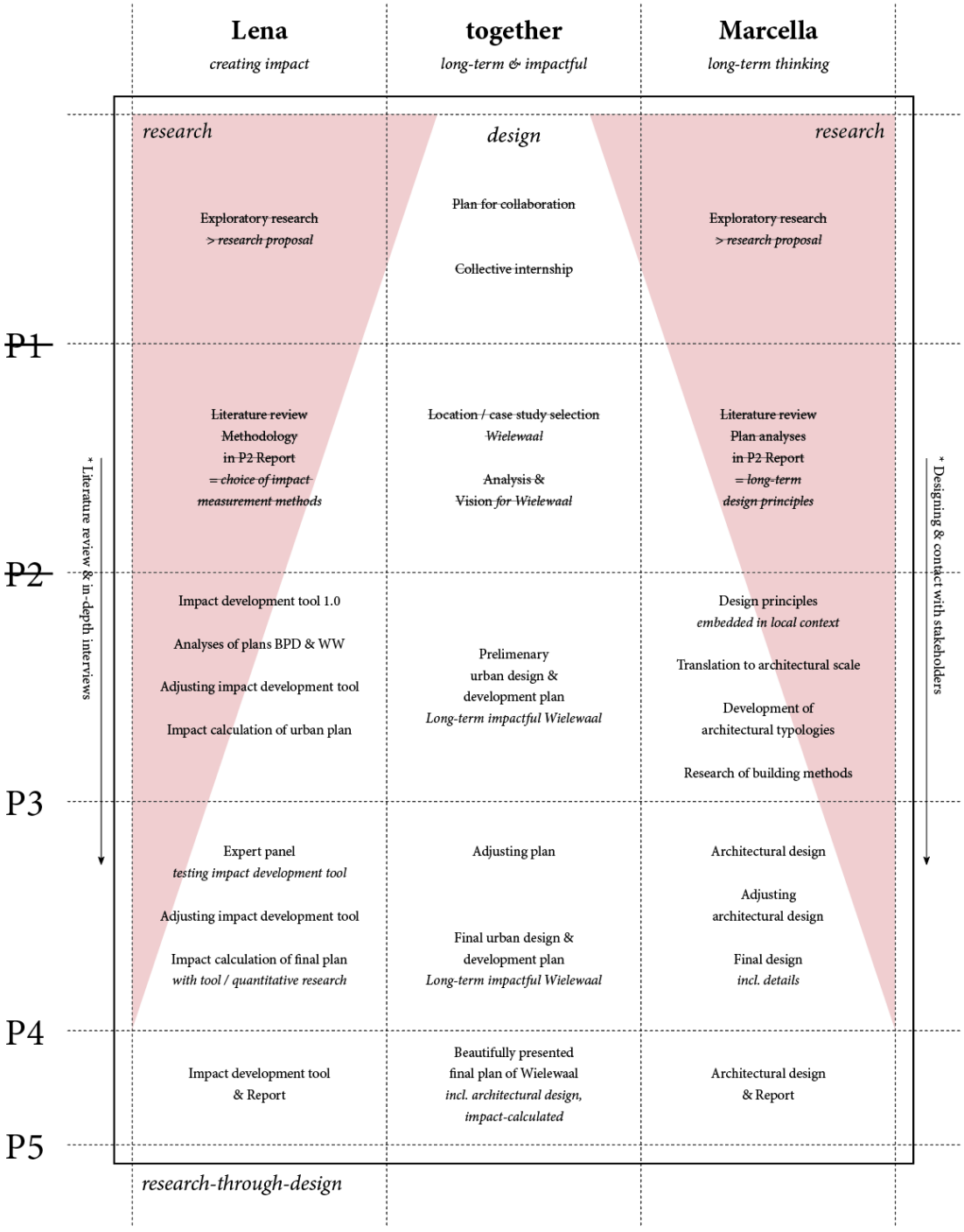
Societal relevance

Working towards impact is relevant, as our planet is facing climate change and social inequality is only growing. Impact measurement and management can help organizations work towards the sustainable development goals. This research helps with the implementation of IMM in urban area development and based on this, gives suggestions on how the business case of the developer could change in order to set impact first. If done well, this results in a tool that developers (but maybe also other stakeholders) can use in the development of inclusive, sustainable urban areas.

Planning

The full time planning can be found on the next page. From January onwards, there is only one retake that needs to be done, for the rest, full focus is placed on graduation.

Before P3, most interviews with stakeholders and impact experts will have been planned and undertaken. And a first preliminary version of the impact development tool / adjusted business case is made. Before P4, a focus group is organized to evaluate the impact development tool and give final recommendations. Based on this a definitive version of the impact development tool will be developed. This tool together with a report, stating the design process and use of the tool, will be finished before P4. Before P5 the finishing touches will be made.


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
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
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
* Literature review & in-depth interviews
* Designing & contact with stakeholders