

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.

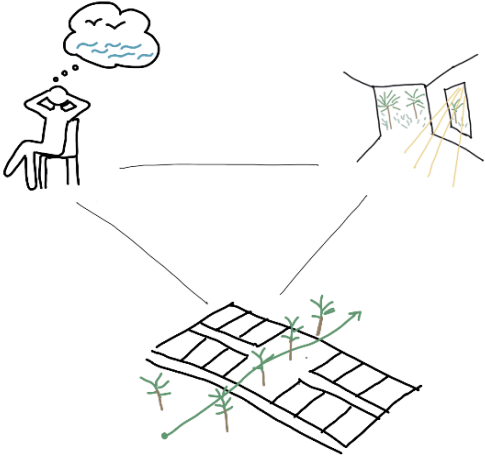
The graduation plan consists of at least the following data/segments:

Personal information		
Name	Masja Rietveld	
Student number	4852214	

Studio		
Name / Theme	AR3AE100 Architectural Engineering Graduation Studio	
Main mentor	Ir. Mo Smit	Architecture and the Built Environment, Architectural Technology
Second mentor	Ir. Nico Tillie	Architecture and the Built Environment, Landscape Architecture
Third mentor	Ir. Engbert van der Zaag	Architecture and the Built Environment, Architectural Technology
Argumentation of choice of the studio	I believe integrating architecture and engineering is the future for the architect. Also, I appreciate the freedom that comes with working in this studio. It allows me to focus on my main interest in architecture and provides opportunities to connect with interesting individuals in this field.	

Graduation project	
Title of the graduation project	The natural in-between place for stress relief through biophilic design

Definition of key terms	
Biophilic design	Biophilic design is a nature-inspired approach that taps into our natural affinity for nature, influencing our contentment with the built environment. It has been proven to alleviate stress, boost creativity and mental clarity, promote wellness, and accelerates healing. With the world population increasingly gravitating towards urban living, the significance of biophilic design cannot be overstated. (Terrapin Bright Green, 2014).

Nature in the space	Nature in the space is one of the three biophilic design categories and involves the direct presence of nature in a space, including plant life, water, and animals, as well as natural elements like breezes, sounds, and scents
The natural in-between place	The natural in-between place consists of three components, as shown in Figure 1: character of the location, sense of place, and form, collectively defining a place (de Wit & Piccinini, s.d.). The character of the location of the natural in-between place establishes a connection between primary functions visited one after the other and the nature in the space. The sense of place of the natural in-between place focuses on stress relief by including nature in the place category of biophilic design. Finally, the form of the natural in-between place relates to the cores in the building, aligning both contextual nature and functional aspects.  <i>Figure 1: Meaning of the natural in-between space (by author)</i>

Goal	
Location:	TNW building, TU Delft campus  <i>Figure 2: TNW building in context (TU Delft, 2022)</i>
The posed problem,	People are becoming disconnected from nature, mainly because they spend most of their time in urban environments. This results in many adverse effects on our mental health, including high stress levels in modern society. Especially at the TU Delft, stress levels are very high. 97% of students experience stress, with 70% experiencing excessive performance pressure and 51% reporting psychological complaints such as anxiety and gloom (Rooijackers & TU Delta, 2021). Biophilic design can answer the stress problem of today's society. However, the problem is that too little is known about how to integrate biophilic design for stress relief as an architect.
research questions and	Overall Design Question How to make a renovation design for the TNW building by incorporating natural in-between places for stress relief? Sub-questions: 1. How can the biophilic design category nature in the space be used to increase stress relief as an architect? (Thematic research question) 2. How to rethink activities in a mixed-use building to increase stress relief in student's modern lifestyles?

	3. How to make a natural in-between place vision for TU Delft campus? 4. How can the natural in-between places be integrated into the renovation design of the TNW building on the TU Delft campus? Thematic Research Question: How can the biophilic design category nature in the space be used to increase stress relief as an architect? Sub-questions: 1. How can biophilic design be related to stress relief? 2. How to use the biophilic category nature in the space which relieves stress? 3. How can existing biophilic theories about stress relief be translated into a nature in the space design guide for architects? 4. How can an architect use the nature in the space design guide to provide stress relief?
design assignment in which these result.	The design assignment is a renovation design for the TNW building on the TU Delft campus, with study places, student housing and wellness/biophilic/culture activities as the main program. Here, the natural in-between places are central, and the biophilic design of the building forms a natural system in relation to the ecologically designed system of the campus. The ecological system of the campus is also part of the assignment. The goal is described as the campus as a landscape, the building as a natural system, and water as connecting element.
Process	
Method description	
Thematic research A literature review addresses the thematic research question. A prototype, namely the TNW building, is also examined. Overall design The overall design question, including overall sub-design questions, will be answered through research by design, reference analysis, context research, literature research	

and in-depth interviews. The individuals participating in the in-depth interviews will be further elaborated on in the 'Literature and general practice references' section.

Literature and general practical preference

Literature

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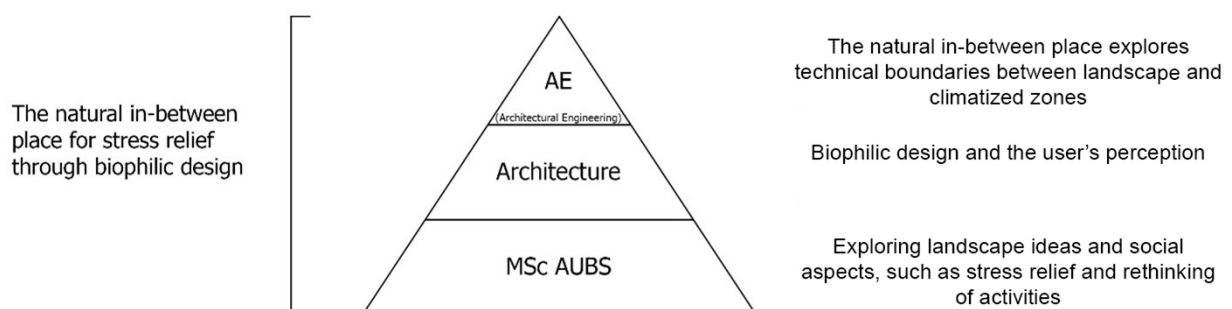
General practical experience/precedent

Cecil Konijnendijk - One of the world's leading urban forestry experts, director of Nature Based Solutions Institute, Global Urban Forester

Kristel Aalbers – Coordinator and lecturer, Faculty of Architecture TU Delft, Department of Urbanism. She is specialized in sustainable urban planning and architecture with a focus on water.

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)?



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

The thesis serves as a design guide that fulfils the need to translate biophilic stress relieving theories into practical design opportunities for architects. The design will have an exemplary function and will show how the design guide with the toolbox can be applied. Besides designing for stress relief, it will also show how a building as a natural system can connect to the ecology of the environment.

References

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Figures

Figure 1: Meaning of the natural in-between space (by author)

Figure 2: TNW building in context (TU Delft, 2022)

Figure 3: Relation between graduation topic, studio topic, master track and master programme (by author)