

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	Emma Kannekens
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Studio		
Name / Theme	Urban Forest Places - Graduation Studio Landscape Architecture: Flowscales	
Main mentor	J.R.T. van der Velde	Landscape Architecture
Second mentor	Dr.ir. M.J. van Dorst	Urban Design
Argumentation of choice of the studio	The Lab it is a good way to explore my interest, landscape architecture in the city. The green areas and public spaces in cities are crucial to a good living environment, providing quiet- and recreational zones in the city. Further the lab gives me the opportunity to improve my design skills while working with the senses and telling a story through design.	

Graduation project	
Title of the graduation project	Urban Forest Movement(s) Movement as design method for experiencing nature and its beneficial effects in the city of Den Haag.
Goal	
Location:	Nieuw en Oud Eykenduinen, Loosduinseweg, Den Haag, The Netherlands
The posed problem,	<p>Due to cities becoming more dense the need for green spaces in cities becomes more apparent. Next to this need, new design questions rise such as water storage, heat islands, densification and healthy living environments are all taken into account when designing or improving cities. Although improving the health of residents is one of these design questions, it mostly focuses on the physical side of health, offering places for regular exercise and looking into how a food-waste flow could be designed. Despite the fact that this physical health side is important, the mental health side should not be overlooked. A big aspect of mental health is the occurrence of stress, which can lead to depression, often resulting in a slow healing process. Consequently, stress is currently becoming one of the highest expenses in healthcare.</p> <p>Stress is often linked to highly densified areas but recovery from stress can be achieved while spending time in, walking through or looking at nature (Grahn & Stigsdotter, 2003). This recovery is a result of the restorative effects of nature. Theories like the Attention Restoration Theory by Kaplan and Kaplan, Stress Reduction Theory by Ulrich and Biophilia Theory by Wilson, all conclude that visiting nature could reduce stress and help with one's ability to focus (Grahn & Stigsdotter, 2003; Kaplan, 1995; Sugiyama, Leslie, Giles-Corti, & Owen, 2007; Sullivan, 2014). The idea of healing nature can be recognised over centuries such</p>

	<p>as courtyards in the Middle Ages, which used medicinal plants as pain relief (van den Berg & van den Berg, 2001) and the Estates, which were used as an escape from daily life (Verschuure-Stuip, 2019).</p> <p>Throughout history different idealistic urban plans had as main goal to create a healthy living environment with access to green spaces. One of these was the Garden City movement which was the answer to the rising density in cities and unhealthy living environments in the nineteenth century. It offered a new planning method for designing ideal cities by rethinking their structures. The model explains a schematic plan of the ideal city and of what such a city should consist of, clarifying the main structures, functions and set up of the city (Howard, Garden cities of to-morrow, 2013).</p> <p>As mentioned earlier cities are rapidly densifying resulting in fewer green spaces and overpopulated neighbourhoods. This linked to the rising healthcare expenses caused by stress and mental health and current design questions such as climate issues, densification demands and healthy living environments leads to once again rethinking the structure of cities. The Garden City movement could therefore, offer a lens into rethinking current cities and their main structures.</p> <p>Along with this, rethinking the spatial structures of a city allows for creating various connections between the living environments and green areas or the surrounding landscape. Without green areas in the city there is no restorative nature therefore, the current imbalance between green and grey should be levelled out. The layout and structures of dense cities should be reconsidered, creating a new healthy living environment, focussing on green structures, answering the new design questions and creating spaces with restorative effects of nature.</p>
research questions and	<p>What might a contemporary 'Garden City movement' look like, and how can this be implemented, responding to current environmental design questions, that focusses on restorative green spaces informed by movement and bodily experience?</p> <p>Sub questions:</p> <ul style="list-style-type: none"> - What are the various ideas on creating a healthy living environment throughout history and how did it result in spatial designs in urban plans, landscape tradition and ideal cities? - What are restorative nature theories and how can they be applied to design restorative landscapes? - What is the Urban Forest Movement and what are the main design goals and principles that form the spatial structure of the plan? - What are the main structures of Den Haag, how do these relate to the surrounding landscape and what are the main design questions of the city and the chosen site? - How can the Urban Forest Movement be implemented in the chosen site and how can it be further elaborated on a detailed scale?
design assignment in which these result.	<p>Design a generic Urban Forest Movement city framework which creates a healthy living environment on different scales and offers restorative effects for its users, that can be used to design green structures in different built areas. The Urban Forest Movement is implemented in Den Haag resulting in a design on three scales: a vision for the city, a masterplan for a zoomed in structures of this vision and a detailed site design on eye-level perspective. It focusses on designing with movement to create a bodily experience resulting in experiencing restorative nature.</p>

Process

Method description

The research consists of three parts, a historic overview: creating healthy living environments - restorative research – conclusion, Urban Forest Movement. This last part will provide tools for a new way of designing cities, forming the Urban Forest Movement. How this movement can be used within a city will be further researched by applying and modifying it to the chosen site, resulting in a design on different scales. The design and Urban Forest Movement will inform each other resulting in a back and forth of improving and elaborating.

Den Haag is used as a testing ground for applying the Urban Forest Movement. The city is chosen for its rich history of estate culture and its remaining relation to the surrounding landscape.

The Garden City acts as a starting point in researching ideal city movements, their structures and their relation to the beneficial effects of nature. These will give insights into what a new scheme or model for a city could be and how this should respond to current design questions.

- Historic overview: creating healthy living environments

The first part of the research focusses on ideal city movements, landscape tradition, urban planning and health movements related to healthy living environments. To understand how the ideas, on how to create healthy living environments, have had an influence on landscape tradition, urban planning, ideal city movements and health movements an overview is needed to summarize and compare reviewed literature. This research method allows for literature reviews from different subjects to be put in a timeframe and be compared to each other. From this historic overview, conclusions can be made leading to a better understanding of the separate researched topics.

- Restorative research

Secondly the research focusses on restorative nature theories and how these can be applied when designing a site. Literature and case studies are used to give an insight into what the main goals of restorative nature theories are and how these can be spatially applied when designing a green structure. In the chosen case studies restorative themes are used as lenses to investigate the main design goals and design principles. Different case studies are chosen to offer a variety scale, topography and style such as formal or picturesque offering a wide variety of design principles.

- Conclusion - Urban Forest Movement

To conclude the research the findings of previous parts of the research will be summarized and developed into a concept, on various scales, forming the Urban Forest Movement. This plan is generic and needs to be altered, when applied to a site, to fit the genius loci.

- Analysis of Den Haag

As mentioned earlier the city of Den Haag is chosen as site. To get a deeper understanding of Den Haag several analysis are done on different scales. From city and region scale to structure - and site scale, various subjects are mapped to offer conclusions. This mapping method is a way of analysing the most relevant subjects for the city and valuating their findings to come to conclusions. Various ways of mapping, relevant to the subject, are used, such as: plan drawings, sections, photo (-collages), experiences and 3D drawings. Some of these are subjective and others objective. The subjective mappings explore my own experience during site visits, analysing views, sensorial aspects and the experience of restorative nature. The objective mappings, are researched through found information and site visits. The earlier mentioned historic overview is used to further analyse Den Haag, exploring any remains of the subjects at the chosen site.

- Vision and design

The design will be elaborated on different scales, showing the different levels of detail and spatial structures to create the Urban Forest Movement. The conclusions from the analysis of the site are used together with the Urban Forest Movement to create a vision the city of Den Haag. From this the vision will be further elaborated in a masterplan and a detailed design, showing how to design with beneficial effects of nature. The designed structure will make use of the, in the research found, design principles on restorative nature.

Literature and general practical preference

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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 project researches a new way of designing cities and their main structures, creating healthy living environments with restorative effects. These new, healthy living environments and green spaces relieve stress and improve the mental health of its residents, while responding to current environmental design questions. Throughout the project I came to the conclusion that it was not the amount of green in cities that led to a healthy living environment, but it was influenced by how the green spaces were experienced. Resulting in a design method of using trees, shrubs and grasses to create an experience in a space. This links back the Urban Forest Places lab which focuses on different green structures and scales in the urban environment, exploring trees, their composition and effect on the urban environment.

The designed spatial framework, consisting of forests, green spaces, lanes and country lanes can be recognised in one of the thematic lenses of the Flowscales Graduation Lab. This Green Infrastructure lens consists of green structures which are linked together to form one network. These structures in urban areas offer spaces for leisure, food supply, water storage, nature etc. each of them having their own beneficial effects on their surroundings. This is further explored in the thesis researching the beneficial effects of nature for its users, by researching the restorative side of nature. Another element mentioned in the Flowscales Graduation Lab is the research by design method. Here design is used to understand the spatial characteristics of a site or to research different design elements. In the thesis this method is used to reinforce and investigate the Urban Forest Movement. While the main design is on the lower scale, detailing out how the different movements work in relation to restorative nature, the Urban Forest Movement is still being improved and worked on. This leads to a back and forth of zooming in and out resulting in new ways of looking at the project offering new insights for the design on the different scales.

One of the main perspectives in landscape architecture is perception, how users experience a space and the created design. In my thesis the lens of perception is one of the main design tools to create spaces which offer bodily experiences, created by contrast between light and dark, textures, colours, smells, sounds, amount of enclosure and elevations, reinforcing the importance of the lens perception.

Further the project is be related to urbanism, creating a new way of designing a city. Focussing on living environments, main structures, ways of planning a city and creating transitions between parks and neighbourhoods.

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

Currently cities are becoming more dense resulting in overpopulated neighbourhoods and little green spaces. Together with this the rising mental health problems and new environmental design questions such as heath island effect, water nuisance and densification, results in questioning our current city structures. The mental health side of the thesis is becoming an important design question in creating healthy living environments that offer green spaces in

dense cities. The research explores a new way of designing a city with current environmental design questions in mind but also by focussing on restorative nature and healthy living environments. Not only should the city structure be designed from a planning point of view but also from an experience point of view. Designing the main framework with movement in mind and how residents of the city are going to experience these structures.

This thesis researches new methods on design cities on different scales, focussing on healthy living environments and using nature for its restorative effects. Conclusions show that when designing green spaces in cities it is not about the amount of spaces but about how these are experienced. Offering a new design method for designing future dense cities with, maybe fewer but, effective green spaces. The research could be used in further development of current cities.