Graduation Plan

Master of Science in Architecture, Urbanism & Building Sciences

MSc Landscape Architecture 2024 - 2025

[Xinran Wang]

Graduation Plan

Submit your Graduation Plan to the Board of Examiners (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	Xinran Wang
Student number	5981832

II Studio / Lab information		
Name / Theme	FLOWSCAPES	
Main mentor	René van der Velde	Landscape Architecture
Second mentor	Daniele Cannatella	Urbanism
Argumentation of choice of the LA graduation lab	I am fascinated by the profound social interaction between human beings and the environment, which is why I chose the urban forest lab. Looking back on my childhood, the forest is a place that carries my exploration and harvest memories. As time goes by, it is also a symbol of memory and renewal. It is not only a symbol of personal connection, but also a symbol of broader ecological and cultural narrative. In the Netherlands, forests give me a new perspective on the intersection of urban life and natural systems, and inspire me to explore how landscape architecture creates space to promote resilience and meaningful links between people and the environment.	

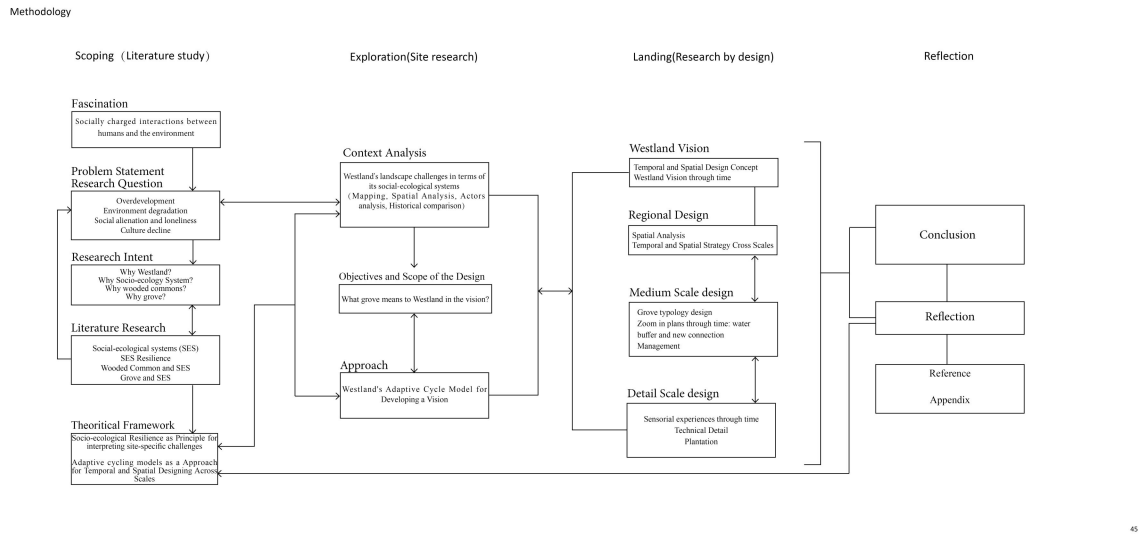
III Graduation project	
Title of the project	From Glass to Grove - Exploring Westland's Socio-Ecological Vision through Wooded Commons
Context and aim of the project	
Location (region / area / site)	Westland, Netherlands
Problem statement	Social-ecological systems (SES) are dynamic, interdependent systems characterized by continuous interactions between people and nature. People modify and care for nature, which, in turn, provides both material and immaterial benefits. These reciprocal relationships occur within specific landscapes and across spatial scales, as human actions in one location influence ecological systems elsewhere, and vice versa (Reyers et al., 2018; Folke et al., 2016). Such frameworks help to capture the complexity of human-nature interactions and emphasize the importance of understanding localized and global ecological processes simultaneously (Berkes et al., 2003). However, traditional approaches to studying SES often focus on surface-level events, such as natural disasters, species

	extinctions, or environmental degradation, as they are immediate and visible (Gunderson & Holling, 2002). These events used, but they are underpinned by deeper systemic elements, including recurring patterns, underlying structures, and mental models that shape how humans interact with the environment (Meadows, 1999). For instance, patterns such as overextraction of resources or land-use change are rooted in mental models of growth-oriented economic systems that disregard ecological thresholds (Steffen et al., 2015). By addressing these deeper layers, researchers can move beyond symptom-focused interventions and propose transformative solutions that address root causes of ecological degradation (Folke et al., 2021). In the 1990s, C.S. Holling's resilience theory brought a new dimension to SES, emphasizing ecosystems' capacity to absorb disturbances and reorganize while maintaining core functions. This idea influenced adaptive management strategies, pivotal in designing landscapes capable of coping with uncertainty and change (Folke et al., 2002). Applied to the urban environment, social-ecological integration focuses on enhancing the composition and configuration of urban spaces, which can potentially fulfill ecological and social goals in a combined way (Ahern, 2013; Alberti et al., 2003). However, the unevenness of the urban landscape makes some spaces more suited than others (Claudiu Forgaci, 2018). In this research, wooded commons are chosen as a focus because they refer to shared, often communal spaces with trees and vegetation, implying a multi-functional landscape that incorporates social interaction, ecological processes, and cultural heritage (Konijnendijk, 2019). Westland exemplifies a economy driven region, where green public spaces are rapidly diminishing under the pressures of agricultural industrialization and urbanization. This not only exacerbates environmental degradation but also intensifies social fragmentation and erodes local identity. Land-use conflicts, environmental challenges associated with greenhouse agriculture, the social integration of migrant workers, and the weakening of cultural heritage are key social-ecological challenges that Westland faces today. Nowadays, it is crucial to examine the challenges of Westland from a socio-ecological perspective, connecting social issues with environmental concerns rather than addressing them in isolation. This research aims to explore Westland's future socio-ecological vision and how the physical spaces of wooded commons can be utilized to enhance social-spatial quality within this vision. Wooded commons or groves serve as buffers that

	accommodate dynamic changes in urban environments, including the shifting dynamics of human activities, environmental changes, and the interactions and exchanges of diverse cultures. This design focuses primarily on the transitional spaces between urban and rural areas - the spaces between the 11 village centers in Westland. These areas are ideal for maximizing social participation across different groups and utilizing leftover urban spaces to create flexible spaces that integrate into both agricultural and urban landscapes. Current research primarily addresses the reflection and transformation of agricultural landscapes or systems in metropolitan and the social studies of farmers and seasonal laborers. However, there is relatively small amount of exploration of the integration of socio-ecological perspectives and landscape design in greenhouse-intensive urban areas like Westland. This gap is the focal point of this study.
Research question(s)	How to improve landscape quality and foster a resilient social-ecological system in an economic-driven region like Westland through redesigning wooded common? Sub-questions: - How to understand Westland's challenges in terms of its social-ecological systems?(Context analysis) - How to design a resilience vision for the future of Westland based on ecosystem services and using adaptive cycle theory as a approach? (Approach) - What is the potential for wooded common on temporal and spatial demision to foster westland 's more resilient social-ecological system? (Strategy and Design) - Which models of governance and maintenance are most effective for sustaining this system?
Design assignment	The design aims to provide a vision that fosters a resilient and liveable social-ecological system for the future of Westland's region's well-being — a region rich in landscape history but poor and limited in green quality due to urban agriculture(glasshouse). The hypothesis is that the theory of socio-ecology and specifically the wood commons model could provide principles for design.

IV Graduation process

Method description



The research methodology of this thesis project is structured around three main approaches: literature study, site research, and research-by-design. These approaches are embedded within a process framework divided into four main phases: Scoping, Exploration, Landing, and Reflection.

In the Scoping phase, the problem statement and research questions guided the selection of relevant theoretical concepts, particularly focusing on Social-Ecological Systems (SES), Socio-ecological Resilience, and the relationship between SES and Wooded Common and Grove landscapes. The main objective of the literature review is to develop the theoretical framework while refining the problem statement and research questions. Two theoretical perspectives are emphasized:

Socio-ecological Resilience as a principle for interpreting site-specific challenges, and the adaptive cycle model as a conceptual approach for temporal and spatial design across scales.

The Exploration phase analyzes the social-ecological challenges of the Westland region, including its ecological habitats, hydrological conditions, urban development history, social tensions, and the loss of cultural and ecological heritage. Historical and current SES structures and trends are examined to extract concrete design goals. Based on these goals, with the aid of the adaptive cycle model and ecosystem services framework, a long-term development vision for Westland is formulated. In this phase, site research also contributes to the refinement and grounding of the theoretical framework by contextualizing it within the specific regional background.

The Landing phase corresponds to the research-by-design process. Combined with the theoretical framework, this method enables exploring multiple design possibilities across scales. Through a gradual zoom-in approach, the design process moves from strategic to spatial and detailed scales, allowing for critical reflection and iteration across different levels

of intervention.

Finally, the Reflection phase evaluates and synthesizes the research and design outcomes. This stage is used to assess the effectiveness of the design in addressing the research questions and to further refine the thesis's conclusions and contributions.

Literature and more applied references

Theories central to thesis:
Socio-ecological system
Wooded common
Grove

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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, I wants to explore the social interaction between the public and landscape space, and use social space such as wooded common as a medium to mediate social and ecological contradictions. This is consistent with the social issues concerned by wooded common of urban forestry lab this year. At the same time, I will also incorporate the core theme of landscape design into the design scheme. In particular, perception, palimpsest and Process will be important aspects of the design process.

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

My graduation project is expected to have relevance in social, professional, and scientific contexts. Socially, it aims to ease issues of "social fragmentation" and insufficient green quality in industrialized urban areas by exploring the design of resilient "wooded commons" that could foster interaction among diverse groups and enhance community well-being. Professionally, the project seeks to demonstrate how landscape architecture can bridge ecology, urbanism, and heritage to create shared spaces with a strong sense of place. Scientifically, the research aspires to contribute to the integration of socio-ecological perspectives and landscape design in greenhouse-intensive urban areas, filling a gap and offering insights into agricultural landscape transformation and social studies.