

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	Jochem Vellinga
Student number	4686098

Studio		
Name / Theme	Design Of The Urban Fabrics	
Main mentor	Rients Dijkstra	Urban design
Second mentor	Alexander Wandl	Landscape architecture
Argumentation of choice of the studio	The graduation project is a design of Delfshaven that redefines the purpose of streets and public space and that focusses on primarily integrating nature in relation to humans and climate adaptation measures.	

Graduation project

Title of the graduation project

Human wellness and ecological potential for streets in urban Environments - A biophilic design for Delfshaven Rotterdam.

Goal

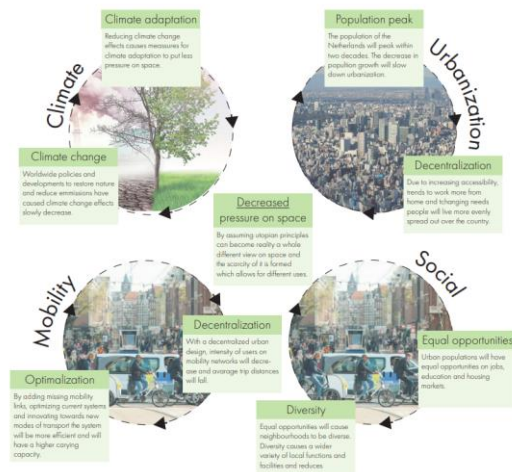
Location:

Delfshaven, Rotterdam

The location of Delfshaven is chosen, because of it's high FSI and low OSR densities. This means that there is the fewest open space per square meter building and thus the challenges of the lack of free space and the increasing pressure on space are more difficult to solve here. By solving ecological, climate and social problems here, the design can be an example for other dense urban areas to do a similar kind of transformation.

The posed problem,

Lack of space to solve problems such as degrading urban ecology, climate change effects, urbanization, and social inequality



research questions

1. How can streets facilitate for a more sustainable use of our public space in terms of climate adaptation, ecology, human wellness and mobility?

- What is the role of streets and how do people use and value them?
- How can streets improve ecological systems?
- How can streets improve human wellness?
- How can streets facilitate for adapting and mitigating climate change effects?
- How can streets contribute to improving mobility?

design assignment in which these result.

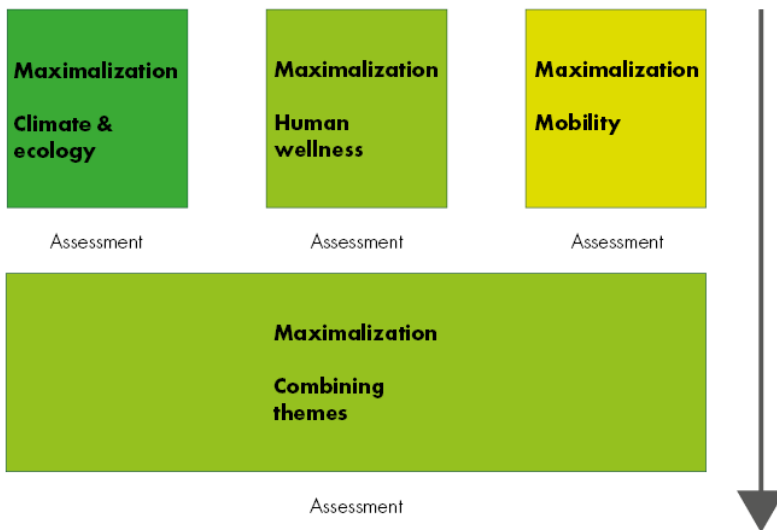
The assignment will result in a set of analyses and research on urban ecology, climate adaptation, mobility, public transportation and human wellness related to public space and streets.

The results of these research and analyses will form the foundation for the final result. This will be a design for all the streets and public spaces in Delfshaven Rotterdam. The design will include a full mobility system, urban eco-system, climate adaptation measures and the implementation of elements that engage residents with their green urban environments.

Process

Method description

For the design I will use the maximalization method. After maximizing per theme I will assess the qualities of different options and combine them into a integrated design. Research will be done throughout literature research, spatial analyses, and interviews with urban ecologists of the municipality.



Literature and general practical preference

Beatley, T. (2010). *Biophilic Cities: Integrating Nature into Urban Design and Planning* (Illustrated ed.). Island Press.

Kothencz, G., Kolcsár, R., Cabrera-Barona, P., & Szilassi, P. (2017). Urban Green Space Perception and Its Contribution to Well-Being. *International Journal of Environmental Research and Public Health*, 14(7), 766. <https://doi.org/10.3390/ijerph14070766>

Lee, A. C. K., & Maheswaran, R. (2010). The health benefits of urban green spaces: a review of the evidence. *Journal of Public Health*, 33(2), 212–222. <https://doi.org/10.1093/pubmed/fdq068>

Nieuwenhuijsen, M. J., & Khreis, H. (2016). Car free cities: Pathway to healthy urban living. *Environment International*, 94, 251–262. <https://doi.org/10.1016/j.envint.2016.05.032>

Norton, B. A., Evans, K. L., & Warren, P. H. (2016). Urban Biodiversity and Landscape Ecology: Patterns, Processes and Planning. *Current Landscape Ecology Reports*, 1(4), 178–192. <https://doi.org/10.1007/s40823-016-0018-5>

Oke, T. R., Mills, G., Christen, A., & Voogt, J. A. (2017). *Urban Climates*. Cambridge University Press.

Van Nes, A., Yamu, C., & Van Nes, A. (2021). *Introduction to Space Syntax in Urban Studies*. Springer Publishing.

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)?

My graduation project relates very well to the master Urbanism. The final result will be a design of a neighbourhood focussing on public space and its relation to climate, ecology and human wellness. Many steps of the project are similar to courses done in the master track. The studio design of the urban fabric fits perfectly as it is all about designing a new way of using our streets and is primarily design oriented.

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

Problems of climate change, ecology degradation, lack of space in cities and changing needs for urban environments is not specific for this location. Cities all across the country (and even further) have to face the same problems and are looking for solutions. I think my project could (if done well) be an example for cities of what an alternative could be to the traditional car oriented development. I hope it can also show the feasibility of integrating green more into our cities and what benefits it will have on human life as well as ecology and climate adaptation.