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:

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| Argumentation of choice of the studio | The research group ‘Design of the Urban Fabric’ studies both the tangible and intangible structures of the urban environment, which is incorporated in this thesis as well. As these types of structures are all subject to urban trends in a dynamic world, the research group and related theses consider the existing urban fabric and its suitability or adaptability to these trends. In other words, the emphasis is on finding the best (urban) answers for a fast-changing world, which incorporates a constantly need for anticipation. For the graduation year 2017-2018 three central themes have been picked: (1) Cities and Health, (2) Cities and Growth, and (3) Cities and Technology. Moreover, several urban urgencies have been addressed, including fast urban growth, urban social inequality, health and environmental issues, sustainability and urban mobility. This thesis is thus strongly related to the studio, as Amsterdam is subject to rapid growth and is more and more characterised by inequalities between city centre and periphery, reflected in both the tangible and intangible structures of the city. By focusing on the ring zone, adjacent to and part of these structures, the dynamics of the urban fabric and especially the relationship with mobility are key issues in this thesis. Creating a vision and transformation strategy for the ring zone requires a deep understanding of the complexity of transforming this area. Hence, the Dutch approach followed by this research group, regarded as a design model for complex tasks, is very relevant. The approach, which entails the combination of a critical analysis (A), an
integrated design (D) and a structured presentation (P) is the basis of the project approach as well.

In the end, the thesis should contribute to the knowledge of how to foster an attractive, sustainable and vital urban environment, which is in line with the general objective of this research group.

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In Amsterdam the ring zone captured attention as well and was identified by the municipality as “the most suitable area to transform into a new attractive part of Amsterdam” (Gemeente Amsterdam, 2011). Amsterdam needs the ring zone in order to accommodate expected population growth of 11,000 people per year until 2025, resulting in a building challenge of 5,000 dwellings per year. The ring zone offers space to densify, but the ring zone also marks the boundary between ‘Amsterdam inside the ring’ and ‘Amsterdam outside the ring’. This makes the case of the transformation of Amsterdam’s ring zone complex:

The implementation of new spatial concepts in the past have led to this dichotomy in the 21st century metropolitan city of Amsterdam,
firstly introduced in the tangible city structures and now visible in the intangible city structures as well. The urban expansions, carried out throughout the previous century, and the city center are being separated by the ring zone: a grey zone due to the lack of integration between city and infrastructure. Instead of the once planned reconciliation between city and infrastructure, the ring road increasingly affected the developments in the areas adjacent to the ring, resulting in the grey zone. This area is characterized by a discontinuity on multiple levels: infrastructural networks, spatial patterns, mobility patterns and street life. It is thus not the ring road itself as building structure, but rather the conditions of the ring zone that causes a break in the continuity of ‘Amsterdam inside the ring’ with ‘Amsterdam outside the ring’ due to a lack of integration between city and infrastructure.

With the current market-led strategy in the ring zone, as a response to the expected population growth of Amsterdam, there is a strong focus on the quantitative ambition of Amsterdam (5,000 dwellings per year). This resulted in a large amount of small projects that are well-designed on the project level, but do not seek any coherence on larger scales. In other words: the bigger picture is lost, there is not enough attention being paid to the long-term impact on the city and there is no clear link between means and goals. Consequently, fragmentation is being caused and, with that, the dichotomy is being reinforced. Hence, the general objective of Amsterdam, becoming the core city of an internationally competitive and sustainable European metropolis, is under threat.
Research questions

MAIN RESEARCH QUESTION

> How can the relationship between city and infrastructure be improved by using the transformation of the ring zone as a means, while contributing to the rejection of the dichotomy and thus the restoration of the balance in 21st century metropolitan Amsterdam?

The main research question follows out of the problem definition. The question attempts to tackle all the issues stated in the problem statement, brought forward by events and trends in the past, present and future. The research takes the tangible structures of the city as a starting point (the relation between city and infrastructure) and from there the question touches upon the layers of the intangible structures as well. The question focuses on a particular zone in Amsterdam, but keeps the bigger picture - the general objective of Amsterdam mentioned in the structural vision 2040 - in mind.

SUB RESEARCH QUESTIONS

Towards a spatial vision...

> How did the relationship between city and infrastructure develop in the past, focusing on the ring zone?

> What are the current characteristics of the ring zone, including the level of integration between city and infrastructure?
> What can be learned from case studies, regarding the relation between a vision and strategy, and the impact on the city?

> Looking at future trends and case studies: what are the expectations regarding the level of integration between city and infrastructure?

> Taking the Structural Vision 2040 as a starting point, what characterises a desirable spatial future for the ring zone?

> What guiding principles for strategic interventions in the ring zone follow out of the desirable spatial future?

Towards a development strategy...

> What strategic interventions can be implemented in the ringzone in order to improve the integration between city and infrastructure, while contributing to the rejection of the dichotomy and thus the restoration of the balance in the city of Amsterdam?

> How to implement the proposed strategic interventions, while focusing on the resilience of the strategy?

> How can the development strategy be positioned in an institutional context? How is the strategy related to existing plans and policies?

The sub research questions concentrate on the different products of the vision and strategy, while keeping the bigger picture and thus the main research question in mind. The research questions combine research and design. Simultaneously, the research questions combine different scales, in order to assure the maximum level of integration of the interventions and the maximum potential of the interventions.

Design assignment in which these result

By taking the relationship between city and infrastructure as a starting point, the thesis aims to connect the disciplines of urbanism and infrastructural design. Infrastructure and city are no longer allowed to function as two autonomous elements, but need to merge on different scales. The project therefore requires an interdisciplinary approach. Throughout the entire process the thesis tries to combine research and design, aiming to get a better understanding of the relation between means and goals and to create a strong spatial vision and development strategy in the end. Therefore, it is necessary to get an
understanding of both the spatial and strategic dimensions of the context and of the development of these dimensions.

There are two end-products: a spatial vision and a development strategy. The vision describes the desirable spatial future for the ring zone, while keeping the bigger picture in mind. The spatial scope of the vision is thus not only the ring zone, but the entire city. The vision will be built upon literature, a spatial (historical) analysis and a trend analysis. Events and trends in both past, present and future will be used as input for the vision. In the end, the vision will be a comprehensive planning framework with a time span of thirty years. In order to convince all stakeholders, the vision has to be convincing. Moreover, the vision serves as a normative frame for the development strategy (TU Delft, 2017). The vision sets out guidelines for the spatial interventions, leading towards a change in the tangible structures of the city and thus an effect on the intangible structures in the city as well. Whereas the vision focuses on a story for the entire ring zone, the strategy will take a closer look to specific locations in the ring zone.

In the light of the spatial vision, a development strategy will be created in order to steer the developments in the right direction. The strategy follows the guidelines of the vision and translates these guidelines into concrete action (TU Delft, 2017). Both short-term and long-term strategic interventions are part of the strategy and must contribute to a resilient approach. Moreover, the strategy focuses on the areas of the ring zone with the greatest potential: where means can be used effectively in order to achieve the most desirable outcome. After defining the spatial interventions a timeline and an inventory of actors and organisations will be created. The timeline incorporates all interventions and must take the unpredictability of the future into account. The inventory discusses all actors and aims at positioning the strategy in an institutional context. Moreover, the strategy’s position towards existing plans and policies will be taken into account as well.

### Process

**Method description**

Throughout the process a wide variety of methods will be used, aiming to combine research and design during all phases. Moreover, the structure of past-present-future is represented by several methods, including the trend study and the historical analysis. The search for the relation between tangible and intangible structures in Amsterdam is visible in the methodology as well: mainly the data analysis and the trend study will lead to a better insight. Below all methods are listed and explained, including the aim.
LITERATURE STUDY
Using literature will enrich both the research and design and will be used mainly in order to make the entire thesis convincing and the design effective. Literature study includes all the readings for this thesis.

MAPPING
Mapping can be understood as the spatial translation and exploration of Amsterdam and in particular the ring zone. The method is used to achieve a wide range of information: from rather basic (but essential) information about the infrastructural networks and the urban fabric to specific features and details. During each phase the method of mapping will be used in order to get a good grip on the spatial structure of Amsterdam. However, during the phase of designing, the maps will become more detailed and more focused on the exact design location.

FIELDWORK
Fieldwork will be carried out before P2 in order to get a good understanding of the area. This is absolutely necessary for the development of thoughts on the problem definition. The fieldwork will contain the ‘view from the road’ (the ring road), as well as the ‘view from the city (the grey zone). In between P2 and P3 fieldwork will take place again, in order to pick the strategic interventions and their ideal location. Photographs, timelapses and sketches will be used in order to document the fieldwork.

DATA ANALYSIS
Data analysis will improve the credibility of the thesis and is necessary to test the hypothesis. Moreover, statistics can reveal the link between tangible and intangible structures. Statistics mainly from the municipality of Amsterdam and Statistics Netherlands (CBS) will be used.

TREND STUDY
In order to make the thesis more relevant, it is necessary to get insight in the trends Amsterdam is dealing with. Moreover, studying trends from the past and expected trends for the future will make the thesis more accurate. Reading newspapers and updates on websites, such as the website of the municipality, will help to discover trends. Other methods will be used to confirm the trends, such as the field work and the literature study.

CASE STUDY
As projects related to infrastructure often require large investments, it is crucial to make use of case studies. Projects in other cities will lead to a list of lessons learned. Moreover, other case studies can support the decisions made in this thesis. The theory paper involves three case studies: Amsterdam, Antwerp and Barcelona, and discusses the strategies of Amsterdam and Antwerp with the lessons learned in Barcelona. Case studies are useful for the creation of the vision and strategy. Moreover, case studies are relevant for all scales.

HISTORICAL RESEARCH
Learning from the past in order to understand the present and to predict the future is a key element in this thesis. History shows that the relationship between city and infrastructure is constantly changing. The history of Amsterdam shows the impact of the relationship on the city’s spatial development. Historical research focuses not only on Amsterdam, but on the relationship between city and infrastructure in general.

**SPACE SYNTAX**
The method of space syntax was developed at the Bartlett, University College London (Read, 1998). The method aims to reveal the relation between ‘space’ and ‘syntax’: the relationship between the configuration of the city and how cities are functioning. Space syntax will especially be used to get a good understanding of the spatial structures in Amsterdam and the differences between several areas in the city.

**INTERVIEWS**
Interviews with experts will contribute to an understanding of the problem. As several design offices and the municipality are already working on projects related to the ring road, it makes sense to find out the ideas behind their proposals. Moreover, an interview with the municipality of Amsterdam will help to make a distinction between the actual desirable future for Amsterdam and the impact of politics and private parties.

**ACTOR ANALYSIS**
The actor analysis will result into a list of actors and their position towards the proposal. In order to make the strategy more feasible and resilient. The analysis includes the resources and capacities of the actors and organisations to enhance or obstruct the proposed changes for the city. Moreover, the analysis focuses on the link between the proposal and the existing plans and policies.

**SCENARIO THINKING**
Scenario thinking can be used in two ways: first of all it can be used to force the designer to come up with a variety of options. Evaluating these options will give insight in the most effective design decisions. In a later stadium it will help to convince stakeholders by giving an explanation of the reasoning behind the decision-making process. Secondly, scenario thinking is a strategic planning method in order to make the strategy more adjustable.

**PEER REVIEW AND EVALUATION MOMENTS**
Reflection is one of the most relevant parts of the thesis. Peer reviews will increase the amount of feedback and it is useful to get feedback from people who are in the middle of the graduation process as well. Meetings with mentors and especially the feedback and questions after each presentation will give input for the evaluation moments.
Literature and general practical preference
Literature is essential in order to combine research and design. Moreover, literature can support the story, leading towards a more convincing, evidence-based thesis.

ACKER, M. VAN (2016). Stedelijke integratie van de Antwerpse ringinfrastructuur


COLLEGE VAN RIJKSADVISEURS & HEESEN, M. (2016). Goed voor de infra, goed voor de stad. Transformatie van de ringweg in de stad. College van Rijksadviseurs


GEMEENTE AMSTERDAM (2016b). Amsterdamse Thermometer van de Bereikbaarheid.


HOEVEN, F. VAN DER (2001). RingRing: ondergronds bouwen voor meervoudig ruimtegebruik boven en langs de Ring in Rotterdam en in Amsterdam. PhD. Delft: Delft University of Technology


KLERK, L. DE (2008). De modernisering van de stad 1850-1914, de opkomst van de planmatige stadsontwikkeling in Nederland. Rotterdam: nai010 publishers


Reflection

Relevance

All over the world designers, policy makers and civil moments are struggling with the relationship between city and infrastructure, especially with ring roads (BNA Onderzoek, 2017). The fact that they are struggling refers to both the societal and scientific relevance: city and ring have each other in a hold, but need each other constantly. That causes complex long-term problems with heated public debates all over the world.

Infrastructure is moving back to the field of urbanism, which changed the approach of infrastructural design projects as well: close collaboration between multiple disciplines is necessary (Shannon & Smets, 2016). Infrastructure now engages imaginative and social dimensions as much as engineering. Policy makers regard infrastructure as their primary field of investment, mainly because accessibility still lies at the root of development and infrastructure can improve the quality of the environment on different scales. Moreover, investing in infrastructural projects makes it possible to structure the urban settlements, which makes it attractive for policy makers. Hence, enormous amounts of public and private money are being invested in these projects. Creating societal approval is thus even more necessary and a convincing, solid research can contribute to this. This thesis focuses on the relation between tangible and intangible structures and the relation between means and goals on multiple goals, which means the thesis contributes to the work field and the existing body of knowledge. Both the spatial vision and the development strategy can lead to useful guidelines for other cities. The fact that these projects are still extremely complex and that it causes struggles all over the world, in combination with enormous investments, indicates clearly that more research on the impact of these kind of projects is essential.

The project has a high urgency: first of all, Amsterdam is changing fast and needs to accommodate the expected growth of 11,000 new residents per year (Gemeente Amsterdam, 2016). Therefore, the city is becoming more compact and needs to take good care of its living environment. Secondly, the city is the big driver of the national economy, which means it needs to keep and improve its international position and the environment needs to be attractive for both companies and the human capital (Gemeente Amsterdam, 2010). The ring zone plays an essential role in this, since it is located on the boundary between ‘Amsterdam inside the ring’ and ‘Amsterdam outside the ring’. The vision of the municipality of Amsterdam is, however,
that it wants to be a good metropolitan city for everyone, which means segregation is undesirable. Moreover, a fragmented city might be a limit to growth, which makes it relevant to transform the Ringzone area. The space of the Ringzone has to be used to build new dwellings, since Amsterdam made the choice to densify, rather than expand. Last but not least, to achieve objectives related to the knowledge-driven economy, it is crucial to be an attractive city and invest in public space and mobility networks, especially when the city is becoming more compact.

**Time planning**

The entire graduation project should be finished within one year, as shown in the schedule below. Next to the regular MSc 3 and MSc 4 planning I am following the Honours Programme for Master’s students as well, which means I will do field work in Africa in December. The final deadline of this programme is in April.

P2 marks the end of the problem definition and therefore the start of the creation of the vision and strategy as well. After each presentation an evaluation will be carried out in order to keep improving.

The coming semester focuses on the future. Input from the problem definition, which is actually a diagnosis of the city, will be used. The scale of the ring zone and the local scale will be more present. After P3 site visits will take place, in order to pick the locations for strategic interventions with the highest potential. The last period will be used to link each scale to one coherent story and to make the story the even more convincing by using the power of visualisation.

The two main end-products, the vision and strategy, are discussed with both mentors and are feasible within the time available. The components of the vision and strategy are already chosen, which is visible in the methodology scheme.