Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Graduation Plan

Personal information	
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Studio	
Name / Theme	Design of the Urban Fabric	
Main mentor	Rients Dijkstra	Section Urban Design
Second mentor	Zef Hemel	Section Spatial Planning & Strategy
Argumentation of choice of the studio	The approach of the Design of the Urban Fabric studio is design driven, explorative and imaginative. I am taking the chance to spend the graduation year on researching and designing a future that is rather unexpected, yet it might be exactly what the city, its people and the planet need. In other words, I would like to explore another way; another perspective for the design and the use of the urban landscape. I am imagining a future in which walking to your destination is not something unusual. I am designing for a world in which walking is a very natural part of the daily routine. Our society is maybe not ready for it yet, but we might be in a couple of decades from now. I aspire that my explorative graduation project can be a first step towards the right mindset.	

Graduation project	
Title of the graduation project	**Walk your way to Joy** An urban design exploration that will nudge people to walk, for a joyful future of Rotterdam

Goal	
Location:	The neighbourhoods of Pendrecht and Oude Westen (Rotterdam); and extending to the city scale of Rotterdam inside the ring road.
The posed problem:	'Who Is the City For?', Montgomery (2015: 233) asks himself justly. Research from Milieudefensie shows that 55% of the public space in the Netherlands is dedicated to cars, driving and standing still (Van Liere et al., 2017). This is also visible in the city of Rotterdam, which has undergone a period of reconstruction after the bombardment in the second world war. Once a very lively city, with small ports and canals, people walking and talking. An urban fabric that allowed for life to take place outside, on the streets. However, with all the good help that the Marshall plan has brought for the reconstruction of the city, it has also brought the American idealism of car centric design (Verkade & Te Brömmelstroet, 2020). And thus, Rotterdam is now left with large city streets that function as pipelines to assure a constant flow of cars (Te Brömmelstroet, 2023). The human scale is lost in these streets, making them boring, uninteresting and not inviting for walking (Gehl, 2010). As Broekmans (2023) expressed it: 'If we design for cars, people will use cars'.

The benefit of a car centric city is that people can drive fast and comfortably from A to B, saving travel time and thus, according to the capitalist system, saving money. However, the time people are willing to spend on traveling has stayed the same over almost half a century, despite the increased velocity of mobility. This is what Hupkes and Zahavi call the *travel time constant* (Verkade, 2018). Since technology has made it possible to travel much faster, people travel now much further. This effect has been strengthened by postwar city planning, in which areas for working and areas for living have been separated on purpose. Pleasant living environments could be build further away from busy cities, as a result of the rise of the private car (Kluiters, n.d.). A residential city like Spijkernisse provides an attractive living environment for people working in Rotterdam (Schipper, 2023), but at the same time it forces its residents to travel further to get to work, and to other amenities. So, technology and city planning together have been encouraging the use of private cars in a city serving for a constant flow of vehicles.

As the travel time constant implies, people seem to be willing to travel long and far, but it does not make them happy. On the contrary, long commutes have led to mental health problems, such as depressions (Montgomery, 2015). This model of mobility encourages individualistic behaviour: one gets into his/her private vehicle and does not have social encounters with a diversity of other individuals who are also on their way (Te Brömmelstroet, 2023). This does not help with the increasing loneliness among the society (CBS, 2022b); in 2022 only 13% of the Dutch population had daily contact with their neighbours (CBS, 2023). Car mobility also does not stimulate physical health, while around 50% of Dutch adults is overweight (CBS, 2022a). So, car centric city planning has negatively impacted the mental, social and physical wellbeing of its residents.

Moreover, car mobility has a lot of negative side effects, that seem to be taken for granted in our society. First of all, it leads to 'manslaughter' as people would call it during protests against cars in the 1970s. Worldwide, 400.000 people die in traffic accidents per year. To put it in perspective, there are more deaths from cars than from wars (Montgomery, 2015). Environmentally, cars also cause problems: noise and air pollution as a result of the particulate matter, leading to health problems (Milieu Centraal, n.d.). High amounts of asphalt and pavement to facilitate car traffic result in the Urban Heat Island effect in large cities like Rotterdam. Furthermore, more space for asphalt means less space for greenery, while we are worldwide dealing with a biodiversity crisis (Oke et al., 2021).

Next to the biodiversity loss, the planet is dealing with two other large crises: climate change and depletion of raw materials (Hemel, 2023). While over the past decades the travel time has been constant, the energy-use for mobility has exploded (Hemel, 2023). Car mobility has a high carbon footprint (TNMT, 2021). In the sustainable mobility strategy from the European Union, the focus still lies on new technologies as *the* solution– smart mobility, autonomous vehicles, electric vehicles (European Commission, 2020). New technologies will need new materials, energy for production and energy for the use of the vehicles. Moreover, these innovations will expectedly only strengthen the current mobility model of going fast and far, instead of solving the broader set of social, environmental and wellbeing issues caused by it.

Problem statement:	The city of Rotterdam is currently designed to accommodate a constant flow of car traffic, which neglects the function of the city to serve as an environment for social interactions, healthy behaviour and happy people.
Research questions:	**How could urban design nudge people to primarily walk through the city, for a joyful future of Rotterdam?** 1. How has (car) mobility developed in Rotterdam? 2. What is the relation between walking and joy? 3. How to nudge people to walk? 4. What is the economy of urban amenities (in Rotterdam)? 5. What potentials do the chosen neighbourhoods have for walking? 6. How to design a walkable neighbourhood? 7. How to expand walkability to the city scale?
Design assignment:	The design assignment starts on the scale of the neighbourhood. Two neighbourhoods with different urban fabrics, one prewar (Oude Westen) and one postwar (Pendrecht), will be taken as exemplary cases for the design. The goal of the urban design is to nudge people to walk significantly more. This will be a combination of proximity of urban amenities and attractive walking routes. From the walkable neighbourhood, the design will be expanded to the city scale: Rotterdam inside the ring road. The assignment on the larger scale will be to create attractive walking connections to nudge people to also walk longer distances in the city. The design assignment starts from the walking experience and everything that is needed to make walking attractive, easy and comfortable. In part, the design will also touch upon making fast mobility less attractive. However, an extensive (re)design of other mobility systems falls outside the scope of the project.

Process

Method description

Drastic change is necessary to solve the complexity of the current crises. My graduation project is therefore imaginative and explorers a what if scenario. The methodology is design driven. Design explorations are alternated continuously with research, when additional literature or analysis are needed. The benefit of a design-driven approach is its ability to think in possibilities, rather than be limited by the current way of thinking.

I am convinced that a design-driven approach is valuable, because it allows to explore a completely different way to shape and use the urban space. It takes courage to step away from the current system, because people tend to be reluctant to significant changes in their daily lives (Thaler & Sunstein, 2008). As an urban designer, I can show an alternative way to move in the city, a joyful alternative.

Intended outcomes
- Theoretical understanding of mobility, walkability and the relation to joy.
- Redesign of two or three walkable neighbourhoods in Rotterdam: plans + sections + eye level perspectives.
- Spatial plan for walkability on the scale of Rotterdam inside the ring road.
- Set of design principles to be applicable to other cities, to make the project transferable.

Aim of study
The aim of this study is to create an urban design for Rotterdam that will attract all users of the city to choose for walking as the number one movement option. The higher goal of this is to design a joyful city, where social, mental and physical wellbeing are achieved. Through the exploration of this what if scenario, this project aims to activate people to start an actual mobility- and behaviour shift.

Sub question	Methods	Intended outcomes
1. How did (car) mobility develop in Rotterdam?	Expert knowledge (Frank Schipper) Literature review	Theoretical underpinning Choice of neighbourhoods
2. What is the relation between walking and joy?	Expert knowledge (Zef Hemel) Literature review	Theoretical underpinning
3. How to nudge people to walk more?	Literature review	Design principles
4. What is the economy of urban amenities (in Rotterdam)?	(Spatial) analysis	Analysis maps Design principles
5. What potentials do the chosen neighbourhoods have for walking?	Spatial analysis Fieldwork	Analysis maps of the space for redesign (drosscapes) Personal experience of walking
6. How to design a walkable neighbourhood	Design explorations -Prewar neighbourhood -Postwar neighbourhood	Design neighbourhoods: plans, sections, 3D impressions, street profile models
7. How to expand walkability to the city scale?	Design explorations	Spatial plan city scale

Literature and general practical references
Key theories
- Happy City (Montgomery, 2015)
- Cities for People (Gehl, 2010)
- 15 minute City (Moreno et al., 2021)
- Loop! (Molster & Schuit, 2020)
- Intentionally slowing down (Hemel, 2023)
- Nudge (Thaler & Sunstein, 2008)
- Wanderlust (Solnit, 2001)
- Het recht van de snelste (Verkade & Te Brömmelstroet, 2020)
- Health as the pulse of planning (Barton et al., 2009)
- De beweegvriendelijke stad (Urhahn, 2017)

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Reflection

Relation between graduation topic and graduation studio, master programme and master track

The graduation studio Design of the Urban Fabric is seeking for answers to the following challenges in the urban realm:

1. How will we live together?
2. Rethinking city and landscape
3. How we move in cities
4. New forms of living and working

The topic of my graduation, walking, is directly linked to the third challenge 'how we move in cities'. For my graduation project, rethinking the way we move in cities for a joyful future, is the starting point. I will explore walking as a possible answer to the challenge, because of its wide range of benefits. For one, walking can be a very social act, as moving slowly through a street makes social encounters possible. As a result, a lot of people walking through the neighbourhood could improve social safety and social cohesion. A feeling of togetherness, that walking could arise, is thus linked to the first studio topic 'how will we live together?'.

Moreover, a shift from fast mobility to walking will open up a lot of space in the city that could be redesigned. For starters, the space could be given to people, to walk and to stay in the public space. Next to that, nature could be invited in the city to make strong ecological connections and to increase biodiversity. Walking in nature is also beneficial for the wellbeing of people. This is linked to the studio challenge about 'rethinking city and landscape'. The fourth studio topic 'new forms of living and working' is also relevant in the walkable city, since destinations should be available primarily at walking distance. This could mean more diverse mixing of living and working. Also, increased densities of people around public functions could encourage walking.

The relation between my graduation project and the master AUBS programme can be found in the approach of the topic. The topic of walking in the built environment will be addressed in an integrated design project, touching upon multiple angles, as described above. More specifically, the topic of walking is related to the Urbanism track, because it seeks answers to local and global trends such as the climate crisis, the need for housing, individualism and obesity. The topic will be explored through multiple scale levels. Introducing the topic of walking is a result of a critical analysis of the status quo and it provides a solution for a sustainable and liveable urban environment.

Scientific relevance

For science it is relevant to provide a completely different perspective for the future of mobility in relation to the design of cities.

'To minimise the machine and optimise society.'
> - Te Brömmelstroet, 2023

In other words, create a future city model in which the happiness of people is central, instead of the accommodation of a constant flow of cars going fast and far. After all, space is scarce in the city, so it is relevant to explore ways to get more quality for the people in the public space.

Next to that, for social sciences it will be relevant to explore how city can be designed to stimulate social interactions and build a sense of togetherness, instead of continuing individualism in society.

Societal relevance

The current mobility model is not socially oriented. To make a transition to social mobility is of high societal relevance. Rethinking mobility will give more space for healthy behaviour (physically and mentally) and for pleasant living environments within cities. This is highly relevant, because growing numbers of people are living in cities worldwide (Montgomery, 2015).

A walkability approach will also be able to change travel time: not having to go further and faster, but staying close. Thus, minimizing travel time and maximizing time for joyful city life: i.e. social encounters, re-energising in nature, spending time with relatives. In an era of innovation and digitalisation, going back to the basics of joy is something people need – even though they might not know this urgency themselves yet.

Ethical considerations
To let the idea of the walkable city work, a behaviour shift is required. One can wonder how ethical it is to force people to change how they use the city, because of an utopian idea of an urban designer. However, the statement of Broekmans (2023), 'the way we shape our cities, shapes our behaviour', makes it sound as though the behaviour change will happen automatically anyways – as long as the urban design is good. That is what Thaler & Sunstein (2008) call nudging: positively influencing people's behaviour, without forbidding anything. That being said, the ethicality of the current space use in the city can also be questioned. The large amount of public space that is dedicated to cars, is not accessible for everyone, and thus not inclusive.

In theory, nudging people to walk more will affect people's lives very positively: more liveable public spaces, more social contact with neighbours, healthier behaviour, more time for other activities than commuting: more joy. Still, it is a big change compared to the current mobility model. Therefore, it is important to involve people early in the process, by showing them all potential positive changes. That is if the project were to be actually executed. For my graduation, participation and involvement of stakeholders is beyond my scope.