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	Pavlos Andrianos
Student number	5613116

Studio		
Name / Theme	Design of the Urban Fabric/ Embracing Plurality – Growing Porosity	
Main mentor	Ir. Rients.J.Dijkstra	Urban Design
Second mentor	Dipl.ing. Ulf Hackauf	Environmental Technology & Design
Argumentation of choice of the studio	The fields of research that the studio Design of the Urban Fabric is dealing with, are strongly aligned with my academic interests. Within the case study of Sloterdijk, a major mobility hub in Amsterdam, my focus will be on the interrelation of urban design and aspects of livability and sustainability within the framework of Transit-Oriented Development. Amidst a time of major crises such as housing and climate, I want to investigate the potential that railway station areas have in addressing these urgencies in an inclusive way. As a primary method of inquiry, I will be implementing research by design, a method which underpins the overall approach of this studio. Carrying out urban design experiments on density and other morphological aspects on the neighborhood scale, will provide me with valuable insights on how to develop the proposed urban fabric. Through density, this new urban fabric will be able to respond to the housing crisis and at the same time and through innovative solutions it will help in the aim of achieving energy transition and climate adaptation goals. Guided by this year's theme "Embracing Plurality-Growing Porosity" I aim in balancing the function of the area as a transportation hub and a diverse place where various groups of people and functions come together. Along with research by design, my graduation project will be supported by data and fieldwork, while working across various scales. To conclude, through this studio, I aim in	

	creating a strong vision for livable and sustainable railway nodes through research by design in the area of around Sloterdijk station. Overall, I believe that the guiding themes, methods, and the scale that this studio relates to, suits fit perfectly with my graduation project and academic interests.

Graduation project	
Title of the graduation project	From Node to Place: A new livable neighborhood in Amsterdam Sloterdijk
Goal	
Location:	Amsterdam Sloterdijk train station area
The posed problem,	Currently, the Netherlands is facing two major and interrelated crises: housing and climate. Housing demand due to the increasing population is leading to unprecedented rates of growth and construction, negatively affecting the environment. On the other hand, emission reduction policies are slowing down construction rates, putting strong pressure on housing provision and especially on large cities such as Amsterdam. Transit-Oriented Development (TOD) in the case of Amsterdam could potentially address both problems in an equal way. An area such as Amsterdam Sloterdijk, due to its great connectivity and other location-specific benefits, could be a great place to begin with. The current image of Sloterdijk is however very problematic. The development of the area was a result of a market-driven approach in urban development since the 1980s, that led to the creation of monofunctional and business-oriented nodes in Amsterdam. Failing to adapt to the current needs, the area faced high vacancy rates and is overall regarded as highly unattractive (Thomas et al., 2018). Social interaction in the area is scarce, enhancing anonymity and the feeling of unsafety. Dominated by infrastructure and mobility, the area is also facing environmental degradation and increased vulnerability to extreme weather events. At the same time, the area must adapt

	to current and future energy-related goals, towards climate neutrality. All in all, design aspects of the Amsterdam Sloterdijk station area are contributing negatively both to its livability and sustainability. All these problems create an interesting challenge with regards to the way that TOD as a concept can be applied within this context as a tool for a livable and sustainable future for the area.
research questions and	**Main Question:** How can Sloterdijk be transformed through design into a dense, livable, and sustainable neighborhood, while maintaining its function as a major mobility hub? **Sub Questions:** 1. What are the key principles of TOD that can guide the spatial interventions at Sloterdijk? 2. What are the interrelations between the concepts of livability, climate (sustainability) and density? 3. How can the spatial organization of mobility around the station allow the transformation of Sloterdijk into a lively neighborhood? 4. What is the highest possible density that can be achieved in the area? 5. How can the new urban fabric facilitate climate adaptation and energy transition goals in relation to density? 6. How did urban development processes and planning policies influence the implementation of TOD in the context of Amsterdam? 7. How can the redevelopment of Amsterdam Sloterdijk influence the transition of Amsterdam to a more balanced and polycentric development?
design assignment in which these result.	1. A comprehensive approach on the theories of TOD, livability, and climate (sustainability), their interrelations and their spatial manifestation in Amsterdam Sloterdijk.

	2. The spatial reconfiguration of transportation around the station according to principles of sustainable mobility, prioritizing walking, cycling and use of public transport. 3. Design experiments on different possibilities regarding density, without compromising the aspects of sustainability and livability. 4. Transformation of the urban fabric in alignment with the overall goals and ambitions of achieving a climate-adaptive and climate-neutral future. Creation of innovative solutions with regards to the existing situation towards a desirable future. 5. Program detailing that will inform larger scale ambitions for a more balanced development of Amsterdam.

Process

Method description

As a starting point for this research, literature review and document and policy analysis are conducted to develop a deeper understanding of the concepts I relate to this project, and particularly TOD, aiming in identifying principles that are applicable in this context. As a next step, as density is a key element of TOD, it is interrelated on a conceptual and design-informed way with the concepts of livability and climate (sustainability), guiding the design aspect of this graduation project. A study of document and policy review of national, regional, and municipal bodies is carried out to reveal how the future development of the city of Amsterdam will increase pressure on the area of Sloterdijk and how the future transformation of the area can contribute to a more balanced urban development.

As the key method for this graduation project, research by design through the iterative approach to research, analysis and design will provide with valuable insights on the project. With this method, I aim to achieve an integrated approach on applying density while integrating solutions that ensure the sustainable development of an area in an inclusive way. An extensive GIS mapping and fieldwork analysis of the site's spatial organization will be conducted across multiple scales. Main aspects of this analysis are the current mobility system, density, and spatial elements of the urban form, mix of functions, environmental conditions, and ecological systems. Implementing the method of research by design from early stages of this analysis, will give insights on several conflicts and potential synergies that will guide the later-stage spatial interventions of this project. Lastly, aspects of climate adaptation and energy transition will be further

explored by GIS mapping, document and policy review and research by design.

Main Research Question

"How can Sloterdijk be transformed through design into a dense, livable and sustainable neighborhood, while maintaining its function as a major mobility hub?"

Sub-Questions		Theme	Methods	Expected outcomes
SQ1	What are the key principles of TOD that can guide the spatial interventions at Sloterdijk?	Theory	Literature Review, Documents and Policy Review, Field Work, Case Study Analysis, Research by Design, GIS mapping.	Understanding of general principles, critical selection of suitable and context specific principles, reflection on general concept of TOD
SQ2	What are the interrelations between the concepts of livability, climate (sustainability) and density?		Literature Review, Research by Design	Conceptual framework and extraction of principles as a guidance to spatial interventions and scenario construction.
SQ3	How can the spatial organization of mobility around the station allow the transformation of Sloterdijk into a lively neighborhood?	Design-Spatial Organization	Spatial mapping, Research by Design, Stakeholder analysis	Various scenarios that in correlation to aspects of density, program and sustainability goal, will determine the spatial organization of mobility
SQ4	What is the highest possible density that can be achieved in the area?		Research by Design	Various scenarios on levels of density and creation of different typologies that flexibility and diversity will create the vision for the future TOD in Sloterdijk
SQ5	How can the new urban fabric facilitate climate adaptation and energy transition goals in relation to density?		GIS mapping, Documents and policy review, Research by Design	Identification of potentials and implementation of design solutions with the aim of achieving climate adaptation and neutrality goals of multiple levels.
SQ6	How did urban development processes and planning policies influence the implementation of TOD in the context of Amsterdam?	Development process	Literature Review, Documents and Policy Review	Deeper understanding of processes and dynamics in urban development, Evaluation of best practices
SQ7	How can the redevelopment of Amsterdam Sloterdijk influence the transition of Amsterdam to a more balanced and polycentric development?		Literature Review, Documents and Policy Review, GIS mapping	Assessment of the concept of TOD as a driver of sustainable urban development, based on sustainability and livability goals on the neighborhood scale.

Literature and general practical preference

Literature themes:

- Transit-Oriented Development (TOD)
- Livability
- Urban Development
- Sustainability
- Energy Transition
- Climate Adaptation

Sources:

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

1. My graduation project From Node to Place, draws attention to the conflict between the two major crises that the Netherlands is currently facing, housing and climate. These two crises are interrelated, as the way in which the housing crisis is resolved, is going to play a major role in achieving a sustainable future for the Netherlands and vice versa. This topic is directly linked to the urgencies that the field of Urbanism is dealing with. In my approach to deal with this conflict, the concept of Transit-Oriented Development (creating high-density and mixed-use areas around transit nodes) offers a great potential. The integral design and analysis approach of the studio Design of the Urban Fabric was a great match for this inquiry, as design can be used as a method of research. Additionally, Design of the Urban Fabric studio puts the importance of place at the forefront of its approach, which allows for deep and thorough understanding of urgencies and potentials. Starting with the case study of Amsterdam Sloterdijk and by applying the method of research by design, I aim in addressing both crises with an integral approach, while working across scales. Within the current theme of the studio "Embracing Plurality-Growing porosity", my topic is strongly aligned with the aspects of density, plurality, and complexity that the studio is dealing with. I strongly believe that this approach will be valuable for my next steps. Finally, regarding the overall master program, achieving such radical transformations calls for an interdisciplinary approach, which is directly aligned with the guiding themes of this program.

2. Scientific relevance

This project is primarily dealing within the concept of Transit-Oriented Development in relation to aspects of density, livability, and sustainability. Each of these topics has been studied quite extensively in recent literature, however within my project the attention will be on their spatial manifestation and interrelations. The concept of TOD is a popular concept amongst transportation and urban planners. However, there is need for research on the way to implement it in terms of urban design on the small scale (Pojani & Stead, 2015). Guiding principles of TOD are primarily informed by American researchers and practitioners and thus contextual differences in terms of densities and cultural preferences, require the understanding of which aspects of TOD are applicable in the context of the Netherlands (Thomas et al., 2018). Furthermore, since TOD is inherently linked with density, negative aspects often correlated with high densities regarding social

and environmental sustainability are going to be explored. Consequently, my aim is to contribute to existing knowledge on how to combine high densities without compromising livability and sustainability. This will be achieved by dealing with aspects of climate adaptation and energy transition in the location of Sloterdijk and the application of innovative solutions to transform the current urban fabric. This aspect of my graduation project is also strongly related to the professional framework of the Netherlands, as most of the development taking place is related to densification.

Societal Relevance

In terms of societal relevance, the project aims to create a livable neighborhood in the vicinity of the Amsterdam Sloterdijk railway station. Livability as a concept is directly linked with the well-being of people and their needs both as individuals and as part of the community (van Dorst, 2012). However, based on literature, livability is referring to the current needs of people, while sustainability is referring to those of future generations. It is apparent that these two concepts should be used in an integrated way. Therefore, this graduation project is based on work of van Dorst (2012), is using the term "sustainable livability" which follows and ecological approach and puts the emphasis on the basic needs of humans.

Another aspect of the societal relevance of this project is related to accessibility, which is directly linked to the concept of TOD. Developing around public transport nodes has a strong influence on increasing accessibility of work, leisure, and other functions of everyday life. Additionally, by dealing with the urgency of housing crisis, the project is also linked with matters of the society. The housing crisis has led to increased inequality due to the higher prices of houses and competition for space. Providing affordable housing in TOD environments can potentially have great effects on social sustainability.

Finally, addressing environmental issues through design in high-density areas can have positive impacts on people. Mitigating risks and environmental degradation is currently a major challenge, negatively affecting millions of people. At the same time, transitioning and achieving climate neutrality in a just way poses another challenge. With my project and through design solutions I aim in balancing these issues in the promising location of Amsterdam Sloterdijk.

Sources:

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