

# Graduation Plan

Master of Science in Architecture, Urbanism & Building Sciences

MSc Landscape Architecture 2024 - 2025

Maxime Lugtenburg



## Graduation Plan

Submit your Graduation Plan to the Board of Examiners ([Examencommissie-BK@tudelft.nl](mailto:Examencommissie-BK@tudelft.nl)), your mentors and delegate of the Board of Examiners one week before the P2 date at the latest.

### I Personal information

Full name	Maxime Claudet Lugtenburg
Student number	5062497

### II Studio / Lab information

Name / Theme	Landscape Based Urbanism	
Main mentor	Steffen Nijhuis	Landscape Architecture
Second mentor	Francesca Rizzetto	Urbanism
Argumentation of choice of the LA graduation lab	We often disregard the existing landscape during urbanization, only attempting to integrate it later. This reactive approach fosters unsustainable environments, contributing to issues like heat, drought, and flooding, while weakening our connection to surrounding ecosystems. I want to change this by pro-actively designing green structures in my future work, therefore this lab contributes to the focus of my professional development.	

### III Graduation project

Title of the project	<b>From Patchwork to Mosaic -</b> Establishing a Regional Landscape Park to combat fragmented landscapes
<b>Context and aim of the project</b>	
Location (region / area / site)	City triangle region
Problem statement	It has become clear we as human beings have been altering living environments all over the world (Zalasiewicz et al., 2010; Forman, 1995; Sijmons 2022). Less than 10 percent of the land surface has not been changed by human actions (Forman, 1995). This was not perceived by all as a positive development. It has become accepted to refer to this time period we live in as 'the Anthropocene', in which we have slowly become a geological power (Hamilton, 2017). As a geological power, our influence is not only on the scale of ecosystems and landscapes, but we are currently throwing planetary systems off balance

(Sijmons, 2022). As a result, our scale of changes on Earth are being compared to major events of the ancient past. Although we do not know how long this geological epoch will go on, it will negatively impact humanity, and it seems poised to globally create more adverse effects than benefits. Some of these effects are already noticeable today: habitat fragmentation, loss of biodiversity, rising temperatures and disruption of ecosystems along with numerous others (Zalasiewicz et al., 2010), with the rapid and disruptive reshaping of landscapes standing out as a key feature of this Anthropocene (Crutzen, 2002; Reid et al., 2005).

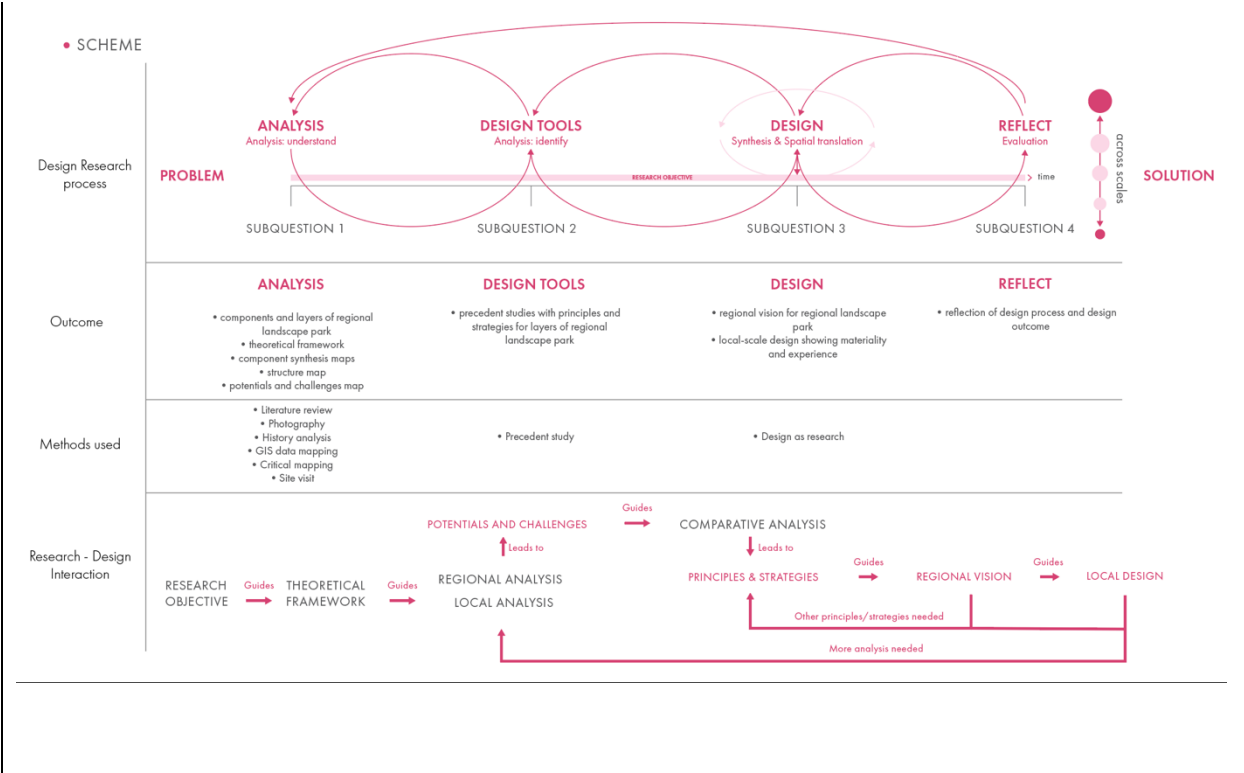
The Anthropocene necessitates us to rethink how we live, not regardless of nature, but with nature as an equal. Historically, our interaction with the environment was more sustainable, respectful and cooperative, instead of living disconnected from nature or treating it as a resource to exploit. We should acknowledge our continuing dominance over nature (Drenthen, 2018), and realise we are interconnected with the health of natural systems (Zalasiewicz et al., 2010).

To acknowledge our dominance and impact on natural system health, urges us to minimise further disruption of these natural systems, created by landscape change (Butler et al., 2022). In the Netherlands for example, the landscape has changed from a completely natural one to a human-altered, fragmented landscape of cultivation, urban areas and inaccessible leftover greenspaces (altered 'nature'), by intervening in natural areas, removing or isolating them. With this change, water flows and wildlife movement are restricted. The result is a patchwork landscape of greenspace in between buildings, infrastructure, industry and agriculture with lost social and ecological connections. This is also the case in the city triangle region, where rising urbanisation pressure, with 24.000 extra houses needed until 2030 (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, Provincie Gelderland, & Regio Stedendriehoek, n.d.), is now threatening further removal or isolation of the remaining greenspace. This means that not only habitats of species will be negatively impacted, but also that these species will encounter behavioural changes in addition to changes to their biology and interactions with other species (Fischer, & Lindenmayer, 2007). Ultimately, this will lead to more species decline, and possibly extinction (Pimm, & Raven, 2000; Reid et al., 2005; Cardinale et al., 2012; Zambrano

	<p>et al., 2019). In addition to the impact on non-humans, it will increase the disruption of geophysical processes, which potentially worsens the impact of already existing natural disturbances (Laurance, &amp; Williamson, 2001; Li et al., 2017). Therefore, it is necessary to minimize our further disruption of natural systems by creating connections and guiding urbanization.</p> <p>This goal may be achievable through the spatial concept of regional landscape parks. Regional landscape parks bring nature and people together, by including sustainable regional development with sustainable agriculture and nature conservation (Denkinger et al., 2017), combining social, economic and ecological motives (Nijhuis, 2007). Additionally, by including both ecological and social connectivity, it captures how the natural and built spatial features and properties of landscapes help people to access nature and its benefits (Butler et al., 2022). This has many benefits, such as health benefits, community formation, noise mitigation and sense of place among many others. However, the most promising service is that by improving accessibility, it can raise awareness of and concern for the environment (Wells, &amp; Lekies, 2006). Therefore, it can not only mitigate the disruptive effects of landscape change through maintenance of important processes, ecological resilience and adaptive capacity, but also by stimulating pro-environmental behaviour, indirectly mitigating further fragmentation. This potential to mitigate is even greater as it is integrated in a multifunctional landscape-scale network (Butler et al., 2022). In conclusion, a regional landscape park can help minimize further disruption of natural systems in the city triangle by pro-actively guiding urbanization through the formation of a connecting, multifunctional framework for sustainable spatial development.</p>
Research question(s)	<p>In this thesis I consider how urbanization can be guided, and awareness can be raised through a regional landscape park, examining how connecting layers can be formed by precedent studies and literature review. I argue that by using three connecting network layers, the discipline can</p>

	<p>contribute to minimization of further disruption of natural systems in areas where fragmentation and urbanization pressure takes place. The goal of this research is to raise awareness and guide urbanization through a regional landscape park in areas pressured by urbanization. Thus, the main research question is as follows: How can a Regional Landscape Park in the Stedendriehoek area, situated between the Veluwe and IJssel, be utilized to protect and develop nature and landscape, raise awareness, and guide urban growth?</p> <p>To answer this question, each chapter answers a related sub-question, through design research and research by design.</p> <ul style="list-style-type: none"> <li>- What are the components of a Regional Landscape Park and what is the current state of those components in the landscape system of the Veluwe, IJsselvalley and IJssel? (Understand)</li> <li>- What are design strategies and principles for the components of Regional Landscape Park? (Design tools)</li> <li>- How can we apply the design strategies and principles in the in between zone of the Veluwe and IJssel to create a Regional Landscape Park that increases awareness and guides urban growth? (Design)</li> <li>- What can we learn from this research? (Reflection)</li> </ul>
Design assignment	<p>Design a Regional Landscape Park with the following 3 layers:</p> <ol style="list-style-type: none"> <li>1. Ecology layer: Public green network with nature reserves which need to be developed, protected and has potential for possible rewetting;</li> </ol>

	<ol style="list-style-type: none"> <li>2. Climate adaptivity: Water circulation network with new sponge capacity;</li> <li>3. Recreation &amp; Identity: Slow traffic network connecting greenspaces with artificial heritage features such as estates and cities.</li> </ol> <p>Then design on a local scale how it will raise awareness with interactive experiences.</p>
<b>IV Graduation process</b>	
<b>Method description</b>	
<p>To be able to understand more about the components of a Regional Landscape Park and its relevance and deduct layers for creating a Regional Landscape Park, a <b>literature review</b> will be conducted.</p> <ol style="list-style-type: none"> <li>1. What are the components of a Regional Landscape Park?</li> </ol> <p><b>Site analysis</b> through the review of site-specific literature, historic maps and (GIS) datasets and <b>a site visit</b> with <b>photography</b> will help to understand the current state of the found components in the landscape system of the Veluwe, IJsselvalley and IJssel. Additionally, synthesis maps will be made where the landscape layers are laid upon each other to show relationships. After analysis of gathered knowledge, <b>critical mapping</b> will reveal the opportunities and challenges of the area.</p> <ol style="list-style-type: none"> <li>2. What do I want to change regarding these components?</li> </ol> <p>In order to find suitable design strategies and principles for components of each of the layers, <b>precedent studies</b> and a <b>literature review</b> will be carried out.</p> <ol style="list-style-type: none"> <li>3. What design strategies and principles can I use to change the components of the layers?</li> </ol> <p>Throughout this whole process, <b>design as research</b> will be used, and the process of searching for the most effective and efficient solutions for each of the layers will be iterative. The design outcome will exemplify how found design strategies and principles can be applied in the chosen site, forming design guidelines for other comparable landscapes and situations.</p>	



## Literature and more applied references

Theories central to the thesis:

- Anthropocene
- Fragmentation
- Regional landscape park
  - Landscape based urbanism
  - Rewilding
  - Greenways
  - Two network theory

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Regio

Stedendriehoek. [https://media.gelderland.nl/TG\\_270223\\_Regio\\_Stedendriehoek\\_Woondeal\\_70ee12e760.pdf](https://media.gelderland.nl/TG_270223_Regio_Stedendriehoek_Woondeal_70ee12e760.pdf)

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Precedent studies:

- Regional landscape park: Emscher park, Rhein-Main Park, Lingezege park.
- Ecology layer: (Ark) rewilding projects
- Climate adaptivity layer: Dendervalley, Kleine Nete area, Moervaartvalley

## V Reflection on the project proposal

1. What is the relation between your graduation topic, the lab topic, and your master track?

In this project a regional landscape park is used as a design tool to minimize further disruption of natural systems by guiding urbanization and raising awareness in an area that is pressured by urban growth and already encounters negative effects of our disruptive reshaping of landscapes. This regional landscape park will draw on the underlying landscape structure and can function as a future-proof, long term carrier for the landscape development of this region, including the consideration of the ecological, agricultural and urban landscape and enabling short-term interventions. It shows how urbanism can be landscape based, guided by a resilient and adaptive spatial landscape architectural framework of green-blue infrastructural layers. Therefore, it relates to the design challenges of Landscape Architecture track, but also the broader issues of the master programme MSc AUBS. Furthermore, central themes of landscape architecture are incorporated and reflected on in this thesis. Experience and palimpsest play a guiding role throughout the thesis, looking back to understand local qualities and uses and by gaining knowledge of older patterns in the landscape and deciding on what will be reactivated or ignored. Processes are considered when designing the regional landscape park and is part of the character as it exists of the earlier mentioned framework that considers future developments and supports, facilitates and provokes them. Lastly, scale continuum plays a role in this project as design of the regional park considers how local interventions influence larger systems, such as hydrological systems.

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

In the Netherlands, land surface is commonly fought over for different land uses such as greenspace, housing, infrastructure, industry and agriculture. Because of our rapid and disruptive reshaping of the landscape, it has become a patchwork landscape of lost socio-ecological connections. With the growing housing demands, remaining greenspace is threatened to be replaced or isolated with all its negative consequences.

A pro-active attitude is needed to guide urban growth and raise awareness, ultimately minimizing further disruption. My graduation work has the potential to inspire a shift in the role of landscape architects as key players in sustainable urban planning, as we are able to mediate between nature and humans, ecological and urban needs.

Additionally, my work can be a practical example of how Regional Landscape Parks can be a pro-active measure against disruption of natural systems and guidance for sustainable regional development, in areas dealing with problems associated with unchecked urban expansion. It introduces a scalable and adaptable strategy for sustainable urban growth, which can be used as inspiration for other regions facing similar pressures. This project demonstrates that landscape architecture can play a vital role in guiding sustainable land management, ultimately helping to change our way of living into a sustainable one.