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.

Personal information	
Name	Chaniek Mellink
Student number	4469348

Studio		
Name / Theme	Urban Fabrics: Embracing Plurality – Growing Porosity.	
Main mentor	Maurice Harteveld	Urban Design
Second mentor	Denise Piccinini	Landscape Architecture
Argumentation of choice of the studio	I chose this studio because of its focus on the relationship between tangible and intangible topics and the possibility to work on the smaller scale. Other studio focused for example for on the regional scale and my project can now focus also on the streetlevel. Next to this, I would like to keep developing my design skills, which made this studio a good fit.	

Graduation project	
Title of the graduation project	Healthy Cities: restoring mental health of diverse individuals within the densifying urban environment. A case study of Bos en Lommer, Amsterdam West.
Goal	
Location	Amsterdam West: Bos & Lommer
Problem Statement	Cities all over the world are getting more and more dense because of population growth and urban popularity. By 2050, more than two thirds of the global population is expected to live in cities according to the latest report from United Nations. (Zumelzu, 2021) With rising urbanization public health professionals are more often speaking up about their concerns about the influence that urban environments have on residents mental well-being. Even though in general the quality of life in the world is still increasing, mental health problems arise more often. (Hajrasoulih et al, 2018)

The main reasons behind the large increase of mental disorders all around the world are population growth and aging. In general the amount of mental illnesses has increased by around 40% between 1990 and 2010 which is probably even larger in cities. (McCay & Bremer, 2017)

City dwellers are overall more vulnerable to depression, anxiety, stress and loneliness. (UD/MH, 2022) Nonetheless urban living has also been associated with mental health benefits. Empirical evidence tells us that environmental factors can have both positive and negative influences on mental health. (Hajrashoelih et al, 2018) The relation of spatial design and mental well-being is therefore starting to emerge as a fundamental concept, especially considering increasing densification within cities. The acceleration of urbanization processes and it's spatial implications, like lack of green and loss of privacy, are argued by several authors to be of a negative influence on inhabitants mental health. (Zumelzu, 2021) Concluding on the evidence that our environment can both positively and negatively influence human well-being and the elevated risk of mental illness in city dwellers leads us to the rising importance of city design that focuses on a more positive outcome. Unfortunately there are still few pointers on how to impact public mental health positively by urban design (Hajrashoulih et al, 2018). This study will aim to narrow the knowledge gap between environmental psychological research and urban design for urban dense areas.

Alongside the focus on mental health this study aims to look into the global issue of gentrification and rising segregation in urban areas. The reason behind this is that urban design that promotes good mental health depends on the population being able to benefit. In addition segregation leads to an ever greater risk of developing mental health problems. (McCay & Roe, 2021) With availability of public space becoming more scarce accessibility to qualitative public space also becomes more important. To approach this topic, this study will look into inclusive city design in urban dense areas, such as Amsterdam, and spatial qualities that will benefit mental well-being in city-dwellers.

RESEARCH QUESTION(S)

Main research question: To what extend can public space design restore mental health of diverse individuals within the densifying urban context? - Case study: Amsterdam West, Bos en Lommer.

Subquestions	Methods	Expected Outcome
Problem Field		
What are the urban stressors influencing mental well-being?	Literature review & case studies	Theoretic background
What urban qualities that restore mental well-being?	Literature review & case studies	Theoretic background & guiding principles
How does urbanization relate to mental well-being?	Literature review & data analysis	Contribute to understanding of the problem field
How does segregation relate to mental well-being?	Literature review & data analysis	Contribute to understanding of the problem field
Context Analysis		
What are the current urban stressors and restorative qualities of Bos & Lommer?	Spatial analysis, data analysis, mental mapping, interviews & user experience	Identification of problem sites and assets within the current conditions.
What is the current community context in amsterdam west?	Data analysis, observations & interviews	Understanding of context and underlaying conditions & identification of community assets
Theoretic Background		
What is mental well-being?	Literature review	Creating a frame of reference
How can we understand human behaviour in the context of environmental psychology?	Literature review	Creating a frame of reference
What is the importance of inclusive city design when it comes to the impact on mental health in urban citizens?	Literature review	Creating a frame of reference
What are the urban configurations needed to create a more inclusive and restorative urban environment?	Literature review	Identifying guiding principles / patterns for analysis and design
How can citizen participation contribute to the creation of restorative and inclusive urban design?	Literature review & case studies	Creating a frame of reference & setting up a supportive system within the community
Design & Strategy		
What patterns within public space design are needed in order to create restorative and inclusive environment within Bos & Lommer?	Research through design, scenario building, & mental mapping	Design experiments and strategy building for design proposal.
What type of design implementations are possible within the densified urban context?	Research trough design, case studies & desk research.	Design experiments and strategy building for design proposal.
How can a strategy for diverse public space networks increase inclusive city design with a restorative character?	Research through design, peer review and users experience	Design experiments and strategy building for design proposal.

Design assignment	For the area of Bos & Lommer diverse public spaces will be designed to increase the restorative quality of the area. The elements of this design should be determined from the results from personal observations, spatial analysis, desk research and a workshop of mental mapping with residents and visitors of the area. It is important to use participation as a tool to decrease segregation with the area and to make sure that restorative qualities are available to all individuals. User experience will be the most important factor of the design. Two other important topics that should always be considered are diversity and flexibility. A public space network/ assemblage on the district scale (Bos & Lommer/ De Baarsjes) should help with this. Another outcome is a set of patterns for public space design within the densified urban context for inclusive and restorative design.

Process

Method description

Extra Large Scale (XL): Amsterdam.
Large Scale (L): Amsterdam West.
Medium Scale (M): Bos & Lommer & de Baarsjes.
Small Scale (S): Bos & Lommer.
Extra Small Scale (XS): Streets and Public spaces within Bos & Lommer.

Literature Research within the fields of environmental psychology and urban design.
- Human Behaviour
- Mental Health
- Urban Stress
- Restorative Design
- Inclusive Design

Data Analysis of Community Context (a.o. ; demographics, housing, socioeconomic, history)
Spatial Analysis (XL, L, M, S, XS)

Setting up guiding principles for design aiming for restorative qualities and inclusive qualities using literature research.

Fieldwork (mental mapping and ethnographic mapping)

3 workshop days working with inhabitants and visitors
1. User Experience (Mental Mapping)
2. Feedback on Design Principle and Preliminary Design
3. Feedback on Design

Creating a design strategy/proposal for the area including:
Public Space Network (Assemblage)
Public Space Design (landscape architectural & urban design)
Design Patterns (inclusive / restorative elements)

Literature and general practical preference
Key literature : Bold

Bhugra, D., Ventriglio, A., Castaldelli-Maia, J., & McCay, L. (2019). Urban mental health. Oxford University Press.

Centre for Urban Design and Mental Health. (n.d.). How urban design can impact mental health. Retrieved from https://www.urbandesignmentalhealth.com/how-urban-design-can-impact-mental-health.html

Cooper, K. (2020). Dystopia, utopia – or somewhere in between? Healthy City Design 2019, London, 14–15 October. Cities & Health, 4(1), 50–53.

Chu, A., Thorne, A., & Guite, H. (2004). The impact on mental well-being of the urban and physical environment: an assessment of the evidence. Journal of Public Mental Health, 3(2), 17-32.

Dissart, J.-C., Seigneuret, N., & Edward Elgar Publishing. (n.d.). Local resources, territorial development and well-being.

van Dorst, M. (2012). Liveability. In Sustainable Urban Environments: An Ecosystem Approach (pp. 223–241). Springer Netherlands.

Edwards, P., Tsouros, A. D., & Weltgesundheitsorganisation Regionalbüro für Europa. (n.d.). A healthy city is an active city : a physical activity planning guide.

Fassio, O., Rollero, C., & De Piccoli, N. (2013). Health, Quality of Life and Population Density: A Preliminary Study on "Contextualized" Quality of Life. Social Indicators Research, 110, 479-488.

Florida, R., Mellander, C., & Rentfrow, P. J. (2013). The Happiness of Cities. Regional Studies, 47(4), 613-627.

Francis, J., Wood, L. J., Knuiman, M., & Giles-Corti, B. (2012). Quality or quantity? Exploring the relationship between Public Open Space attributes and mental health in Perth, Western Australia. Social Science and Medicine, 74(10), 1570–1577.

Gardner, J., Marpillero-Colomina, A., & Begault, L. (2018). Inclusive Healthy Places—A Guide to Inclusion and Health in Public Space: Learning Globally to Transform Locally. Gehl Institute: New York, NY, USA.

Gehl, J. (2013). Cities for people. Island press.

Gemeente Amsterdam (n.d.). Interactieve Kaarten. Retrieved from https://maps.amsterdam.nl/geluid/

Gruebner, O., & McCay, L. (2019). Urban design. Urban health, 256.

Guite, H. F., Clark, C., & Ackrill, G. (2006). The impact of the physical and urban environment on mental well-being. Public health, 120(12), 1117-1126.

Hajrasoulih, A., del Rio, V., Francis, J., & Edmondson, J. (2018). Urban form and mental wellbeing: scoping a theoretical framework for action. Journal of Urban Design and Mental Health, 5(10).

Hochschild, T. R. (2015). The Cul-de-sac Effect: Relationship between Street Design and Residential Social Cohesion. Journal Of Urban Planning & Development, 141(1)

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. Journal of environmental psychology, 15(3), 169-182.

Lafortezza, R., Carrus, G., Sanesi, G., & Davies, C. (2009). Benefits and well-being perceived by people visiting green spaces in periods of heat stress. Urban Forestry and Urban Greening, 8(2), 97–108.

Leyden, K. M. (2003). Social capital and the built environment: the importance of walkable neighborhoods. American journal of public health, 93(9), 1546-1551.

Li, X., Lv, Z., Zheng, Z., Zhong, C., Hijazi, I. H., & Cheng, S. (2017). Assessment of lively street network based on geographic information system and space syntax. Multimedia Tools and Applications, 76(17), 17801–17819.

Mcallister, J. C. (2021). Active frontage design architecture, affordances and atmospheres.

McCay, L., Bremer, I., Endale, T., Jannati, M., & Yi, J. (2017). Urban Design and Mental Health (pp. 1–24). Retrieved from https://doi.org/10.1007/978-981-10-0752-1_12-1

Montgomery, C. (2013). Happy city: Transforming our lives through urban design. Penguin UK.

Ouda, M., Stino, M., Abd, N., & Aziz, E. L. (2020). THE EFFECT OF URBAN DENSITY ON MENTAL WELL-BEING. In JOURNAL OF ENGINEERING AND APPLIED SCIENCE (Vol. 67, Issue 6).

Pfeiffer, D., & Cloutier, S. (2016). Planning for happy neighborhoods. Journal of the American planning association, 82(3), 267-279.

Roe, J., & McCay, L. (2021). Restorative Cities: Urban design for mental health and wellbeing. Bloomsbury Publishing.

Sendra, P. (2015). Rethinking urban public space: assemblage thinking and the uses of disorder. City, 19(6), 820-836.

Sim, D. (2019). Soft city: building density for everyday life. Island Press.

Soltani, S., Gu, N., Ochoa, J. J., & Sivam, A. (2022). The role of spatial configuration in moderating the relationship between social sustainability and urban density. Cities, 121. https://doi.org/10.1016/j.cities.2021.103519

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. Journal of environmental psychology, 11(3), 201-230.

Zumelzu, A., & Herrmann-Lunecke, M. G. (2021). Mental well-being and the influence of pla-ce: conceptual approaches for the built environment for planning healthy and walkable cities. Sustainability (Switzerland), 13(11).

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 context of this project is the urban environment on the city-scale. With questions regarding to the quality of living in the densifying urban fabric this topic is very much related to the master track: Urbanism as it takes place within the built environment. Focussing mainly on the smaller scale and the relation of tangible and intangible topics the choice for the studio of the urban fabric was easy.

The topic, this studio focusses on this year, is: Embracing Plurality – Growing Porosity. Within the manual it says: "With this year's framing theme, we question how the future city will look and work. We acknowledge the plurality of people, processes and functions tightly interacting in dense urban environments and we explore how the urban design project can shape porous spaces that can accommodate those in a sustainable and livable way." This is exactly the question I am asking myself regarding to mental health of citizens of densifying urban environments.

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

This thesis aims to narrow the research gap between environmental psychology and urban design. Towards a better understanding of the influences of urban design on mental health. There have never been more people living in cities then today. With population growth and urban popularity, public space becomes scarce.

The current trends show that cities will keep densifying and the amount of people living in cities has never been larger. When mental health issues are rising globally with larger risks for residents of urban environments the question; how well can we live together? Making sure the built environment is designed in a way that it is inclusive and that it has restorative qualities is, in my point of view, most relevant for a well-functioning city. As a city functionality is for a larger extend dependent on the well-being of its citizens.