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	Roos te Velde
Student number	4646517

Studio		
Name / Theme	Metropolitan Ecologies of Places	
Main mentor	Cecilia Furlan	Environmental Technology and Design
Second mentor	Remon Rooij	Spatial Planning and Strategy
Argumentation of choice of the studio	The interrelation between environmental and socio-cultural dynamics is what interests me. How can new values be created or changed? A big shift is needed in the way we organise our society to repair the harmony between the planet and its residents and to ensure that the earth remains liveable for life in the future. This is becoming more widely known, but spatial interventions are lacking. Dutch urban planning still focuses on cities in the western part of the country, below sea level. My thesis investigates how spatial imaginations can help develop another way of thinking about managing space. This is in line with the studio, which focuses on transitions and with that, the relationship between design, space, and life.	

Graduation project	
Title of the graduation project	**Regrowth** – Imagining new values for space
Goal	
Location:	Zwolle region, the Netherlands
The posed problem,	**Problem** | The way space is valued is deeply influenced by the economy (Savini, 2022). Due to technological advances, the Dutch have been able to transform swampy and uninhabitable land into one of the wealthiest countries in the world (Rutte, 2023). However, this modification of natural forces and land has caused a growing disconnection between where and how we live, and the space we occupy. This is now starting to show its consequences. Subsidence and flooding are increasingly common and even banks are starting to question the insurance of housing in certain places (Phlippen et al., 2023). Despite these challenges, new housing plans continue to focus on areas where things are going well, constructing more houses, and simultaneously attempting to solve ground-related issues and reduce flood risks as much as possible. In the ongoing housing crisis, there is a growing tendency to construct new homes as quickly and extensively as possible (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2022). Considering the lifespan of a house is around 100 years and the urban structure even longer, it is essential to pivot the way housing is planned.

	There are good intentions from the government that wants 'water and soil system to be guiding for spatial planning' (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2023) and scholars who write about transitions and alternatives to the economic growth paradigm (Jackson, 2019; Hickel, 2020; Savini, 2021; Savini, 2022; Schenderling, 2022). However, a gap remains when it comes to the spatial implications and convincing tools for policymakers, planners, designers, and residents on how to get the housing system to thrive within social (enough, affordable, adequate typologies, safe) and ecological boundaries (land conversion, biodiversity, climate change, biosphere integrity). This thesis aims to find a new way of valuing the scarce space we have. An alternative future is proposed that allows us to both stay within the earth's ecological carrying capacity and provide adequate housing for everyone, now and in the future. Moreover, it shows that such a future is desirable. Aim | This project aims to imagine a spatial design of an alternative growth of the Zwolle region, where current strategies face a disconnection between economic risks, housing crisis, and ecological sustainability. A redefinition of the social and ecological boundaries of the housing system will be set out, relinking economic prosperity and the ecological system. A new way of valuing the space is needed to make a possible future - in which housing is a right instead of a product and nature is intrinsically valuable - a desirable future. By developing strategic design interventions and envisioning a new valued-based regional design, this project fills a part of a research gap which is the translation of transitions into spatiality.

research questions and	The central research question guiding this project is: *How can a new valued-based spatial vision stimulate an alternative growth in the Zwolle region in which the housing system can thrive within social and ecological boundaries?*
	
	This overarching question will be answered using several sub-questions:
	
	1. *What are the social and ecological boundaries in which the housing system should lie and how does the Zwolle region align?*
	  o Aim: set boundaries of the housing system and analyse the region using that framework
	  o Methods: literature review, policy/stakeholder analysis, analytical mapping, (qualitative) interviews, fieldwork
	  o Outcome: framework and analytical maps, diagrams, and stories
	2. *What spatial requirements are needed for alternative growth in the Zwolle region, letting the ecological system grow and the economy thrive?*
	  o Aim: understand how economic growth is intertwined with spatiality and what spatial interventions are needed for the water and soil system to thrive
	  o Method: diachronic review, (contextual) interviews, scenario building
	  o Outcome: structural map, scenarios
	3. *What are strategic design principles or interventions that form a new valued-based spatial design to transform the housing system to align with the social and ecological boundaries?*

	○ Aim: understand what is needed to change and what that could look like ○ Method: mapping, policy/stakeholder strategy ○ Outcome: imagination of different scenarios, requirements for strategy
design assignment in which these result.	See sub question 3. There will be four scenarios based on the extremeness of the transition in values. These will be worked out on regional level, with zoom in on three soil types (Flevopolder reclamation, low peat area, high sand area). There are also two microstories; stories based on interviews with inhabitants of two different areas, to show what the different scenarios mean to them. The designs will be evaluated with the framework developed in SQ1.

Process

Method description

The main methods include mapping with input from policy and history analysis, doing interviews (to either collect information for the governance and value analysis or to collect information for the micro-stories), and scenario building which will be illustrated with imaging and storytelling.

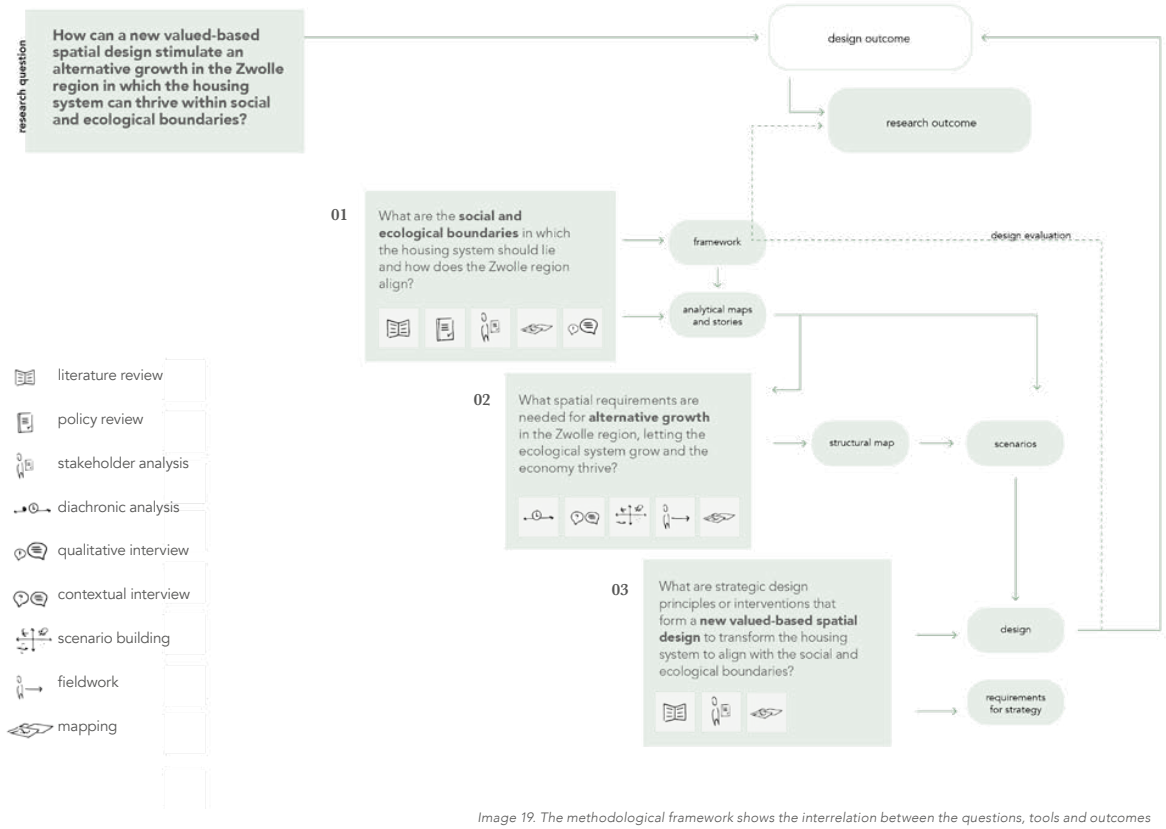

Image 19. The methodological framework shows the interrelation between the questions, tools and outcomes

Literature and general practical references

This thesis builds on the imagination of a post-growth society. This is an attitude in literature that addresses the "limits-to-growth" dilemma. In 1972, the Club of Rome published a book titled "The Limits to Growth" (Meadows

et al., 1972). The book was a response to the system of economic and population growth and warned that the earth may not be able to sustain itself beyond the year 2100, even with advanced technology (Meadows et al., 1972). The research was based on five basic factors, such as population increase and non-renewable resource depletion. Using different assumptions, the authors created multiple scenarios that formed a warning: we could live within the earth's boundaries, but we must change our way of living. It now has been fifty years since the Club of Rome reported on the state of the earth's ecosystem. As stated in the problem statement, unfortunately, the Club of Rome was mostly right. The Stockholm Resilience Centre recently highlighted that humankind surpassed six out of nine processes that regulate the planet's stability known as planetary boundaries (Richardson et al., 2023). Exceeding these limits is highly dangerous as they are all interconnected, and most overshoots cannot be reversed.

Dualism | In the 18th century, philosopher Descartes' vision of dualism became a leading value in European society (Hickel, 2020). This vision is based on a clear distinction between humans and the rest of the living world. This laid out the base for our current economic system, which is built on the idea of perpetual growth, requiring continuous depletion of resources and space (Schmelzer, 2015). Current policies count on technology to solve any problems along the way. It is still widely believed that economic growth is essential for social and ecological development and has therefore been the foundation of political systems since the last century (Schmelzer, 2015). Important to note here is that this paradigm of economic growth is relatively new and only started to take off after World War II. Before the Second World War, there was 'hardly any trace of interest in economic growth' (Arnd, 1978). The OEEC (Organisation for European Economic Co-operation), hugely affected by the war, did not aim to go for endless growth but wanted to get the economy back to a 'satisfactory' level and maintain it there. However, national goals quickly became centred around economic expansion, turning difficult political conflicts into technical questions on how to collectively increase GDP (Schmelzer, 2015). Growth became a common good.

There are several reasons why this approach is not sustainable, as highlighted by the Club of Rome and numerous studies afterwards (Meadows, et al, 1972; Hickel, 2020; Schenderling, 2022). Firstly, the earth's ecosystem simply cannot sustain the ongoing expansion of consumption, as resources and space are finite. Secondly, the system is based on the Global South bearing the burden of the ecological debt created by the Global North. Lastly, research has demonstrated that there is no correlation between a country's economic growth and the well-being of its citizens after a certain point of prosperity. Although there is a certain threshold where economic growth can contribute to well-being, most European countries reached this threshold in the 1970s and have not seen significant improvements in human well-being since (Schenderling & Olthaar, 2023; Philips et al., 2021). The reliance on the ongoing expansion of the economy is destroying the planet and it is proven impossible to decouple economic growth from sustainability because of the Jevons paradox (Jackson, 2021; Schenderling, 2022). Scholars even call Sustainable Development Goal 8, Economic Growth, a trojan horse, because of which the other SDGs will not be achieved (Meynen & Martinez Alier, 2019).

Post-growth | The concept of post-growth provides an answer to this paradigm. Post-growth is an approach that argues that unlimited expansion of production and consumption is not imaginable on a finite planet (Savini, 2022). It describes a timeframe, the one after the timeframe of economic growth, and is an alternative to the approach of Green Growth, in which the goal is to decouple the economy from sustainability (EU, 2022). Degrowth is a planned contraction of economic activity, aimed at increasing well-being and equality (Schmelzer, 2015). Compared to the concept of post-growth, it provides a more concrete plan of what is needed, that is to find a place to thrive within the planetary boundaries. The term degrowth arouses many uncomfortable feelings among policymakers. A reason for this is that degrowth asks for a reduction of excess in the wealthy side of society. That side is usually well-represented in government and much 'lobbied for', for example, the aviation industry (Savini, 2022). This project imagines a future in the post-growth era. The term degrowth will be avoided as it is not a goal to do something about the economy, but more to think about new leading values.

Doughnut economy | Both concepts of degrowth or post-growth aim for a system that lies within the ecological boundaries of the planet. As stated in the problem field, the other important side of the goal should be the social boundaries of society. The Doughnut Economy by Kate Raworth (2017) provides a framework for this. Raworth takes the nine planetary boundaries as the outside borders and takes ten social minimal boundaries as the inside borders, creating a doughnut shape. Compared to the concept of post-growth and degrowth, this framework is more concrete on what needs to be done. It is a tool to get to a post-growth society and provides an alternative measurement to the well-known GDP.

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 focal point of my graduation project centres around exploring values in spatiality and understanding how these values influence decision-making. This theme aligns seamlessly with the studio's emphasis on the intersection between system and design thinking, specifically exploring how ecological and social structures influence one another. Within the Urbanism track, the importance of spatial design is underscored, emphasising the narrative power of envisioning alternative futures. This also comes back to the core philosophy of the master's program, where thinking about the built environment encompasses design, science, and societal considerations.

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

My graduation delves into the spatiality of transition, showcasing the crucial role of urbanists in bridging the gap between government policies and the needs of inhabitants. This involves the ability to perceive both short-term needs and long-term urgencies, thereby embracing the complexity in urban planning. Addressing the governmental taboo surrounding postgrowth, my project not only tries to demonstrate desirability but also feasibility, contributing valuable insights for societal progress.

Further reflection (draft for P3):

3. What is the relation between research and design in your graduation project?

In this thesis, the design is not offered as a solution for a defined problem. It is used to imagine a progress of a shift in organising society, in particular the way we plan and use housing, in a different way. It functions as a powerful communication tool and acts as a test for the research, evaluating the practical application of post-growth concepts in the real world. The design becomes a tool to test and validate the conclusions drawn from the research.

4. How do you assess the value of your way of working (your approach, your used methodology)?

My approach and methodology are characterised by a strong theoretical foundation, leveraging existing research. While the use of prior studies, about the system as well as the region, is worthwhile, there is a challenge of becoming immersed in an abundance of data.

5. How do you assess the academic and societal value, scope, and implication of your graduation project, including ethical aspects?

There is a relevance to broader discussions on spatial transition and the role of visual imagination. If it were really to be implemented, conversations with inhabitants as well as policymakers are crucial, exploring the benefits and new values associated with post-growth scenarios.

6. How do you assess the value of the transferability of your project results?

The value of the transferability of my project results is substantial, given the choice of a region often referred to as "a small Netherlands." The project's applicability to similar climate-related challenges in the larger country makes it relatively transferable to other regions in the Netherlands. While a nationwide transfer is cautioned against due to complexity and scale, the governance aspects are transferable to regions with similar

administrative structures, especially in smaller, interconnected areas. It is noteworthy, however, that the region's self-sufficiency in economic terms may impact the transferability to certain contexts.