

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	Tejon Kraan
Student number	██████████

Studio	
Name / Theme	Metropolitan Ecologies of Places
Main mentor	Marjolein van Esch Environmental Technology and Design
Second mentor	Deepti Adlakha Urban Studies
Argumentation of choice of the studio	Our cities are conceived through many ideals, concepts and values. Therefore the metropolitan context, which this studio is focused on, becomes a place of many contradictions. Together they form an intricate ecosystem of ideas that shape our everyday life. Spaces inside cities are limited. Due to this scarcity of space, different ideals, concepts and values will inevitably compete. Within this studio, I will be able to examine a paradox that occurs in our cities.

Graduation project

Title of the graduation project

Designing Healthy Density, From Paradox to Nexus

Goal

Location:

Overvecht-Zuid, Utrecht, the Netherlands

The posed problem,

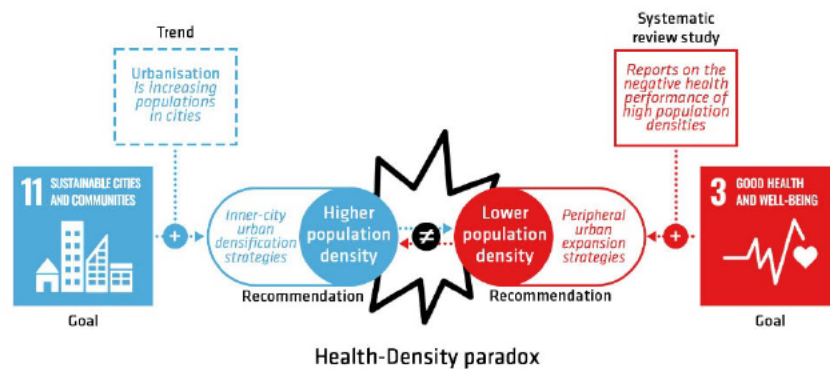


Figure 1 A sequence diagram summarising the Health-Density paradox, by Tejon Kraan.

Problem statement

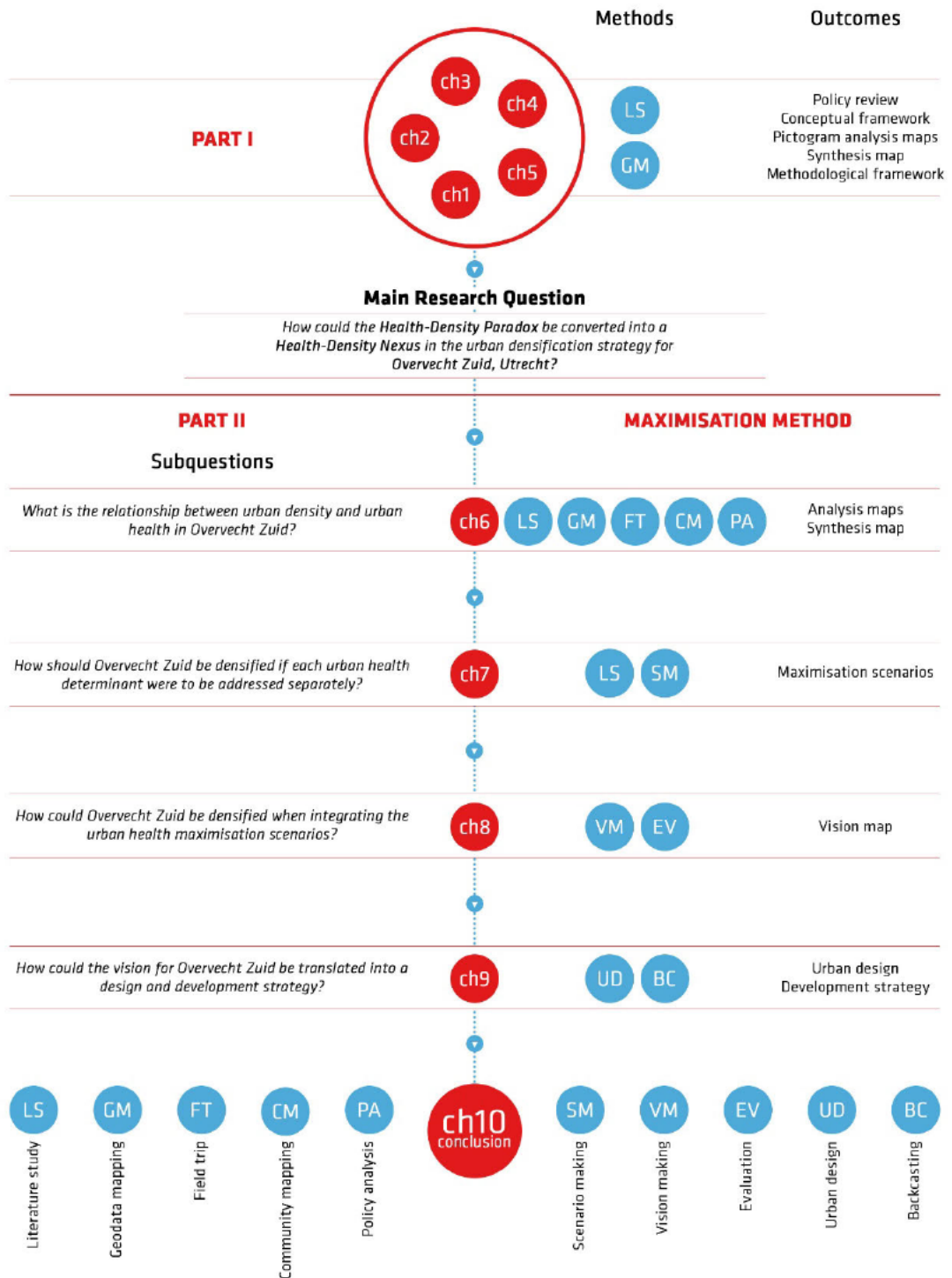
Despite efforts to meet the sustainable development goals (SDGs^[1]) with inner-city urban densification strategies, a paradox appears^[2]. The ambitions for SDG 11: sustainable cities and communities on the one hand, and SDG 3: good health and wellbeing on the other, result in contradictory urban density recommendations. In an increasingly urbanising world^[3], inner-city urban densification is a crucial strategy^[4] in the face of creating sustainable cities and communities. However, these strategies should not come at the expense of the health of urban residents. Yet, extensive research shows that higher population densities do lead to certain health issues^[5]. This paradox is specified as the Health-Density paradox (see Figure). Perhaps a study, exploring the Health-Density paradox by examining the interplay between its key topics, can remedy the situation and convert the Health-Density paradox into a Health-Density nexus in the case of context-specific inner-city urban densification strategies.

	<p>[1] United Nations, 2015 [2] Schonebeek, 2024 [3] Deelen et al., 2020; Galea et al., 2019; Groot et al., 2018; PBL en CPB, 2015 [4] Garnett, 2017; Nabiliek, 2012 [5] Beenackers et al.,2024; Berghauser Pont & Haupt, 2021; Lungman et al., 2024; Nidhy et al., 2020; Ramly et al., 2024</p>
<p>research questions and</p>	<p>Main research question: How could the <i>Health-Density Paradox</i> be converted into a <i>Health-Density Nexus</i> in the urban densification strategy for Overvecht-Zuid, Utrecht?</p> <p>Sub questions: <i>What is the relationship between urban density and urban health in Overvecht Zuid?</i></p> <p><i>How should Overvecht Zuid be densified if each urban health determinant were to be addressed separately?</i></p> <p><i>How could Overvecht Zuid be densified when integrating the urban health maximisation scenarios?</i></p> <p><i>How could the vision for Overvecht Zuid be translated into a design and development strategy?</i></p>
<p>design assignment in which these result.</p>	<p>A spatial design exploration for the inner-city urban densification of Overvecht Zuid to improve urban health in the area.</p>

Process

Method description

To answer the main research question this thesis will make use of the Maximisation method and is thus structured accordingly. The methodological framework below describes this structure by providing the subquestion, methods, and intended outcomes each chapter will be concerned with.



Literature and general practical references

Literature:

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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)?

As was stated in the problematisation, the main concepts of my thesis (urban density and urban health) are entangled in a paradox. The ambitions for sustainable cities and communities on the one hand, and good health and wellbeing on the other, result in contradictory urban density recommendations. The metropolitan context, which this studio is focused on, is a place of many contradictions. Different ideals, concepts and values will inevitably compete. Therefore, within this studio, I will be able to examine this paradox.

The concept of urban density and urban densification strategies are quintessentially urban phenomena. The way they influence the health of urban dwellers is emphasized by applying the "urban health" concept, which is a broader understanding of health, including the social and environmental perspectives of health. These topics are also central topics in the Urbanism master track, Therefore, urban health is strongly connected to the subjects of the Urbanism master track as well.

Within the AUBS master program, this thesis addresses contemporary issues connected to the built environment. The paradox explored in this thesis can support a better understanding of resolving alike paradoxes that might occur in the built environment. Moreover, it is a step toward reaching the Sustainable Development Goals, which is strongly related to the philosophy of the faculty.

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

My thesis is socially relevant because it will give insight into a paradox within the Sustainable Development Goals. By examining the interplay between SDG 3 and SDG 11, my work will aim to enhance urban health through inner-city urban densification strategies. To do so, my thesis will cover social issues such as the Dutch housing crisis, social segregation caused by health disparities, and urbanization to contribute to more inclusive, equitable and just cities.

Professionally, my thesis will provide urban planners, designers, and other professionals who work within the domain of the built environment, a framework to navigate the conflict between inner-city urban densification strategies and urban health. Thus, it will offer evidence-based recommendations for integrating health into these strategies with a context-sensitive approach.

The scientific relevance of my thesis is rooted in a knowledge gap: throughout history, experts and decisionmakers have disagreed on the optimal urban density for protecting urban dwellers against disease, as well as increasing health and wellbeing among them. My thesis will try to bridge this knowledge gap with a context-specific approach. Furthermore, it provides a foundation for future research on optimizing the Health-Density nexus in different urban contexts.