Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (1), 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	**Anežka Vonášková**
Student number	5626846

Studio		
Name / Theme	**Resilient Coastal Landscape**	
Main mentor	Steffen Nijhuis	Landscape Architecture
Second mentor	R. J. van den Veen	Urban Design
Argumentation of choice of the studio	There are too many reasons why I chose the RCL Lab. I believe that the RCL lab is the most suitable studio for my thesis project. It's a platform where I can combine my interests, fascinations and my passion for Nature driven approaches while at the same time implement concrete knowledge on a complex Big-scale project which I never did before. For that reason, I was personally most interested in the leading professor of the studio. Inclusive green design, design with Natural processes, big-scale complex projects and sustainable urban landscape development are domains to which Steffen Nijhuis devotes his professional and scientific work. All these topics offer solutions, which can help to fix the fundamental problems, and the challenges we will face as the next generation. I believe that I can personally learn a lot through the study and discussions of these topics and be able to move forward professionally as a future designer.	

Graduation project	
Title of the graduation project	**Tomorrow's (P)ARK: Designing the Biggest International Nature Reserve in North-West Europe.**

Goal	
Location:	North-West Europe with specific focus on Netherlands, Germany, and Denmark. With case study on area Hamburg-Bremen.
The posed problem,	At present, the impact of human society has transformed almost every square meter of the earth's surface and beyond. These events led Nobel laureate Paul Crutzen to name this New Geological Age – the Anthropocene[1]. What does this historical period bring us and what situation do we find ourselves in? We are standing on the edge of the sixth mass extinction of species, this process of biodiversity loss is unprecedented in the last million years[2]. One million species out of roughly eight million are threatened. According to IPBES reports, one of the main reasons for the loss of biodiversity is the loss of natural animal habitats. People are drastically reducing natural places and processes that have not been affected by humans before[3]. There are currently over 250,000 protected areas on Earth, spread across 245 countries and territories. This makes up 13% of the remaining unadulterated natural environment. The requirement of the CBD is that by 2021 another 4% of the protected area should be secured. The critical question, however, is not only the creation of new territories, but above all the way in which we keep what we have on Earth in the times of Climate changes. Same as the rest of the World, the European Union is currently struggling with the trend of loss of natural animal habitats, which is slowly leading to a Domino Effect. Nature is undoubtedly losing its life-giving systems to man, and up to 81% of habitats at the EU level are in a poor condition.[4] In other words: the way our society lives is unsustainable, it's literally invasive. Landscape fragmentation, intensive agricultural activity, deforestation, desertification, urbanization, pollution, uncontrolled construction, and use of transport infrastructure are the problems we have to face. To summarise: we disregard the living space that humans share with the plant and animal world, on which we as biological organisms are dependent. Even though there are already a large quantity of plans and strategies that aim to protect the vision of a positive future for a Nature – WE ARE NOT FAST ENOUGH. Care for biodiversity is therefore one of the main topics of today.

[1] The Nobel Prize in Chemistry 1995- Paul J.Crutzen , online (https://www.nobelprize.org/prizes/chemistry/1995/crutzen/lecture/)

[2] Millenium Ecosystem Assesment, UNEP

[3] Global Assessment Report on Biodiversity and Ecosystem Services (2019), IPBES

[4] https://www.eea.europa.eu/ims/conservation-status-of-species-under

research questions and	**How can we create the biggest continuous Nature Reserve of North-West Europe, and create places for the Protection and Restoration of Biodiversity, whilst improving socio-economic well-being?** **Sub-research questions:** **Understand:** Which conflicts prevent the connection of Nature in North Europe? **Imagine:** What landscape structures can be created by a buffer around ecological protected areas/hotspots. And how can such a structure be comprehensively conceived to create a resilient environment for both nature and humans with a long-term perspective? **Design:** What are the main landscape-urban- based principles and strategies we can design for connecting the remaining natural mosaic, and supporting the growth of biodiversity?
design assignment in which this result.	A comprehensive spatial, functional strategy of the largest protected international Nature Reserve in North-Western Europe. This strategy will include recommendations for analysis, methodology, tools, and principles for design at various scales, which will independently indicate the recommendations for specific steps to achieve a comprehensive Large-Scale design. The project will be executed throughout three different scales: Macro scale, Micro scale, and Nano scale. An active part will also be a Guide for the management of this area, an economical plan and a Zoning plan, which will describe in detail the strategy for the protection of important ecological hotspots through time.

[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

Research through Design will be applied throughout the project. And it will be used for each stage, methods, and approaches, to help answer the sub-research questions.

1.Interpretation Stage

A. Literature and Precedent study, Mapping, Analysing

The first step is an analytical understanding of complex data, followed by an exploration of spatial layers and typology. All this information will allow me to comprehensively understand not only the location but also the operations and processes associated with it, across different scales. And thereby create sufficient substantive material in creating a proposal of specific design interventions. This stage also includes the analysis of reference projects, like the World Park from Weller (2020).

Macro scale (1:1,000,000,000) In this scale, two products/maps will be created, which will form a solid basis for me to work on in the following steps of my thesis and will also help me in the permeability between different scales and the design itself.

The first Analysis/map is the 'Ideal Image of Nature' - Ecological landscape infrastructure analysis. By this, I mean the analysis of the structures that are important for a fundamental understanding of the natural layer that would exist in place without human intervention. These layers are Soil Map, Geomorphology, Topography, Water System, Potential Vegetation Map etc.

The second analysis map is about 'Reality/Conflict': By this, I mean a comprehensive analysis of the current state, i.e.: Land use, human settlement, historical maps, and infrastructure (highways, railways, second-class roads, public transport etc.). Lastly, non-urbanized areas, Natura 2000 structure, National Parks, and localities owned by private owners, were used for ecological management. In this phase, I will also focus on real threats associated with the Landscape. So, there will also be a study of pollution, threats associated with the river landscape, groundwater, deforestation, salinization, etc.

Lastly, I will generally aim to understand what activities are associated with specific territories and how they are used by the public or tourism. As part of the broader concept of the future and understanding of permeability in the Landscape, I will also map what trails, historical paths and religious paths exist/existed on the territory of Europe.

This 'sandwich' of information can provide me with an original source of information that will help me create a strategy for a large scale such as North-West Europe. And together with the literature it will help me to **answer the first sub question.**

Micro scale (1:20 000–1:300 000)

On a smaller scale of a specific region, there will be a more precise analysis of existing ecotypes and protected landscape areas and, if resources allow, an analysis of specific animal and plant species associated with these places. More detailed maps of spatial character, pollution, water quality, infrastructure, geological development etc. will be collected. These more detailed data will help me create a more accurate map of the current state and, in response, I will be capable to create a more detailed zoning strategy for the proposed (P)ARK in upcoming months. I believe with this information I can be more specific about the need to expand those ecotypes that the European Union is currently losing.

There will be a deeper examination of a kilometre wide buffer around the existing protected areas. And at this point, I will be able to name what this buffer means in the real landscape and what problems associated with the current fragmentation of the landscape are present in it. This means that **I will be able to answer the second sub-question.**

Nano scale (1:10 000 –1:100)
This is the smallest scale of the design, and I will focus mainly on analysing the understanding of the physical place. For this understanding, I will primarily use personal mapping of space. Certain facts, emotions, and space will be recorded in various supporting ways such as sketching, photos, videos, interviews, etc. Through this understanding, I will be able to begin to describe in detail the issues associated with specific places and defend the genius loci, i.e., come up with a functioning, respectful and well-thought detailed design.

2. Development of the Landscape framework and strategies

One of the most important stages of the entire work is the correct identification, design and sustainability aspect of partial proposals and strategies. So, this is the point where I will be studying and later proposing specific strategies and sub-solutions. They will aim to create a larger functional unit. There will be also a detailed review of existing methods and principles to support the growth of biodiversity. At the same time, I aim to create a kind of safe zone around the current suitable nature, and therefore a functional concept will have to be created here, which includes maintenance, care, activities, a zone plan. This phase also includes a description of the scenarios, a review of the literature and the project, and a small catalogue of reviews of different techniques and strategies. Based on the study of this phase, I will answer the third sub-questions, and formulate design principles for the design exploration phase.

A. Literature and Project review
As with defining the challenges and describing the specific scenarios, I seek importance in the literature search and study of existing projects. Analysing pre-existing knowledge and strategies can help me to create an outline project strategy that can take advantage of pre-existing supporting technology and tools. And, in case they lack, it can focus on the missing elements, which are necessary to strengthen my ideas. I have several projects that are very inspiring to me for several reasons, both in terms of scope and content. The first is a study done at the University of Pennsylvania by Richard Weller and his students – WORLD PARK[5]. Subsequently, it is an existing project Yellowstone To Yukon Conservation Initiative[6].

Because nature conservation is a complex discipline, I have chosen several books and studies that allow me to confront the facts that are necessary to include in my thesis project. I will give several examples here, which will be supplemented and/or reduced during the work.

1. Henrique M. Pereira, L. M. N.: *Rewilding European Landscapes, 2015.*
2. European Red List of Habitat,
3. Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.
4. Wenche E. Dramstad, J. D. O. a. R. T. F.: *Landscape Ecology Principles in Landscape Architecture and Land-Use Planning,* 1996.

5. Foran, R. T. T.: *Land mosaic: the ecology of landscapes and and regions,* 2006.

6. Collinge: Ecological consequences of habitat fragmentation: implications for landscape architecture and planning, 1996,

B. Scenarios
As part of such a complex project, which is abstract for its large scale. It will be necessary to clarify how the project can withstand several scenarios and how it responds to them. These scenarios will

[5] World Park project - https://theworldpark.com
[6] Yellowstone To Yukon Conservation Initiative - https://y2y.net

be, for example, sea level rise, cities growth scenarios etc. I will divide the work on these scenarios into two phases, and that is a detailed description of what will happen in the time horizon and then what strategies associated with the design I can use in response to them.

C. Strategies
My response to the above-mentioned scenario's will consist of strategies studied in the literature study, so they can be implemented in my design. So far, I see potential in the following strategies, but they are subject to change:

- Rewilding
- Blue + Green Infrastructures
- Landscape Planning
- **Resilience**

D. Design Principles
Based on the strategies, I will formulate my design principles for each corresponding scale. These principles summarize the findings from the analysis and form the starting point for the design phase. Because I use the method of research through design, the design principles will give a solid base to provide grip and control during different design experiments.

3. Design exploration

My project will work in several iterative design loops, where my research will input the design and vice versa. I will try to achieve specific proposals for the given areas and site locations. I see this as a process where I have to succeed and find a solution that aims to create a non-invasive environment for life. But at the same time, it must be resistant to several scenarios and the future itself. Also in this design exploration, I will go through different scales. I must appropriately establish a large-format spatial concept in the territory of North-Eastern Europe and subsequently choose such places that deal with different topics and thus help to define the detailed design and explain strategies associated with different locations and issues. At this stage, I will use several design support techniques such as sketching, modelling, collage etc.

Experiment
Through experimenting with different spatial structures and with specific, appropriate strategies, I will be able to come up with several different proposals, from which I will eventually be able to choose the most suitable and durable option. Experimentation is an integral part of finding answers to several my internal questions as well as finding a suitable final design. Through experimentation with spatial design, I will also be able to better understand real places and use design to identify their qualities and potential, thus creating a design that represents certain territories. By that, I mean to highlight their qualities and then help to fix their problems. Finally, I am aware that even artistic expression will require experimentation to be presented appropriately and attractively to the future audience.

Modeling and looking for the best solution option
Thanks to modeling, I will be able to practically verify how the project works at individual scales and simultaneously check whether they all correspond and create a harmonious and coherent study. I take modeling as a tool with which I'll spatially check out partial designs and thus create an idea of how they could succeed in a real environment, and at the same time perceive their qualities and the weak points. By modeling I understand the process that also completes the design process.

4. Conclusion

To conclude, I will sum up my findings in this chapter. This should give a clear overview of the tools, strategies, and key-principles of my project. They will be translated into well-defined schemes and diagrams to be used in discussions, or as references in other projects.

5. Reflection

In the end, there will be a reflection on my work, where I will evaluate whether the work procedure was chosen well and whether I achieved my expectations and the targeted result. This reflection will concern three branches: **On process, Paper writing and Evaluation**. In conclusion, I would also like to highlight parts that would need to be elaborated on in more detail in future works.

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)?

Relation between my graduation topic and the studio topic:

The relation between the project I am working on and the RCL LAB are actively discussed topics and active experiences of my mentor that I incorporate into my work. The problematics and topics addressed are Inclusive green design, design with Natural processes, Large-scale complex projects, sustainable urban landscapes, and social economies, etc. The concrete topic of the lab is Coastal landscapes, which nowadays face a number of extreme problems such as sea level rise, industrialization, pollution, loss of biodiversity etc. Even though my project mainly covers the inland

of Holland, Germany, and Denmark. With its theme and scope, it largely corresponds to the problematics and issues of the future to which Steffen Nijhuis refer to his professional work. I envision RCL Lab as a platform where I can combine my interest, fascination, and my passion for Nature-driven approaches, and problems of biodiversity loss. As a link between the topic and my work, I understand the importance of my work, the scale, and the complexity of the project which is largest Nature Reserve in North-West Europe.

Relation between my diploma thesis and Landscape Architecture master track:
The master track of LA deals with spatial organization capabilities and aesthetic architectural structures that make landscape architecture indispensable for current environmental and spatial problems. As part of our studies, we are confronted with the issues of contemporary housing, work, infrastructure, recreation, nature, and the water landscape. But also, with the complexity and role of the designer himself in the various phases of the project. This complexity, in our master track, is referred to as FLOWSCAPES. The study and research are actively focused on design and spatial expression, and creation of complex studies, tools and strategies that can be implemented in a different environment. The field works on the border between Culture, Social and Nature to achieve the vision of positive future for live.

As a follow-up to the field of landscape architecture at TU Delft University, I perceive a strong inspirational link to the stage from the previous year. I learned to name complex environmental problems that can be solved in specific areas. But the work is layered and complex. Training on different topics such as housing, infrastructure, the energy landscape, and others has created knowledge that enables me to create a suitable range of scenarios, tools and strategies that help solve the set goal. All of these are connections that connect my project to the field and issues that LA explores, studies, and solves. For these reasons, I perceive my project, the largest Nature Reserve in North-West Europe, as a scale-adequate project in contrast to the inexorable development and industrialization of the planet. Which addresses spatial concepts that can help the decline of European biodiversity and ecotypes. Therefore, I think my project reflects this master's track FLOWSCAPES philosophy, since the project is layered, comes with planning strategies, passes through three different scales, and deals with active issues related to the current environmental crisis.

Relation between my graduation topic and the master programme:
The master program of Architecture, Urbanism and Building Sciences focuses on the changing world around us, and the challenge of adapting our buildings, neighbourhoods and cities to new insights and needs of its residents[7]. The Master's program moves between four disciplines: Technology, Design, Society, and Environment. I believe that my project is relevant in terms of the goals and themes of our university. It is about creating a space where a person can live comfortably, can move, and express themselves freely and at the same time does not disturb the history and environment around him that he shares with others. I carefully examine the environment, natural processes, ecological problems and simultaneously social problems and human needs. I responsibly try to come up with a proposal that will be as complex as possible and suggest appropriate solutions for future adaptive life.

[7] World Park project - https://theworldpark.com

[7] Yellowstone To Yukon Conservation Initiative - https://y2y.net

s/bk/bachelor-of-architecture-urbanism-and-building-sciences/degree-programme"
|https://www.tudelft.nl/en/education/programmes/bachelors/bk/bachelor-of-architecture-urbanism-and-building-sciences/degree-programme**}**

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

Nature is undoubtedly losing its life-giving systems to man, and up to 81% of habitats at the EU level are in a poor condition.[8,9,10] Therefore, in this time and place, preventing biodiversity loss is one of the most relevant topics for our society. We have an ethical duty to care for the species we have brought to the brink of extinction and to prevent this from happening to others. After all, no one has the right to play the role of GOD and take lives. If we are a truly modern society, we must prevent the sixth extinction of species. And so, with this work I respond to this fact. I come up with my vision of a new (P)ARK space for the growth of nature and a safe space for life. I believe that such a study can raise awareness of this issue from a social perspective and create holistic solutions and strategies that will lead to a model of sustainable living and sustainable communities and economies.

Regarding the wider professional field, I believe that works of this type can open an objective professional debate between preservationists, ecologists, and landscape architects. I believe that in the field of biodiversity protection, there are still socially unknown qualities and abilities of landscape architects who, together with other experts, could play an active role in the field of nature protection, especially at the level of spatial planning on a macro scale of regions or even continents. Through this work, I can show the importance of the types of projects where humanity can work together to be a constructive force of Nature. Hopefully, through exhibiting my project to the larger public, it will inspire others to come up with projects or initiatives with a similar scope and scale.

Regarding the scientific framework, the relevance of my project lies mainly in the sectors and topics that are already actively dealt with in the academic environment and research. My project follows the academic studies of a resilient and sustainable environment, or strategies dealing with the issue of landscape fragmentation. I believe that my work is actively building on existing research, responds to current problems, and that it shows and defends the necessity and needs to actively address these topics both on the academic ground and in the professional field of landscape architecture. Because ecology takes a detailed interest in the characteristics, needs and dangers inherent in the animal and plant world. Landscape architects have the tools and knowledge to work with spatial strategies and landscape planning. My work builds on the discoveries of the past and in the future will be able to provide useful information to other students researching similar topics or future students will even improve their conclusions.

[8] https://www.eea.europa.eu/ims/conservation-status-of-species-under

[9] Global Assessment Report on Biodiversity and Ecosystem Services (2019), IPBES

[10] Millenium Ecosystem Assesment, UNEP