

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	Wouter Daantje Benjamin Nouwens	
Student number	4995201	
Studio		
Name / Theme	Metropolitan Ecologies of place	
Main mentor	Ulf Hackauf	Environmental Technology and Design
Second mentor	Rodrigo Cardoso	Spatial Planning and Strategy
Argumentation of choice of the studio	The studio Metropolitan Ecologies of Places (MEP) compels me as it can fit my ideas/area for a thesis. My idea is to use the border region within West Brabant and the Belgian cultural area known as the Noorder Kempen. All three pillars can be applied to this area. Firstly, the pillar of designing places. As both these areas lie in different countries, their local histories and culture are different but have ties which bind them together, both in the past and present. They are not only shaped by the people but also by natural processes and the existing flora and fauna that can be found in the areas, and which often make the area stand out. The pillar on designing space and time can be seen in the multiple shifts the area and subsequent the landscape has gone through, from a barren heath land to a productive agricultural area to name one. Together with the pillar of design processes it is possible to address the current urgencies present in this area. Urgencies such as water scarcity and pollution, soil degradation, nitrogen crises, strain on infrastructure and the aging and impoverishment of the area. Using the multiscalar approach that MEP adheres, these urgencies, through the three pillars can be addressed together. Both a flow-based and a place-based approach can be implemented. A flow-based approach could focus for example on agricultural production, for instance the cultivation of strawberries in Hoogstraten, which can be found on marketplaces all the way in France or the use of land for bovine farming in Brabant. The urgency fitting this would be nitrogen and water.	

	A place-based approach can more broadly look at the entire area and address multiple flows, which in a border area such as this exist enough: flows concerning nature, society and accessibility. The use of multiple themes to guide the thesis within this studio helps me specify which urgencies I would want to address too. For instance, Urban ecology and Biophilic design could make me design a regional vision focusing on reconnecting the users of the land with the ecology present and regenerate it. Connecting to it, the theme Circular urban and territorial metabolism can form the base for a vision where a decarbonised society is the future. All in all, the Multiscalar approach, connecting Landscape and Urban design interest, the various themes and possibilities for wildly different areas and motivate me the most. Previous projects such as Q1 and Q3 really gave me most energy. Where Q1 for focused more on a place-based approach and a city-wide vision concerning water and Q3 on a flow based one concerning pollution, both sparked my interest as they look not only at a single place but a larger system, affecting not only people but also land and ecology. I am certain that the use of the three pillars and various themes can help me refine my thesis to develop a well-rounded vision for the forgotten geographic centre of the Benelux
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Graduation project	
Title of the graduation project	Northern Campine Regained: Regenerative Sustainability in a Cross-border region
Goal	
Location:	Northern Campine region
The posed problem,	[Problem Statement] In the past years, the effects of nitrogen emissions and depositions on nature and soil quality have become more and more clear. Large scale intensive farming, mainly livestock farming and increasing livestock have resulted in a stagnation in nature improvement (CLO, 2024). Paired with the constant effort to increase ecological surplus through fertilizers and other forms of intensive farming, soil depletion, ecological degradation and social decline/ impoverishment of production areas can pose a risk to the viability of such a region (Moore, 2015).

	Especially in regions characterized by low density urban development and infrastructure aimed at urban growth of neighbouring cores, these issues are visible as existing methods of planning trying to be implemented are centred around the idea of the urban core (Wandl, 2019). With the climate become more extreme in droughts and period of rain, it becomes more important to look at new more sustainable ways of production and extraction (Buckton et al, 2023). For this water and soil need to form the base to ensure sufficient water of good quality and adequate soil quality to allow farming, water storage and climate adaptation in future years (Harbers, Heijnen, 2022). Furthermore, population developments result in shifting needs of amenities and mobility which currently do not get addresses adequately (Provincie Brabant, 2022). Especially in a border region, different use of land and provision of amenities can lead to a paradox where amenities such as healthcare are nearby but inaccessible due to it being across the border. Research needs to be done on how regenerative sustainability can tackle both ecological and social issues of a production landscape along a border region incorporating both sides as one singular landscape.
research questions and	[Research Question] How could regenerative sustainability counter ecological and social depletion resulting from intensive land-use and rural shrinkage in the Northern Campine region? [sub Questions] How have intensive land uses and dispersed urban development shaped the Northern Campine region ecologically, socially and spatially over time?

	What is Regenerative Sustainability and which praxis can improve soil and ecological quality? What is Regenerative Sustainability and which praxis can improve soil and ecological quality? Which spatial structures and/or conditions can be reused or introduced to combat rural deterioration? How can Scenario development help define a future strategy?
design assignment in which these result.	[aim] The focus of this thesis lies on the Northern Campine region between Breda and the suburbs of Antwerp. With such a large scale and various subjects as main topics, the aim is not to change a single system such as water or agriculture. Instead, the aim is to create an integrated strategic vision that illustrates the complexity of various systems arising from the shift away from a production landscape towards a more regenerative sustainable one. This will be done on a multi-scalar approach combining micro-scale levels of design and policy with more meso and macro scale to achieve a. The thesis combines design and planning together with environment and technology to create a policy base leading to a final regional strategy. The results would include 1] An understanding of current policies and gaps within their envisioned goals and strategies 2] A scenario development based on a policy draft and/or proposal. These would show the spatial implications of new policies resulting from the theoretical section where concepts of rural resilience, Cross-Border Cooperation and Regenerative Sustainability are explained.

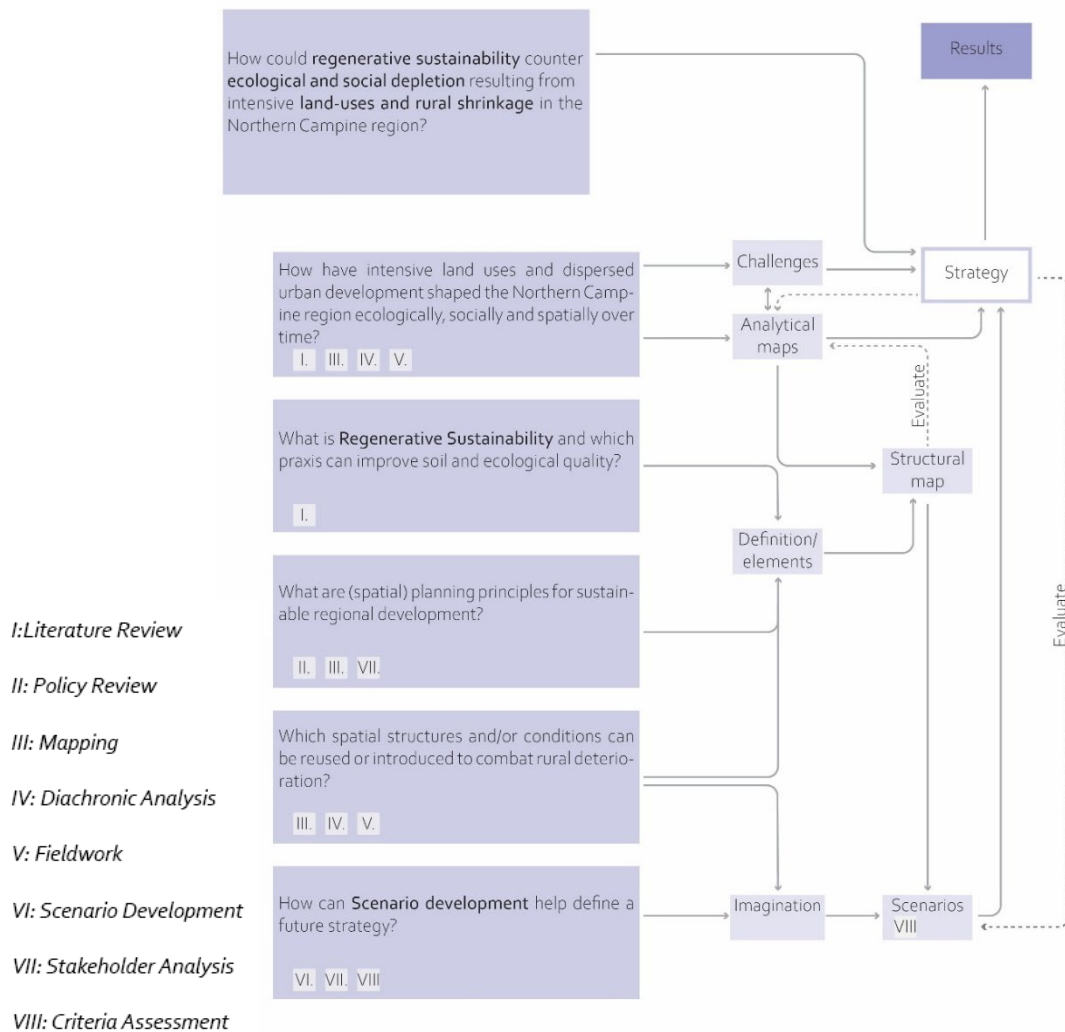
3] A Strategic regional design vision, including incorporating the policy.

4] An example design on a local and neighbourhood level to show spatial changes in urban areas and agricultural areas.

Process

Method description

[A description of the methods and techniques of research and design, which are going to be utilized.]



I: Literature review | This method consists of gathering, reading and reviewing scientific articles, books and new articles. These are summarised to conclude and review the findings. The result of this method provides an understanding of current (scientific) positions and findings knowledge gaps. Documents are found using Google Scholar, TU Delft repository and news outlets.

II: Policy review | Reading policy documents on various scale levels and topics to achieve an overview of goals and strategies implemented by governments and (national) institutions. Within this method, a qualitative analysis of the documents identifies the overlapping topics and possible gaps within the various policies. The policy documents are found on governmental databases

III: Mapping | Illustrating spatial structures and systems on maps to achieve a spatial analysis. The findings of mapping are provided in a conclusion shown in several synthesis maps according to various chapters. The datasets used are found on various sources such as PDOK, EEA, VLOPS and DOV.

IV: Diachronic Analysis | Using Historical maps, reading documents and archival texts to create an analysis of the regions history and spatial development. The outcome provides historical context and traditional systems that were in place in the region.

V: Fieldwork | going to the region to conduct fieldwork tries to provide a better understanding of the regions systems. These can be natural, social and economic. This method expands on the mapping and diachronic analysis to give more detailed spatial information of how the systems have shaped the area. Multiple moments and scales of fieldwork can provide information on the many systems addressed in the region.

VI: Scenario Development | Based on the outcome of various analyses, different scenarios through varied design products and policy can give ideas of alternative futures

VII: Stakeholder Analysis | Illustrating the various stakeholders and levels at which they operate provides insight in the needs, relations and goals that they have. This can help with a scenario development. Sources to find the stakeholders can be news articles, government sites and local groups.

VIII: Criteria Assessment | Setting up criteria based on analyses conclusions to form a base for evaluation. These are based on the findings in the literature review, policy analysis and the problem field.

Literature and general practical references

[The literature (theories or research data) and general practical experience/precedent you intend to consult.]

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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 focusses on the relation between spatial planning and design to address issues that past choices in politics, design and systems have created. A new approach around land use and development through regenerative sustainability to allow systems to change with ecological changes and limits. Using concepts and theories pertaining to cross border cooperation and resilience the link with MEP is visible. This is due to broader systems being investigated and designed. Due to the territorial concept in a geographic region that is divided between two nations, domains of planning, landscape, water and energy and ecology are covered. This interdisciplinary approach together with the multiscale levels of analysis and design fit well with the MSc Urbanism

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

[social]

The relevance can be divided into two main components. Firstly the broader communities of the Northern Campine and secondly the accessibility of rural villages. The second is primarily applied to site specific elements of the Northern Campine but could form a base for similar frontier regions in Europe. This thesis is relevant to the communities in the Northern Campine as it tries to address the social depletion and lack of functions within it. The thesis does not give a final implementation but provides a strategy consisting of design and policy elements on how to change living patterns and land use to provide a vital village core. Secondly, the accessibility of rural villages is relevant as increasing aging and decreasing population results in changes in mobility (Provincie Noord Brabant, 2023). Shifting away from a profit driven model of transportation, this thesis provides a new system of rural transportation aimed at increasing accessibility. As the location qualities and elements are similar to various rural areas across Europe, the design and policy proposal could be relevant to other locations. This results in the thesis making it relevant to not only the direct Northern Campine but to other border regions too.

[scientific]

Regenerative Sustainability and Cross Border cooperation have been well documented in the past years. However, they have often remained quite theoretical. The relevance of this project within the scientific field will be the following: Through its exploration of regenerative sustainability and cross border cooperation, the aim is to create a set of policies and design interventions to achieve the many goals stated by national and local governments. By providing direct design interventions

through spatial design, this project will expand on the scientific theory. For further research or design, the way policy aims are combined into new policy draft and proposal to eventually create spatial scenarios can form a guide for future research and design implementing policies into scenarios.

[professional]

The project explores the design implementation of regenerative sustainability on a larger scale. This is relatively unexplored as the concept mostly focusses on small scale theoretical implementations. Through an understanding of spatial and political conditions, the spatial and territorial aspects form the focus. Additionally, the project tries to include local networks of organisations with the goal of a design a policy system based on local needs instead of regional demands.