



How To Use Mixed-Use Development?

A multiple case study research to define the successfulness of different planning strategies for the implementation of mixed-use development in urban industrial estates

Steijvers, N.W.R. (Niels)
Master's Thesis Spatial Planning programme
Nijmegen School of Management, Radboud University
August 2019

How To Use Mixed-Use Development?

A multiple case study research to define the successfulness of different planning strategies for the implementation of mixed-use development in urban industrial estates

Personal data

Name: N.W.R. (Niels) Steijvers
Student number: s4607147

Master programme: Spatial Planning
Specialisation: Planning, Land & Real Estate Development
Faculty: Nijmegen School of Management
University: Radboud University Nijmegen

First reviewer: Prof. dr. Erwin van der Krabben
Second reviewer: Dr. Huub Ploegmakers
External mentor: Dr. Jasper Beekmans
Internship organisation: Stec Groep
Cover photo: Own picture (taken at Havenkwartier, Deventer)



**stec
groep**

(This page is left blank intentionally)

PREFACE

This master's thesis paper is the result of more than half a year of work and is the final piece before graduation from the Spatial Planning Master's programme at Radboud University's Nijmegen School of Management.

Already from the start of the bachelor's programme Geography, Spatial Planning and Environment Studies, I was very keen on the spatial aspects of this field of study. Especially the system that is underneath the way we shape our environment has attracted my attention: spatial planning. I have always found it quite intriguing how human race has been capable of adjusting its surroundings in such a way that places have become suitable for living and working, but also how we have managed to protect ourselves against the forces of nature. Especially the Dutch have got a long tradition in shaping their land; it's not unjustly that the Netherlands are often called 'Planner's Paradise'. A secure system of rules, plans and policies makes it manageable to live with roughly 17 million people in a delta-area and still sustain a certain level of spatial quality which makes it one of the best places to live on this globe.

Often, people use the statement 'God created the earth, but the Dutch created the Netherlands'. This implies that the Netherlands are somehow 'finished' and 'all done' in spatial terms. However, current global advances have shown that adapting and developing our land is never finished: physical trends like global warming, human migration but also social trends like internet-shopping and changing mobility preferences have their influence on the way we use our space. For me, the constant need for adaptation of spatial use to the needs of modern society is one of the most fascinating aspects of spatial planning. For that reason, I wanted to investigate a topic that is about change and adaptation, namely the transformation of industrial estates into mixed-use urban districts.

After more than half a year of work (sometimes feeling like a bit of a struggle, but most of the time being a great way of getting a nice insight in planner's practice) I have finished my thesis. I am proud of the work I have put in to this graduation research project, but also very grateful for the opportunities and changes I have received. For that reason I want to thank a couple of people who have been indispensable for the realization of my master's thesis.

Firstly I want to thank all the interview participants, both during the orientation phase and case study period. Without your willingness to help me and give me a thorough insight in the practice of various stakeholders within the case development areas I would not have been able to establish my research. Secondly, I want to thank Stec Groep for giving me the opportunity to write my thesis combined with working for their projects: I have gained a lot of experiences from the working field and really appreciated the time and patience you had for my personal research work. Subsequently to this, I also want to thank both of my supervisors, professor Erwin van der Krabben and Jasper Beekmans from Stec Groep: your stimulating feedback and helpful remarks have really helped me along the process and were an important basis for this thesis. Then I would like to thank those who are close to me, friends and family, for their interest in my research and support. And finally, I would like to thank my girlfriend for her patience and for bringing a smile on my face at the end of the day, even when it was a rough or long week.

Thank you all for the support and your contributions and enjoy reading my thesis!

Niels Steijvers,

Nijmegen, 16th August 2019

SUMMARY

In recent years, Dutch policies towards spatial development have changed. Population, mobility and the economy keep growing, while we still want to preserve the green buffers we have in the Netherlands. As a result of these developments, greenfield areas have to be protected and new developments mainly have to take place in urban districts. This means that different uses of space inevitably will have to be mixed and new forms of area development will have to be discovered. This thesis will investigate the various strategies authorities use for the implementation of mixed-use development and their successfulness in reaching their goals.

Problem statement

As becomes clear from theory, the mixing of uses is not the optimal form of spatial development, as it almost always includes longer negotiation processes and higher costs. Although, it seems to be an important way of spatial development, especially if we want to keep the rural districts of the Netherlands green. Many local authorities struggle to combine various functions within one area, with often as a result the moving out of some functions towards other areas. Environmental zoning issues, urban design problems and other obstacles are reasons for the difficulties that governmental bodies face with these projects.

Research goal and question

As a result from the problem statement, the following research goal is formulated as a basis for this research project: ***to gain more insight in suitability of different planning strategies for the implementation of mixed-use development in urban industrial areas that are in need of redevelopment or have the potential of value increase.***

From this research goal, the central research question was drafted: **‘Which planning strategies are or are not successful for the implementation of urban mixed-use development?’**

In addition to this central research question, a couple of sub-questions have been formulated. The first three questions have been answered based on the theoretical framework and formed also the basis for the further empirical data collection. The fourth sub-question, consisting of a couple of parts, has been answered based on the data collected during the interviews.

1. What is mixed-use development?
2. Which planning strategies are relevant for the implementation of mixed-use development?
3. What aspects define the success of planning strategies?
4. A. What is the role of local authorities in the investigated mixed-use development projects and how do these roles differ?
B. How do the different planning strategies support the local authorities in their task of implementing mixed-use development?
C. How do the chosen planning strategies cope with obstacles that occur specifically when different uses are mixed?

In addition to these research questions, a central hypothesis was formulated based on the findings from the theoretical framework, in order to structure the main object which was sought during this research project. The hypothesis consisted of the following:

“The more uses are planned in an area and the more stakeholders are involved in the development, the higher the required amount of steering and managing by the responsible authorities has to be.”

Methodology and approach

The central starting point of this research is the presumption that different regions have different needs and local aspects that make them unique and in need of a local solution. For that reason, a constructivist philosophical stance is chosen as the methodological approach. This means that scientific knowledge can be derived through the collection of data from various areas and creating ‘consensus’ from these locally-constructed realities. As a result from this constructivist approach, a qualitative method was chosen to do the empirical data collection, namely a multiple case-study.

Firstly, a theoretical framework was constructed, which served as a basis for the empirical data collection and as the answer to the first three sub-questions. The theoretical framework consists of three parts: mixed-use development, planning strategies and the defining of urban industrial estates. Hereafter, three case areas were selected out of a shortlist, which would be further investigated through a series of semi-structured expert interviews with different stakeholders from the municipalities involved. The selected case areas are Binckhorst (The Hague), Havenkwartier (Deventer) and Cruquius-island (Amsterdam). After the interviews were done, each of the case areas and the used planning strategy got analysed separately, based on how was dealt with four categories of obstacles that often occur in urban redevelopment projects:

- Land-management and ownership structure obstacles
- Urban design issues
- (Environmental) zoning issues
- Financial feasibility problems

Afterwards, a comparative analysis of all three case areas (to see what consensus there would be between the three areas) was undertaken and eventually conclusions could be derived.

Results and conclusions

The results of the research will be summarized through the answering of the sub-questions and the main question and, eventually the conclusions with regard to the central hypothesis.

A) What is the role of local authorities in the investigated mixed-use development projects and how do these roles differ?

In the three case areas, the role of the municipalities differs quite a bit. Where the municipalities of The Hague and Deventer have quite an active role and steer a lot, the municipality of Amsterdam left most of the initiative and responsibility to private parties. As a result of these different roles, the outcomes of the development projects differ quite a lot as well.

B) How do the different planning strategies support the local authorities in their task of implementing mixed-use development?

The used strategies have led to different outcomes for various reasons. Firstly, the used strategies in Binckhorst and Cruquius have had an impact on existing companies; they were uncertain about their future prospects in the current area and (especially on Cruquius-island) this has led to the leaving of many businesses. Besides that, choices made in the past (large-scale land acquisition or too little land

acquisition) might have effects on future possibilities for further development due to a lack of financial possibilities or too little steering options.

C) *How do the chosen planning strategies coop with obstacles that occur specifically when different uses are mixed?*

This question resulted in a quite contradictory answer: the possibility to be flexible in regulations and policies (which was mainly the case in Binckhorst and Cruquius) is in conflict with the need for certainty that small- and medium sized companies within such areas need to assure their business activities. In other words: if municipalities try to facilitate one group within the area to develop, it almost always means that another group will be limited in its possibilities. In that sense, mixed-use developments means constantly navigating between giving space and steering strictly.

‘Which planning strategies are or are not successful for the implementation of urban mixed-use development?’

From the case analyses it became clear that municipal steering in mixed-use development projects is essential for successful redevelopment. The policies which entail the most steering instruments and options tend to have the best impact on the mixing of uses the area to develop. Therefore the best planning strategies happen to be the ones in which municipalities take the lead (together with private developers and other stakeholders), as well when it comes to regulations and policies as in a financial sense for the acquisition of land.

In addition to that, the central hypothesis of this research project can be approved:

“The more uses are planned in an area and the more stakeholders are involved in the development, the higher the required amount of steering and managing by the responsible authorities has to be.”

Recommendations

Some recommendation for future practice could be derived in the end of the research process:

- When it comes to land-management issues, active land acquisition by governmental bodies has stimulated the investigated projects quite a lot and could be a good kick-start for future mixed-use development projects. In addition to this, legal steering planning instruments could help when large-scale acquisition seems to be unfeasible.
- The establishment of an urban design vision early in the development process helps to get good coordination between different stakeholder groups and prevents conflicts between these groups from taking place.
- Thoughtfulness with the use of the Crisis- and Recovery Act is necessary, since it is a good instrument to speed up developments but also creates uncertainty for some stakeholder groups (like existing companies).
- The use of a broad range of instruments to recover costs for public facilities was used in all three case areas. This has offered a good opportunity to recover costs of land acquisition as well and can be seen as useful material for future development projects.

TABLE OF CONTENT

PREFACE	II
SUMMARY	III
TABLE OF CONTENT	VII
PART I: INTRODUCTION	1
INTRODUCTION	2
1.1 INTRODUCTION TO THE PROBLEM STATEMENT	2
1.2 RESEARCH AIM AND RESEARCH QUESTIONS	3
1.3 SOCIETAL AND SCIENTIFIC RELEVANCE	5
SOCIETAL RELEVANCE	5
SCIENTIFIC RELEVANCE	5
PART II: METHODS	7
METHODS	8
2.1 ONTOLOGY AND EPISTEMOLOGY	8
2.2 RESEARCH APPROACH	9
ALTERNATIVE APPROACHES	9
2.3 RESEARCH DESIGN	10
2.4 CASE SELECTION	11
2.5 RESEARCH METHODS	12
LITERATURE REVIEW	12
DOCUMENT STUDY	12
SEMI-STRUCTURED INTERVIEWS	12
2.6 DATA ANALYSIS	13
2.7 RELIABILITY AND VALIDITY OF THE RESEARCH	13
PART III: THEORIES	15
THEORIES	16
3.1 THEORETICAL FRAMEWORK MIXED-USE DEVELOPMENT	16
DEFINING MIXED-USE DEVELOPMENT	16

IMPLEMENTING MIXED-USE DEVELOPMENT IN PRACTICE	18
PLANNING STRATEGIES AND IMPLICATIONS FOR MIXED-USE DEVELOPMENT	19
RELATION BETWEEN GOVERNMENTAL STEERING AND COMPLEXITY OF DEVELOPMENT TASK	23
3.2 THEORETICAL FRAMEWORK PLANNING STRATEGIES	26
DEVELOPMENT OF LAND MANAGEMENT & PLANNING STRATEGIES BY MUNICIPALITIES IN THE NETHERLANDS	26
CURRENT LAND MANAGEMENT STRATEGIES	28
PLANNING STRATEGIES FOR INNER-CITY DEVELOPMENT	29
STAKEHOLDER INVOLVEMENT AND MISMATCHES BETWEEN PUBLIC AND PRIVATE DEVELOPMENT GOALS	32
LEGAL PLANNING INSTRUMENTS FOR URBAN MIXED-USE DEVELOPMENT	34
SUCCESS FACTORS OF PLANNING STRATEGIES	35
3.3 THEORETICAL FRAMEWORK URBAN BUSINESS ESTATES	37
3.4 OPERATIONALISATION OF THEORETICAL CONCEPTS AND CONCEPTUAL FRAMEWORK	39
 PART IV: CASES	 41
<hr/> CASES	<hr/> 42
 4.1 HAVENKWARTIER DEVENTER	 42
INTRODUCTION	42
CHANGE OF PLANNING STRATEGY	43
4.2 BINCKHORST THE HAGUE	44
INTRODUCTION	44
REGIONAL AND LOCAL GOVERNMENTAL VISIONS	44
CHANGE OF PLANNING STRATEGY	45
THE ENVIRONMENT & PLANNING ACT AND CRISIS- AND RECOVERY ACT IN PRACTICE	47
4.3 CRUQUIUSEILAND AMSTERDAM	47
INTRODUCTION	47
REGIONAL AND LOCAL GOVERNMENTAL VISIONS	48
CHANGE OF PLANNING STRATEGY	49
 PART V: CASE STUDY FINDINGS	 51
<hr/> CASE STUDY FINDINGS	<hr/> 52
 5.1 ANALYSIS OF THE HAVENKWARTIER DEVENTER	 53
THE FLEMISH DEVELOPMENT MODEL IN THE HAVENKWARTIER-CASE	53
IMPLICATIONS OF PLANNING STRATEGY FOR MIXED-USE DEVELOPMENT	54
LAND-MANAGEMENT AND OWNERSHIP STRUCTURE OBSTACLES	54
URBAN DESIGN	55
ENVIRONMENTAL ZONING ISSUES	56
FINANCIAL FEASIBILITY PROBLEMS	57
CONCLUSIONS	57
5.2 ANALYSIS OF THE BINCKHORST THE HAGUE	59

THE ENVIRONMENT & PLANNING ACT AND CRISIS- AND RECOVERY ACT IN THE BINCKHORST	59
IMPLICATIONS OF PLANNING STRATEGY FOR MIXED-USE DEVELOPMENT	60
LAND-MANAGEMENT AND OWNERSHIP STRUCTURE OBSTACLES	60
URBAN DESIGN ISSUES	61
ENVIRONMENTAL ZONING ISSUES	62
FINANCIAL FEASIBILITY PROBLEMS	63
CONCLUSIONS	64
5.3 ANALYSIS OF THE CRUQUIUS-ISLAND AMSTERDAM	66
THE MARKET-ORIENTED MODEL IN THE CRUQUIUS-ISLAND CASE	66
IMPLICATIONS OF PLANNING STRATEGY FOR MIXED-USE DEVELOPMENT	66
LAND-MANAGEMENT AND OWNERSHIP STRUCTURE OBSTACLES	66
URBAN DESIGN ISSUES	67
ENVIRONMENTAL ZONING ISSUES	68
FINANCIAL FEASIBILITY PROBLEMS	69
CONCLUSIONS	70
 6 COMPARISON ANALYSIS OF CASE STUDY AREAS	 72
LAND-MANAGEMENT STRATEGIES IN CASE AREAS	72
URBAN DESIGN VISIONS IN CASE AREAS	74
ENVIRONMENTAL ZONING STRATEGIES IN CASE AREAS	75
FINANCIAL FEASIBILITY OF CASE AREAS	76
 7 CONCLUSION & RECOMMENDATIONS FOR FUTURE PRACTICE	 78
TOWARDS MORE SUCCESSFUL IMPLEMENTATION OF MIXED-USE DEVELOPMENT	78
RECOMMENDATIONS FOR FUTURE PRACTICE	83
CONTRIBUTION TO THE SCIENTIFIC FIELD OF SPATIAL PLANNING	84
 8 REFLECTION & RECOMMENDATIONS FOR FUTURE RESEARCH	 85
REFLECTION ON RESEARCH PROCESS	85
METHODOLOGICAL CHOICES AND THEIR IMPLICATIONS	86
RECOMMENDATIONS FOR FUTURE RESEARCH	87
 EPILOGUE	 88
 BIBLIOGRAPHY	 89
 LIST OF FIGURES AND TABLES	 95
 APPENDIX	 96

PART I: INTRODUCTION

INTRODUCTION

This chapter will introduce the topic for this research, by elaborating on the problem statement first. After this, the central research question will be formulated, supported by a couple of sub-questions. Finally, the societal and scientific relevance of this research theme will be discussed.

1.1 Introduction to the problem statement

The future will take place in cities: since the industrial revolution, cities have started to take in an important place within the world economy. The rise of industrial activity attracted many labourers and cities in Western Europe and the United States started to grow significantly from halfway the 19th century onwards (Gollin et al, 2015). But with this growth of cities came unforeseen side-effects like air pollution, which created bad living conditions around existing factories. The living areas of the working class got separated from the factories, which led to neighbourhoods that contained no more than one specific use: working or living. In later decades after the Second World War, the development of mono-functional neighbourhoods became commonplace among planning departments in the Netherlands, and all over the country similar kind of city expansions arose.

In later years, the same happened in some of the historical, popular city centres in Western Europe with a highly increased mobility and additional growth of tourism. Cities like Amsterdam, London or Venice are extremely popular amongst tourists which have created city centres that are 'themed enclaves' completely decorated on the wishes of tourists (Pinkster & Boterman, 2017). The popularity of these cities also creates a large demand for housing, which causes rising house prices and could in the end lead to neighbourhoods that are only accessible for the upper-class citizens. Besides this, the focus on tourism also creates difficulties for local inhabitants: supermarkets and shops for daily needs disappear because of the rising demand for tourist entertainment. Jane Jacobs describes in her book 'The Death and Life of Great American Cities' how Manhattan in New York started to lose more and more of its cultural value, because movie theatres, food specialty stores and meeting points for the locals disappeared overtime due to the rising amount of working and office space on this peninsula (Jacobs, 1961). This example also shows the physical distance created between spaces of working, living and recreation.

Today, it seems this mono-functional neighbourhood development will have to change in the Netherlands. Since a couple of years, the Dutch have adopted the so-called 'compact-city policy' (Compacte Stad beleid), which should ensure the preservation of the Dutch rural landscape instead of using urban sprawl as a solution for urbanisation (Foord, 2010). The policy focuses on the development of new housing locations within existing urban areas. But at the same time, the CBS (Statistics Netherlands) made a prognosis that the amount of households in the Netherlands will have to grow with around 1 million new dwellings (Van Duin et al, 2016). This means that a lot of these dwellings will have to be built within existing urban areas. Two complementary solutions offered to cover these numbers of new houses are:

- 1) Densifying the urban environment by building more houses and keeping less open spaces
- 2) Transformation of existing inner-city business or industrial estates into mixed-use areas.

These solutions however still face some problems: land prices for urban land are much higher than they are in greenfield-areas, where municipalities used to build their city expansions. And, on top of that, the landownership structure in urban areas is much more dispersed, making the negotiation process and land acquisition much more time-consuming and expensive. This has negative impact on the land exploitation, as the costs for acquiring land might get higher than the eventual income will be from selling the plots, which means that the business-case for the area development will be unfeasible (Verheul et al, 2017). If the municipality or the private developer of the area want to continue the development, they have to adapt the plan capacity of the area, by building in higher densities or include more expensive real estate products in the area plan. The disconnection with the market demand (building only expensive apartments does not fit the demand of the entire population on the housing market) is an important issue that occurs when plan capacity or housing typologies get adjusted to the financial consequences that are at stake in the area to develop.

To overcome these problems and produce housing that fits the market's needs, the municipality could use a different type of area development in which itself takes in a passive role: the municipality initiates plans for development and leaves the actual execution to the market. By doing this, the municipality omits the step of acquiring the land herself which then does not affect the land exploitation. A downside of this strategy however is the lack of governmental control: the landownership is in hands of the market, which gives them the strongest negotiation position. The municipality can enforce some contributions for the development of public facilities and the content of the housing plan for the area, but only via an anterior agreement (which the private party has to agree on as well) or an exploitation plan (which can cover only part of the costs for infrastructure, not as much as in an anterior agreement).

These deficiencies in both the strategies give reason to ask critical questions about the role governmental bodies should take in development projects. Active planning strategies could lead to larger financial risks, due to uncertain market prospects and the high costs of land acquisition, but also offer the most possibilities for the municipality to implement its own ambitions and visions according to the national policies on urban (re)development. Passive planning strategies on the other hand omit these large financial risks, but do not offer the same amount of steering for the municipality as an active role does and cannot ensure that developments will actually take place since it is up to the market if developments take place.

Besides the strategy that a municipality chooses to use for the implementation of mixed-use development, local authorities also have access to a broad range of legal instruments and policies to facilitate their development projects. This research project will look further into the planning strategies, including the legal planning instruments, that are used to steer urban mixed-use development projects and evaluate the outcomes and successes of these strategies.

1.2 Research aim and research questions

As becomes clear from the introduction, the aim of this research is *to gain more insight in suitability of different planning strategies for the implementation of mixed-use development in urban industrial areas that are in need of redevelopment or have the potential of value increase*. This research aim consists of multiple parts: (1) to get a better insight in the possible planning strategies that can be used for area development in general, (2) to understand which planning strategies are currently being used

for urban mixed-use development projects and (3) to investigate which success factors exist within strategies for implementing mixed-use development in urban industrial areas and what could be fields of improvement in these strategies. The areas that will serve as case studies for this research won't be selected randomly, but based on their characteristics (like current use and size of the project site), to get a better insight in the usefulness of planning strategies for their specific needs. A broader explanation will follow in the chapter on case selection. Therefore there will be a division into different types of planning strategies, from a governmental perspective; from very much active planning strategies to more passive ways of steering development processes. The aim of the research can be formulated in the following main research question:

'Which planning strategies are or are not successful for the implementation of urban mixed-use development?'

The main concepts in this question are 'planning strategies', 'mixed-use development' and eventually the successful aspects of these strategies. Besides this main research question, a couple of sub questions, based on the research aim, will support the research process:

1. What is mixed-use development?

This question will be answered on the basis of a desk research on the current literature on mixed-use development. Furthermore, the gathered knowledge will serve as a basis for the empirical research that will follow. The desk research will look into various scientific definitions for mixed-use development, the practical implementation of these kinds of development projects and the implications that occur in the recent practical planning field with regard to mixed-use development.

2. Which planning strategies are relevant for the implementation of mixed-use development?

This sub-question will also be answered on the basis of the theoretical frameworks about mixed-use development and planning strategies in the Dutch context. This question will elaborate further on the differences between greenfield planning and inner-city redevelopment projects, mainly focussing on the obstacles that appear along the planning process for brownfield regeneration and arguing why this requires a different strategy than greenfield development. Besides that, it aims to give an insight in the differences between planning for a single-use area and the specific obstacles that arise when municipalities start developing for mixing of uses.

3. What aspects define the success of planning strategies?

The third question is also related to the desk research on planning strategies and will give a better insight in the aspects that determine the success of planning strategies for mixed-use development. These will be related to the different strategies mentioned in the theoretical framework and the outcomes of the stakeholder interviews afterwards.

- 4. A. What is the role of local authorities in the investigated mixed-use development projects and how do these roles differ?*
B. How do the different planning strategies support the local authorities in their task of implementing mixed-use development?
C. How do the chosen planning strategies coop with obstacles that occur specifically when different uses are mixed?

Question four will be answered based on the outcomes of the semi-structured stakeholder interviews from the selected case areas. These sub-questions will be juxtaposed with the findings from the desk research to be able to draw conclusions about the successful aspects of planning strategies for mixed-use development and to comment on the hypothesis formulated as a result of the theoretical framework.

1.3 Societal and scientific relevance

Societal relevance

Regeneration of urban areas by turning them into mixed-use areas is a topic that is quite relevant these days: popular projects, like Strijp-S in Eindhoven serve as examples for other cities how they can create a stimulus for urban industrial estates and turn them into vibrant mixed-use areas to achieve the goals for housing and business demand. And not only the impulse for urban industrial estates is a goal on itself for cities, the earlier mentioned 'compact city policy' makes the mixing of uses within these urban areas necessary as well. To keep up with the growing demand for housing in urban landscapes without having to develop greenfields outside the existing urban landscape, cities have to be creative in redevelopment of certain inner-city industrial or business estates.

Although an example like Strijp-S seems like an ideal picture that can be copied in various places, there are quite some obstacles that make the implementation of dwellings within business or industrial estates difficult. For example regulations in relation to environmental zoning: housing units can only be built in a certain distance to businesses causing nuisance. These noise or pollution regulations make it often impossible to implement housing into industrial estates due to the presence of companies that produce more noise or are more polluting than allowed around a living environment. Besides that, aspects related to the built environment could cause trouble: business estates require very different public space in comparison to housing areas. Creating public spaces that are both suitable for businesses and nice to live in is difficult.

In recent years, a broader set of legal instruments is available to overcome the obstacles that local authorities face during such urban redevelopment projects. Instruments like the Crisis- and Recovery Act offer the possibility to accelerate development projects and stimulate mixing of different uses at a higher level.

By analysing the planning strategies used in various cases and defining the successfulness of these strategies, this research could help to enhance future strategies for mixed-use development projects. This could add knowledge for municipalities to choose on a well underpinned base for a certain planning strategy for future mixed-use developments. Besides that, this research projects also aims to give an insight in the usefulness and suitability of various legal planning instruments that municipalities are allowed to use.

Scientific relevance

Mixed-use development is not a very new subject: Jane Jacobs was in 1961 one of the first researchers to write about this topic and soon many others followed. Often it was used in relation to the growth and globalization of cities, leading to rising house prices and uniformity of city centres. Jane Jacobs argued that city centres should be surprising, with lots of variety in uses and should be easy accessible for

pedestrians and, nowadays, cyclists (Jacobs, 1961). In many other researches, mixed-use development was brought up as a solution to keep cities accessible for all social groups and classes.

Nowadays, mixed-use development is not only used as a possibility to have cities that remain accessible for all social classes of society, but also to stimulate urban areas that lost their function or face dilapidation. Besides that, the large housing task that is at stake in the Netherlands requires new solutions for development of dwellings within existing urban environments. Most of these projects and ideas are now in an early stage of development and research has not been carried out yet on the successfulness of certain aspects of the strategies used for these projects. So there is quite a lot of scientific literature about planning strategies and the relation to new forms of planning, but the evaluative part of the strategies nowadays used is not very extensively researched yet. Especially the mixing of uses between activities that usually take place at industrial estates and housing is a quite new topic. This research aims to explore this evaluative part, by looking further into the consequences of certain planning strategies for the success of the mixed-use development in question. In the end, the goal is to formulate success (or less successful) factors of the strategies used in the different case areas to formulate recommendations for future development projects.

PART II: METHODS

METHODS

This chapter will go further into the methodological backgrounds of this research project. First, the ontological and epistemological principles will be outlined, on which the specific research design is based. Besides the research approach chosen, there will also be underpinned why alternative approaches do not suit the research questions at stake in the same way as the chosen approach does. Finally, an overview will be given about the research process and the different phases within the process to get a better insight in the various concepts that guide the research towards the final answer on the main research question and sub-questions.

2.1 Ontology and epistemology

One of the main assumptions of the research questions in the first chapter is the fact that there are differences between areas and planning strategies. Regions and single places have their own context and ask for a specific approach regarding the planning strategies needed for the development of these places.

Based on the assumption that different areas (with different stakeholders and varying uses) ask for different strategies, the assumption is made that the research takes in a constructivist perspective. According to Guba and Lincoln, constructivism sees reality as not more or less 'true', but simply more or less sophisticated in different cases (Guba & Lincoln, 1994). The way reality is seen by humans is thus alterable and differs from place to place. This also underpins the fact that various urban redevelopment areas have a differing background, future forecast and local needs, desires and characteristics that have to be taken into account when determining which strategy suits the development project best.

From an epistemological perspective, the constructivist approach argues that the investigator and the object that he or she is investigating, are linked in both ways (Guba & Lincoln, 1994). This suggests that the researcher is actively involved in the object that is being investigated and therefore influences and creates the outcomes. But the other way around works in a similar manner: by getting in contact with the research object, the researcher gets influenced in a certain way as well. If we translate this into possible methodological terms, the interaction between investigator and object investigated seems to be of great importance. The key principle is to derive consensus from the individual reconstructions that are undertaken during the research process, which should lead to an overall shared answer to the research questions. This means that being in contact with actual stakeholders who are involved in the research object (in this case, stakeholders involved with the redevelopment projects that are used as cases in this research) is of great importance for the success of the research process. Guba and Lincoln describe the methods that could be used as: 'conventional hermeneutical techniques for interpreting these constructions, which can then be compared and contrasted through a dialectical interchange' (Guba & Lincoln, 1994). For this research project this would imply that deriving consensus from contact with diverse stakeholders should lead to a (partly) confirmation or disproof of the hypothesis and further answering of the sub- and main research questions. In the end, this means that the empirical

research of the cases should create an overview of success-factors and points of improvement for the different planning strategies used.

2.2 Research approach

Since the interpretivist perspective sees the interaction between researcher and the object of inquiry as very important, a qualitative research approach would fit best for this subject (Bryman, 2015).

Respondents could in this case give their own 'view on reality', which might be connected to the specific location factors and regional context that influence the respondent's way of looking on the world around him or her and the specific development project he or she is involved with. Feelings, behavioural aspects and relational aspects between stakeholders within the development process are important components of this research. Quantification would in that sense be quite difficult, because locational factors could have different effects on all different inhabitants and stakeholders who use the investigated space or are involved with the development of it. This means that one would have to ask all the inhabitants of the specific area to give their view on reality to draw conclusions in a quantitative way.

Besides the fact that it would be difficult to speak with every stakeholder involved, the fact that the success factors of urban mixed-use development projects isn't researched that much yet and there's especially a lack of quantitative data about it, would make it difficult to find enough information to analyse quantitatively. It means that the research would be some sort of exploratory research, which usually is related to a qualitative research approach (Bryman, 2015).

Alternative approaches

As this research follows the constructivists paradigm and uses qualitative methods as a research method based on the argumentation above, this subchapter tries to argue why other research methods would be less useful for the questions asked in this paper.

First, an argument will be made why the constructivist perspective is being preferred before other research philosophies. From the theoretical framework becomes clear that there are certain differences in strategies between areas caused by factors like stakeholder involvement and variety of uses, which makes it impossible to have a general single strategy to implement mixed-use development in every area. Ownership-structures, market conditions and locational qualities are quite determinative for the development strategy that fits the specific location. This means that a positivistic or post-positivistic perspective on research, which both entail a more objective view on reality, would be difficult to fit with the research questions as they are. The current questions for this research project are mainly exploratory and the content of the local strategies used by the different project areas can vary, making it difficult to generalize. Through the hypothesis described in this research project, there will be tried to generate some sort of guideline for developing planning strategies for mixed-use development in general, but locational factors might remain to be of great importance.

Linking the research questions formulated in this case to a quantitative research design (which would often follow from a positivistic perspective) would not make a good match: the research questions contain elements that are relevant on a policy-level and do not have a broad fame with inhabitants of the areas to investigate. This could make it hard to use questionnaires as a method for gathering data. Besides that, the differences between the practical process of implementing mixed-use in areas with

differing characteristics have not been investigated that much, leading to a lack of quantitative data available now. Quantitative research using existing data would be difficult as well. Mixed-use development has not been implemented in existing urban environments on a large scale, which makes it hard to derive enough statistical data from the chosen regions. Instead, this research aims to find suitable strategies for authorities to help them implement mixed-use development in their own area.

2.3 Research design

As earlier on mentioned, locational factors might be of great importance for the way mixed-use zoning can be implemented in different urban areas. This suggests that information that derives from this research would be useful on a local or regional level instead of generally applicable on multiple regions in the same way: it aims to formulate a guideline of success factors on which local authorities can base their own strategy for mixed-use implementation in urban areas, based on the locational factors that are linked to these success aspects. In that sense, this research mainly aims to add scientific knowledge instead of testing existing theories. According to Bryman, this means that the research will have an inductive focus, working from a broad theoretical framework towards the formulation of new knowledge (Bryman, 2015).

Based on these principles, the research will be conducted as a multiple case study design, which is according to Bryman more interesting when trying to compare different areas (Bryman, 2015). Besides that, he also argues that a case study offers the opportunity to have “an intensive examination of the setting”, which means that multiple aspects of planning strategies can be taken into account instead of a more general overview (Bryman, 2015). This is more useful when determining success-factors of different planning strategies. To be able to identify success factors of used planning strategies in each case area, the selection of cases will be based on the presence of a strategy-change for the development of the area in question. Because the areas all have their own unique locational characteristics, it would be hard to compare similar strategies used in different areas: the effect of the strategies in each area could depend on the specific characteristics or unique situation that exists in these different places. By selecting areas based on the fact that the chosen planning strategy has changed during the development process, it will be easier to identify success (or less successful) factors of planning strategies, because one can compare an initial strategy that failed with a follow-up strategy that led to the actual development of the area.

After the case selection, the empirical data from the areas will be collected through semi-structured interviews with stakeholders in these areas, to get a better view of the policy- and strategy context that local authorities use for spatial actions and the aspects of the development process that made substantial impact or created a draw-back. Afterwards, these interviews will be analysed based on the four identified obstacle categories. The goal is to define how the planning strategies aimed to deal with these obstacles and made more mixing of uses possible or, in other words, made more successful implementation of mixed-use development feasible.

To summarize, the research process in figure 3 gives a systematic overview of the steps that are taken during this research project. The first and second stage of the research process (the introduction and methodological framework) include the problem statement and methodological choices made, which

have (for a large part) been done during the writing of this proposal. The third step in the research process entails the designing of the theoretical framework: the main concepts that arise from the research question will be explained and defined. Besides that, the criteria for the case selection will also be derived during this phase. The fourth stage contains the empirical data collection of this research which consists of two parts: on the one hand, there will be a document study to get further insight in the background of the selected cases and the used planning strategies. Furthermore, relevant factors for successful or less successful planning strategies will be defined. On the other hand, semi-structured interviews will be carried out to get primary data from stakeholders involved with the different cases. Eventually, in the fifth phase of the research process, the outcomes of the document study and interviews will be analysed and combined to draw conclusions and create recommendation for future mixed-use developments. Figure 2 shows (abstractly summarized) what the research process looks like.

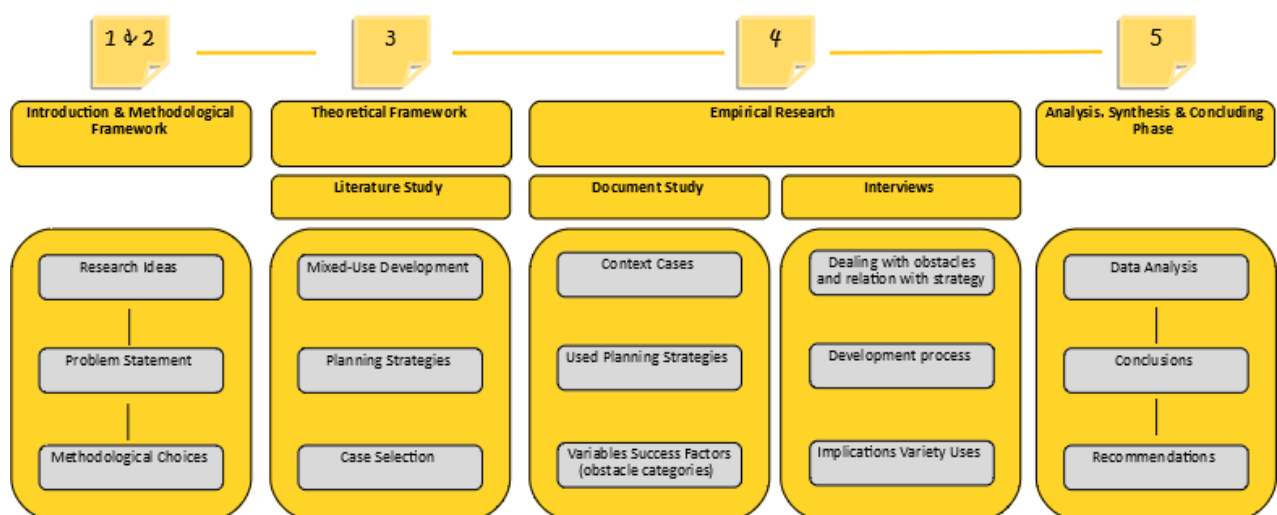


Figure 1: Research Model (following a multiple case study design)

2.4 Case Selection

The secure selection of cases is essential for a good execution of a multiple case study. For that reason the selection of cases for this research will be based upon a list of several criteria. According to Verschuren and Doorewaard, this is the so-called strategy of purposive sampling (Verschuren & Doorewaard, 2007).

The following selection criteria have been used to collect a range of suitable case study areas:

- The area has to be located in an existing urban environment
- The area has to be defined as an industrial or business estate
- To improve comparability of the cases, former (or current) harbour-activities are desirable
- The already ongoing process (either on paper or physically) of developing the area into a mixed-use zone
- Preferably a change in planning strategy during the development process

By using these selection criteria, a long-list of possibly suitable areas was defined. After a global literature review on the processes and activities in the selected areas, the long-list was being reduced to only 6 case areas. On these areas, a thorough, more extensive review on existing reports, visions and development plans was carried out to get a more detailed overview of their suitability for this research. Afterwards, exploratory interviews with municipal officers, development managers or project supervisors will be carried out to get a better insight in the development process. After this more extensive literature review and the exploratory interviews, the range of case areas can be reduced to three in total.

The list of six cases exists of the following areas: Achtersluispolder (Zaandam), Havenkwartier (Deventer), Binckhorst (Den Haag), Waalfront (Nijmegen), Oliemolenkwartier (Amersfoort) and Cruquius-eiland (Amsterdam). All these projects meet up to most of the selection criteria, but the development plans and visions for the areas are different, with most of the cases containing a change in planning and development strategy during the process.

2.5 Research methods

According to Bryman, research methods are the techniques that one uses to collect relevant data for the research (Bryman, 2015). The methods used for this research will exist of a desk research and semi-structured interviews.

Literature review

Before the actual empirical research will start, a literature review will create a basis for this part of the research process. Literature reviews are used to create an overview of the already existing scientific- and policy literature on the concepts relevant for the research. For this research project, it will also form a theoretical framework. The literature review will consist of the concepts mentioned in phase 3 of the research process: mixed-use development, planning strategies and the case selection (the definition of the urban industrial estates that will be selected). Not only will the current scientific knowledge on these concepts be gathered, but also the interconnectedness of the three concepts will be shown in the conceptual model. This conceptual model shows the relations between the concepts of the literature study and serves as a guideline for the creation of interview guides.

Document study

This part of the research mainly focuses on the current status of the different case areas. In this phase of research, various policy documents like spatial visions, ambition documents, development strategies and other literature related to the development plans for the case areas will be collected and analysed to create a complete overview of the different strategies used in the various case regions.

Semi-structured interviews

As earlier mentioned, semi-structured interviews are chosen as a tool for data collection because of the qualitative character of this research project. The use of semi-structured interviews offers the opportunity to get a better insight in the broad context of a couple of cases to extract some first evaluative aspects of the success or failing points of planning strategies used for urban mixed-use development projects. The theoretical framework that is being created by the literature review is a basis for these interviews. Therefore, the aim of the interviews is to discuss all relevant aspects that could be

success-factors or points of improvements within the used planning strategy, to be able to formulate recommendations in the end that could help municipalities in defining their role in future urban mixed-use development projects.

For the interviews, a diverse group of stakeholders will be interviewed to get different insights of the development project in question. The groups included will at least be representatives from the government side (municipal officers), the market actors (the private developer(s) involved) and (if possible) the current- or end-users of the area that has to be developed. Including this wide range of stakeholders should offer an overview of all those involved in the project with different interests.

2.6 Data analysis

All interviews will be recorded after which transcripts or excerpts will be made to make it more easy to analyse them afterwards. The interviews will all consist of a similar structure, to make them comparable and make it possible to use codes that cover all the research questions that have to be answered in the end. A codebook will serve as a background to make sure the relevant themes are covered and give a better insight which aspects can be categorized under which family code. These family codes will be selected based on the theoretical framework and document study, which have to give an answer to the related research questions (sub questions 1, 2 and 3).

The first part of the data analysis will be an overview of the planning strategies and the successful and less successful aspects of the development processes in the selected case areas. The second part will consist of connecting the empirical data with the hypothesis and trying to confirm or disapprove this statement. The last part consists of a concluding summary and recommendations for future mixed-use development projects.

2.7 Reliability and validity of the research

Using a qualitative approach and choosing for a case study research design means that the research will be carried out from a certain angle (generating in-depth, location-specific knowledge), which means that other parts will be left out of the discussion (generating broad, generalizable theories). This has some implications for reliability and validity of the research itself, which is being elaborated in this subchapter.

According to Saunders et al, reliability refers to the replication and consistency of the research itself, or in other words: if someone else wants to redo the entire research in the same way, would he or she get the same results? (Saunders et al, 2016). Because of the timeliness of the research design, reliability could be affected: answers given by respondents during the interviews could differ a few years afterwards, due to changed circumstances in political, economic or social fields, leading to different outcomes or the further development of the area which might have negative or positive implications for some stakeholder groups. Countering these issues within the research design is difficult, since these changes cannot be predicted.

The internal validity of the research can be secured by ensuring that enough different insights within a region are being consulted. By interviewing a large variety of different stakeholders with various insights on this subject the internal validity can be ensured. Besides that, using a structured way of conducting and analysing each interview is important: this to make sure that there won't be any false outcomes based on a different treatment of interview translations. A code book for coding interviews and using family coding in all the interviews are examples of structuring the analysis of data.

Finally, the research might experience the most negative influence in the external validity: generalizability is, according to Saunders et al, usually not high when using a qualitative case study design (Saunders et al, 2016). The research aim of this project is ,though, to gain more insight in suitability of different planning strategies for the implementation of mixed-use development in the selected regions. It has thus a quite practical aim and producing a generalizable theory is not part of the central research aim.

PART III: THEORIES

THEORIES

This chapter forms the theoretical basis for the empirical research in the case areas. To create a proper framework, a couple of sub-questions have been formulated to be answered in this theoretical chapter. These sub-questions were derived from the problem statement and are formulated as follows:

1. What is mixed-use development?
2. Which planning strategies are relevant for the implementation of mixed-use development?
3. What aspects define the success of planning strategies?

First, the relevant concepts that were extracted from the main research question will be further outlined. Afterwards these concepts will be placed into a conceptual model, to show the relations between them.

3.1 Theoretical Framework Mixed-Use Development

This chapter of the research will look further into the concept of mixed-use development. In the first part, a suitable definition for mixed-use development will be sought, after which the practical implementation of mixed-use development will be explained based on the current literature available. The last part of this chapter will relate the concept of mixed-use development to the concept of planning strategies and summarize the implications that follow from existing scientific literature.

Defining mixed-use development

The definition of mixed-use development exists in many different forms according to different authors at various moments in time. According to Rowley there are many aspects that can have different forms, but still can be called mixed-use (Rowley, 1996). But first, we take the definition of The Urban Land Institute as a starting point: they argue that 'mixed use is characterized by three or more significant revenue-producing uses that are significantly and functionally integrated and developed in conformance with a coherent plan' (Witherspoon, Abbett & Gladstone, 1976). This definition already sums up quite well how the process of creating mixed-use works, but is still relatively vague about what the revenue-producing uses could be. Niemira adds a list of uses that could be seen as these revenue-producing uses. He defines mixed-use as a 'real estate project with planned integration of some combination of retail, office, residential, hotel, recreation or other functions that are pedestrian-oriented' (Niemira, 2007). Besides this, Niemira adds a few requirements to the definition of mixed-use:

- The use should maximize space usage
- It has amenities and architectural expression
- It mitigates traffic and sprawl (Niemira, 2007)

Especially the aspects about mitigation of traffic and the orientation on pedestrians are quite close to an important base issue that Jane Jacobs brings up in her earlier on mentioned book: she argues that the sidewalks of streets are important places of meeting and social behaviour. 'In itself, sidewalks and streets are abstractions, but in conjunction with their surroundings and their users they get significant importance' (Jacobs, 1961, p. 29). Adding to this, she states that the use of a street at all times of day is important, for social cohesion but also social control. Greater street activity increases the surveillance by

people who visit the area and creates a safer environment (Zahnow, 2018). Streets that attract people at all times of day have dense concentrations of people, accommodate a variety of ages (as well as inhabitants as visitors), have short blocks with frequent intersections and corners and have various functions for these different age groups (Jacobs, 1961). We can extract out of these statements that *design* (which Niemira defined as 'architectural expression') is another important feature of mixed-use development. Also, the functions hosted within the mixed-use area have an effect on the use of streets at all times of the day. Think for example about the integration of offices (used at day) and a pub (visitors in the evening or at night) in one building.

Besides Niemira, Rowley also joins Jane Jacobs in his definition of mixed-use: he also argues that mixed-use essentially shows that it is a combination of urban texture (the length of blocks and amount of corners and intersections), the location (town centre, suburban or in greenfield areas) and the importance of time dimension to have occupied streets at all moments of the day (Rowley, 1996). In addition to this, Rabianski et al states that there can only be spoken about mixed-use when a development is based on a consciously made plan for different uses in that area and exists of more than just 'a shop on the bottom floor and apartments above it' (Rabianski et al, 2009). Just having these different uses in one building would be called 'multiuse' according to the Urban Land Institute (ULI, 1987). Besides the use of an area, *the way it is planned*, the design and lifestyle of the objects are important aspects of mixed-use as well (Rabianski et al, 2009).

According to different authors, the size of mixed-use development projects can vary: some authors include the scale of a single building, others only define it as projects on neighbourhood-size. We can also distinguish between vertical (mixed-use within one building unit) or horizontal (mixed-use in multiple buildings on ground floor) mixed-use. On this point as well, many authors take in different points of view. Huston and Mateo-Babiano (2013) make a distinction between the two types (vertically and horizontally). Hoppenbrouwer and Louw (2005) create even more distinctions in that sense, dividing mixed-use into four separate dimensions:

- *Shared premises dimension*: two (or more) types of use in one and the same floor of a building.
- *Horizontal dimension*: multiple types of use in one block, district or city, but all uses in separate buildings
- *Vertical dimension*: multiple types of use in one building or in one block
- *Time dimension*: multiple types of use in one building or in one block, but at different moments in time (for example: a school that acts as a community center in the evening)

In this research, the dimensions suggested by Hoppenbrouwer and Louw are being used as a starting point.

Concluding, a few aspects the definitions of mixed-use seem to be of great relevance. However many authors use different definitions with various exceptions or inclusions, a couple of important aspects show up in almost all the definitions: the inclusion of revenue-producing uses in mixed-use developments, the consciously planned way of applying mixed-use, the importance of the way urban areas are designed when mixed-use development takes place and, finally, the scale- and dimensional differences that exist within mixed-use projects as explained by Hoppenbrouwer and Louw.

Implementing mixed-use development in practice

As became clear from the previous subchapter, mixed-use has been widely researched in theory, but the practical implementation of mixed-use development has been explored only very little yet. To get a better understanding of the possibilities for implementing mixed-use in practice, this subchapter will give insight in the actors involved, the requirements needed and difficulties that appear when mixed-use comes into practice in contrast to other development projects.

Actors involved

The inclusion of stakeholders in area development projects is according to various authors of great importance (Sandercock, 1998; Van der Krabben & Jacobs, 2012; Savini et al, 2014; Thorpe, 2017). Sandercock argues that there should be no such thing as just professional planning that serves the public interest; this idea only exists because certain interests are erased and excluded from the planning field (Sandercock, 1998).

Rowley argues that there are three main actors of interest in relation to mixed-use development (Rowley, 1996):

1. The profit-seeking private developers and investors
2. Public authorities
3. 'Voluntary' organisations, groups and individuals

The Environment Assessment Agency (Planbureau voor de Leefomgeving, PBL) formulates the same categories, but they specifically split the third category according to Rowley into inhabitants and passers-by (Pols et al, 2009) because they seem to have relevant differing needs. Recent research by Bast shows that the importance of involving stakeholders present in the area to develop during the transformation process of that area is quite large: they can delay development projects or even make it impossible to start transforming at all (Bast, 2019). To make sure land owners and other stakeholders active in the development area are willing to co-operate, it is important to involve them in the development process in a secure way. This means that the list of Rowley should be completed by adding a category consisting of the current and future users of the area to develop. The way these stakeholders are involved in the planning process will be outlined in the following chapters.

Requirements for the implementation of mixed-use development

Many authors argue that mixing uses within one area has additional requirements in contrast to single-use planning projects (Hoppenbrouwer & Louw, 2005; Buitelaar et al, 2008; Korthal Altes & Tambach, 2008; Boeve, 2017). This subchapter aims to outline these additional requirements.

Some practical requirements for the implementation of mixed-use development are formulated by the The Environment Assessment Agency (Pols et al, 2009). They first suggest that there should be a certain level of 'tuning' between the functions within an area: for example, function A should not cause any nuisance for function B. This nuisance is the so-called negative externality for the surrounding area: an unwanted (negative) effect for function B caused by the production or activity of function A (Van der Krabben, 2008; Koster, 2016). Mitigating negative externalities could be done through the categorization of functions according to the Association of Dutch Municipalities (Vereniging van Nederlandse Gemeenten), which entails for example that certain functions should not be located in the same building, but should always be separated in different blocks. A second point they outline is the location of an area: industrial estates close to Amsterdam are for example more suitable for mixed-use

development than an industrial estate somewhere in the north-eastern part of the province of Groningen, which will make it more easy to get a redevelopment started in the Amsterdam-region (with high market interests) than in the north-eastern part of Groningen (where the market interest is significantly lower). A third important point is the existence of a well-underpinned urban development plan. Important aspects of this requirement are for example the possibilities for access roads to the area and again a proper market research to investigate the local or regional needs. The fourth point is in line with the arguments that many other authors made, namely the fact that variety in the area is important for the success of mixed-use zoning. The last point Pols et al make is also hooking up on this, concerning the fact that the design of business and retail spaces should be in line with the design of the rest of the area (not too big, similar kind of architectural style et cetera).

These requirements should be taken into account by municipalities when they are undertaking projects that involve the implementation of mixed-use development and could perhaps determine which planning strategies are useful to guide the process. To set an additional critical remark: the implementation of mixed-use development is often quite difficult in practice. A set of reasons are responsible for these difficulties, which will be outlined in the next chapter.

Planning strategies and implications for mixed-use development

To get a better grasp of the reasons why mixed-use development could stumble upon challenges during the development process, this chapter will first give a brief outline of the current planning strategies that are mainly being used in the Dutch planning system.

Spatial planning in the Netherlands has undergone some significant changes through history, which will be further outlined in the planning strategies theoretical framework. For many decades, planning has been a governmental task: municipalities bought large pieces of land, serviced them and sold them to developers or developed it themselves. This strategy is called 'active land development' (Needham, 2014). But active land policy is quite risk-taking, since municipalities had to buy large pieces of land, without any guarantee that developers were willing to buy them in return. These risks became clear during the financial crisis that struck worldwide in 2008. Municipalities lost large sums of money due to investments in land they did not receive back because of the 'wait and see' attitude developers maintained during that time. After the financial crisis, many municipalities decided to avoid active land policy when it is not necessarily needed. Instead, they adopted passive land development as a new strategy: public bodies still steer and co-ordinate desired planning developments, but they do not invest in land anymore (Needham, 2014). The so-called 'planning by invitation' gives the initiative to developers, investors and other private stakeholders to develop areas. Municipalities guide these developments through zoning plans and other land-use regulations. This new attitude of the authorities gave space to all other kind of planning methods that could be experimented with, like organic urban redevelopment (Needham, 2014). This entails a method in which the large, integral projects are omitted and developers can take the lead in developing small units within an area to create bit by bit, like a chain reaction, a new use for the neighbourhood.

Nevertheless, since the large projects that were planned during the economic crisis got cancelled because of the lack of interest for new housing during that time, serious shortages in housing seem to be at stake now. According to recent research the shortage is estimated around 263.000 housing units at this moment that are needed to solve the current problems (Capital Value, 2019). To solve these problems, there is being suggested to let municipalities take the lead again by using active forms of

planning strategies (Muskee, 2019). However, municipalities should be more flexible and careful with active planning strategies and risk-spreading thus remains a valuable item. To create more risk-spreading municipalities could use alternative, cooperative ways of planning that involve other stakeholders that can share the financial risks of the area development. Some examples of these strategies are public-private partnerships, like the building claim model or joint-venture developments. These kind of planning strategies are getting increasingly popular, but can also have certain downsides. For example in the case of the Waalsprong project in Nijmegen; a large VINEX-location of about 850 hectares and roughly 12.500 dwellings that have to be build. This large development project should take place through a joint-venture construction consisting of the municipality (50%) and private developers (50%). The joint-venture co-operation bought all the land in advance, serviced it and wanted to sell them to private developers from the joint-venture group. But, when the financial crisis struck in 2008, private developers were not willing to buy the land anymore and the private developers used a clause in the joint-venture contract to leave the partnership, which meant that all financial risks of the landownership were now with the municipality (Valtonen et al, 2017). To conclude, this left the municipality with exactly the same risks as they would have had not using risk-spreading strategies from the beginning onwards. The use of these co-operative forms of planning requires a lot of negotiating and contract-forming to make sure all possible risks are secured in such constructions. However, taken into account the importance of stakeholder involvement, these forms of participatory planning could be very useful for current mixed-use development projects.

Perhaps the most relevant question for this research is the question how government organisations try to implement mixed-use development in their cities. But nowadays, mixing different functions in one urban area is quite difficult and faces a couple of obstacles:

- First there is the problem of the **variety of stakeholders**, making it difficult to get everyone on board in an agreement about the proposed development. Many owners of land or buildings within the area that has to be developed could have other plans with their property and do not want to cooperate, making the negotiation process longer and thus more expensive (Foord, 2010). In comparison to single-use urban development, the mixing of uses does not only face difficulties with existing landowners, but also with possible future co-developing or end-user parties. If an urban area is being transformed into a single-use area, there often is just one type of stakeholder involved (for example a housing corporation if it is going to be a living area). But when multiple uses will be facilitated within the area, more types of stakeholders are involved in the development process (not only housing corporations, but also companies who want office space or private developers willing to invest in retail space). This makes it possibly more difficult to receive consensus between all different parties about the content of the development plan.
- The second difficulty is about the **financial uncertainty** accompanying mixed-use development projects, which has two sides from which the problem can be approached: some authors argue that the risks municipalities take with projects that involve mixed-use (and thus a lot of negotiating and transactions of land) are larger than in regular housing projects that do not include mixed-use development (Hoppenbrouwer & Louw, 2005), also partly caused by the involvement of multiple stakeholders and the possibly longer negotiation process. But on the other hand, as some authors suggest, having areas with various functions could also lead to more financial security, since the area is not dependent upon one single function. If for example the market for one specific function (like the office space market) would collapse, the mixed-use

area would still be able to enhance itself using other functions which do have enough demand (like housing at this moment). So, the risk spreading would be larger, since developers do not depend upon one type of use in the development area (Kane, 2004).

- Another obstacle lies within the **ownership of land or real estate**; like many other Western countries, the Dutch law states that the owner of land has the right to decide how he or she will use it within the boundaries of public and private law (Buitelaar, Segeren & Kronberger, 2008). Especially with mixed-use development, various parties might take in land positions within the area to develop, to receive their share of the development revenues. This means that they can choose not to cooperate when a municipality wants to redevelop an area in a way that is undesirable to them, which could lead to higher costs for the project because the landowners have to be expropriated and compensated if the municipality would want to carry on with the redevelopment. This problem mostly arises in urban areas, where mixed-use development mainly takes place, because of the larger share of property owners of generally smaller pieces of land (Buitelaar, Segeren & Kronberger, 2008). One solution offered for this problem is by making use of land assembly; this entails the merging of different plots of land to create a larger area for the redevelopment that is wanted (Louw, 2008). This and other possible solutions will be outlined in the theoretical framework about planning strategies.
- Often, mixing uses will lead to a more dense urban environment and higher demand for space. A logical consequence of this higher demand is the rise in land prices, which makes the height of the eventual profit more important; the higher this profit will be, the more feasible a certain development will be due to profits that are higher than costs for acquiring land. This means that the function with the highest profitability will be preferred by the developer in question. Since the large demand for housing creates rising house prices, **the use of land for dwellings will often be more profitable than using it for business units or office space**. This might lead to the repression of these functions from the development area within the urban environment to areas outside of cities (Nabielek et al, 2012). This would again create a highly separated urban environment instead of a mixed-use area, which was undesirable in the first place. To overcome these difficulties, municipalities could set up a mixing-rate which entails a required minimum amount of space for certain uses.
- Another obstacle is related to Dutch environmental zoning system. This law entails some regulations concerning distance that should be maintained between housing locations and companies that produce noise or pollution. Companies are classified in this system in different categories, from category 1 for the least polluting or noise-producing companies up to category 6 for industrial activities like nuclear plants or steel factories. This so-called system of **environmental zoning (milieuzonering) makes it difficult or even impossible to develop dwellings next to business estates** that contain companies in a high environmental category (which means category 3.1 and higher).
- An important reason for the yet not so much used principle of mixed-use development is the fact that **regular, non-mixed business parks or industrial estates are cheaper** than the mixing of various functions in urban areas. The regular business parks are often well accessible by car, they offer a lot of space and large parcels for businesses who want to expand in the future and the costs for acquiring land are significantly lower (Pols et al, 2009). Often this leads to advantages for so-called 'greenfield areas' relative to 'brownfield areas'; there is no level-playing field between these two categories. To prevent this from happening in practice, the

Dutch ministry of Infrastructure and Environment invented the *Ladder for Sustainable Urban Development*. This is a motivation requirement for the location of a specific project that is compulsory for every developer to prove that the development is necessary on that specific site. This procedure entails the following questions:

1. Is there a regional need for this project? (if not, the development has to stop or has to be altered in line with the regional need)
2. Can (a part of) the regional need be intercepted within the existing urban area? (if yes, the development has to take place within the existing urban area and cannot be carried out on a greenfield site)
3. If there is no opportunity within the existing urban area, the development can take place on a greenfield site

Taking these steps during the license application for the execution of projects should lead to a higher rate of urban transformation or 'urban infill' in contrast to the expansion of the city due to greenfield projects, which follows the vision of the compact city.

The above mentioned Ladder for Sustainable Urban Development is an example of a legal planning instrument that authorities can use to steer spatial developments in a desirable way. The use of specific legal instruments could also have a great effect on the eventual outcome of development projects: certain instruments offer quite strong steering possibilities for the municipality (like Environmental Zoning Plans), while other instruments are established to loosen some of the planning regulations (for example the Crisis- and Recovery Act);. These legal planning instruments will be further outlined in the theoretical framework about planning strategies.

For this research, these obstacles will be categorised into a couple of categories that will be used to analyse the case areas. The following obstacle-categories will be used:

- **Land-management and ownership structure obstacles**
- **Urban design issues**
- **(Environmental) zoning issues**
- **Financial feasibility problems**

In relation to the above mentioned obstacles, the most difficult areas to transform into mixed-use zones would be inner-city industrial estates, which this research project also mainly focuses on. It would be even more difficult if these areas have the ambition to keep some of the industrial activities present in the new area, due to the before mentioned environmental zoning issues. In this research project, there will be mainly focused on areas in which this is the case, to investigate how different strategies coop with issues related to environmental regulations. As becomes clear, legal planning instruments are not incorporated as a separate category among the obstacle-categories. These instruments more or less act as the basic layer for the above mentioned categories: the use of certain legal instruments determines in some way how the obstacles that occur during development are being tackled. In that sense, these legal instruments are part of the chosen strategy and will be evaluated in this research as such, from a planning point-of-view. In other words: their effect and usefulness for the implementation of mixed-use development will be analysed from a spatial planning-perspective, but its legal background and context will not be extensively discussed in this research project.

Relation between governmental steering and complexity of development task

As becomes clear from the examples of difficulties, mixed-use development is not the ultimate objective if governmental officials together with market players would act and make choices in an economically rational way, due to (often) higher costs, more complicated negotiation procedures and the economically driven location choices of businesses. This means that implementing mixed-use development in practice, asks for different strategies than shaping spaces in the way it is economically and process-wise easiest.

Besides the required difference in strategies, a hypothesis could be derived from these difficulties that occur when using mixed-use development in practice: as becomes clear from the last point about location preferences of businesses, it naturally lacks a level-playing field. To create this level-playing field and make sure brownfield locations will be regenerated as well, the Ladder for Sustainable Urban Development was invented. The same irrationality seems to be the case in development projects that involve a wide range of stakeholders. An example is the development of Buiksloterham in the northern part of Amsterdam.

This, partly former, industrial area is being transformed into a mixed-use area that should connect the northern part of Amsterdam to the city centre. Within the area, various private sector companies have land positions and need to be involved in the development process. Most of these companies still represent the actual land-use of the area, namely industrial purposes. And up to now, this land-use has been protected, with other possible uses (like housing) presented as potential threats for the industrial businesses, due to environmental regulations accompanying possible future housing projects within this area (Dembski, 2013). The leading joint coalition for the development of this area, Noordwaarts, (consisting of the municipality of Amsterdam and the urban district of Amsterdam-Noord) had to take these stakeholders into account when making development plans for this area, making sure housing developments and existing industrial activities won't conflict with each other. Besides these industrial companies, housing corporations and project developers are willing to develop as well within this area because of its central and unique location close to the waterfront of the river IJ. And, as a third group of stakeholders, civic organisations were involved as well, having their own visions and ideas for the area. This rather large and diverse group of stakeholders makes it relevant for the coalition of Noordwaarts to take the lead in this area development and steer as much as possible to keep all stakeholders on board. The municipality owns about one third of the land in the area and, by imposing developments initiated by the municipality itself, makes it more interesting for other developers to get involved with the development of Buiksloterham (Dembski, 2013). The municipality's development should thus function as a catalyst for other developments in the area.

Besides the fact that the amount of stakeholders involved might require more managing or active involvement by the municipality, the variety of functions that will be integrated within one area should attract the municipality's attention as well. As earlier on mentioned, the integration of various functions within one area requires a certain level of 'tuning' (Pols et al, 2009). Some functions, like heavy industrial activities, cannot be combined very easily with other functions, like housing. Various environmental legislations and nuisance zoning laws need to be taken into account when a certain urban area is being transformed into a mixed-use zone (Boeve, 2017). However, there is a law (Crisis- en Herstelwet) which makes it possible to deviate from the environmental quality requirements if one wants to enhance the spatial and economic qualities of an area (Boeve, 2017), but this law was mainly used for larger projects that were of great national importance and required a well underpinned

explanation why the environmental quality requirements should be omitted. However, the use of this Crisis- and Recovery Act gets more and more common in urban redevelopment projects. Still, in most cases, the variety of functions that will be integrated in one area requires quite some steering by governmental bodies.

From these examples it becomes clear that mixed-use development often requires a rather large commitment of public authorities as a driving force for the development that could take place. The presence of multiple uses within a single area means that the developing agency has to meet up to many regulations and legislations. And the involvement of various stakeholders with different needs and wishes makes it also important to let them participate in the development process to prevent delay of the process caused by court appeals. These factors make development projects more complex. The hypothesis that can be derived from these examples could be as follows:

“The more uses are planned in an area and the more stakeholders are involved in the development, the higher the required amount of steering and managing by the responsible authorities has to be.”

This hypothesis consists of a few concepts that are relevant to elaborate on when conducting the research and thus proving or falsifying the hypothesis as such. These concepts are ‘uses’ and ‘stakeholders’, that represent the complexity of a development project and which in some way determine the strategy that will be used by the responsible authorities. According to this hypothesis, the responsible authorities will be more actively involved in the development process and strategy if the task in question is more complex (so if there are more functions and stakeholders included in the area that has to be developed). Often, a larger group of stakeholders and a larger variety of uses within one area means that the area to develop will be larger. In that sense, we can also rephrase the hypothesis by exchanging the amount of uses and stakeholders for the area size.

The actively involvedness of responsible authorities can be related to the earlier on mentioned active or passive planning policies that the government can handle. Active planning policy has always been the standard policy for many municipalities, but since the economic crisis they left the initiative of land development more to private developers. Besides the land development, the rise of ‘collaborative planning’ has put the involvement of stakeholders in the development process higher on the agenda (Healey, 1998). Especially in view of the new Omgevingswet (in which participatory planning takes in a central spot) it is important for governmental bodies to involve stakeholders already in the decision-making process. However, to keep matters in hand, municipalities do want to remain in a steering role to make sure desired developments take place on the right locations. So besides the two options of active and passive planning policy, other forms of planning strategies have come up over the last few years as well, like public private partnerships, which are very much in line of the idea of collaborative planning.

Based on this knowledge, we can create an axial system (figure 1) for planning strategies imposed by governmental bodies and size of the project area to develop, with the last aspect representing the amount of uses and stakeholders involved in the development project. Based on the hypothesis, most of the mixed-use projects should be in the top-right quadrant (containing all large projects with a governmental body that is actively involved) and bottom-left quadrant (consisting of small-scale projects with less governmental influences).

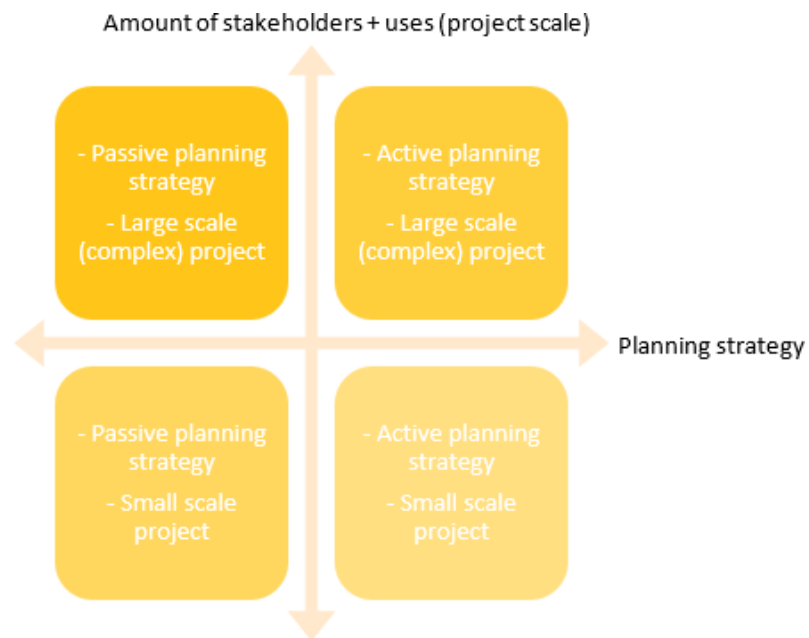


Figure 2: Axial system of planning strategy related to scale of project area

Based on this axial system and the related hypothesis, this research aims to find out if active planning strategies are indeed more successful in projects that involve a large group of stakeholders or will have a great variety of uses.

3.2 Theoretical Framework Planning Strategies

This section of the research will elaborate on the planning strategies used by governmental bodies in the Dutch planning system. Firstly, this chapter will look into the evolvement of urban planning in the Netherlands, which leads to the current mainly used land management strategies for the development of urban areas. The chosen land management strategy is often determinative for the planning strategy that can be used. The ownership of land plays a central role in that sense. So connecting to that, the possibilities for the use of participatory planning strategies (if municipalities cannot or do not want to acquire land), like public-private partnerships, will be explained. Finally, the current problems and mismatches in the transformation projects of urban industrial or business estates into mixed-use zones will be further explained.

Development of land management & planning strategies by municipalities in the Netherlands

The first planning systems find their roots back in the nineteenth century, when the Industrial Revolution and rapid urbanization rates in Western-European cities caused municipal boards to start co-ordinating the spatial planning of their cities. Before this era, the little amount of urban planning that took place was carried out by public actors and the scientific community: 'enlightened industrialists' who wanted to create better living conditions for their labourers or movements formed by scientists (mostly based on philosophical visions) wanting to improve urban living conditions (like the City Beautiful Movement) were the first examples of basic urban planning (Van der Cammen & De Klerk, 2012). The Housing Act of 1901 was the first legal principle that allowed municipalities to use urban planning as a tool to shape their cities. Before 1875 municipalities used the message 'town planning is essentially a private enterprise, public intervention is undesirable' (Van der Cammen & De Klerk, 2012, p.142). Influential and wealthy citizens (mostly CEO's of factories, banks or other large companies) invested in urban development projects, to attract workers for their companies. The first few decades of the public institutionalisation of urban planning, after the implementation of the Housing Act, were characterized by a top-down system, based on knowledge of scientists, architects and urban planners who planned for a city that had to be made attractive to live in. Slums were being cleared away, old fortifications got teared down and large green areas were constructed instead. The City Beautiful Movement and Garden City Movement were some of the examples that happened to be leading forces during the late 19th and early 20th century.

The period from the beginning of the 1930s until the late 1960s formed one of the most turbulent periods in planning history: the Second World War had had quite a catastrophic influence on Dutch cities, causing municipalities to take matters in to hand concerning the reconstruction of many inner-cities. Besides the damage done by the War, planning authorities faced additional problems like a large population growth and rising possibilities to travel for the ordinary man, giving them more options to choose the location for their homes. This led to a modernist vision on urban planning, including large infrastructural projects to make city centres accessible and the construction of large, mainly mono-functional neighbourhoods in the outskirts of cities (Needham, 2014). During this phase in the history of urban planning, government bodies were obviously taking the lead in the redevelopment of cities. Municipalities bought large pieces of agricultural land in strategic places without yet having any intent of developing it into new housing areas. Since the municipality could decide where to change land-use plans to make developments possible, they changed it on their own land, prepared the site for building and then sold building plots to private developers. Through this system, and the value increase of the land (due to the land-use change from agricultural to building zone), municipalities were able to control

and steer spatial development, make a profit out of the selling of building plots, but as a landowner they could also impose interested developers to include social housing or other public facilities in their plans as well (Priemus & Louw, 2002). Before 1990, private developers hardly bought any land to be able of developing it first when plans were made by the municipality for that specific piece of land: costs of making the land available and servicing it with public facilities were often too high for private developers and they preferred to buy building plots that were ready to the last gaiter button (Van der Krabben & Jacobs, 2012).

Until roughly 1990 this way of working withstood, but in the early 90s the playing field on the land market changed: a growing housing demand (with a following delayed reaction from the market) led to increasing house prices and, as a consequence, rising land prices as well (Van der Krabben & Jacobs, 2012). Private developers thus became more interested in the buying and speculating on future building land, stimulated by the new policy of the national government (VINEX) that created scarcity on the land market by limiting the areas for new suburban development (Needham, 2007). With new players, and in that sense also new competitors on the land market, it started to become more important for municipalities to take private developers into account when developing new (sub)urban areas. During the 90s the first real public-private partnerships started to come up. The building claim model¹ is one of these strategies.

Unfortunately, the competitiveness on the land market had some downsides as well: due to the self-realisation claim of private developers, municipalities became unable to use their domain powers to expropriate these developers since they could claim successfully that they were able to carry out developments themselves. Besides that, municipalities did not have any tools to oblige private developers to contribute to the costs of public facilities: the so-called free riding (Van der Krabben & Jacobs, 2012). This made for example the building claim model highly risky for municipalities, since they did not have the guarantee that private developers were willing to co-operate and pay for the servicing costs. To improve the position of municipalities, the new Spatial Planning Act of 2008 included some tools for the cost recovery of public works, even if the municipality did not have land positions. This made the position of municipalities in development negotiations a lot stronger. Nevertheless, many of the large VINEX-projects were based upon agreements from older laws, which made it impossible to impose these new tools on the private developers of these projects.

When in 2008 the financial crisis arrived, many municipalities faced huge losses on those VINEX-projects. The municipality of Nijmegen for example, lost a large amount of money on interest costs for the Waalsprong area. They owned, together with private investors, all the land for this VINEX-location, but when the financial crisis struck, private investors could leave the joint venture model and the municipality remained on its own having to pay all the interest costs for the land. The risks taken in these large greenfield projects had quite an impact on planning departments of municipalities, creating a careful attitude towards the acquisition of large pieces of land for development projects.

¹ Private developers agree to sell their undeveloped land in VINEX locations for roughly the price they paid for the land. In exchange, the developer that sold the land, receives a claim (meaning, the first opportunity to buy) for the land after the municipality has serviced it. The selling to the original private developer is based on the real market value of the land in its new use (building land) which means the municipality keeps some profit to pay for the servicing. The private developer receives in return a fully serviced piece of land.

Current land management strategies

As an important part of planning strategies, the land management that is being carried out by governmental bodies is quite determinative for the strategies that can be used to develop urban areas. The ownership of land plays an important role in this process, because of the additional ownership rights that belong to it.

Since the financial crisis, municipalities are more and more looking into different models for land development, to prevent large financial risks (Buitelaar & Bregman, 2016). These land development models should increase the role of private sector parties that bear part of the risks involved with the land development. Van der Krabben & Jacobs (2012) speak about a couple of alternative land models that involve both governmental and private sector bodies:

Land development models	Definition	Main purpose and relation to planning	Land assembly	Cost recovery and value capturing
<i>Land Assembly Models</i>				
Public comprehensive top-down models	Public purchase and development of area, guaranteeing public goals, realizing full cost recovery by selling serviced building plots and capturing part of surplus value	To implement a local-authority driven development program, but in relation to city-wide, comprehensive public planning goals	Public body acquires and services all land needed and sells plots to private developers	Via selling of building plots
Public planning-led quasi market models	Public purchase of land, subsequent selling to private developers	To achieve a (re)development program for a specific area by involving private sector in development stage (sometimes in relation to smart growth/brownfield agenda)	Public body acquires land needed for development	Cost recovery via developer contributions linked to building permit, value capturing usually not a goal
Private market model	Private purchase of land	To achieve a (re)development program for a specific area, in accordance with the zoning plan	Private sector company acquires land needed to achieve their own development plans	Cost recovery via developer contributions linked to building permit, value capturing usually not a goal
<i>Land readjustment models</i>				
Urban land readjustment model	Landowners voluntarily hand over their land to self-governing body, replotting of area, original owners receive piece of land again proportional to the original share	To achieve a (re)development program for a specific area (sometimes in relation to smart growth/brownfield agenda)	Temporary transfer of land rights to a self-governing body for redevelopment	Cost recovery via contribution by the self-governing body for redevelopment (often caused by more suitable building plots), no value capturing by public bodies

Table 1: Alternative land development models (own illustration based on Van der Krabben & Jacobs, 2012)

The suggested land development models differ mainly on the bases of who is involved with the purchase of land and the ways costs are recovered. Each of the models has its pros and cons regarding these themes. If we look at public comprehensive top-down models, it has an obvious advantage in relation to the municipalities wish for control: by owning land they can impose restrictions or additional requirements for developers to create the publicly desired spatial form. A major downside of this strategy is the fact that acquiring land, especially in urban areas, is quite costly and could lead to large

financial risks for municipalities. Besides that, municipalities do not have any guarantee that developers will buy the building plots in the end: they might consider to wait before they involve in the development, based on market prospects that could entail a larger profit in the future if they postpone the buying of land (Stec Groep, 2019).

Public planning-led quasi market models give more certainty about the cost recovery to municipalities by involving private sector companies in the development in an earlier stage. By involving the private sector in the plan-making process for the area to develop, they can impose requirements via developer contributions in an anterior agreement (antérieure overeenkomst) when selling the land to the developer or in the land development plan (exploitatieplan) after the land has been sold. This immediately also reveals a difficulty of this strategy, namely the need to negotiate with private parties: municipalities are dependent on the collaboration with private parties to make things happen in the development area. As long as these private developers do not want to co-operate, based on regulations in the anterior agreement, the municipality can only choose to oblige certain aspects for cost recovery via the land development plan. However, the range of aspects that can be made compulsory for the developer to contribute to via a land development plan is much smaller than via an anterior agreement. So the municipality might not be able to recover all the costs and might have to subsidize for public facilities in the development area. This is often an unwanted effect of this kind of strategy. By using variations on this model, like the building claim model, municipalities can generate more certainty about the buying and selling of land and the co-operation of private parties in the area development.

The private market model leaves the development completely to private sector parties, which are only bound to the legally-binding zoning plan for the area that has to be developed. Municipalities can only steer via this document, which means they don't own land in any stage of the land development process. The downside of this way of working is obviously within the starting phase of the area development: private parties need to take the lead in the development project, since they own the land. If the municipality is willing to develop an area into a certain way and the private developer that buys the land does not agree with the requirements for this development, there won't be any development at all, unless the municipality is willing to subsidize again in the end. In the current improving real estate market, developers are also often postponing developments to wait for higher real estate prices. Cost recovery happens again in the same way as with the previous model and in this model it is even harder to come to an agreement with private parties, since the municipality does not have any landowner rights and thus a weaker negotiation position.

Finally, there is a completely different group of models, namely the land readjustment models. This entails methods in which there is no financial transaction of land, but value increase through optimisation of the ownership-structure in the area to develop. The current legal framework for this model however is not very substantially institutionalized yet in the Dutch planning system, which will be elaborated further in the next chapter.

Planning strategies for inner-city development

This subchapter will look into the strategies that could be suitable for inner-city (re)development projects, which have nowadays become more important since greenfield developments have proven to be quite risky at times. Greenfield developments have, as earlier on mentioned, been a flagship for spatial planning departments for many years. But, among other reasons, the large risks connected to these developments made municipalities also look at alternative inner-city locations to fulfil their

ambitions. Guided by the compact city policy (Compacte Stad Beleid) and the Ladder for Sustainable Urban Development (Ladder voor Duurzame Verstedelijking), municipalities started to look for urban infill locations as new options for urban development. Although the Spatial Planning Act of 2008 offered municipalities quite some options to keep in charge in greenfield locations, it did not serve urban redevelopment projects in the same way. Van der Krabben and Jacobs (2012) argue in favour of this statement for a couple of reasons:

1. **Cost recovery is limited:** acquiring land in urban areas is very expensive and makes it almost impossible for municipalities to buy land and at the same time make private developers contribute to the costs of public services.
2. **Free-rider problems:** municipalities lack legal power to oblige landowners to contribute to servicing costs. If property owners can benefit from investments of the municipality without having to pay for it, they will try to stay outside of the development process. This could also create a lack of support for urban redevelopment projects.
3. **Fragmented ownership:** some large redevelopment areas can contain up to 300 different landowners, all with their own interests. This makes it difficult to get consensus about the direction of developments in the area. Besides that, municipalities do not own large pieces of land in urban areas, which means that top-down led public development is difficult.
4. **Uncertainty about return on investments:** often, municipalities have to service the land for the whole development area at once. This means they have to purchase the land and pay for the public facilities, but they have no guarantee about the return on investment. They are bound to the interest of developers and prices they are willing to pay for their returns afterwards. If the interest happens to be lower than expected, municipalities might have to incorporate financial losses.
5. **Transparency of process:** public land development could lead to less transparency, since all parties want to keep information within the development agency for the assurance of the bargaining. This could have impact on the dependability of public authorities as it is not publicly transparent what is about to happen in the area in question.

To make municipalities capable of dealing with these difficulties, various authors suggest alternative ways of working: firstly, Buitelaar et al (2008) suggest to adapt the development strategy to the ownership-structure in the area to develop. Usually, municipalities try to convert the ownership structure to a suitable form for the development plans of the area. Buitelaar et al argue that municipalities should turn it the other way around and let the ownership structure determine which strategy suits best for the area. If for example the municipality plans to develop a large urban area that consists of a lot of different parcels of various owners, the land development plan might become, in a financial sense, quite risky. Municipalities have to acquire large pieces of land and have to negotiate with a large group of owners, who might not want to co-operate and have to be expropriated against a higher price than estimated beforehand. In this case, Buitelaar et al would suggest the municipality to start developing small bits of the larger area by co-operating with single owners, to create an incentive for other stakeholders to participate. Although this does prevent the municipality of taking too much risk, one could also argue that this way of developing strategies is some sort of a 'hold out' factor for future urban redevelopment projects due to the fact that risks are being avoided and large urban development becomes very hard to implement. Besides that, letting the existing ownership structure determine the way urban development takes place could mean that the restructuring of the areas in

case won't be in the interest of the broad society, since the stakeholders involved might want to serve their own interests first. To overcome these implications, municipalities will still have to take a strong lead to ensure that developments take place for the greater good of society.

A second option that has recently acquired more and more interest is Urban Land Readjustment (ULR), part of the land readjustment models (Van der Krabben & Jacobs, 2012). Currently, only a voluntary ULR track exists in the Dutch legal planning context, which allows landowners to co-operate in a ULR scheme (Van der Krabben & Lenferink, 2018). A problem related to this voluntary idea of developing land is the inability to oblige landowners who refuse to participate in the ULR scheme to take part in the redevelopment after all (Bregman, 2015). The only option is to have the municipality expropriate landowners that do not want to co-operate, which would make the development again dependent on public money. Besides that, if the land-use plan is not in conformance with the suggested redevelopment of the ULR scheme, it is impossible to proceed before the land-use plan allows the planned redevelopment (Van der Krabben & Lenferink, 2018). And finally, it seems to be rather difficult for municipalities to steer in these kind of developments, since the voluntary ULR track gives a lot of the managing and steering during the process to the landowners. If the suggested redevelopment is in line with the applicable land-use plan, municipalities do not have a lot of possibilities to make the developers pay for part of the infrastructural costs.

Third, municipalities could choose to abandon public land development at all and allow private initiatives to redevelop areas in small steps. This is often being referred to as 'organic' development (Buitelaar et al, 2017). Some of the core elements of these kinds of urban development projects are the small scale size (sometimes on the scale of one building), the missing of an end vision, the focus on the process and the focus on the short-term time span instead of long-term blueprint visioning (Hajer & Urhahn, 2012). This way of working seems quite similar to the suggestion of Buitelaar et al about adjusting development plans to ownership structures. The PBL however makes a distinction between two types of organising the development process for organic urban development: planning on permission (toelatingsplanologie) or planning on invitation (uitnodigingsplanologie) (Hajer & Urhahn, 2012). When using the first type of planning, the role of municipalities is much more passive: their main task is to test development plans of private parties to the zoning plan and legal framework. The municipality's role in the second type of planning however is much more active: this is more about creating opportunities for private developers, connecting private parties with one another and trying to tempt them to take the initiative for developments.

Planning on permission could lead to undesirable outcomes when combining it with organic urban development: if municipalities do not actively get involved in the (re)development of an urban area, the private developers might choose to develop the best locations (the so-called '*krenten uit de pap*') within the area and leave the rest behind. This could lead to impoverishment of some parts of the development area, which might have actually been the reason for the municipality to look for redevelopment or transformation possibilities.

A second point that could be seen as a downside of organic urban planning is the fact that the organic, sometimes temporary, developments may obstruct other long-term developments. An example could be the Honig-factory in Nijmegen: this former soup-factory is since 2012 being used as a location for organic urban redevelopment projects and has nowadays evolved into a cultural hot-spot for the entire city with multiple restaurants, craft companies and festival locations. The municipality of Nijmegen

however has long-term redevelopment plans for the area to transform it into a housing area, but due to protests of current owners and citizens of Nijmegen, part of the factory will remain as it is and the current plans for transformation have been postponed to investigate the possibility to fit the current use in the new neighbourhood. Again, the question about 'developing for society' comes into this case: the current use seems to be in favour of the inhabitants of Nijmegen, but this use might not offer the maximum profits for the municipality which it had expected to generate from the transformation of this area. One could argue this to be a good development (from a 'planning for the public interest'-perspective) or a less desirable development (from the perspective of the private developers for this area and the returns on investment for the municipality).

To conclude, from the theory becomes clear that inner-city or brownfield redevelopment projects encounter quite some more difficulties than new greenfield development projects related to ownership-structures, land prices and stakeholder co-operation. These difficulties are all in one way or another related to the presence of a large group of stakeholders, which can be landowners, present users of the land or future users who want to participate in the development process. But quite often, the desires of governmental bodies and private parties differ, leading to longer negotiation processes and thus higher development costs. The next chapter will elaborate on the co-operation with various stakeholders during the development process.

Stakeholder involvement and mismatches between public and private development goals

To get a better insight in the role of the different groups of stakeholders involved in urban redevelopment projects, we first need to look into the various definitions and theories about stakeholder involvement in urban planning.

As already stated in the 'development of urban planning' chapter, stakeholder involvement was until the 90s not much more than just citizens responding on development plans made by the governmental body in charge. This usually happened at the end of the process, making it very difficult to get plans changed if citizens were not pleased with the suggested ideas (Krouwel & Duyvendak, 2001). From the 90s onwards, more active forms of stakeholder participation arose. One of the key authors on participatory planning from that era was Patsy Healey. She argued that tensions around involving stakeholders in urban planning circled around two purposes (Healey, 1998):

1. **Conflict management**: regulation of land use rights and planning by negotiation and contract
2. **Place making**: promoting and producing spatial quality for broader social, economic and environmental objectives

Healey argues that these two purposes are in constant conflict, because conflict management is about maintaining "established parameters" (Healey, 1998, p.7) and the second is just about the opposite, namely the transformation of policies and practices to suit the social desired shaping of places. The first purpose, which has been the way of working for planners for a long time, became less of a standard due to a couple of reasons: the shortages of funds with public parties to develop land by themselves, the change from building new to improving existing built environment and by the growing political and economic power of private parties interested in land development (Healey, 1998). These aspects made the second purpose more and more important over the years to keep spatial planning as a medium for creating spaces in favour of the broader society.

As became clear from the previous chapter, current planning strategies do involve stakeholders in quite a broad range, but the stakeholders involved in urban redevelopment projects are not one and the same group of people. They can consist of current landowners, current users (which do not always have to be the same people as the current landowners) and future landowners (often developers). The municipality itself is also counted as a stakeholder in the development process. These various groups of people have their own ambitions and interests which will be further outlined.

Municipalities are often a core-stakeholder in urban redevelopment projects: since the prisoner's dilemma² shows up quite regularly in urban redevelopment projects, municipalities have to operate as a catalyst to kick-start desired development (Buitelaar et al, 2008). Besides this role, they have (according to Healey) also a role in connecting different parties involved in the development and a monitoring role. Finally, the municipality can shape the conditions under which developments can take place since they are able of adjusting land-use plans and the included restrictions connected to it. These land-use plans can also limit or broaden the options that remain in the development area: municipalities can choose to take a controlling position by implementing a zoning plan that has a really fine-grained grid with very detailed uses for specific parcels. This way, the municipality keeps matters in own hands. On the other hand, they can create a more global land-use plan if they want to keep the possibilities for the area more open. Municipalities thus have quite some range to manoeuvre and specify their position in the development process according to the conditions under which they have to operate.

Stakeholders who have a land position within the area to develop also have a strong voice in the development trajectory since they are in possession of the ownership rights. Their co-operation is essential for the success of area development as the ownership rights have a strong position within the Dutch planning law. In the current literature, a distinction is made between active and passive landowners (Adams, 1994; Louw, 2008). If landowners are not willing to co-operate (passive landowners), municipalities will have to expropriate them, which would be costly and not preferable. Logically, active landowners are then the ones who are willing to develop or co-operate. Besides that, investors who own land within an area that will be redeveloped (from for example industrial to mixed-uses) know there will be differences in what their piece of land will be worth depending on the future use that will be allowed on it. Landowners might thus for example wait until their piece of land will be marked for 'housing' instead of 'mixed-use', because the housing-function will lead to a higher market-value of their land (Pols et al, 2009). This could lead to delay in the development process. As earlier mentioned, municipalities can adjust to these situations by leaving the passive landowners that do not want to co-operate out of the development plans. This however has complications related to 'free-rider'-behaviour and suboptimal developments due to local left-outs.

Current users are quite closely related to the landowners within an area: they can be one and the same person, but they could also be using the land based on ground leasing or copyhold (erfpacht). This also means that the opinion of a current user could influence the decisions made by the landowner: if the landowner for example makes a good profit out of the rent he gets from the user, he might not be willing to develop because there is no extra incentive for him. But if the user wants to co-operate in the development, because he believes the area is in need of an upgrade, this might influence the owner's

² The prisoner's dilemma refers to the situation described by Klosterman (1985) in which no stakeholder is going to take the lead in renovating his or her house, because it won't change anything if other inhabitants of the neighbourhood do not renovate. It would cost him or her money, but there might not be any value increase due to the negative effects of the surrounding houses.

opinion. However, the landowner is still, in a legal sense, the one who is allowed to decide whether or not to co-operate.

The last stakeholder group consists of future users of the area: this can be future companies, but also people who want to buy a house or civic organisations that want to be involved in the development area. The legal negotiation position of these stakeholders depends on the current position they have in the area: if they do own land and want to remain active in the future in the area in question as well, they have a strong legal position. However, if the future users do not have any land positions before the development starts, their legal rights are way smaller. Nevertheless, various authors, among whom Jane Jacobs and Patsy Healey, strongly emphasize the importance of involving all possible stakeholders in the development process, to create sufficient conditions for all (Jacobs, 1961; Healey, 1998).

Legal planning instruments for urban mixed-use development

Besides land-management strategies and stakeholder involvement, the municipality has another set of instruments to guide and steer during the development process: legal planning instruments. This subchapter will briefly look into the current stance that Dutch Law takes in when it comes to mixed-use development and how certain broadening legal planning instruments aim to facilitate mixed-use development.

As earlier on mentioned, the stance of Dutch Law towards the mixing of different uses has been quite clear: from the Second World War onwards the Dutch started developing neighbourhoods with strictly separated functions as a part of the common planning philosophy at that time. But in recent years, the Compact City Policy and a lack of greenfield development areas made the urgency for inner-city development larger and thus the need for mixing of uses in some areas. Nevertheless, much of the current planning law still aims to separate different uses. An example is the environmental zoning law, which prohibits the development of dwellings next to or on industrial estates. Zoning plans contain plan rules which describe what kind of uses are allowed and which are not. Up until now, the mixing of uses stumbles upon these difficulties and procedures often take long or are very costly (Needham, 2014). As Needham describes these problems: *"It is claimed that the existing rules are based too much on sectoral norms. These give certainty but, because trading one sectoral norm off against another is not permitted [...] there is not sufficient room for allowing and stimulating sustainable growth"* (Needham, 2014, p.116).

In the last couple of years however, some planning instruments and laws have helped simplifying planning procedures and specifically the development of mixed-use districts. One example is the Crisis- and Recovery Act (*Crisis- en Herstelwet*), which got established in 2010. The aim of this new law, that was created during the financial crisis of 2008, was to speed up the process of some large-scale building and infrastructure projects, that got stalled during the financial crisis with large financial risks as a result (Needham, 2014). Practically, this law makes it possible for certain projects to skip certain development procedures and simplify the issuance of environmental permits. Adding to this, the application of environmental norms is made more flexible according to Needham: *"if they are transgressed in one part of the area but not in another part, the excess in the first area can be regarded as being compensated by the reserve in the second part"* (Needham, 2014, p.115). This way, the mixing of different uses becomes possible.

Success factors of planning strategies

The previous parts have looked into the implications that might occur during the planning process of mixed-use development projects, which have to be taken into account and require solutions to make the development process successful. This subchapter will elaborate on these success factors of planning strategies. First, the concept of 'success' needs to be defined. Planning literature on the successfulness of certain strategies is not very extensive, but Faludi argues, in a global way, that 'where there is conformance between outcomes and intentions, there the project may be deemed a success' (Faludi, 2000, p. 304). But nowadays, not all spatial development projects have intentions that reach to a certain final image, like the organic development strategies, which also use quite a lot of stakeholder involvement. Albrechts builds further on the question of success by arguing that the exploration of stakeholders involved in the development issue is a key reason for a project to be successful (Albrechts, 2015). This means, that for leading parties (mostly governmental bodies) it is essential to identify all stakeholders involved to be able to successfully redevelop an area. The stakeholders involved have, according to Holden et al, a large share in determining if a project is going to be a success or a failure, since the stakeholders involved are often capable of spreading their experiences or opinions about development projects amongst a broader public (Holden et al, 2015). This can have a positive or negative effect on the willingness of stakeholders to participate in the redevelopment and thus the eventual outcomes of the project.

Besides aspects related to stakeholder involvement, more technical features could determine the success of a development project as well. The programmatic and related financial organisation are aspects that can determine the success of projects as well. A report from Urhahn established a categorization of strategies, which each link up to certain kinds of development areas and the corresponding characteristics of that area. The right strategy linked up to an area with the right characteristics for that strategy should lead to a successful development, which means in the vision of the report: a development that entails a more active use of the area on multiple times of the day, value increase of the developed area and a feasible financial strategy (Urhahn, 2015). Furthermore, they define various aspects that should determine which strategy should be chosen. These combinations of the area characteristics combined with the right strategy can thus also be seen as success factors.

The table below shows the different aspects (rows) related to the role of the municipality and the strategy it should adopt (columns). This table could be used as an indicator for success of mixed-use development projects: the more the strategy suits the indicators (or characteristics) of the area to develop, the bigger the chance will be that the intentions formulated beforehand will turn into desired outcomes afterwards. The strategies composed by Urhahn can be related to the strategies by Van der Krabben and Jacobs mentioned earlier in this chapter. The public comprehensive top-down models relate mostly to the strategies of 'control', 'rules of the game' and sometimes 'impulse'. The more bottom-up, market-led models are closely connected to the strategies of 'improvisation', 'quartermaster' and 'temptation'. Finally, the 'stranger in the midst', Urban Land Readjustment, can also be seen as a bottom-up model, which could for example connect to the improvisation-strategy (if the municipality leaves the initiative to the market that themselves suggests to use land readjustment). Since the Dutch planning context still only contains a voluntary-track for ULR, the top-down models are hard to identify with this kind of planning strategy.

Indicators Strategy	Market potential	Amount of landowners within area	Urgency	Municipal vision or policy for area	Example of suitable legal planning instruments
Control	High	One or only very few (or many owners with a collective agenda)	High	Masterplan with programmatic flexibility	Environmental Zoning Plan
Rules of the Game	High	Many, with a low rate of organisation (individual agendas)	Low	Framework with rules of the game as guiding tool for development per parcel	Game rule chart, which is decisive for the issuing of permits
Improvisation	High (with many programmatic options)	One owner or a group that is willing to co-operate in a shared vision	Low	Optionally formulating ambitions, but keep options open for initiatives	Capturing ambitions in zoning plans, use of change permissions or obligations to steer on desirable developments
Temptation	Low	One or more 'problem'-owners (often municipality)	High	Clear ambition, formulating an attractive area profile to tempt developers	Differentiation in developer obligations through higher obligations for more profitable uses (tempting developers to also incorporate less profitable functions in their plans)
Impulse	Low (for large-scale development)	One or multiple (largest owner will be the one that needs to be triggered)	High	Not needed, one strategic physical intervention is needed, after which a different strategy can be used	None, other strategies will be adopted after the development of 'impulse'-action
Quartermaster	Unsure	One or multiple	Low (but high social urgency, society wants the area 'to be used')	No municipal plan, but leaving it to the market to create short-term dynamics	Initiation of zoning plans lies with private developers (inviting them to initiated plans for area)

Table 2: Relation between area characteristics and municipal development strategy (own illustration based on Urhahn, 2015; empirical data collection, 2019)

The relation between the indicators and strategies in table 2 offer a feasible indication of the suitability of the strategy chosen for the situation present in the area to develop. For that reason, the indicators and strategies formulated by Urhahn in the table above will be used for the interviews with stakeholders to see if the chosen strategy suits the development in question.

3.3 Theoretical Framework Urban Business Estates

This research will look further into the success of planning strategies for the transformation of urban industrial estates into mixed-use environments, which means that a clear delimitation of the kind of areas involved in this research is required. This chapter will look further into the possible cases and demarcation of the urban industrial estates that could be suitable for the implementation of mixed-use development.

As earlier mentioned in the theoretical framework, municipalities are looking for new inner-city development locations as alternatives for the former greenfield-locations, which are in the context of the compact city policy less favourable. Besides this policy that focuses on preventing urban sprawl, municipalities also struggle with a large task in the development of housing as the shortage in housing is being estimated in 2019 at 263.000 dwellings that have to be constructed before 2021 (Capital Value, 2019). These houses have to be built at least partly in existing urban areas. In that sense, industrial estates that are now located within urban regions would be feasible seen the central location and often good accessibility. Various authors underpin this argument with successful projects from the past (Hoppenbrouwer & Louw, 2005; Korthals Altes & Tambach, 2008).

The reason for using urban industrial estates as locations for mixed-use zoning is quite simple and also related to the task for more housing: most of the inner-city areas already consist of housing and building in higher densities in these areas might not be favourable or feasible. Industrial estates in inner-city areas do not consist of housing units yet and are thus one of the few options left to build in existing urban areas.

Even before the financial crisis of 2008, national government institutions argued that mixed-use development was a favourable spatial development: the *Nota Ruimte* (VROM, 2004) saw mixed-use as one of the major aspects of spatial vision to enhance the liveability and social-economic position of cities in the Netherlands. Mixed-use areas serve as an attractive living- and working area which offer possibilities to use other modes of transport than travelling by car, like cycling or walking. The VROM-council even wanted to eliminate the term 'business estate' and replace it with 'work landscapes' or *werklandschappen* (VROM, 2006). Eventually, from 2009 onwards, with the financial crisis at full blast, it became even more necessary to start transforming urban business estates since vacancy rates (especially in office-spaces) started to rise. The PBL started to investigate the possibilities for the implementation of mixed-use development in certain urban business estates with positive outcomes (PBL, 2009; Pols et al, 2009).

To make a better characterisation of which business estates would be suitable for transformation into mixed-use areas, a categorisation of business estates will be made. An often used categorisation is the division of five different types of business areas (Stijnenbosch, 2012):

- **Heavy industrial estates:** business or industrial estate that allows business activity from nuisance category 5, which often involves seriously environmentally harmful activities.
- **Seaport areas:** business zones with a loading and unloading dock for sea transport activities, like the ports of Rotterdam, Amsterdam, Delfzijl and Terneuzen.
- **Mixed business estates:** zones with activities in nuisance categories 1, 2, 3 and 4. Varied offer of business activities, which are not included in the high quality business estates. Mainly consists of light modern industry.

- **High quality business estates:** zones intended for high quality industries in the sectors production or R&D.
- **Distribution estates:** zones specifically intended for logistic services and wholesale.

Not all these types of business areas are similarly suitable for transformation into mixed-use areas. The type of business estate and the location of the area in question are some relevant aspects that determine the possibility for transformation. Two examples will underpin this:

The first example entails the transformation of an old foundry factory in the village of Ulf, close to the German border in the Dutch Achterhoek-region. In 2003, the industrial activities on this site stopped and the municipality decided to transform the complex into a cultural hotspot to counter the migration stream of young people away from this region (De Zeeuw, 2018). The transformation consisted of cultural parts (a theatre hall, pop-concert hall, library, music school and grand café) and housing units in the form of apartments. The entire renovation of the area cost 13 million euros, partly paid by the municipality and through subsidies from the province and European Union. The project was finished in 2009, but only a short period after the finalisation, a committee of concerned citizens found out that the transformation had cost way more than estimated beforehand, which had serious implications for the exploitation of the area in the first few years. Through structural subsidies from the municipality and province of Gelderland, the DRU-cultural factory is now finally healthy (in a financial sense). This example shows the difficulties for thinly populated, peripheral areas with large transformation projects like this. A substantial support is needed for these kind of interventions on a long-term prospective and this often lacks in peripheral, rural areas (De Zeeuw, 2018).

The second example also entails the mixing of different uses in one area. In the northern part of Amsterdam, close to the so-called Hamerkwartier, is a large catalysts company established, Albemarle Catalysts. This company has been around for more than 100 years and is an important employer for the region. But, with the compact city policy in mind, the municipality of Amsterdam is willing to develop the nearby Hamerkwartier (which serves as a business and industrial district now) into a dense housing area. This means that there will be about 6700 dwellings and 15.000 new inhabitants very close to the Albemarle-site (Znidarsic, 2018). This could have implications for the license to operate for the still active catalysts factory, since they will have to meet up to new environmental requirements. This means they will have to invest in their working process to keep their license to operate, instead of investing to innovate their business, which could have effects on their competitive position within the market. On the other hand, the first new inhabitants will be informed about the presence of the factory close to their dwellings, but the future inhabitants will probably question why this factory is located so close to this living area. This might lead to suboptimal spatial conditions for both uses, since the factory cannot operate on full capacity and the inhabitants have the negative effects of a heavy industrial site close to their homes. As earlier mentioned, mixing functions has to be done carefully and, as Pols et al suggested, if possible by using the mixing-categories of the VNG as a guidance (Pols et al, 2009). However, the Crisis- and Recovery Act seems to be an alternative for some obstacles that occur due to limitations that are raised by the environmental zoning law.

Summarizing, the most important aspects of the suitability of business estates for the implementation of mixed-use development are the location of the site nationwide (due to differences in feasibility based on support) and the suitability of the business site in question, mainly related to the current industrial activity and its plans for continuing these activities after the redevelopment. If we relate this to the

business area-categories according to Stijnenbosch, it becomes clear that not all of these categories are suitable for mixed-use development at first sight. For this research, we will look at inner-city industrial estates that have the ambition to keep part of their business function,

3.4 Operationalisation of theoretical concepts and conceptual framework

The most important concepts in relation to the aim of this research will be operationalised in this subchapter. These concepts are 'mixed-use development', the planning strategies used in the case areas, the obstacles that (could) occur during the development process and the characterisation and selection of the areas that act as the cases for the research.

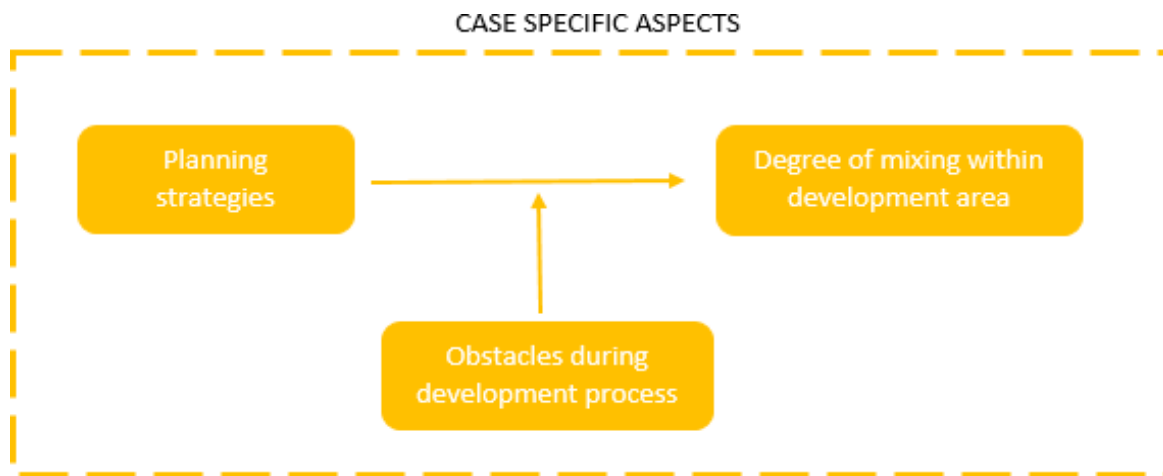


Figure 3: Conceptual Framework

Figure 3 entails the conceptual framework for this research, showing the process of how the most important concepts are linked to one another. At first, some case specific aspects (like stakeholder identification and development program, which together also determine the complexity of the development project as earlier mentioned) are fundamental for the planning strategy that will be used during the development of the area into a mixed-use zone. These planning strategies are based, in some way, on the size of the development area and can entail different types of strategies in the range from strategies in which the municipality plays a minor role up to strategies that require a lot of steering by the involved governmental bodies.

Besides the size of the development area, the original use of the development area and the program for the area development are important aspects that determine the planning strategy as well. The goal of this research is to find out what the success factors (and thus the suitability of different planning strategies) are for the implementation of mixed-use development. Success will in this research be defined by the actual degree of mixing in the development area. This can be measured based on actual uses present in the area, but also by the establishing of zoning plans or agreements about certain developments that will take place.

As an intervening factor, some obstacles during the development process might preclude the mixing of uses taking place. If the planning strategies used in the case areas offer solutions to overcome these obstacles, the mixing of uses could be more successful (in other words: there would be a higher degree

of mixing or the involved parties would agree on the intended way of mixing). The hypothesis formulated in this research states that if a development area entails a more complex situation (which means that more obstacles during the process could occur), the government has to take a leading and steering position within the development process. This also suggests that the planning strategy used for the development needs to facilitate this role for the municipality. The goal of this research is to find out if steering is indeed needed and which aspects of planning strategies are successful instruments for implementing mixed-use.

PART IV: CASES

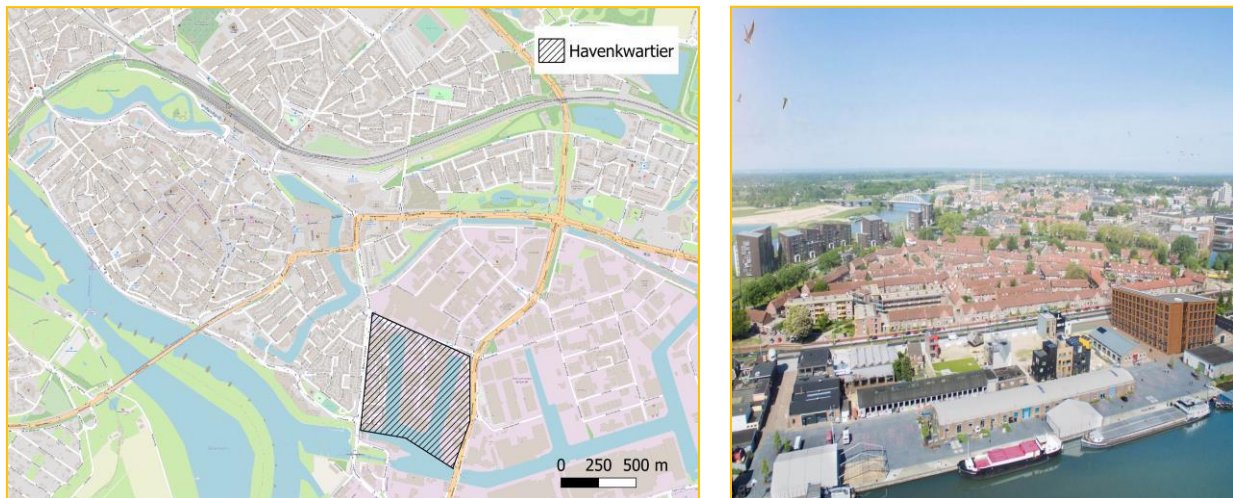
CASES

This chapter will offer some preliminary information about the cases chosen for this research. Each case will be elaborated on, starting with a short introduction on the characteristics of each area, followed by the regional or provincial policies towards mixed-use development. Afterwards, this chapter will look further into the context of each area, based on accessible documents, visions and development plans about the different areas. The aim of this chapter is to give a suitable overview of the development processes in general in the case study areas. The interviews afterwards will give a more in-depth insight in the underlying success or failing factors that some of the planning strategies chosen might entail.

4.1 Havenkwartier Deventer

Introduction

The Havenkwartier in Deventer is a former, industrial dockland area close to the city centre of Deventer. In 1920, the alderman of Deventer back then (mr. H.F. de Boer) initiated the development of the Bergweide terrain, which was a meadow area, and transform it into a harbour. The new harbour should stimulate the development of Deventer as an industrial hub and should create economic progress. Until the 1970s the harbour area kept on growing and served as an important transport unit within the Deventer region. But from the 70s onwards, transport via road became increasingly important and the separation of polluting uses (like harbour activities) and the still growing living areas of the city of Deventer stimulated pressure on the industrial and logistic activities in the Bergweide area. Eventually, with the diminished importance of the harbour for the economy of Deventer, the area started to face rising vacancy rates.



Picture 1: Location and aerial photo of the Havenkwartier-district

In the beginning of the 21st century, the municipality of Deventer developed an ambitious masterplan for the Havenkwartier-area. The 2004 area vision entailed a plan to turn the harbour area into a highly urbanised district, containing roughly 1000 dwellings of which about 70% were apartments. This integral large-scale plan came across a lot of resistance from the current owners and users of the harbour area, who were afraid that this large amount of new houses would become a problem for their industrial

activities. Besides that, further research showed that the market demand had changed, and the demand for new housing stabilised. In the meantime, the municipality together with development company Apeldoorn and the living company 'ieder1' had bought large pieces of land within the area, so the urge to develop the Havenkwartier remained (Hajer & Urhahn, 2012). At the same time, this offered the municipality a stronger position in negotiations, because they would be able to oblige certain aspects to interested developers in anterior agreements.

In 2007 the municipality again started to develop a plan for the Havenkwartier-district and this resulted in a development vision established in 2010 based on the so-called 'Flemish Model' (Gemeente Deventer, 2010). This entails a more organic way of developing, based on 'programmatic accents' on certain zones and buildings within the area (Hajer & Urhahn, 2012, p. 35). Besides that adjustment, the amount of houses to be realised also got reduced; from 1100 to 275. The kind of dwellings had changed as well in the new development plan: the apartments were left out of the new plan and the new type of housing focused on the pioneers of Deventer by allowing many forms and shapes (Gemeente Deventer, 2010). Besides these housing plans, the development plan also stated that they wanted to preserve the harbour function for shipping and industrial activities (Ontwikkelingsplan Havenkwartier, 2010). Relating to the theoretical framework, this quite complex mix of uses would suggest a high degree of steering by the municipality.

Change of planning strategy

As mentioned in the introduction, there has been a change in planning approach for the Havenkwartier. In 2008, landowners and other users of the Havenkwartier-area requested the municipal board for a permission to deviate from the zoning plan from the original masterplan founded in the 90s. The municipality decided to approve the request. According to Reussing this was based on a couple of reasons (Reussing, 2016):

- The objections made to the masterplan's zoning plan by surrounding businesses, who collaborated against the plans in a new foundation,
- Large shortages to get a comprehensive business-case, due to traditional acquiring and servicing of land,
- A declining demand for office space and apartments (which were the largest share in the original masterplan)
- The desire of current owners to restructure the business district in its current use,
- The financial crisis (although this was only a minor cause),
- The appreciation of the industrial heritage and the temporary Incubator Havenkwartier because of its innovativeness, inspirational function, the jobs it offers, impulse for public meetings and catalyst function for the entire Havenkwartier.

The municipality chose to leave the strategy and write off land values immediately. This meant that the municipality had to deal with the losses on the land value, but on the other hand, developments in the Havenkwartier could start immediately (Buitelaar et al, 2014). Unfortunately, the first two years of the strategy-change did not trigger that much activity in the area, so the municipality decided to appoint a project manager and area advisor who should develop and communicate the new organic strategy into a development plan. This resulted in some sort of 'place-branding' strategy which aimed to keep as much of the original character of the area intact.

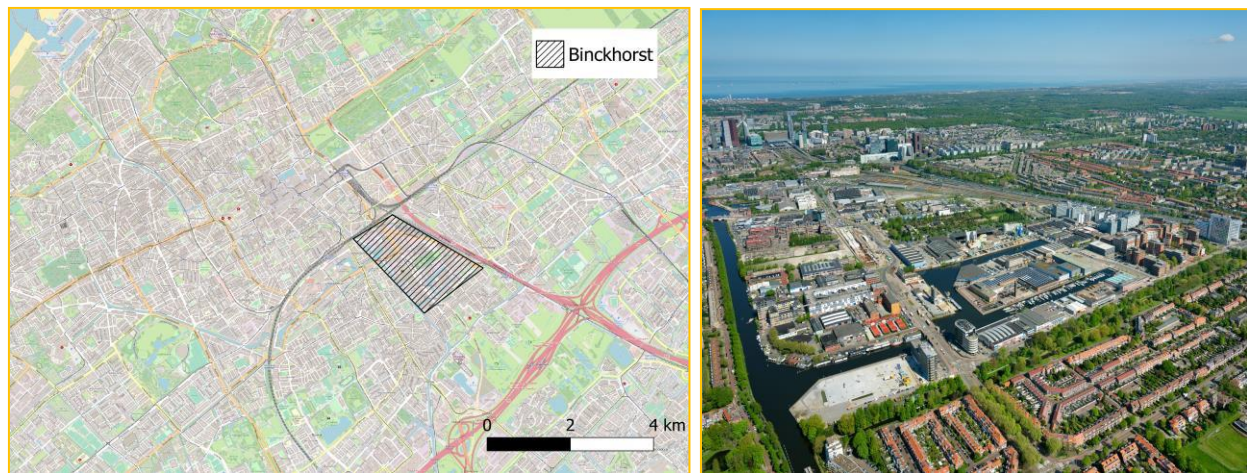
4.2 Binckhorst The Hague

Introduction

The Randstad-region of the Hague stands for a large housing-task: according to the demographic forecast made by the municipality in 2018, the population of the Hague will increase from 533.026 inhabitants now to roughly 615.000 in 2040. This means that there will be a rising demand for new housing that have to be built mainly within existing urban areas.

One of the locations that was appointed as suitable for transition into a dense, urban living and working area was the business district Binckhorst. Soon plans were made to transform this 130 hectares business area, making it one of the most ambitious inner-city development tasks of the Netherlands. The masterplan 'Nieuw Binckhorst' (designed by architect Rem Koolhaas) entailed the redevelopment of the area into a mixed and sustainable living- and working district with international allure, presenting it as the most important development zone of the Hague with roughly 7000 new dwellings to be built there.

Unfortunately, due to the financial crisis in 2008, the municipality of the Hague had to decide to postpone the masterplan until 2017. In the end of 2010, they even decided to drop the masterplan completely and change to a more organic way of developing: the municipality decided they would only be in charge of the development of the Rotterdamsebaan and the rest of the area has to be taken care of by the market (Kannevorff, 2011). In the days of the former masterplan, the municipality already acquired a lot of land in the Binckhorst, because they were willing to transform the area completely into a dense urban living area. The urge for the municipality to kick-start developments remained due to the interest costs that lie on the purchased land. The development of the Rotterdamsebaan and appointment of the Binckhorst as a new city entrance area were some impulses that should attract developers to participate.



Picture 2: Location and aerial photo of the Binckhorst-district

Regional and local governmental visions

Just like the case in Deventer, governmental visions are quite well in line with the developments that should or have taken place in the Binckhorst. On a provincial level, the province of Zuid-Holland has formulated a provincial vision document in 2012, in which the urban transformation of business estates

into mixed-use areas is marked as one of the core goals for the province in the near future (Provincie Zuid-Holland, 2012). In the new provincial vision on space and mobility of 2018, they again emphasize the trend towards mixed-use zones, caused by the decreasing difference between working- and living areas due to technological innovation and the upcoming concepts of start-ups and 'the new way of working' ('het nieuwe werken') (Provincie Zuid-Holland, 2018).

On a local level, the vision of the municipality of the Hague for 2020 (which was established in 2005) still very much entails the image of Binckhorst as an integral, large-scale urban redevelopment project with a high density-mix of living and working. In the chapter on development strategies they portray the municipality as a core player in area development and responsible for large-scale integral area development in urban environments (Gemeente Den Haag, 2005). In 2009, a new elaboration on this vision was presented. Although the financial crisis had already struck, this vision still included the old masterplan 'Binckhorst Plus', which argued for a large-scale redevelopment with, for example, 'no limits to high-rise buildings' (Gemeente Den Haag, 2009).

After the change in strategy in 2010 and the annulment of the masterplan as a result of that, the municipality stopped all investments in the Binckhorst and left initiatives to the market. However, the ambition remained unchanged: 'Transformation into a sustainable and high-end living-, working- and recreation-area'. Individual initiatives had to contribute to this ambition and, while the financial situation re-stabilised, innovative and cultural initiatives sprouted up on different spots in the Binckhorst-district: examples are the Bink36-hotspot and Cabfab-factory. These initiatives caught the attention of the municipality, regional and provincial authorities (like the Randstad-regional co-operation and the province of Zuid-Holland) who again saw potential in the Binckhorst. With a new approach, based on the new Environmental and Planning Act, the area should gradually be transformed instead of integrally (Gemeente Den Haag, 2018). This led to the new global plan for the Binckhorst that is being carried out now.

Change of planning strategy

Over the years, quite some framework setting documents and reports about the project's progress have been written. This subchapter will look further into the strategic changes that arose from these documents.

The first vision on the Binckhorst-district came in 2002, written by Kraaijvanger Urbis. This vision document actually only argued for two different directions of redeveloping the area: stimulating the business-estate character in the area or redevelop the Binckhorst into a zone with an accent on housing (Rekenkamer Den Haag, 2013). One year later, in 2003, the first concrete area vision was presented by the municipality, in which they showed the development direction that had been chosen. In this document, the municipality argued that the development does not have a concrete functional or spatial program, due to the need for flexibility because of 'the competitive approach and long duration of development' (Rekenkamer Den Haag, 2013, p.33). In the following years, not very much happened in the Binckhorst, which for many stakeholders seemed as a result of the lack of an integral vision. To give an impulse to the developments in Binckhorst, the municipality drafted an area concept together with two co-operating partners in 2006. The goal of this collaboration was to create a more concrete masterplan, which eventually evolved from this co-operative concept in 2008.

Only shortly after the presentation of the masterplan 'Binckhorst Plus', the financial crisis struck the Dutch economy. Eventually, there was no anticipation on this new situation from the side of the developing co-operation: in 2010 they still made amendments on the original masterplan (development in phases, only the southern part at first, et cetera), but they did not immediately notice the financial crisis as a threat (Rekenkamer Den Haag, 2013). In October 2010, the Investment Program for Urban Development (*IpSO; Investeringsprogramma Stedelijke Ontwikkeling*) was written and this document stated that, due to a lack of financial resources, the municipality was forced to step out of the development of the Binckhorst and leave it completely to the market. This means that the original masterplan 'Binckhorst Plus' and the integral development vision were dropped and that the further actions in this district would take place in a radically different way: bottom-up, organic and funded by the market (Rekenkamer Den Haag, 2013). The municipality would only be in charge of the spatial main structure, like the development of the Rotterdamse Baan and investments in better accessibility by public transport. This way, the municipality is hoping to tempt developers to join the activities taking place in the Binckhorst.

A couple of years later, the Binckhorst area becomes an experimental zone for the future Environment and Planning Act: this means that the original zoning plans got dropped and that a new, more general plan for the area was put into use (*Omgevingsplan Binckhorst*, 2018): the entire Binckhorst area got assigned as 'transformation area'. This offers developers a broader range of options to redevelop the district into a mixed-use zone, without being bound to specific uses or building regulations per plot. Besides the changes concerning the Environment and Planning Act, the Binckhorst is also one of the areas appointed in the context of the Crisis- and Recovery Act. This law was established to accelerate and stimulate the building sector during the financial crisis, but nowadays also serves as a tool to allow more mixing of uses in areas that are difficult to transform into mixed-use zones under the regular law. The new plans for the Binckhorst are also in line with the idea of subareas with different identities: this offers opportunities to create a varied area and serves as a form of risk-spreading: if one kind of use happens to be dysfunctional within the Binckhorst-area, other successful uses in different subareas can bear the risks.

For the Binckhorst area, mixed-use instead of single-use development might offer some opportunities in the current setting, but could also create certain difficulties. As becomes clear from this chapter, a large variety of entrepreneurs was settled in the Binckhorst. In the past, it was especially known as a business estate for car mechanics and other related businesses. Quite some of these businesses are still active in the area and would like to stay where they are if possible (Rolsema, persoonlijke communicatie, 24 april 2019). At first sight, this would create difficulties for the adding of dwellings in this area due to environmental zoning laws related to noise and pollution caused by the still active businesses. Receiving consensus, as argued in the theoretical framework, would be more difficult in this opinion.

Besides the large amount of businesses (and thus stakeholders), there were also some businesses active in the Binckhorst in the higher environmental categories, like a concrete factory. For an area that entails only industrial uses that would not be problematic, but the adding of houses to the same area could lead to difficulties in relation to safety and noise contours for the protection of new inhabitants.

The Environment & Planning Act and Crisis- and Recovery Act in practice

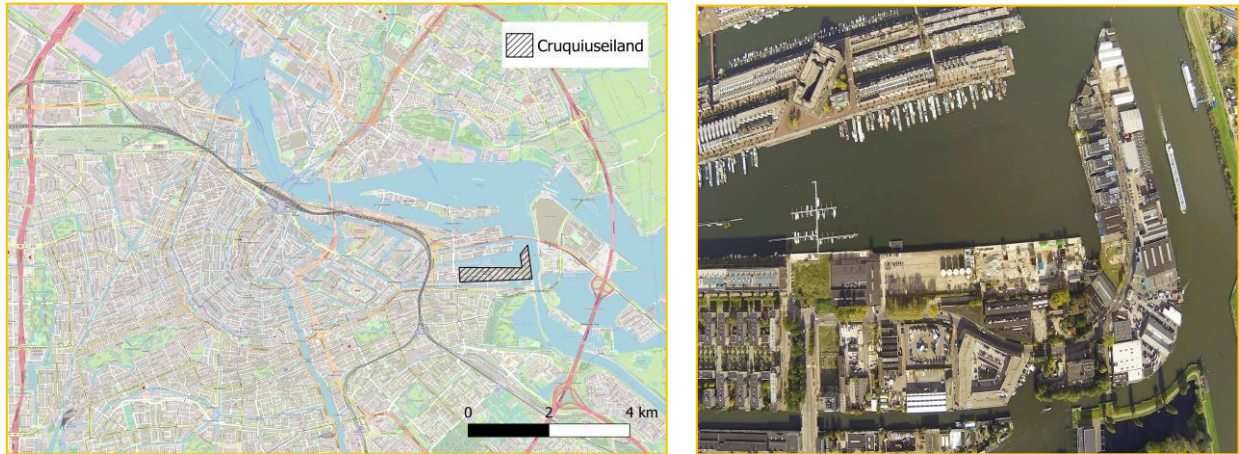
In this case, the municipality used an experimental version of the future Environment & Planning Act (*Omgevingswet*) combined with the Crisis- and Recovery Act (*Crisis- en Herstelwet*) to transform the Binckhorst district.

At first sight, the Environment & Planning Act and the Crisis- and Recovery Act (CRA) have differing goals. For the first Act, the goal is mainly to create a more integral, comprehensive legal framework for spatial decision making by the municipality (A. Rolsma, personal communication, April 24th 2019). The second Act was composed during the financial crisis of 2008, to make sure building activities wouldn't stop completely due to a lack of demand. The CRA aimed to make review procedures by the municipality shorter or even unnecessary. Besides that, it also temporarily makes it possible to include flexibility in environmental zoning norms, which is necessary for mixing different uses. At first, this law was created for large development projects of national importance, but after the crisis the CRA gets used for more and more inner-city development projects, also at a smaller scale-level. With the broader range of projects that can be signed in for the Crisis- and Recovery Act, the rules and content of this law have changed over time as well. Every now and then, the law gets a new update, a so called new 'tranche'. The Binckhorst-district was included in the 7th tranche of the CRA and has to adhere to the rules established in this version of the law. The Environment & Planning Act is not yet active and is being implemented now in a couple of projects throughout the Netherlands to test its impact and functioning for Dutch spatial development projects.

4.3 Cruquiuseland Amsterdam

Introduction

Located close to the other former harbour islands KNSM-island, Zeeburg and Borneo-island, the Cruquius-island is part of a unique urban environment, close to the water and only a stone's throw away from the Amsterdam Central Station. In the past this dockland-area has been an important storage location for goods shipped from Asia and Africa, like coconut oil, tea, cocoa and coffee. Some of the remains of this period are still visible in the area: the old head quarter of Insulinde, known as 'Huisje Insulinde', rusty rail tracks and some empty wine tanks which will get a new use in the future. The Cruquius-island can be characterised as a former dockland-peninsula which nowadays still hosts companies for about 1500 employees. However, a lot of the former activities in the area have stopped and land has become vacant. These sites all have different owners, making it difficult for the municipality to start an integral large-scale redevelopment. For that reason, the municipality has chosen for a different strategy, based on game rules for initiatives and a bottom-up way of developing by inviting stakeholders who are willing to participate in the redevelopment.



Picture 3: Location and aerial photo of the Cruquius-island

Regional and local governmental visions

Amsterdam is one of the Dutch regions with the highest demand for housing, due to its attractive force as a metropolitan region with a large job market and vivid urban atmosphere. The provincial vision on spatial structure argues that therefore 150.000 new dwellings will be needed within the metropolitan region of Amsterdam before 2030 (Provincie Noord-Holland, 2010). Due to national policies on the compact city and the lack of available and financially feasible greenfield-locations within the region, a substantial amount of these dwellings will have to be built within the existing urban environment through transformation, densification or mixing of uses.

This last aspect is taking place in the Cruquius-area. According to the municipal economic vision, the Cruquius-island will become a so-called 'Productive Neighbourhood' (*Productieve Wijk*). These neighbourhoods entail the combination of business activities with urban living areas, by which the municipality wants to go back to the traditional way of urban developing from the 19th century (in which the nowadays admired city centre of Amsterdam was built). However, this document also states that the main starting point of these developments is to create a safe and healthy living environment, which excludes certain types of activities in these productive neighbourhoods (Gemeente Amsterdam, 2017). For this reason, only companies within the range of 1.2 up to 3.1 (according to the environmental impact category) are allowed in these neighbourhoods. Since many of the suitable areas for this development already include companies that are above level 3.1 the municipality made some compensation-possibilities for these companies.

To prevent the Cruquius-island from transforming into a non-mixed use area that entails only dwellings, due to the higher profits on housing these days, the municipality stated in its spatial structure vision for 2040 that they want to maintain 50 percent of the land in Cruquius for business-use (Gemeente Amsterdam, 2010). However in the rules of the game document, they do not make it mandatory to keep 50 percent available for business-use, but visualise it as a desirable outcome. This makes it difficult to uphold these rates, since the rules of the game leave a lot of freedom to the developers to choose which type of use they want to develop since they are not legally bound to certain percentage per type of function. In other words: the municipality of Amsterdam does not have many legal options to oblige developers to incorporate economic space in their development plans.

Change of planning strategy

In the case of the Cruquius-island there is not so much a case of a strategy change, but more the use of a new strategy in comparison to projects in the past. For this project, the municipality explicitly acts as a supervising stakeholder that leaves the initiative of development to private parties. In this case, the municipality invented a 'game rule card' (*spelregelkaart*), that should steer the developments taking place within the Cruquius-island. This game rule card has been established as some sort of vision-document on which the municipality could base the actual zoning plan for the Cruquius-island. This means that the game rule card has no legal status at all (H. Ombre, personal communication, April 23rd 2019).

The reason they opted for this strategy lies according to Urhahn in the characteristics of this area (Urhahn, 2015). Firstly, the ownership structure within the area is really scattered. This leaves the municipality with a dilemma: they can try to acquire all the land, to generate a more influential position in this district. A downside of this strategy are the high costs for acquisition and the, probably, longer taking negotiation processes. A second option is to leave the initiative to the market, which means that private parties have to acquire plots of land and develop them. A negative point about this way of working is however the fact that the municipality has not got a very strong position due to a lack of land ownership.

A positive upside of this area is the state of the regional real estate market: as mentioned earlier, the demand for especially housing, is growing fast in the metropolitan region of Amsterdam. Because of a fixed amount of space to build new housing, prices for land are increasing and the amount of private developers willing to participate in area development is thus also large due to this favourable market condition. The potential of a central location like Cruquius-island is therefore high, because it is one of the last locations within the A10-ringroad that is available as a new mixed-use location.

Because of this high potential, the amount of investors was estimated to be quite high as well. This made the position of the municipality, as an area director, a bit stronger, because they might still be able to impose restrictions or obligations without scaring away all the developers. By on the one hand imposing some rules to which initiatives have to adhere, but on the other hand leaving the exact infill of the redevelopment to the private developers both the governmental and market-side of the stakeholders have influence in the final vision of the new Cruquius-island.

Until now, the innovative strategy has worked well: many plots have been sold to private developers and initiatives have been accepted as feasible according to the game rule card. But there are also some concerns about the strategy: the risk of developing in an organic way is, as earlier mentioned, that the good spots and interesting real estate products get developed first and the less profitable items are left out. This might happen with public amenities like elementary schools, libraries or other facilities that usually do not generate a large profit for the developer. Another aspect that might vanish, are the industrial relics still present in the area, which give the district its raw character: demolishing these items or buildings instead of processing them into the development plans is often cheaper and therefore preferable for private developers. Some authors warn for the creation of again a market-conform living area, because this generates the best profit (Zonneveld, 2015; Paquay, 2015). These are some aspects that might cause the municipality to adapt its strategy to the changing situations that appear in the area from time to time.

In addition to this strategy, the municipality has also adopted the Crisis- and Recovery Act as a juridical instrument to steer in the development of Cruquius-island. One of the included aspects of the CRA is the use of a flexible zoning plan, especially in relation to noise (6th tranche of the CRA, 2013).

To conclude, the Cruquius-island does not have a specific strategy change, but the strategy being used there is quite different from the ordinary way of working in Amsterdam. This makes it challenging and, in the light of the future Environment and Planning Act, interesting to see if this strategy brings some specific success factors to the toolkit of spatial planning.

PART V: CASE STUDY FINDINGS

CASE STUDY FINDINGS

In this chapter, the findings of each of the case study areas will be discussed. For each case area, there will be further elaborated on the strategy used, the impact of the strategy on the mixing and the specific aspects of the strategy through which it aims to deal with the different categories of obstacles. These four categories consist of land management obstacles, urban design issues, (environmental or legal) zoning issues and financial feasibility problems. Each of the categories will be elaborated on.

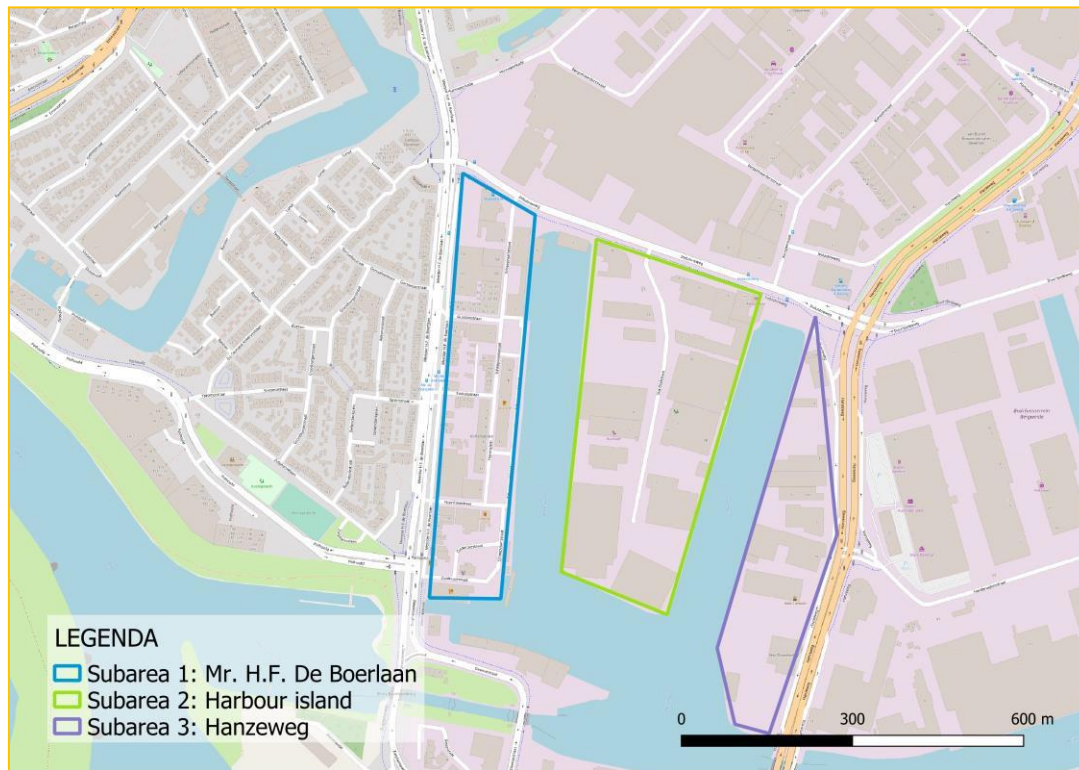
The content of this chapter derives from a set of interviews with professionals involved in the area development of the different cases. Different professions were selected to make sure the cases could be analysed from different points of view to have a more profound insight in the various fields of potential obstacles during the development process.

There are some remarks with regard to the collected data: the interviews have been conducted over a period of three months (from April 2019 until July 2019). Events that have taken place afterwards the empirical data-collection and analysis phase, have not been taken into account (unless of major importance for the research as a whole). For confidential and strategical reasons, not all kinds of information could be derived or named in this report (for example future land acquisition by the municipality or company names mentioned during the interviews). In that sense, company names won't be used in this chapter, but they will be specified by naming their activity.

In addition to this remark, there have been some interesting developments with regard to the Project Nitrogen Approach (*Project Aanpak Stikstof, PAS*). Recently, the Council of State has annulled the legitimacy of this law. Originally, this law was created to monitor and calculate the amount of nitrogen that would be released into the atmosphere by development projects. These project should keep their nitrogen emission below certain levels. Since the PAS has been annulled, these regulations are not legally usable anymore and many infrastructural or building projects have been decommissioned. These developments have taken place after the collecting of data for this research project, so the effects of this verdict have not been taken into account. Nevertheless, this development surely will have its effect on the projects investigated.

5.1 Analysis of the Havenkwartier Deventer

The Havenkwartier-area in Deventer is divided into different subareas, which consist of two harbour arms and a harbour island. The first harbour arm is almost fully redeveloped into a mixed-use area of working and living. However, the harbour island, which is appointed as the second area to develop is still completely unchanged. This chapter will look further into the successfulness of the first harbour arm development and the reasons why developments are lacking on the harbour island. First, this chapter will offer a short insight into the used strategy in the Havenkwartier-district. After that, the effects of the strategy on the development of the Havenkwartier will follow, focussing on the four categories of obstacles as also mentioned in the Binckhorst-case. The main focus will be on specific obstacles that occur during the development and how the strategy offers solutions to overcome these problems.



Picture 4: Subareas within the Havenkwartier-district

The Flemish Development Model in the Havenkwartier-case

From the start of the current redevelopment of the Havenkwartier, the municipality chose, together with urban planner Andries Geerse, the Flemish Model as the development strategy for the Havenkwartier-district. This organic strategy was chosen, because of the large amount of land the municipality owned in the first part of the area, namely the area at the Mr. H.F. De Boerlaan (B. Landeweerd, personal communication, June 18th 2019). The main assumption of this Flemish Model was that developments should take place in small pieces, spread over time and based on the interests of market parties (I. Visser, personal communication, May 8th 2019). In that sense, it is a perfect example of organic area development. The zoning plan that supported the strategy was not very detailed: the entire first subarea was zoned as 'mixed-use'. Within these zoning plans, the existing buildings should remain and an obligation for renovation of these buildings was mandatory for each of the developers

that bought a building (B. Landeweerd, personal communication, June 18th 2019). In that way, the atmosphere of the harbour should be preserved.

Implications of planning strategy for mixed-use development

By choosing for the Flemish Model as a development strategy for the Havenkwartier-district, some consequences for the ways the mixing of uses can be created rose. This subchapter will look further into the implications that the chosen strategy has for the development of mixed-use areas, by looking into the four categories of obstacles that often occur when inner-city mixed-use developments take place and how the Flemish Model offers solutions to deal with these obstacles.

Land-management and ownership structure obstacles

As earlier mentioned, the municipality had acquired quite a lot of land in an early stage, mainly in the first subarea close to the De Boerlaan. Reason for this land acquisition was an earlier masterplan, that entailed the complete transformation of this subarea into a living- or office district. However, this masterplan got cancelled around 2008 due to protests of surrounding companies (who claimed to be threatened in their business by the adding of large amounts of dwellings) and the lacking market interest in office space (B. Landeweerd, personal communication, June 18th 2019; [REDACTED], personal communication, June 26th 2019).

The urge to redevelop the area remained due to the large amount of land the municipality had acquired. The decision to use a more organic way of development with the Flemish Model as a strategy seemed to be well-suited for the ownership situation in the Havenkwartier. Because of the land ownership, the municipality was able to steer a lot in the developments by obliging developers to renovate the buildings they bought from the municipality and sometimes even make it compulsory to use the buildings as a business space (B. Landeweerd, personal communication, June 18th 2019).

These obligations could be made because the municipality and developer had to make an anterior agreement on the transaction of the land (B. Landeweerd, personal communication, June 18th 2019). By using an anterior agreement instead of an exploitation plan, they could shift a broader spectrum of responsibilities and costs to the side of the developer. If the developer did not want to agree to the anterior agreement, the municipality was still in possession of the land and could easily sell it to someone else. This strong negotiation position made it possible for the municipality to incorporate their ambitions and visions in the actual development.

However, not all the land in the first subarea of the Havenkwartier was owned by the municipality. Some plots were still privately owned. For these plots, the municipality put a so-called 'change permission' (*wijzigingsbevoegdheid*) in the zoning plan. This change permission is legally recorded in article 3.6, first section, under 'a' from the Spatial Planning Law (*Wet ruimtelijke ordening, Wro*). This means that the municipality holds the right to change the plans initiated by the landowner, if these are not in line with the municipal vision for that area³ (B. Landeweerd, personal communication, June 18th 2019). By putting these change permissions into zoning plans, the municipality tries to prevent from getting into exploitation plan procedures, which often have a long procedure and offer less steering

³ A critical remark with the use of change permissions is the fact that the municipality has to prove that the changes that will be made by applying this permission are feasible. In organic development projects, it is often difficult to predict what will happen and which developments will take place. This makes it also complicated to underpin the feasibility of changes made through a change permission.

possibilities (cost recovery or obligations for the building program, et cetera). Up until now, this change permission has been used once, which lead to the establishment of an anterior agreement.

But the ownership of land also had another consequence for the municipality: by acquiring most of the land in the first subarea near the Mr. H.F. De Boerlaan in advance of the first masterplan, they took quite a big financial risk. When the masterplan got pushed aside by the municipal council, the buying of parcels had already cost the municipality a substantial amount of land in an area that was not very popular at that time (I. Visser, personal communication, May 8th 2019). When the municipality changed its strategy and chose for a more organic way of development, they also chose to take the financial consequences of land acquisition for their account by selling the plots to artist organisations and small businesses for prices way lower than the plots would have been sold when the masterplan (that consisted of large amounts of apartments) would have been pushed through. The municipality made a critical decision to take the loss and amortise the land at that moment. This financial 'sacrifice' made by the municipality has given the Havenkwartier-district the opportunity to develop in an organic way by adding a financial stimulus.

Finally, the chosen development strategy has got implications for the current phase that the project is in: due to the large financial risks on the first subarea, the municipality is not willing to acquire land again on the harbour island. However, if the municipality would establish a similar zoning plan for this area, which leaves a lot of space for private parties to choose what the program for the area will be, the mixing of uses might become complicated. If the responsibility for the mixing of uses lies with private market parties, many of these developers will choose to invest in real estate that offers the largest profit, in this case private sector housing. Due to a lack of municipal land ownership, steering in the development program would be rather difficult, as long as the plans of private developers fit within the context of the zoning plan. In that sense, a more detailed zoning plan would be needed to make steering on the development program possible, which does not support the chosen organic development strategy. So to conclude, the chosen organic strategy does not match the challenges that the municipality faces on the harbour island and amendments have to be made.

Urban design

In their vision documents and development plan for the Havenkwartier-area, the municipality describes the district as an 'experimental rough edge of the city of Deventer' (Municipality of Deventer, 2010). This document also offers an insight in the type of urban environment the municipality would like to create in the Havenkwartier. This entails the preservation of most of the characteristics of the former harbour zone and the connection of new projects to this type of design (Municipality of Deventer, 2010).

Because the area is assigned by the municipality as an experimental organic development zone (without any special legal status), there are not that many restrictions when it comes to urban design issues. At the Mr. H.F. De Boerlaan for example, a row of dwellings have been constructed based on the principle of collective private commissioning (*Collectief Particulier Opdrachtgeverschap*, CPO): every dwelling has a unique shape and look. One of the dwellings even contains a rehearsal room for a band inside a shipping container on the roof of the building (██████, personal communication, June 26th 2019). Another project that connects to the experimental identity of the area is the so-called 'ProjectOne' building. This entails a concrete construction in which people can create their own apartment and 'plug' it into the concrete frame (B. Landeweerd, personal communication, June 18th 2019).

Another ambition of the municipality was to preserve the harbour identity of the area. In that sense, the municipality included obligations for renovation in the agreements for the selling of the characteristic harbour warehouses (I. Visser, personal communication, May 8th 2019; B. Landeweerd, personal communication, June 18th 2019).

As becomes clear, the municipality had a clear vision for the first subarea of the Havenkwartier-district when it comes to urban design principles. For the harbour island however, the municipality had a lot less clear vision. The development plan states that the island should exist of 'medium-sized businesses combined with a couple of business dwellings (Municipality of Deventer, 2010). However, the municipality also has a differing strategy for this part of the district; they are not willing to actively participate in the development, which means they will not buy any land (I. Visser, personal communication, May 8th 2019; M. Koops, personal communication, June 3rd 2019). The idea is to leave the development to market parties. However, up until now no developments have taken place for two reasons. Firstly, some developers are speculating on changes in the zoning plan since they rather want to include houses in the program of this area instead of only economic space (B. Landeweerd, personal communication, June 18th 2019). And secondly, the landowners who do want to redevelop the area are held back by one business trading demolition goods that does not want to move (M. Koops, personal communication, June 3rd 2019). This company is on a crucial location (on the opposite side of the already developed first subarea of the Havenkwartier-district) and also has a small noise circle which prohibits the development of houses around it (M. Koops, personal communication, June 3rd 2019).

As a consequence, the already developed first subarea now looks out over the old warehouses on the opposite side on the harbour island. This might not be a problem for current users, who are pioneers and like the raw edges of this place, but as more dwellings are being planned for the Havenkwartier other types of citizens will find their way to this area. The municipality does not have any regulations towards these urban design issues, which create a large contrast between the popular and new first subarea and the run-down, undeveloped harbour island.

Environmental zoning issues

Especially in the past, the development of the Havenkwartier-district encountered difficulties with regard to environmental zoning aspects (since it was and still is assigned as an industrial estate, which now partly also hosts housing areas). The business and industrial estate that the Havenkwartier is part of, called Bergweide, contained a large amount of big companies in higher environmental categories. Some examples are the printing company Roto Smeets and the chemical industries of AkzoNobel. In the past, these companies joined their forces to protest against the masterplans that aimed to transform the Havenkwartier into a housing- or office district (I. Visser, personal communication, May 8th 2019). Recently, Roto Smeets has gone bankrupt and AkzoNobel moved most of its industrial activities to other countries (M. Koops, personal communication, June 3rd 2019). This offered new options for the Havenkwartier to develop. Besides the disappearing of these companies, almost all companies in the first subarea of the Havenkwartier left or were moved to different areas.

The problems that now arise, are originating from the harbour island. The earlier on mentioned demolition goods trader still prevents his surroundings from getting developed. Because the municipality does not want to be involved in a financial sense and has no planning instruments that can oblige this company to leave without paying him, the developments are stalled. The current zoning plan for the plot of this company prescribes an environmental category of 3.2, which means that building

houses in its surroundings is only possible with preventive measures like deaf facades. The trader in demolition goods does not use the full 3.2 category at this moment, but is not willing to lower the bar in order to be able to possibly expand his activities in the future. Changing the zoning plan to lower the category can only be done after 10 years when the zoning plan ends. The only option for the near future is to stimulate negotiations between the entrepreneurs on the island, in order to create a shared vision for the harbour island (M. Koops, personal communication, June 3rd 2019).

In case of environmental zoning issues, the used organic development strategy does not have clear advantages: in the first subarea, the former industrial companies all moved away or were bought out by the municipality in the stage of the former masterplan. Due to these actions and the fact that the municipality owned a lot of land, they had enough instruments to overcome environmental zoning issues. In addition to this, they had the change permission to prevent undesirable developments (like heavy industrial activities in the first subarea) taking place on plots the municipality did not own in this area. However, for the harbour island the situation is completely different. Due to the presence of noisy businesses, the lack of municipal land ownership and private parties who are financially responsible for the area development the developments stalled. A more leading role for the municipality would be needed to take up the development again, since private parties cannot come to an agreement without municipal or financial interference (M. Koops, personal communication, June 3rd 2019).

Financial feasibility problems

As earlier on mentioned, the municipality has taken some quite large financial risks when developing the first subarea. By acquiring a lot of land and, later on, amortizing these plots again the municipality has subsidized a lot of the costs for the development of this area. In that sense, the role of the municipality has been a really active one, since they also steered a lot in the program of the development. Costs for infrastructure and public space however were not directly being subsidized by the municipality. The municipality had a fund for the development of their business park and industrial estate as a whole (Groot Bergweide), which was used to cover the costs of public infrastructure in the first subarea (B. Landeweerd, personal communication, June 18th 2019).

To make sure the land exploitation of the first subarea was financially balanced, the amortization of land that the municipality had applied earlier was covered by the same fund for Groot Bergweide. This was necessary to make sure zoning plans could be edited, because a financial underpinning is obligatory to make sure the zoning plan will be of sufficient quality for establishment by the municipal council (B. Landeweerd, personal communication, June 18th 2019). Without the change of the zoning plan from an 'industrial' zoning to a 'mixed-use' zoning, the entire development would have been impossible.

The access to sufficient financial funds and acquisition of land in the first subarea are one of the main success factors of the development process of the Havenkwartier so far (B. Landeweerd, personal communication, June 18th 2019). As becomes clear from the situation on the harbour island, market parties struggle when they have to take the lead in developments, especially when different parties cannot come to an agreement concerning the exact fill-in of the future program for the area to develop.

Conclusions

This subchapter aims to give an overview of the main obstacles and solutions the chosen development strategy offers. First, the chosen strategy will be linked to the solutions that are sought for obstacles

that have risen during the development. Secondly, possible consequences of these solutions for mixed-use development will be defined.

Obstacle category	Chosen strategy	Solutions	Consequences
Land-management and ownership structure obstacles	<ul style="list-style-type: none"> - Partly active land-management (acquisition of most of the land in first subarea) - Steering through change permissions on privately owned land 	<ul style="list-style-type: none"> - Steering the municipal ambitions for the area through obligations linked to the issuance of land. - The change permission offered options to make sure the development would come about in an integral way and prevent 'freeriding' by owners of private land. 	<ul style="list-style-type: none"> - Municipal funds shrunk due to large investments in the first subarea. Caused by their financial situation, the choice was made to leave the development of the harbour island to private parties.
Urban design issues	<ul style="list-style-type: none"> - Preserving harbour qualities by renovating characteristic real estate - Parking has to be realised on private land, the municipality only provided limited temporary parking space. 	<ul style="list-style-type: none"> - Obligations for renovation for private parties incorporated in the issuance of plots by the municipality. - Parking has to be realised on private land, when pressure for parking rises above a certain level the municipality is willing to co-invest in a parking garage. 	<ul style="list-style-type: none"> - Municipality sold plots against lower price than they bought it for, to make it possible for private parties to renovate the characteristic buildings. This made a financial impact on the municipal area exploitation. - Users of the Havenkwartier are parking in surrounding neighbourhoods due to a lack of parking space. Neighbourhoods get overwhelmed.
Environmental zoning issues	<ul style="list-style-type: none"> - Organic development strategy ('Flemish Model'): identifying zoning issues per plot. - Buying out most of the businesses within the first subarea to make mixing with other uses more easy to apply. 	<ul style="list-style-type: none"> - No problems in the first subarea due to the lack of noise or pollution circles (most companies already left). - The harbour island has to be developed by the market and nuisance-causing companies have to be persuaded (financially) to leave. 	<ul style="list-style-type: none"> - Developments on the harbour island stalled, due to the lack of cooperation of one nuisance-causing company, that does not want to leave. Any mixing with housing is impossible due to noise circles.

Financial feasibility problems	<ul style="list-style-type: none"> - Active development strategy: the municipality has invested a substantial amount of money in the redevelopment of the first subarea. - Funds for the business district Groot Bergweide have to cover costs for amortization of land. 	<ul style="list-style-type: none"> - The first subarea has successfully (but costly) evolved into a mixed-use area. - By using the funds for Groot Bergweide the municipality could cover the losses. 	<ul style="list-style-type: none"> - The effect of the subsidizing in the first subarea is the fact the municipality cannot contribute in a financial way to the development of the harbour island. This has caused the stalling of these developments.
---------------------------------------	--	---	--

Table 3: Analysis of the four obstacle categories for the Havenkwartier-district (own illustration)

5.2 Analysis of the Binckhorst The Hague

As mentioned in the case description, the Binckhorst is nowadays appointed as an experimental zone for the future Environment & Planning Act. This subchapter will first offer an insight in the functioning of this law in the Binckhorst. After that, an elaboration on the effects of this strategy for the spatial form of the Binckhorst will follow, especially focusing on the different obstacle categories and how the strategy tries to overcome these problems.

The Environment & Planning Act and Crisis- and Recovery Act in the Binckhorst

For the Binckhorst, the Environment & Planning Act has led to a changed zoning plan: the former zoning plan consisted of mainly plots assigned as ‘business use’, but for different plots exist different types of business-use. The new, so-called zoning plan with a broadened scope, leaves only one type of zoning for the entire area, namely ‘transformation area’. This entails 13 different main types of activities, which could all be developed in the entire plan area. These types of activities are regulated in the plan rules, which also contain a set of conditions which initiatives of developers have to meet. One of these conditions is the obligation to apply for an Environmental Permit (*Omgevingsvergunning*) for every initiative that entails new buildings. This already remarks a difference as compared to the regular zoning plan: in the regular zoning plan systems, a permit is not needed as long as the initiative fits within the spatial regulations set up for that specific plot. In the environmental zoning plan (*Omgevingsplan*), initiatives are obliged to apply for a permit when the initiative does fit within the spatial regulations (J. Van der Goes, personal communication, June 14th 2019). When initiatives do not comply to the conditions set in the plan rules, they are already on forehand not acceptable (J. Van der Goes, personal communication, June 14th 2019).

One of the main goals of the municipality of The Hague was to create a dense urban environment, which includes both living and working. To create this mixed-use environment, the plan area has split up into a so-called district primary living and primary working (*‘primaat wonen & primaat werken’*). For these areas, different starting positions were set up. For the primary living area, the main goal was to create a dense living area, while the primary working should preserve the amount of working space it offered when developments started in the Binckhorst (C. Verhaegh, personal communication, June 5th 2019).

Some regulations have been included in the environmental zoning plan to make sure the mix of uses will be preserved. One of these regulations that counts for the primary working area, is the obligation for developers to include 20 square meters of economic space for every dwelling they want to build within

the primary working district. In that way, dwellings can only be built if it also leads to the construction of more economic space (A. Rolsma, personal communication, April 24th 2019).

Implications of planning strategy for mixed-use development

The chosen strategy of the municipality, in this case a flexible zoning plan in combination with an experimental status for the Environment & Planning Act, has specific consequences for the way mixed-use development is being facilitated in the Binckhorst. This subchapter will look further into the implications for mixed-use development through four categories of possible obstacles that often occur in mixed-use development projects and how the strategy aims to deal with these obstacles.

Land-management and ownership structure obstacles

As earlier mentioned, the municipality already acquired quite a lot of land in the Binckhorst area, especially in the Trekvlietzone (which is appointed as the primary living district). Besides these lands in ownership of the municipality, they also have quite some plots issued in leasehold (*erfpacht*). This means the municipality is still the official owner, but the leaseholder can use and develop the land they pay the municipality for. This way, the municipality can make a profit from the developments that take place on these plots, without having to sell the land. A downside is the fact that the municipality cannot use the land for different plans, because the leaseholder has the only right to use it. In that sense, this land is not readily available (*'vrij uitgeefbaar'*).

Nevertheless, the municipality owns a substantial amount of land in the Binckhorst (about 1/3 of the total area is in ownership of the municipality and readily available). One of the benefits of municipal landownership is the fact that it is possible to oblige a broad range of aspects on developers who want to buy the land to develop their initiatives on it. If the municipality is not in possession of any land, they can only oblige a limited set of aspects to developers. For example, the so-called *bovenplanse voorzieningen*, which can be obliged through an anterior agreement (private law), but these cannot entirely be obliged through the exploitation plan (public law). For the municipality, ownership of land offers way more options to cover costs for public facilities.

In both the primary living and primary working district, the municipality has options to steer and guide its ambitions. However, the type of steering they can use differs quite a lot. In the case of the Binckhorst, the municipality had quite a lot of private steering possibilities in the primary living zone, due to a lot of strategic land positions they owned within this area. This allowed them to oblige developers to incorporate their ambitions in the initiatives. In the primary working district, the municipality had a lot less readily available land. To preserve working for this area (one of the main goals), they established rules through public law like the compulsory addition of economic space for every dwelling built in this district (20 square meters of economic space for every dwelling). These regulations have been implemented in the policy rules of the Environment & Planning Act, which makes them legally enforceable.

However, there is also a downside to these policy rules: the municipal council holds the right to change these rules if they think this is needed in the context of 'good spatial planning' (J. Van der Goes, personal communication, June 14th 2019). In the appendices of the policy rules, the municipality now states that they will only adjust the policy rules if the mix in functions will get under pressure. Nevertheless, if the market demand for development of economic space happens to be substantially lower than the market demand for housing, the municipality might overthink their vision and ambitions for the Binckhorst and

adapt the policy rules to the market's demand (J. Van der Goes, personal communication, June 14th 2019). This gives a lot of uncertainties for existing companies in the Binckhorst about their future and, as a consequence, most companies are not investing in their business anymore (C. Verhaegh, personal communication, June 5th 2019).

A main difference between the steering possibilities the municipality has in the primary living and primary working zone, is the flexibility: steering through anterior agreements offers a lot more options to diversify between different initiatives within this district. For the primary working area, the municipality can only steer through public law regulations. These rules have to be applied in every case and diversifying is not possible. It is thus more complex to adapt policy to sudden social or economic changes or desired directions of development within the Binckhorst.

Urban design issues

Just like many industrial or business estate transformations, the Binckhorst wants to preserve its identity as a 'raw edge of the city'. In that sense, they do not want to reshape all of public space. To make public space better suited to the different types of use that will be incorporated in the Binckhorst district, the municipality chose to create two different zones: primary living and primary working districts (*primaat wonen & primaat werken*). This would make it easier to adapt public space to the needs of the specific functions that are located in both areas. This means that most of the budget will be spend on the Trekvlietzone for public space that fits a living district (M. Overbeek, personal communication, June 5th 2019). Additionally, developer contributions (which will be further discussed under 'financial feasibility problems') to public space reduce the financial responsibility of the municipality for the cost recovery of public amenities.

For the quality of public space, the plan and policy rules contain specifically regulation about the public space. For the primary living district for example they especially want to create a residential environment. Usually, an additional image quality plan (*beeldkwaliteitsplan*) gives an idea of the desired final result of the municipality. However, for the Binckhorst-district, such an image quality plan has not been made. Because the municipality wants to offer a flexible development framework, they only added maps with rules developers have to adhere to, but there is no urban development vision. This means that the current warehouses and the plots that lie in the primary working district do not have to adapt to the spatial quality the municipality wants to create in the primary living area. This could lead to quite large spatial contradictions with regard to quality of public space. Besides that, this might be leading to tensions between different users of the Binckhorst. The first people who start using the Binckhorst as a living space, are often pioneers who enjoy the place as a rough edge of the city (C. Verhaegh, personal communication, June 5th 2019). However, as living becomes more common and massive, also other types of people start buying or renting dwellings who do not enjoy these raw elements. Often, citizens who start complaining about business activities, get their way and companies have to adapt or move (C. Verhaegh, personal communication, June 5th 2019). The loose regulations for spatial quality and urban development and the lacking of an image quality plan might make it difficult to maintain the current business uses in a later stadium of development when living is taking in a more substantial spot.

Besides that, the environmental plan itself creates some new challenges for municipality and developer as well when it comes to urban design. A key aspect of the new Environment & Planning Act is the consideration of participative planning. This means that, in an early stage of development, stakeholders have to be informed and asked for their opinion about plans that have an impact on their own living

environment (J. Van der Goes, personal communication, June 14th 2019). The municipality struggles at this stage with its own role in these participation projects.

Until now, they have left the initiative with developers. But this created unwanted situations as well. For example with the development of a plot at the crossing of Binckhorstlaan and Maanweg. A private developer wanted to build a high apartment building and, additionally, the municipality wanted to include a cycling bridge to connect their cycling infrastructure to the cycling lanes in the neighbouring municipality of Voorburg. During the consultation evening for citizens, the developer presented his plans, but the citizens were mainly cross about the addition of the cycling bridge instead of the large tower (due to the expected nuisance caused by traffic). Immediately the developer turned the discussion around towards the cycling bridge instead of his own initiatives. This way, the municipality cannot determine whether there has been sufficient participation from stakeholders on the plans (J. Van der Goes, personal communication, June 14th 2019). Unfortunately, taking matters into own hand could lead to difficulties as well: if for example initiatives take place close to the neighbouring municipality of Voorburg (which is next to the Binckhorst), they have to participate even amongst different municipalities. The definition and expectations with regard to participation still have to be thoroughly discussed before it is clear what has to be done in the context of the Environment & Planning Act.

Environmental zoning issues

With regard to environmental zoning issues, the Environment & Planning Act does not include a lot of changes compared to the regular zoning plan. The environmental zoning circles of companies still need to be taken into account when developers want to initiate their plans (J. Van der Goes, personal communication, June 14th 2019). Besides that, the plan rules state that the business activities of existing companies should be 'taken into account' by new initiatives and should not be 'disproportionally harmed' (Omgevingsplan Binckhorst, 2019). In legal terms, the phrase 'taken into account' means that there is still some room left for developers to negotiate with and about the companies in question. For companies that are still active in the Binckhorst, this also adds to the feeling that their future in the Binckhorst is unsure (C. Verhaegh, personal communication, June 14th 2019).

Most of the companies already have environmental categories that can be well combined with housing (maximum of 3.1). However in practice, a couple of companies seem to be difficult to integrate into a mixed-use environment. In the Binckhorst for example, a couple of gas stations with LPG filling-point are active and are responsible for delivery routes of LPG across the Binckhorst (via the Binckhorst-lane). There's also a still active asphalt plant, which wants to keep its place within the Binckhorst.

In case of the asphalt plant, its environmental contour makes it impossible to develop houses within quite a broad range from the plant. For that reason, the municipality would like to move the asphalt plant to a different location outside the Binckhorst. But, the asphalt plant wants to stay where it is now, due to their need for a central location within the city. Another option is to raise the chimney of the asphalt plant up to 70 meters instead of just 40 meters (J. Van der Goes, personal communication, June 14th 2019). That way the pollution will spread out over a larger area and dwellings can be built closer to the plant. Unfortunately for the municipality, the owner of the asphalt plant is not willing to invest any money for improvements. He refers to the former zoning plan, which still gives him the legal right to pollute and continue his business activities on that location due to transitional law (*overgangsrecht*). In that sense, the asphalt plant has the 'right' to pollute. The only way to change the situation is by buying

out the plant so that developments can take place. Otherwise old and new rights will remain incompatible.

The same counts for a bakery in the primary living district (Junostreet): this bakery has an environmental contour that makes it impossible to develop dwellings close to this activity. This company takes in the same position as the asphalt plant; they refer to their rights according to the former zoning plan and are not willing or are not able to invest in further improvements of their business activities. This not only relates to environmental zoning issues, but also has implications for the urban design ambitions the municipality has for the primary living district. This bakery for example, does not really fit with the residential quality of public space the plan rules describe. On multiple levels these problematic situations create obstacles that could subvert the progress of developments taking place, as developers might be less willing or unable to implement initiatives close to these companies. If the municipality wants to change anything, they will have to financially compensate these businesses, in order to create space for the ambitions formulated in their policy documents.

For the LPG filling-points the municipality sees a role for the market: they would like a couple of developers (who would like to build houses next to the Binckhorst-lane) to collectively buy out these gas stations (J. Van der Goes, personal communication, June 14th 2019). It also seems like these developers are taking up this task, because they are already working together much more to receive a more integrated area development (J. Van der Goes, personal communication, June 14th 2019).

Financial feasibility problems

Many inner-city development projects struggle to cover the costs for public space and public services, in and outside the plan area. Often, when land is not owned by the municipality and the area has to deal with a regular detailed zoning plan, it is hard for public bodies to make developers accountable for costs of infrastructure or public space in general. As earlier mentioned, they have to use public law because of the lack of ownership. Through the exploitation plan only a limited amount of costs can be covered, often leading to the municipality subsidizing the rest of the costs.

In the Environment & Planning Act, the municipality of The Hague has included a separate policy rule for cost recovery (M. Overbeek, personal communication, June 5th 2019). The environmental plan for the Binckhorst includes for each type of use the amount of space that can be added to the existing program in the district: this is the so-called 'usage space' (*gebruiksruimte*). This usage space for example entails a maximum of 4.125 square meters of restaurants and cafes. For developers it was possible to make a reservation for a certain amount of space for these types of uses when the environmental plan got established. These reservations would be accepted based on the order of application. Within 15 minutes after the opening of the reservation-system, already 100% of all the usage space for dwellings was reserved (J. Van der Goes, personal communication, June 14th 2019). Currently, about twice the amount of dwellings possible is reserved. Other uses, like business space have not been fully reserved up to the usage space limit. To create more interest with developers to invest in these types of uses and, at the same time, make sure costs for public space and services are covered, the municipality established some sort of contributions each developer has to pay over its project (M. Overbeek, personal communication, June 5th 2019). These contributions vary for each type of use. If a project for example contains only owner-occupied dwellings, the developer has to pay a fee of €105 per square meter. For less popular uses, like business space for example, the fee is much lower (only €45 per square meter). These costs can be adjusted when the economic situation changes. So if for example building costs rise, as a result of

the shortage of construction workers, these contributions will drop. But, if prices for real estate are rising faster than building costs, the contributions will rise as well.

By letting developers pay contributions, the public space can be paid for without the municipality having to subsidize. Besides that, the municipality is also hoping that lower costs for less popular functions might tempt developers to include these kinds of uses in their initiatives to cut costs.

Right now, the municipality has invested itself 60 million euros in the Binckhorst area development with a shortage of roughly 20 million euros at this time. Originally, the municipality wanted to build 10.000 dwellings within the Binckhorst-district, to make sure that the business case would not be financially loss-making. Unfortunately, compulsory research reports argued that 5000 dwellings would be the limited, because of the lack of a high-end public transport facility within the district (M. Overbeek, personal communication, June 5th 2019). Such a public transport facility would make it possible to create more dwellings (which often generate higher profits), which might eventually be a solution to the current shortages on the business case. However, preserving the mixing of both living areas with working or even industrial sites might become more complex if the amount of dwellings rises while the grade of working should also stay the same, according to the environmental plan (M. Overbeek, personal communication, June 5th 2019).

Conclusions

This subchapter aims to give an overview of the main obstacles and solutions the chosen development strategy offers. First, the chosen strategy will be linked to the solutions that are sought for obstacles that have risen during the development. Secondly, possible consequences of these solutions for mixed-use development will be defined.

Obstacle category	Chosen strategy	Solutions	Consequences
Land-management and ownership structure obstacles	<ul style="list-style-type: none"> - Partly active land-management (acquisition of 1/3 of the land in the Binckhorst district). - Environmental Zoning Plan for steering on privately owned land. 	<ul style="list-style-type: none"> - Ability to oblige a broader range of conditions guiding the municipal ambitions for the area. - Plan and policy rules that make a certain level of mixing in the subareas mandatory. 	<ul style="list-style-type: none"> - Policy rules can be adjusted by the municipality. Low market interest in business space could then be a cause for changes in the program of the Binckhorst-area.
Urban design issues	<ul style="list-style-type: none"> - Crisis & Recovery Act offers options to temporarily deviate from zoning plan regulations. - No image quality plan. - Participative aspects of the Environmental Zoning Act should incorporate all stakeholders in the development process to come to an agreement about urban design. 	<ul style="list-style-type: none"> - An open zoning plan (mixed-use) makes it possible to develop various uses next to each other, even dwellings next to industrial sites (if not within their noise or pollution circle). - The lack of an image quality plan offers a broader range of 	<ul style="list-style-type: none"> - Future conflicting interests might occur due to the mixing of untidy business premises and new expensive apartment buildings. - Buildings might not be flexible or sustainable for future adaptations due to a lack of guiding rules.

		<p>design options to developers.</p> <ul style="list-style-type: none"> - Market-oriented way of participating by obliging the developing party to involve stakeholders. 	<ul style="list-style-type: none"> - Negotiation process might take long or have undesirable outcomes for the development process.
Environmental zoning issues	<ul style="list-style-type: none"> - Crisis- and Recovery Act makes it possible to have to 'take into account' noise and pollution circles instead of having to 'adhere' to them; more mixing is possible. - Preserving existing companies by allowing them to stay in their current place based on the former zoning plan and the regulations that were attached to this plan. 	<ul style="list-style-type: none"> - Dwellings can be built in places where they could not be built under a regular zoning plan. - Companies can remain active in their current form, without having to move. 	<ul style="list-style-type: none"> - Companies can experience a 'locking in' of their plot by other uses, which might make them unwilling to do further investments in their company. - Polluting companies could cause nuisance for other uses without having to move, which could have a negative impact on house prices ('negative externalities').
Financial feasibility problems	<ul style="list-style-type: none"> - Cost recovery for public space through a differentiated levy per type of use to the Environmental Zoning Plan. - Maximum usage space secures the mixing of uses and is a 'lock on the door' in case the foregoing rule does not work. - Issuance of land through leasehold, offering the municipality more options for cost recovery. 	<ul style="list-style-type: none"> - Municipality does not have to subsidize on public facilities due to cost recovery via levy. - Leasehold offers the option to make a profit from developed real estate as an addition to the value of that land. 	<ul style="list-style-type: none"> - Costs for land acquisition and the development of the Rotterdamse Baan have cost the municipality a lot of money, but through the regulations mentioned they are trying to recover these costs, otherwise the municipal risk fund warrants for the losses.

Table 4: Analysis of the four obstacle categories for the Binckhorst-district (own illustration)

5.3 Analysis of the Cruquius-island Amsterdam

The Cruquius-island was one of the last still active harbour arms in the eastern dockland area of Amsterdam. From 2012 onwards, the municipality combined with private developers established a development plan for the island. This subchapter will give an insight in the used strategy and its effects on the mixing of uses. The successfulness of the mixed-use development will be evaluated through the four categories of obstacles that occur during development and how the strategy aims to deal with these obstacles to ensure a mixed environment.

The market-oriented model in the Cruquius-island case

From 2012 onwards, the municipality established plans to redevelop the Cruquius-island into a living-working combined district. They first made a global zoning plan, which was guided by a game rules chart. In these documents, and their municipal economic vision for 2030, they stated that the Cruquius-island should become a 'productive neighbourhood'.

Most of the land on the island was in ownership of the municipality, but issued in leasehold at the time, with a smaller amount of land owned by private parties (H. Ombre, personal communication, April 23rd 2019). Around 2012 the businesses active at the Cruquius-island were still doing well, so this meant that the willingness of companies to move to other places would not be very high. The municipality investigated the viability of active land policy for the Cruquius-island, but in the end this seemed to be unfeasible due to long negotiations and higher land prices as a result of unwillingness of companies to leave (H. Ombre, personal communication, April 23rd 2019). Developer Amvest had, at the same time, acquired some strategic plots on the island, so the municipality eventually decided to incorporate a market-oriented strategy.

This exists of a game rule chart and a global zoning plan, which roughly guide the ambitions of the municipality. They show which buildings have to be preserved and what the urban planning directives are with respect to building height, volumes and FSI (Floor Space Index). With most of the companies, an arrangement was made to temporarily leave the area and come back later when developments have taken place (██████████, personal communication, July 11th 2019). Developers could then submit an initiative document, that clarified their plans for a subarea. The municipality would test these documents based on the zoning plan and game rule chart and, if everything got through the tests, developers had to establish a zoning plan for their subarea. This means that every subarea has its own zoning plan, based on the specific plans of the developer.

Implications of planning strategy for mixed-use development

This way of developing worked for both parties in a positive way: the municipality did not have to acquire large pieces of land to make developments possible and developers had enough freedom to shape their plans the way they would like to. But besides the positive reactions of both sides, some critical remarks could be made as well. The following subchapters will look more in detail into the different obstacles that this development project has faced and sometimes still faces.

Land-management and ownership structure obstacles

As earlier mentioned, the municipality of Amsterdam has a tradition in issuing land in leasehold. This is similar for the Cruquius-island, on which a lot of the land had such a status. Only a smaller amount of land was privately owned.

With most of the companies, the municipality could come to an agreement to relocate these businesses to other places within the municipal boundaries (H. Ombre, personal communication, April 23rd 2019). A couple of companies were bought out by developer Amvest, like a concrete factory on the outer curve of the island (██████████, personal communication, July 11th 2019) and an old mower company (H. Ombre, personal communication, April 23rd 2019). Only two companies remained active on the island, and are still in business today. All other plots were in hands of the municipality and Amvest.

During the development process, a foundation for the concerns of the existing businesses got established: Stichting Cruquius 2015. This foundation had as a goal to protect the existing businesses and ensure their place in the newly developed area (H. Ombre, personal communication, April 23rd 2019). Most of these companies however did not bother moving to a different location outside the Cruquius-island and therefore they were willing to co-develop. However, since the municipality wanted to preserve economic space on the island, they urged the companies to make sure it is not compulsory for them to leave the island (H. Ombre, personal communication, April 23rd 2019). But, since the municipality hasn't got the full ownership of the land, they cannot protest against the selling of an industrial site to a developing party. Two aspects might have been stimulating the leaving of these companies in particular. Firstly, most of the entrepreneurs on the Cruquius-island were age 50 to 55, which means that having a decent retirement provision is important at that age. Selling their company might have been an option to have a more substantial retirement provision (H. Ombre, personal communication, April 23rd 2019). Secondly, the housing market of Amsterdam has such shortages that the prices that citizens are willing to pay for living accommodation are extremely high. This means that developers can make a large profit on houses and that they can afford a substantial amount of money to buy out entrepreneurs. If entrepreneurs get the assurance of the municipality that they can start somewhere else again, they might consider selling and moving as an option.

The fact that the municipality had issued most of the land in leasehold and that a large part of the area is in hands of one private developing company means that the steering possibilities for the municipality are limited. An example is the location of public amenities: in general, private developers are not really willing to develop such uses on their ground, because of the low return on investments that these uses offer. Since the municipality only established a global zoning plan and a game rule chart that did not really oblige developers to incorporate these kinds of uses in their plans, amenities like a primary school and other public facilities will have to be located on municipal land (H. Ombre, personal communication, April 23rd 2019). This also is a consequence of the flexible agreements and space the game rule chart and zoning plan offer to developers with regard to the building program.

Urban design issues

As mentioned earlier, the municipality wanted to preserve the identity of the island as a harbour area. For that reason, they appointed buildings as 'identity holders' which should be restored. The existing companies should be protected as well to make sure there would arise a mix of working and living. But, since there were many companies with higher environmental circles (3.1 or higher), it would require quite some amendments to buildings to make housing feasible in this area. For many developers, it would be not that interesting in a financial way to get involved in such a development with lots of requirements and obligations (██████████, personal communication, July 11th 2019). For that reason, as earlier mentioned, many developers chose to buy out companies.

Meanwhile, the municipality had changed its vision on the Cruquius-island as the initiative documents that were submitted mainly consisted of apartment buildings. The municipality still wants to preserve economic space, but the type of space has changed: most of the newly added business space will be offices or room for creative entrepreneurship (C. Lieuw-Fo, personal communication, July 4th 2019). Real harbour activities will not come back to the Cruquius-island. One of the reasons for the change in type of economic space, is the lack of specification in the zoning plans for the lands with leasehold. In the leasehold-contracts, which are the base layer for the zoning plan, there is no specification for the type of economic space developers have to provide. Most of the developers have chosen to provide one type of business space linked to one regular price per square meter (H. Ombre, personal communication, April 23rd 2019). This is a mean price of different types of business space, which means that it is too expensive for manufacturing or typical harbour businesses, who often pay only a small amount of renting fee on regular industrial estates. These types of businesses will not return, but most of these places will be filled in by service-oriented companies or creative industries.

Nowadays, the Cruquius-island mainly consists of apartment blocks with some cafés or small businesses in the ground floor. There is not much left that reminds of the former dockland-area that it once was. For that reason, there are not that many difficulties with regard to urban design, simply because the friction between business use and housing units is not present anymore due to the departure of most companies. The actual urban design issues that arise now, are more moral questions for the municipality; did they create a new piece of city for all inhabitants, has the experiment with market-oriented developing worked out well?

Environmental zoning issues

From the beginning of the transformation onwards, the municipality has had the goal to protect the existing businesses on the island. This means that new developments, which are mostly housing developments, have to take their business activities into account (C. Lieuw-Fo, personal communication, July 4th 2019). In some cases, where a business has a noise or pollution circle lying over the area of the Cruquius-island, this has led to the placement of deaf facades. As long as these companies are active within their current place, the surrounding developments have to take their activities into account and cannot oblige them to move or prevent the nuisance (C. Lieuw-Fo, personal communication, July 4th 2019). In practice, this could lead to the following situation: a developer builds an apartment block, with deaf facades on one side, to make sure there won't be any nuisance from a company just behind the building. Within two years, this company moves away, but the deaf facades remain. This means that there is a reduction in the quality of the dwellings, that is only based on nuisance caused in the past. It would take new investments to overcome this reduced quality again. In that sense, mixing uses can lead to undesirable outcomes for the quality of the built environment.

Although it has been a municipal ambition to transform the Cruquius-island into a mixed-use 'productive' neighbourhood, most of the nuisance causing companies have been bought out and relocated by developers. One reason might be the example given above. It might have been easier to buy out these companies then build dwellings that are not of the best quality.

Besides the buying out of the companies, the municipality also used the Crisis- and Recovery Act (added at the 8th tranche) as a tool to make mixed-use development possible. This law made it possible to deviate from the noise standards that are normally used at industrial sites. This made it possible to build apartment blocks next to active industrial businesses, provided that amendments like deaf facades were

made. But another aspect of the Crisis- and Recovery Act is the fact that after the duration time of the law ends (which is 10 or 20 years), the zoning plans can be revised and environmental categories (especially when it comes to noise in this area) can be lowered. This is what happens at the moment for certain companies which are active at the Zeeburgerpad (the area south of the Cruquius-island), which fall under the Crisis- and Recovery Act as well (██████████, personal communication, July 11th 2019). This way, the municipality can steer in transformation situations as well, by over time 'obliging' entrepreneurs to change their business activities to a lower environmental noise category or move to a different location. The Crisis- and Recovery Act 'pushes entrepreneurs out of the area' in this case, in order to make transformation into housing areas possible.

Financial feasibility problems

This type of obstacle category might have taken the biggest advantage due to the market-oriented strategy for the Cruquius-island. At the time when the developments started, the municipality had issued most of the land in leasehold. When private developers started buying out some of the companies, the municipality established new leasehold-contracts with the developers (mostly Amvest). The change of the zoning plans from industrial to mixed-use has had an impact on the value of the land, so the prices that developers had to pay were high (B. Van Huit, personal communication, July 12th 2019). Based on the residual value calculation, which the municipality of Amsterdam uses to calculate the value of land, the residue would be substantially larger than in an industrial zone. One of the advantages of leasehold is the fact that the municipality is able to skim the residue (B. Van Huit, personal communication, July 12th 2019). The municipality uses this residue to cover the costs for the development of the public space (B. Van Huit, personal communication, July 12th 2019).

However, not all of the land on the Cruquius-island is issued in leasehold; some parts are in private ownership which makes it impossible to skim residues. For these plots, the municipality has made a 'letter of agreements' (*afsprakenbrief*). This letter has the legal status of a private agreement (anterior) between developer and municipality and it is conditional to the granting of a permit to use the developed building (B. Van Huit, personal communication, July 12th 2019). In this letter of agreement, the municipality has included a levy per square meter to cover the costs for public space. This means that every private plot-owner has to contribute per square meter to the development of public facilities (B. Van Huit, personal communication, July 12th 2019). This way, the municipality does not have to subsidize any costs for public space.

But, this system also has a downside. The levy for privately owned plots holds no differentiation with respect to different types of uses; this means that the levy for 10 square meters of economic space is the same as for 10 square meters of private sector housing (B. Van Huit, personal communication, July 12th 2019). In that sense, a stimulus for the development of less profitable uses misses. Besides that, the levy from the leasehold-contracts and the privately-owned plots differ: the leasehold-contracts entail flexible levies that move along the economic conjuncture. The levies for privately owned plots however are not flexible. As a result, the most expensive dwellings arise on the privately-owned plots, due to the rising house prices and thus the rising levies on the leasehold-contracts (B. Van Huit, personal communication, July 12th 2019).

With regard to risk-preservation, the responsibility lies with private developers. Since the municipality gives a lot of freedom to developers, they also expect them to take financial risks into account. Only for soil decontamination the municipality gives developers a contribution. For all other possible risks, they

expect developers to thoroughly investigate them beforehand (B. Van Huit, personal communication, July 12th 2019).

Conclusions

This subchapter aims to give an overview of the main obstacles and solutions the chosen development strategy offers. First, the chosen strategy will be linked to the solutions that are sought for obstacles that have risen during the development. Secondly, possible consequences of these solutions for mixed-use development will be defined.

Obstacle category	Chosen strategy	Solutions	Consequences
Land-management and ownership structure obstacles	<ul style="list-style-type: none"> - Market-oriented strategy: lands in leasehold or private party has to acquire land. - General zoning plan combined with a game rule chart steers the development a small bit - Collaboration with existing businesses via foundation 'Stichting Cruquius 2015' 	<ul style="list-style-type: none"> - Municipality is not responsible for land acquisition and does not have to take any financial risks - Through foundation, voice of businesses can be heard and taken into account - Large interest of developers, due to location and limited set of obligations through zoning plan 	<ul style="list-style-type: none"> - Due to lack of land ownership (or readily available land) and the general zoning plan and game rule chart, the municipality cannot steer that much on the building program - Mixing of uses seems hard, since businesses voluntarily leave the area due to high land prices and age-aspects (many 50-55 years old).
Urban design issues	<ul style="list-style-type: none"> - Only limited sets of urban design aspects recorded (building height, FSI, maximum building surface, etc.) - Rights of existing businesses have to be respected and 'taken into account' 	<ul style="list-style-type: none"> - Impulse for willingness of developers to get involved due to freedom - At first hand, existing businesses do not have to leave and their activities have to be respected; possible impulse for mixed-use development 	<ul style="list-style-type: none"> - Not very special building blocks, developers build in the financially most profitable way - Quality of built environment can be influenced by presence of high environmental category business (deaf facades for example); might be more profitable to buy out businesses and build without deaf facades
Environmental zoning issues	<ul style="list-style-type: none"> - Rights of existing businesses have to be respected and 'taken into account' - Use of Crisis- and Recovery Act to 	<ul style="list-style-type: none"> - Strategy offers more options to both preserve the existing harbour and business activities and at the same 	<ul style="list-style-type: none"> - Crisis- and Recovery Act entails a 'feint protection': environmental noise categories can be lowered after 10

	make transformation temporarily possible under	time make transformation to housing areas possible	years, to force businesses to change their activities or leave the area without compensation (happens at the Zeeburgerpad)
Financial feasibility problems	<ul style="list-style-type: none"> - Cost recovery for public space in two ways: on private plots via mandatory levy in agreement letter and on municipal owned land via levees in leasehold-contracts. - Financial risks have to be taken into account by private developers (except for soil decontamination) 	<ul style="list-style-type: none"> - Municipality does not have to subsidize any costs for public facilities - Risk-preservation as a responsibility for private developers stimulates them to do a thorough investigation on the area beforehand 	<ul style="list-style-type: none"> - The use of non-flexible levees for the private plots will lead to the development of just expensive buildings on these plots (developer wants to keep his profit and thus passes on the costs for public facilities to the end-user by increasing house prices)

Table 5: Analysis of the four obstacle categories for the Cruquius-island (own illustration)

6 Comparison analysis of case study areas

This chapter consists of two parts. The first part will look into the overall findings of the three case study areas, by juxtaposing the three cases. By comparing them, similarities and differences will be outlined and their effect on the actual successfulness (the amount of mixing) will be explained. Not only a comparison between the three cases will follow, but also some feedback will be formulated with regard to the theoretical framework in order to get a better insight in the functioning of this theoretical knowledge in practice. The second part aims to give an answer on the research questions and formulate general conclusions that can be derived from the case study research. The main purpose is to draft success-factors for the practical field of area development on which future policies and strategies can be based in order to make better decisions for the implementation of mixed-use development.

Land-management strategies in case areas

Starting from the beginning of all three area developments, there can be recognised some base similarities. At first, all three case areas have a common historical background. Once they were all industrial estates with partly harbour functions, which have decayed over the years. First plans for the areas were to transform them at once into living- or office areas, with an active municipal role. For that reason, all three municipalities acquired large amounts of land in the areas to kick-start developments. But in all the cases, these developments stalled, mostly due to the economic crisis of 2008.

Because of the large financial risks that were taken in the past by acquiring these large amounts of land, all three municipalities were more careful when developments were taken up again after or in the end of the economic crisis. Although all three municipalities decided to take up a more organic way of developing, they did this in very different ways. In the Binckhorst-area they chose for a global zoning plan, supported by the status of experimental zone for the new Environment & Planning Act. This strategy offered the municipality the possibility to steer on all plots within the Binckhorst-district, regardless of the ownership situation. The Environmental Zoning Plan is a really extensive document, which entails many prerequisites that developers have to adhere to. These prerequisites can be found in both the plan and policy rules. However, these policy rules can be adjusted by the municipality, which still makes the future unsure for businesses that are nowadays active in the Binckhorst-area. They are not willing to invest in their company, as long as they do not know whether they can stay there or not. Unfortunately, these policy rules are mainly applicable to the primary working district, in which the municipality has only a small amount of readily available land in possession. Rules that ensure the amount of space for working could thus be changed in the future if market interest in the development of such real estate seems to be poor.

The municipality of Amsterdam struggled with similar issues regarding the certainty they can offer to existing businesses for their future activities in the area to develop. In this case, they were also willing to protect the existing working space; new developments have to 'take existing business activities into account' and the 'Stichting Cruquius 2015' foundation should represent their wishes. But when we look at the juridical context of the Cruquius-island, there was no protection of the existing businesses interwoven in the zoning plan and additional plan rules; there is no mandatory minimal amount of economic space developers have to provide, prices of newly built business space are substantially higher than the prices before the development started and the Crisis- and Recovery Act offers the municipality options to encapsulate companies with other uses and bring environmental categories back to a lower degree. These aspects have led to the situation that most companies chose the easiest and safest way

out by asking a high price for their land and moving out to a new location. Due to the high land prices, developers were coerced to build more expensive apartments to make sure costs could be recovered. This led all in all to an area with luxury apartment blocks, similar amenities but without a mix of different social classes and various uses.

If we link the land-management strategies of the three case areas to the land development models suggested by Van der Krabben & Jacobs (2012), we can relate some of the models to the case areas. The case of Havenkwartier is obviously a 'public comprehensive top-down' model: the municipality purchased most of the land and sold plots to private developers. By using this strategy the municipality guaranteed public goals and ambitions due to the strong position they had with large-scale land ownership. For the second subarea in the Havenkwartier however, the municipality opted for a strategy closely related to the 'private market model' (Van der Krabben & Jacobs, 2012). A couple of entrepreneurs on the harbour island started co-operating and opted for an 'urban land readjustment model'; nevertheless, this attempt failed since not all of the landowners on the island were willing to co-operate. The case of Cruquius-island is a typical 'private market' model: all land is being purchased and developed by private market parties, who have to adhere to the zoning plan and pay developer contribution to recover costs for public amenities developed by the municipality. By using this strategy the municipality avoided financial risk-taking and by having most of the land beforehand in possession, they were still able to steer in the developments that would take place.

The Binckhorst-case is the most divergent from the models suggested by Van der Krabben and Jacobs: while the municipality owned roughly 1/3 of the land in the area, they also still left a lot of the developing initiative to private parties. However, since the Environmental Zoning Plan contained a lot of prerequisites and since the maximum limits for adding of specific uses are quite strict, this type of land-management model can still be defined as a 'top-down steered model'. Public goals are guaranteed, costs for public facilities are covered by contributions of the private developers (which are recorded in the Environmental Zoning Plan and are legally binding) and the municipality is able to sell or issue land in leasehold and recover the costs of prior investments which aimed to attract developers (like the predisposition of the Rotterdamsebaan).

As mentioned in the theoretical framework and conceptual model, the success of the development strategy is determined by the amount of mixing that is established in the case area. Since not all of the cases have been fully developed, the amount of mixing at this moment and the risks for further developments with regard to mixed-use development will be used as a starting point.

What becomes clear from all of the cases, is that active land-management has played an important role in the success of the different cases; almost all respondents have named this as one of the success factors of the development projects. The ownership of land offers the municipality possibilities to oblige private developers to take public goals in account and prevention of unwanted developments taking place. These instruments have been used in the Binckhorst-case (through obligations and prerequisites in the Environmental Zoning Plan) and the Havenkwartier-case (through obligations in selling agreements and the amendment authority on private plots), which have, up til now, led in both cases to a substantial amount of mixing in the case areas; in both areas, zoning plans entail specific rules that state which types of uses can be developed on the land in question. This is a juridical support that makes it mandatory for developers to take mixed-use development into account, even if it is not the most profitable type of use. A critical remark that has to be placed with these legislations that oblige

developers to mix different types of uses is the fact that developers still have the possibility to take up only development tasks that entail profitable uses or don't have to adhere to protective rules for nearby industrial businesses. In that case, only the 'popular spots' of the area might be developed and less profitable or more difficult areas will be left as they are: this might lead to unwanted discrepancies within the area to develop. None of the case areas have an instrument to prevent from these situations taking place, which might be an idea to think about for future developments.

The Cruquius-island case entails an entirely different kind of land-management strategy: private developers acquire land, zoning plans are established based on the initiative document that a private developer proposes to the municipal council and there are no requirements with regard to the degree of mixing of different uses. As a consequence, private developers were willing to develop, but only proposed initiatives containing housing blocks. The small economic space that was included in these plans consisted mainly of office space and retail, which is very different from the types of labour that existed on the Cruquius-island before developments started. This strategy has led to the rapid development of a high-standard urban living district, but with quite a uniform appearance. Most of the plots contain apartment blocks without really innovative building styles or special forms of mixing. Although all parties involved are really pleased with the way developments have taken place (municipality, private developers & former land-owners or companies), one can dispute if this area is the type of city development that is needed to keep cities open and inclusive for all groups in society.

Urban design visions in case areas

If we look at the vision towards urban design in each of the case areas, it links quite much to the organic strategies that are used in all three cases: except for building heights, maximum building percentages per plot and building lines not that much is regulated with regard to urban design. In most cases, experimental building projects (like the CPO-dwellings in the Havenkwartier-district) are crowd pullers for these areas and the preservation of the industrial heritage is mostly a goal to keep the creative vibe and identity of the area as it is.

However, the organic way of developing, in combination with certain more passive land-management strategies, could lead to unwanted situations when it comes to urban design for these areas. In the Havenkwartier-district for example, developments on the harbour-island (that should be initiated by the market) have stalled due to unwillingness to develop of one land-owner. As a consequence, this part of the area remains undeveloped and some of the plots look quite messy. As more and more people are moving to the first subarea of the Havenkwartier-district as a living area, complains about the view on these messy plots might swell, as they supposed beforehand that this area would get transformed as well. Opposing interests of both businesses and new inhabitants could then lead to conflicts. The question that would rise then is 'who is responsible?'. Companies might not want to invest in refurbishing their buildings, so the municipality might have to subsidize then. The lack of regulations towards urban design, which was used in the past to attract pioneers to start using the area for creative and artistic businesses, could now work in a counterproductive way as parts of the area start to develop.

In some cases, the protection of existing businesses to stimulate mixed-use development, as a part of urban design, is quite difficult. In the case of Cruquius-island in Amsterdam, the municipality had a policy which aimed to protect existing companies with their original rights; this meant that companies could keep their place on the island and private developers had to take these rights into account. The placing of deaf facades or other protection assets led to dwellings of a lower quality than would be possible or

less apartments due to a larger minimal distance from these companies. In this case, almost all companies were eventually bought out and placed out to a different industrial estate. In this case again, the urban design policy of protecting existing companies to create a mixed-area, worked in a counterproductive way. Besides that, the lack of juridical instruments through the zoning plans (which were based on the initiatives of private developers) made it impossible for the municipality to preserve this economical space for the same use when the existing companies left.

If we look at the success factors of urban design visions, policies and strategies with regard to mixed-use development, there are mainly variations in successfulness over time. At the start of the developments in the case areas, the fact that the rough industrial identity of these areas was being preserved and these districts offered cheap labour space was a pull-factor for small companies in the innovative and creative sector. After that, urban pioneers started to use these areas as living districts as well. In the more 'mature' phase of development, the lack of regulations with regard to urban design started to create conflicts and friction between uses. In some cases, like the Cruquius-island, this has led to some sort of 'uniformisation' of the area after all. A main aspect of attention in this case is, that urban design policies might be redrafted when developments get further and different uses might get in conflict.

Environmental zoning strategies in case areas

As mentioned in the foregoing chapter, in two of the cases rights of existing companies have to be taken into account when new developments take place. Only in the Havenkwartier-district, which at the time of the start of developments did not host any businesses in higher environmental categories (all below 3.2), there was not such a regulation. Goal of these regulations is to force private developers to start thinking about innovative options to prevent nuisance of neighbouring businesses without these businesses having to move.

In the case of the Binckhorst-district and Cruquius-island, the noise or pollution circles of businesses have to be respected as well. But due to the large pressure on the housing market and very limited vacant space within the city boundaries of The Hague and Amsterdam, efficient use of the available land in these areas for housing is needed. In the case of the Binckhorst, this led to situations in which houses should be built next to a concrete factory or bakery, both with a pollution circle. To overcome these problems, adaptations to the installations of both companies have to be made. But in both cases, the businesses claim their rights from the former zoning plan (which allows them to pollute up to a certain level) and they refuse to pay the costs of adaptations to their activities. In this case, it would be cheaper to not build houses around these businesses, which means that the successfulness of the chosen strategy (the amount of mixing) will be lower.

The problem is in this case related to the distribution of rights; the concrete factory and bakery have the right to pollute, while the houses to-build don't have the right on fresh air. A solution for this problem could perhaps be found within the Coase Theorem (Coase, 1960). He argues that if property rights (in this case the right to pollute or the right on fresh air) are defined clearly and transaction costs are zero, there would be no problem concerning negative externalities (in this case, the pollution). However, transaction costs are never zero and often property rights are not very transparent. In that case, Coase suggests the establishment of a market in rights. By making property rights tradable (in this case the right to pollute or the right on fresh air), both parties can negotiate and come to the best outcome. This could mean that private developers (partly) pay the costs for adaptations to the concrete factory and bakery, but they receive the right on fresh air and the ability to build dwellings next to the factory.

A second policy that is used in both the Cruquius and Binckhorst-case, is the Crisis- and Recovery Act. This law makes it easier and faster to develop inner-city districts due to temporal exceptions and derogatory powers for multiple acts that usually have to be met up to before developments can take place. After 10 or 20 years, when developments have taken place, the Crisis- and Recovery Act ends and new zoning plans can be established, adapted to the new situation.

On the one hand, this law makes regeneration of run-down inner-city industrial estates much faster (and thus cheaper), but when it comes to mixed-use development it also contains some downsides. The fact that the Crisis- and Recovery Act is only temporarily in effect, gives a lot of uncertainty to the existing companies. After 10 years, the municipality has the option to change zoning plans and also change environmental categories. As a result of the lowering of environmental categories, companies might have to leave or adapt their activities to the new situation. In this case, these companies have no right on financial compensation.

In the case of the Cruquius-island, almost all companies took the easiest and safest way out and left the area before developments started. A couple of companies remained active, but some of them might now face a 'cold sanitation' (*koude sanering*), being obliged to leave without any compensation. The same distress prevails amongst companies in the Binckhorst-district. Although the municipality has included protectionary rules for companies in the Environmental Zoning Plan, these policy rules can be changed by the municipality at any time. This again does create quite a lot of uncertainty for the future of the entrepreneurs.

As becomes clear, environmental zoning strategies aim to protect companies in all cases in order to make mixed-use development possible without the most profitable use (housing) taking over all of the area. Unfortunately, current strategies mostly face difficulties in uniting all uses within one area. Often protection of one type of use harms the options that another developer on his or her plot has. The instalment of a market in rights, in which developers can negotiate and trade their rights guided and steered by juridical support from zoning plans, could offer solutions for these problems.

Financial feasibility of case areas

This last category of obstacles is closely related to the land-management strategy that municipalities use; land acquisition is often one of the largest expenses in area development. In all cases, municipalities have acquired quite large pieces of land in the past. At the time this land was bought, the land was still purposed for industrial or business use, which meant a lower land price then on land purposed for housing. The municipality of Amsterdam sold a substantial amount of land on Cruquius-island to private developers for higher prices, due to the changes in zoning plans to housing and made quite a substantial profit on this. The lands they did not sell were issued in leasehold. The municipality of The Hague also sold part of the land to private developers, who first had to adhere to the already established Environmental Zoning Plan. The profits of land sales and issuing in leasehold were enough to cover part of the costs of prior land acquisition. Nevertheless, a substantial loss of roughly 60 million euros remained. In the Havenkwartier-district, the municipality bought almost all land for a former masterplan and amortized almost all the costs for land, which resulted in large losses on this project. The municipality took account for these losses and left the further development of the Havenkwartier with a clean sheet.

Construction of public facilities is another (often large) expense of area development. In most cases, municipalities do not want to subsidize for these costs and often developers have to contribute as well. In the case areas of Cruquius and Binckhorst this happened as well. On the Cruquius-island, developers have to pay a contribution per square meter of their plot to recover the costs that the municipality made for public facilities. In the Binckhorst-area however, they also have to contribute to the Environmental Zoning Plan and public facilities, but in this case area the price developers have to pay depends on the type of use they develop; less popular uses (like business space) have to contribute less than more profitable uses like private sector dwellings. Through this legislation, the municipality hopes to stimulate developers to also choose to develop economic space or other uses and create a more mixed environment.

On the Cruquius-island, they did not choose to diversify in levees between different uses. As a result, the most expensive houses have been realised on private plots, since the levees that are agreed on in the letter of agreement when the land was sold do not change anymore. Economical changes thus influence the price of houses as developers want to save their profit and pass the costs for public facilities on to the end-users by increasing the house prices. Most of the houses available on the Cruquius-island are now private sector and not affordable for citizens with a modal income.

In the Havenkwartier-area, most of the infrastructure remained the way it was. This left the municipality with only very little costs for public facilities, which could be recovered by using a municipal fund for business estates. Landownership however created opportunities for the municipality to oblige entrepreneurs to renovate existing buildings when they bought land from the municipality. That way, the municipality was free of costs for renovation.

Financial risks were in two of the cases covered by a municipal fund and in the case of Cruquius, which used a market-oriented development model, risks were for the account of the private developers. In none of the cases, financial risks have led to financial feasibility problems and less successful mixing.

In conclusion, we can state that the relation between an active or passive land-management strategy and the occurrence of financial feasibility problems is quite strong; in all three case areas, municipalities have acquired large amounts of land and took a big financial risk. Most of them were eventually able to recover these costs by selling plots or by skimming residues from leasehold-lands due to risen land values. An important success factor often named by respondents is the economic situation and the rapidly growing house and land prices after the financial crisis had passed, which has obviously had an important impact on the financial feasibility of these projects. But if municipalities had taken in a passive stance back before the financial crisis and would not have acquired large pieces of land, developments initiated by private parties would probably have been a lot less successful.

7 Conclusion & recommendations for future practice

This subchapter will consist of the answering of the main research question and the supporting sub-research questions. First, sub-research question 4 will be answered and thereafter the final conclusion in relation to the main research question will follow. After the answering of the research questions, some recommendations for future area development projects will be established. Finally the discussion, consisting of a definition of the limitations of the research and recommendations for further research, will conclude this chapter.

Towards more successful implementation of mixed-use development

In the beginning of this research project, the following main goal was stated: *“to gain more insight in suitability of different planning strategies for the implementation of mixed-use development in urban industrial areas that are in need of redevelopment or have the potential of value increase”*. The final goal should be to define success factors of different strategies that helped to make mixed-use development possible in the case areas selected. In order to achieve these goals, a main research question and supporting sub-research questions were formulated. The main research question was: *‘Which planning strategies are or are not successful for the implementation of urban mixed-use development?’*. Next to this research question, a hypothesis was formulated:

“The more uses are planned in an area and the more stakeholders are involved in the development, the higher the required amount of steering and managing by the responsible authorities has to be”.

The confirmation or refutation of this hypothesis will be derived from the conclusions concerning the central research question. To make the central question more manageable, four sub-questions were formulated. The first three questions should form the base layer of the theoretical framework:

- 1) What is mixed use development?
- 2) Which planning strategies are relevant for the implementation of mixed-use development?
- 3) What aspects define the success of planning strategies?

These three questions have been answered in the theoretical framework and received a spot in the conceptual model, that served as a guideline for the further empirical case study research. The fourth subquestion, consisting of three different parts:

- A) What is the role of local authorities in the investigated mixed-use development projects and how do these roles differ?
- B) How do the different planning strategies support the local authorities in their task of implementing mixed-use development?
- C) How do the chosen planning strategies coop with obstacles that occur specifically when different uses are mixed?

These three questions will be answered first, after which a final answer for the central research question can be given.

A) What is the role of local authorities in the investigated mixed-use development projects and how do these roles differ?

In theory, local authorities (mostly municipalities) can take in a couple of different roles when it comes to area development projects. At first, they can choose whether they want to be actively involved themselves or leave the developing initiative to private parties. Both strategies have their shortcomings and advantages. Related to this consideration, municipalities can also choose between a range of land-

management strategies, again from really passive up to active acquisition of all land in the area to develop. The choice made between the different land-management strategies has quite some implications for the way the municipality involves stakeholders in the development process, nevertheless because of the power relations that some of the strategies entail (municipal landownership provides really different stakeholder relationships than private landownership). These relations can influence the way municipalities have to use their planning instruments: very little landownership means less steering possibilities, which might lead to the establishment of more detailed zoning plans to remain in control of developments. The other way around, large-scale landownership offers lots of steering possibilities through sales and leasehold contracts, which does not make it necessary to establish very detailed zoning plans.

The range of different strategies compiled by Urhahn (2015) gives an overview of the range of strategic options local authorities have.

In the three case areas, local authorities acted quite differently. At first glance, the municipality of The Hague seemed to use a quite open, inviting and even tempting way of developing by establishing an Environmental Zoning Plan which entailed only very global zones and two separate areas: primary working and primary living district. However, beneath these layers, a large document of prerequisites, legislation and plan and policy rules made organic ways of developing hardly possible. The need for control, due to limited space, the fact that a large amount of uses had to be combined and the interests of various groups of stakeholders which had to be taken into account, made this development area too complex to not reign down on control. Now, developments are to be initiated by private parties, but within quite strict contexts of the Environmental Zoning Plan.

If we link this development strategy to the range of strategies suggested by Urhahn, it would be most closely linked to the 'Control'-strategy: high market potential, large-scale municipal landownership, high urgency for development (due to prior investments) and a masterplan (in this case Environmental Zoning Plan) which offers some degree of flexibility.

The strategy used in the Amsterdam case of Cruquius differs quite a lot: the municipality also made a global map indicating the visions for the different sub-areas, but only one paper of rules should guide the developments on the former harbour island. This strategy can be linked to the 'Rules of the Game'-strategy (Urhahn, 2015). This case also had very high market potential, there were quite a lot of landowners within the area, the urgency was not really high (low vacancy rates and businesses who were doing well) and the steering occurred through a limited amount of rules that should guide development per parcel. Developments took place quite rapidly, due to good co-operation between municipality, private developers and the foundation representing the businesses. However, the outcome of the development can be called into question. The successfulness of the used strategy (the amount of mixing) is quite low, since almost all companies left and mostly expensive apartment blocks took in their place. For regular area development or transformation into living districts, this strategy would have worked well, but the concept of mixed-use development has not been successful in this case.

The last case, Havenkwartier, made use of again a different strategy: because the municipality had amortized most of the costs for land acquisition in the area even before developments started, the urgency was quite low. The aim was to develop in an organic way, by offering creative entrepreneurs the possibility to come to the area and gradually develop it into a new creative and innovative hub for the city of Deventer. The strategy of Urhahn called 'Improvisation' is most closely related to this case:

market potential was high due to the favourable position within the city, the municipality did own quite a lot of land and the urgency was low. The municipality established a vision document with some ambitions that initiatives had to adhere to, but they left most options open. For the second sub-area however, the harbour island, the municipality wanted to use the same strategy but with a different starting point: the municipality was not going to invest or acquire any land. The vision document did formulate some goals for this area, but initiatives had to be taken by private parties. By leaving the initiative to the market, the developments stalled due to a lack of a shared vision. Municipal involvement thus seems to be of great importance for the successfulness of mixed-use development.

B) How do the different planning strategies support the local authorities in their task of implementing mixed-use development?

As already mentioned in the foregoing question, the difference in support of the chosen strategy is closely related to the role the municipality wishes to take in during the development process.

The municipality of The Hague had with the development of the Binckhorst a difficult and complex transformation task at stake; not only was the former Binckhorst in need of revitalization, some large infrastructural changes (for example the development of the Rotterdamsebaan) and a large housing task were other aspects that had to be taken into account. At the same time, the municipality had ambitions with regard to sustainability and alternative modes of transport. All these ambitions put the municipality in front of a serious challenge. To make an integral vision for the entire area possible, the experimental status for the new Environment & Planning Act got obtained. The use of an integral map⁴, showing what can be done where and under which circumstances, made it clear for all those who wanted to co-develop which options they had.

However the possibilities for those who wanted to develop were clear, the existing small and medium-sized enterprises (*MKB*) were uncertain about their future due to alterable regulations and zoning plans and the use of the Crisis- and Recovery Act which allows the municipality to lower environmental categories. These companies saw houses coming closer to their plots and for some companies this has been a reason to leave the Binckhorst.

The same happened on the Cruquius-island, where most of the companies left due to uncertainty. The municipality choose in this case to leave most of the initiative and responsibilities to the market. The game rule chart aimed to guide developments initiated by developers, but in practice the rules stated in this document were quite open and general, which hardly created any restrictions of guidelines for developers. As a result, private developers opted for the development of functions that offer the largest profit. Now, the Cruquius-island mainly consists of apartment blocks, without any social rent. The existing companies have nearly all left the area, in spite of the municipal ambition to preserve them.

Although the game rule chart and quite large amount of landownership (in the form of leasehold) allowed the municipality to wield power, they did not use it very excessively: most of the plans of developers were approved without many requirements. For the municipality and the involved stakeholders, this strategy has worked pretty well, as all respondents have approved. But from an

4

<https://denhaag.maps.arcgis.com/apps/MapSeries/index.html?appid=ae8f6acda6654ede948fcce5f06e764b>

inclusive planning perspective, the lack of social rent and relocation of existing businesses might not have had the best effect for all groups in the society of Amsterdam.

Lastly, the strategy chosen by the municipality of Deventer for the development of the Havenkwartier-district has worked partly well. For the first subarea, the chosen strategy (organic development on the basis of the Flemish Model), in combination with the large amount of landownership, offered the municipality options to get a better grasp of the ambitions and visions they had for this area while there was no direct urgency to redevelop this district. A global zoning plan should tempt creative entrepreneurs and artists to discover the Havenkwartier-area, but at the same time instruments like the amending authority and renovation obligations made sure that unwanted developments could not take place. This way the municipality could leave developments to private parties, but still have the possibility to intervene when needed. Landownership and the interest of entrepreneurs due to the end of the financial crisis were critical factors for the success of this strategy.

Nevertheless, the same strategy did not work on the harbour-island. The critical factor of municipal intervention or landownership was missing, which meant that, without a shared vision or ambition among the landowners and entrepreneurs, there would not be any developments. In summary, the strategy linked up quite well to the role the municipality wanted to be in for the first sub-area, but the second sub-area is in need of a different strategy if anything has to happen.

An overall look at the support of the strategies on the implementation of mixed-use development delivers a mixed view: although in the case of the Havenkwartier-district and the Binckhorst, the chosen strategy has been successful so far for the implementation of mixed-use development, there can already be some future obstacles defined for further development. These obstacles are mainly related to a lack of landownership and municipal financial possibilities (Havenkwartier) or future uncertainty for businesses and environmental zoning issues (Binckhorst). In the case of Cruquius, mixed-use development has not been implemented in the end, since all existing businesses have left.

C) How do the chosen planning strategies coop with obstacles that occur specifically when different uses are mixed?

As earlier mentioned, this research looked into four different categories of obstacles that occur during mixed-use development. In the case study locations, the local authorities tried to coop with these obstacles in various ways.

When we look into the land-management and landownership obstacles, we can see a common strategy, namely the acquisition of large parts of the land. In all cases, this acquisition found place before the financial crisis of 2008. After the economic recession, most municipalities became more careful with buying plots. This has been an advantage for the case areas. Nevertheless, in the case of Havenkwartier, the acquisition of land has cost so much, that the municipality stopped all financial investments for the harbour island, of which the development stalled after this decision.

In the Binckhorst and Cruquius-case, where the municipality owned only part of the land, they kept control over the private plots via policy rules in the Environmental Zoning Plan (Binckhorst) and letters of agreement combined with the game rule chart (Cruquius). In both cases, these regulatory instruments were not very solid: policy rules in the Environmental Zoning Plan can be adjusted and the game rule chart did not offer enough prerequisites to secure the development of economic space on the Cruquius-island. In both cases, existing small- and medium sized businesses were (and still are) uncertain

about their future. In the Cruquius-case this has led to less mixing and a lack of steering possibilities for the municipality.

For urban design issues, most cases did not have a clear vision on how the area had to look in the end, often due to the lack of exact directions developments would take over time. This won't be a problem during the start of developments, because mostly creative and artistic pioneers use these areas and like the rough atmosphere. But, as the area evolves, other users might not want the same and desires and needs of various groups of users might get in conflict with each other. To prevent this from happening, policy on urban design should be made in advance.

In the case of environmental zoning issues, we can see similar problems as that occurred in land-management strategies: instruments like the Crisis- and Recovery Act allow more mixing, but at the same time give a great amount of uncertainty to entrepreneurs. Finally the financial feasibility problems show similar symptoms as the urban design issues: policies in this field have to be adaptable to changing situations. In the case of Cruquius-island and Havenkwartier, financial decisions have been made that have implications for the current situation in these areas. The fact that the municipality of Deventer cannot invest anymore in the harbour island is an effect of the prior investments in the first sub-area. The same counts for the expensive apartment blocks that have been built on the private plots on Cruquius-island, as a result of the non-flexible levees for public facilities and the passing on of these costs to end-users.

What becomes clear from these examples is that steering on mixed-use development happens to be contradictory: the possibility to be flexible in regulations and policies is in conflict with the need for certainty that small- and medium sized companies within such areas need to assure their business activities. These are some remarks that have to be taken into account for future mixed-use development projects.

By answering the three parts of sub-question 4, an answer to the main research question can now be given and, together with that, some final conclusions of this research and recommendations for future practices in mixed-use development. Together with the answer on the main research question, the hypothesis will be confirmed or disapproved as well.

'Which planning strategies are or are not successful for the implementation of urban mixed-use development?'

From the analysis of the cases, the comparative analysis and, as a result from this, the answers on the sub-questions, it becomes clear that the strategies needed to implement mixed-use development on inner-city industrial estates differ a lot from regular transformation projects on these sites. The needs of many, often conflicting, stakeholder-groups have to be taken into account, environmental zoning regulations play an important role when mixing vulnerable functions with industrial companies and the often scattered landownership structure can make these projects quite costly.

The successfulness of planning strategies is mainly based upon sufficient municipal landownership (in order to overcome land-management obstacles), it contains a clear, shared vision on how the area will evolve, including the urban design aspects (in order to create certainty and prevent conflicts among

stakeholders and users), prevents or even stimulates the less profitable or less popular functions and makes use of contractual and juridical instruments to recover costs for public facilities.

This means that a municipality needs to take in an active role in the area development, especially when it comes to land acquisition: from the case study areas it becomes clear that this has been a vital aspect for the success of these cases. Besides that, flexibility in zoning plans (when it comes to urban design but also environmental zoning) is another key issue, but also to keep in mind that some uses (like often the existing companies) need more certainty and support from these policies. Finally, the use of instruments to recover costs for public facilities is also needed to create successful mixed-use districts. The use of differentiated contributions per type of function is a success factor that can stimulate the development of less popular functions and is therefore an example of a successful strategy as well.

Mixed-use development can often be seen as complex, difficult area developments, which hardly ever develop as desired. The aspects described above show that a dedicated local authority is a key aspect for the success of such developments. The case study supports this statement, as the policies which entail the most steering instruments and options, seem to have the best impact on the mixing of uses in their area to develop. For that reason, the following hypothesis can, based on the empirical and theoretical research of this work, be approved:

“The more uses are planned in an area and the more stakeholders are involved in the development, the higher the required amount of steering and managing by the responsible authorities has to be”

Recommendations for future practice

In the previous paragraph, the conclusions of this research project were presented. The success factors of the strategies that were used in the case areas have been highlighted and the hypothesis that was established in advance of the empirical research has been approved. In this chapter, recommendations are drawn that can be used as a guideline for future strategy formation in mixed-use development projects. In each of the four categories of obstacles, some recommendations will be given to make municipal steering in future mixed-use development projects more practically applicable:

- Land-management and ownership structure:
 - Making an estimation of the possibilities to acquire land within the area to develop (or at least on strategic locations) is a key aspect for successful mixed-use development. Municipal ownership of land allows the authority to implement its ambitions and visions for the area and oblige developers to take these into account, which should result in a more mixed environment.
 - In addition to this, if large-scale municipal ownership seems to be unfeasible, steering instruments like amending powers or renovation obligations can still make sure some of the municipal ambitions can be fulfilled.
- Urban design issues:
 - Even if the end-vision is unclear at the beginning of the development, it is wise to establish a vision and policy towards urban design during the process. Besides the design-aspect, it is also important to include a policy on the responsibility for the costs of renovation. This way, undesirable subsidies by local authorities can be prevented.
- Environmental zoning issues:

- The Crisis- and Recovery Act is a good instrument to accelerate developments, but thoughtfulness with the use of this regulation is needed to make sure existing businesses have enough certainty for the future without feeling the urge to leave.
- Giving rights to one party often leads to the downsizing of the possibilities of other parties. This also counts for environmental zoning rights: giving rights to pollute to one party, makes development for other parties on neighbouring plots impossible. Mixed-use developments is about giving and taking, so a market-system in development rights could be a solution to solve conflicts.
- Financial feasibility:
 - The use of various instruments to make sure developers contribute to public services in the development area is necessary to make these kinds of mixed-use developments possible.
 - In addition to this, the diversification of costs linked to the type of use that is being developed is a stimulating instrument for a more mixed environment: lowering the costs for less popular functions makes it perhaps more interesting to develop these kinds of uses than popular ones which bring higher developer contributions with them. Besides stimulating less popular uses, it thus also prevents the area from becoming a mono-functional space and create more of a level-playing field between various uses.

Contribution to the scientific field of Spatial Planning

The aim of this research project was to gain more insight in suitability of different planning strategies for the implementation of mixed-use development in urban industrial areas that are in need of redevelopment or have the potential of value increase. This aim consisted of a societal and scientific contribution. The scientific contribution consists mainly of the approval of the central research hypothesis.

As mentioned in the foregoing chapter, the amount of steering and managing by authorities during the process of mixed-use area development is larger when there are more stakeholders and uses involved in the project. The need for municipal steering was being questioned during the financial crisis. Many projects got decommissioned and there were large financial losses for governmental authorities. At the same time, many former active development projects got turned into organic development sites, which flourished due to minimization of rules and regulations and became breeding spots for creative and innovative artists and entrepreneurs. It seemed that reigning down was helping these areas to recover.

Nevertheless, the current recovering (and sometimes even exploding) real estate market shows that loosening the rules does not always work in favour of good spatial planning for all groups in society. The need for governmental steering is nowadays back, since developers are often profit-minded and willing to develop what delivers the highest profit. To keep area development inclusive and make sure all facilities are included, municipalities need strategies and instruments to take up a leading position again, especially in those areas that face large housing-shortages and rising house prices. This research project has contributed to scientific knowledge by approving the fact that governmental interference in complex and large development projects is essential for sustainable and inclusive cities, now and in the future.

8 Reflection & recommendations for future research

In this chapter, a recap of the research process will be given. Firstly, the obstacles that occurred during the research process and how I dealt with them will be addressed. After that, a reflection on the methodological choices made and the following limitations of these choices will be given. From this reflection, some recommendations for future research projects will be established.

Reflection on research process

From the start of the academic year of 2018-2019, I have been thinking about suitable subjects for my master's thesis research project. Soon, it became clear that my interests were mainly related to industrial revitalization and urban transformation projects: I have always found these types of developments extremely fascinating due to the paradox of current uses in comparison with former functions of these places. This creates a special kind of atmosphere in these places.

After the submission of my research interests and linking to my supervisor, I started the first literature research sessions. This happened to be quite difficult, since I was searching on very broad terms which often led to enormous amounts of papers. Getting through it was hard and I missed some sense of direction at that time. In November, I started looking for a suitable internship organisation, from which I could conduct this research project. Soon, I found Stec Groep as a potential working place and, in collaboration with them and my own supervisor, we got closer to a possible research subject and question. However, it still took some time to optimize these questions.

Before I started my internship period at Stec Groep, I had planned to finish my research proposal. Predominantly, I succeeded in doing so, but some small amendments still had to be made. In my first period at Stec Groep, I took quite a lot of time for my own research project. Looking back, this has been a wise decision: being able to do a lot of literature research has made my theoretical framework more meaningful and given the research as a whole a better scientific background. Obviously, it was nice to know that this opportunity was given to me by my internship organisation, who have given me the time to develop my own research instead of working for them most of the time.

When I finished the proposal in March 2019, I started looking for case areas and searching for potential interview participants. This part of research has taken most of the time, since contacting interview candidates seemed to be quite hard at times. During this period I might have also taken a bit too much time for work from my internship organisation instead of contacting more interview participants. Defining priorities can be seen as a learning goal for future research projects. Nevertheless, I eventually succeeded in contacting and interviewing all participants I had planned to speak to beforehand, which was a personal goal since I failed in doing so during my bachelor's thesis.

At the same time, I struggled a bit with the way I wanted to analyse the outcomes of the interviews. I was missing some theories that could serve as a basis for the analysis. The theories I had found were often bound to specific law-systems of other countries or not relatable to my research questions. For that reason, I decided to choose to create my own 'obstacle-categories' as a theory for the analysis of the interviews. However, while the first interviews were already done at the same time, I struggled with which relevant information I should derive from these conversations. After I created a new conceptual model which included the obstacle categories, I was more certain about the core aspects I needed to know from those I interviewed.

When the summer period started, difficulties with planning interviews arose due to absence of participants who were on their holidays. This has made the research process a bit longer than I hoped. Nevertheless, at the end of June, all participants had been interviewed. Concomitantly, I started working for my internship organisation as a project member for three days per week. This consumed substantial time that I also needed for my own research. This was again another reason why the finalising of the thesis has taken a bit longer than expected. However, the analysis phase has been a smooth process and I am satisfied with the results I have obtained in the end.

Methodological choices and their implications

For this research project, I have chosen to take in a constructivist stance. This choice was made, because the research questions assumed that the successfulness of different planning strategies is very locally bound: local characteristics influence the urge for a certain governmental role, which differ from place to place. The goal of this research has been to formulate some general success factors, which could be applied in several places to stimulate mixed-use development. In order to achieve this goal, consensus of different 'truths' of the various interview participants was needed. In other words: those aspects that made the mixing of uses in the case areas easier or possible and correspond with each other, can be seen as the commonly constructed truth. As a next logical step, the research should take in a qualitative approach due to the qualitative character of the constructivist philosophy.

By choosing for a qualitative approach with a multiple case study as a methodological framework, some possibilities and limitations could be defined. Firstly, this offered the opportunity to go really in-depth in a few cases, which would give a broader insight in the various facets of mixed-use development projects. This has obviously been an advantage of this research method. On the other hand however, these choices have also resulted in limitations. Although constructivism sees the consensus of various local situations as the commonly constructed truth, the investigation of three case areas seems to have its limits when it comes to generalizable outcomes. All three case areas, for example, were located in cities. Even on the longer shortlist there were only bigger cities to choose from. And, in addition to this, most of these cities were located in the Randstad-district or at least not in peripheral regions. These facts raise questions. The housing market in bigger cities is for example very different from the market in smaller towns or peripheral regions that face population shrinkage. In these regions, the need for mixing of uses could be approached from a whole different starting point: not because there is a shortage of houses, but because some areas in towns face high vacancy rates and need to be revitalized. But in these development projects, it would perhaps not be needed to slow down developers who only want to develop profitable uses, but the challenge would be to find new destinations for these buildings at all.

Differences between regions could not be highlighted that well in this research project, which can be seen as a shortcoming of the research methodology. Nevertheless, the chosen research method fitted well with the research questions and research aim, which have both been answered and achieved.

Another shortcoming of this research method is the fact that only speaking with stakeholders makes a different impact than using actual numbers and statistics. During interview conversations, personal feelings, opinions or dissent can be expressed, which is sometimes afterwards during the analysis hard to separate from the actual facts. This means that certain developments, that have created emotions and conflicts amongst those involved, can be highlighted more than the actual strategies that lay behind the reason these conflicts were able to come about. With a more quantitative approach, facts could be separated better from personal feelings.

Recommendations for future research

This research aimed to find success factors of different planning strategies for the implementation of mixed-use development. In relation to the research questions and eventual outcomes, I think the research has achieved this goal, since it has been possible to define specific success factors. And although this master's thesis is coming to an end, it does not imply that all research regarding this topic has been done by now. Therefore recommendations for future research on this topic could, based on the outcomes of this research project, be made:

- As mentioned in the reflection on the methodological choices made, this research project has focused on three cases in bigger Dutch cities. Further research could investigate the situation in smaller towns or peripheral regions, in order to clarify the applicability of the recommendations regarding planning strategies made in this project for the situation in these regions. This provides a broader insight in mixed-use development, not only in bigger cities, but also in other regions of the Netherlands.
- Suggestions have been made to apply a market in development rights when it comes to environmental zoning issues. Further research could look into the possibilities of implementing such markets in practice, to see if such systems could stimulate the amount of mixing within the investigated areas. Experimental or gaming simulation research projects could then provide new planning instruments for urban developers to enhance the quality and success of mixed-use development.
- The approach of this research has been from the municipal or governmental side of the spectrum. As a consequence, the roles of other parties have not been as thoroughly investigated as the role of local authorities. Future research projects could look into roles of other stakeholder groups, like pioneering entrepreneurs or the artistic enclaves that often start developments in these types of development areas.
- The case areas investigated for this research project have all not been finished yet. In most cases, the developments have started only recently. Therefore it would be interesting to do a similar research project in a couple of years, to see if the planning strategies have changed, if mixed-use development has actually taken place and, if not, which aspects have been responsible for a changed situation.

Epilogue

Mixed-use development is a research item that has yet been studied for many decades in countries all over the world. Each country has its own planning system, leading to different views on how mixed-use development should look like. But the one thing all these visions on mixed-use planning have in common is the aim to keep cities vibrant, varied and open to all groups in society.

Keeping cities open for all groups means that planning regulations should be inclusive as well and should aim to represent the needs of all those involved of area development. Unfortunately, as becomes clear from this research paper, policies are often established to suit one group of stakeholders, but, unintentionally, hinder at the same time another group as some sort of negative externality. To make cities more inclusive means that balance has to be sought between all kinds of uses and all kinds of inhabitants.

This research paper aimed to give some handgrips for a more balanced future urban environment, which aims to include all citizens and facilitates mixing as much as possible and favorable. During the empirical data collection for this project, I wandered along the wharfs of the Havenkwartier-district and noticed the enormous variety of urban functions this area hosts; from classic, still active industrial complexes on one side of the river IJssel, up to creative breeding spots for young entrepreneurs, but also the presence of small working-class dwelling directly across the Mr. H.F. De Boer-lane. It all seems like an 'urban circle of life': the former port warehouses once housing large companies and now serving as fertile ground for new start-up companies. Preserving history, embracing the present and looking forward to new uses for the future. Walking along the docks I wondered what the future will bring for mixed-use development...

Bibliography

Albrechts, L. (2015) Ingredients for a more radical strategic spatial planning. *Environment and Planning B: Planning and Design*, 2015, vol. 42, pp. 510-525.

Bast, B. (2019) Towards participation of existing businesses in the regeneration of industrial urban waterfronts. *Urban Development Management: Next Generation Waterfronts*, Delft University of Technology.

Bouwmeester, H. (2005) *Stad in de Steigers: Twintig jaar samenwerken aan het hart van Amersfoort*. Gemeente Amersfoort & Ontwikkelingsmaatschappij Centrumplan Amersfoort NV.

Bregman, A. (2015). *Herverkaveling als instrument voor gebiedsontwikkeling—een update*. Amsterdam School of Real Estate, 7, 1-29.

Bryman, A. (2015) *Social Research Methods*. 5th edition. Oxford University Press.

Buitelaar, E. & Bregman, A. (2016) Dutch land development institutions in the face of crisis: trembling pillars in the planners' paradise. *European Planning Studies*, 2016, vol. 24, no.7, pp.1281-1294.

Buitelaar, E., Galle, M. & Sorel, N. (2014) The public planning of private planning: an analysis of controlled spontaneity in the Netherlands. In: *Cities and Private Planning*, chapter 12, pp. 248-268.

Buitelaar, E., Grommen, E. & Van der Krabben, E. (2017) *The self-organizing city: An analysis of the institutionalization of organic urban development in the Netherlands*. From: *Routledge Companion to Real Estate Development*, Routledge, London. Accessed on: 11 Mar 2019.

Buitelaar, E., Segeren, A. & Kronberger, P. (2008) *Stedelijke transformatie en grondeigendom*. NAI Uitgevers, Rotterdam. Ruimtelijk Planbureau, Den Haag, 2008.

Capital Value (2019, 11 februari) Woningtekort loopt op naar 263.000 woningen. Geraadpleegd op 6 maart 2019, van <https://www.capitalvalue.nl/nieuws/woningtekort-loopt-op-naar-263-000-woningen>

Coase, R.H. (1960) The Problem of Social Cost. *Journal of Law and Economics* (1960), vol. 3, pp. 1-44.

Dembski, S. (2013) Case Study Amsterdam Buiksloterham, the Netherlands: The Challenge of Planning Organic Transformation. CONTEXT Report 2. AISSR programme group Urban Planning, Amsterdam.

De Zeeuw, F. (2018) *Zo werkt gebiedsontwikkeling*. Praktijkleerstoel Gebiedsontwikkeling TU Delft, 2018.

Faludi, A. (2000) The Performance of Spatial Planning, *Planning Practice and Research*, 15:4, 299-318, DOI: 10.1080/713691907

Foord, J. (2010). Mixed-Use Trade-Offs: How to Live and Work in a 'Compact City' Neighbourhood. *Built Environment*, 36(1), 47-62.

Gemeente Amersfoort (2016) *Ruimtelijke Agenda Amersfoort 2016*. Gemeente Amersfoort en Provincie Utrecht, 11 mei 2016.

- Gemeente Amsterdam (2017) Ruimte voor de Economie van Morgen: Ruimtelijk Economische Bouwstenen voor de groei van Amsterdam. Gemeente Amsterdam, juni 2017.
- Gemeente Den Haag (2005) Wéreldstad aan Zee: Structuurvisie Den Haag 2020. Gemeenteraad Den Haag, 17 november 2005.
- Gemeente Den Haag (2009) Agenda voor de Haagse Verdichting: thematische uitwerking van de structuurvisie Den Haag 2020. Gemeente Den Haag, mei 2009.
- Gemeente Den Haag (2018) Voorstel van het college inzake Actualisatie gebiedsaanpak Binckhorst. College van B&W, Gemeente Den Haag, 29 november 2018.
- Gemeente Den Haag (2018) Omgevingsplan Binckhorst. Gemeente Den Haag, 29 november 2018.
- Gemeente Deventer (2010) Stadsas Deventer: Pilot stadsassen en transformatiezones. Andries Geerse stedenbouwkundige BV.
- Gemeente Deventer (2018) Visiedocument voor de Omgevingsvisie. Expeditie Deventer.
- Gemeente Nijmegen (z.d.) Ontwikkelingsbedrijf Waalfront Beheer BV; begroting 2017-2020. Accessed at 8 april 2019, from: <http://nijmegen.begroting-2017.nl/p17705/ontwikkelingsbedrijf-waalfront-beheer-bv>
- Gemeente Nijmegen (2013) Structuurvisie Nijmegen. Gemeente Nijmegen, December 2013.
- Gemeente Nijmegen (2019) Voortgangsrapportage Grote Projecten 2019.
- Gemeene Zaanstad (2012) Economische Structuurvisie 2030: Zaanstad; stad van durvers, denkers en doeners. Gemeenteraad Zaanstad, 7 juni 2012.
- Gollin, D., Jedwab, R. & Vollrath, D. (2015) Urbanization with and without industrialization. Journal of Economic Growth, 2016, Vol. 21, pp. 35-70.
- Guba, E.G. & Lincoln, Y.S. (1994) Competing paradigms in qualitative research. In: N.K. Denzin & Y.S. Lincoln (eds.), Handbook of qualitative research (pp. 105-117). Thousand Oaks, CA: Sage.
- Hagens, J., Kruger, M., Jannink, P., van Berkel, S., Gallo, G. & Kloosterman, H. (2017) Economisch-ruimtelijke verkenning Noordelijke ZaanIJ-oever; Bouwstenen voor een ontwikkelstrategie. Bureau BUITEN, MUST Stedebouw & UrbanXchange, 24 april 2017.
- Hajer, M. & Urhahn, G. (2012) Vormgeven aan de Spontane Stad: belemmeringen en kansen voor organische stedelijke ontwikkeling. Planbureau voor de Leefomgeving & Urhahn Urban Design.
- Healey, P. (1998) Collaborative planning in a stakeholder society. The Town Planning Review, 1998, vol.69, no.1, p.1.
- Hermans, A. (2012) Tijdelijkheid voor de eeuwigheid; Een onderzoek naar de rol van tijdelijke functies ingevuld door de creatieve industrie in de veranderende context van herbestemmingsprocessen. Masterscriptie Planologie, Universiteit Utrecht, juli 2012.

- Holden, M., Scerri, A., & Esfahani, A. (2015). Justifying redevelopment 'failures' within urban 'success stories': Dispute, compromise, and a new test of urbanity. *International Journal of Urban and Regional Research*, vol. 39(3), pp. 451-470. doi:10.1111/1468-2427.12182
- Hoppenbrouwer, E. & Louw, E. (2005). Mixed-use development: Theory and practice in Amsterdam's Eastern Docklands. *European Planning Studies*, 13(7), 967-983.
- Huston, S. & Mateo-Babiano, I. (2013) Vertical mixed-use communities: a solution to urban sustainability? Review, audit and developers perspectives. Conference: 20th Annual European Real Estate Society Conference, Vienna Austria.
- Jacobs, J. (1961) *The Death and Life of Great American Cities*. Vintage Books, Random House, New York.
- Kane, M.J. (2004) Multiple Sources: Financing the Mixed-Use Development. *The New York Law Journal*, September 29, p.5.
- Kanneworff, L. (2011) De 'organische' transformatie van bedrijventerrein de Binckhorst: tussenstad op weg naar een duurzame Haagse stadswijk. Lectoraat Grootstedelijke Ontwikkeling, De Haagse Hogeschool.
- Klosterman, R.E. (1985) Arguments for and against planning. *Town Planning Review*, vol. 56 (1), pp.5-20.
- Korthals Altes, W.K. & Tambach, M. (2008) Municipal strategies for introducing housing on industrial estates as part of compact-city policies in the Netherlands. *Cities*, vol.25, no.4, pp. 218-229.
- Koster, H. (2016). De economie van het ruimtelijk ordeningsbeleid. *TPE Digitaal*, 10(2), 163-176.
- Krouwel, A. & Duyvendak, J.W. (2001). Interactieve beleidsvorming: voortzetting van een rijke Nederlandse traditie?, in Edelenbos, J. & Monninkhof R., *Lokale interactieve beleidsvorming. Een vergelijkend onderzoek naar de consequenties van interactieve beleidsvorming voor het functioneren van de democratie*, Lemma, Utrecht pp. 17-32.
- Locatus/PBL/CLO (2017). Leegstand van winkels, 2004-2017. Retrieved from <http://www.clo.nl/indicatoren/nl2151-leegstand-winkels> (visited 9 January 2019).
- Louw, E. (2008). Land assembly for urban transformation—the case of 's-hertogenbosch in the Netherlands. *Land Use Policy*, 25(1), 69-80. doi:10.1016/j.landusepol.2006.09.002
- Muskee, M. (2019, 22 februari) Co Verdaas, hoogleraar gebiedsontwikkeling: Actieve grondpolitiek mag weer, mits risicobewust. Geraadpleegd op 6 maart 2019, via <https://vng.nl/co-verdaas-hoogleraar-gebiedsontwikkeling-actieve-grondpolitiek-mag-weer-mits-risicobewust>
- Nabielek, K., Boschman, S., Harbers, A., Piek, M. & Vlonk, A. (2012) *Stedelijke verdichting: een ruimtelijke verkenning van binnenstedelijk wonen en werken*. Planbureau voor de Leefomgeving, Den Haag, 2012.
- Needham, B. (2014) *Dutch Land-use Planning: The Principles and the Practice*. Routledge, Taylor & Francis Group, London/New York.
- Niemira, M.P (2007) The Concept and Drivers of Mixed-use Development: Insights from a Cross-Organizational Membership Survey. *Research Review*, 2007, 4:1, 53-6.

Ontwikkelingsbedrijf Waalfront (2018) Voortgangsrapportage Waalfront. Juli 2018.

Paquay, L. (2015) Cruquius ontwikkelen – van onderop. Retrieved from: <https://stedenintransitie.nl/interview/leonpaquay>, op 4 april 2019.

Pinkster, F. & Boterman, W. (2017) When the spell is broken: gentrification, urban tourism and privileged discount in the Amsterdam canal district. *Journal of Cultural Geographies*, 2017, Vol. 27, no.3, pp. 457-472.

Planbureau voor de Leefomgeving (2009) De toekomst van bedrijventerreinen: van uitbreiding naar herstructurering. Den Haag/Bilthoven, 2009.

Planbureau voor de Leefomgeving (2016) Balans van de Leefomgeving 2016. Retrieved from <https://themasites.pbl.nl/balansvandeleeftomgeving/jaargang-2016/themas/wonen/beschikbaarheid-woningen> (visited 9 January 2019).

Pols, L., Van Amsterdam, H., Harbers, A., Kronberger, P. & Buitelaar, E. (2009) Menging van wonen en werken. Planbureau voor de Leefomgeving, Den Haag/Bilthoven.

Priemus, H. & Louw, E. (2002) Changes in Dutch land policy: from monopoly towards competition in the building market. *Planning and Design* 2003, vol.30, pp. 369-378.

Provincie Gelderland (2016) Beleidsnotitie aanpak SteenGoed Benutten; bijlage bij Statenbrief.

Provincie Gelderland (2018) Gaaf Gelderland; Kadernota doorontwikkeling Gelderse Omgevingsvisie en Omgevingsverordening 2018. Provincie Gelderland, februari 2018.

Provincie Noord-Holland (2010) Structuurvisie Noord-Holland 2040: Kwaliteit door veelzijdigheid. Provinciale Staten Noord-Holland, 21 juni 2010.

Provincie Utrecht (2011) Focus op Kennis en Creativiteit: Economische Visie provincie Utrecht 2020. Provincie Utrecht, september 2011.

Provincie Zuid-Holland (2012) Visie op Zuid-Holland; Provinciale Structuurvisie. Gedeputeerde Staten Provincie Zuid-Holland, 27 november 2012.

Provincie Zuid-Holland (2018) Visie ruimte en mobiliteit, geconsolideerde versie. Provinciale Staten Zuid-Holland, 30 mei 2018.

Rabianski, J.S., Gibler, K.M., Tidwell, A.O. & Sherwood Clements, J. (2009) Mixed-Use Development: A Call for Research. *Journal of Real Estate*, Vol. 17, no. 2, 2009.

Rekenkamer Den Haag (2013) Sturen op maatschappelijke effecten bij grote projecten: feitenrapport. Rekenkamer Den Haag, 2013.

Reussing, R. (2016) Innovatieve wijkaanpak en gebiedsontwikkeling in Deventer: meer inzichten via KISS. *Bestuurswetenschappen*, 2016, vol.70, no.1, pp. 71-89.

Rowley, A. (1996) Mixed-use Development: Ambiguous concept, simplistic analysis and wishful thinking?, *Planning Practice & Research*, 11:1, 85-98, DOI:10.1080/02697459650036477

Sandercock, L. (1998). Towards cosmopolis: Planning for multicultural cities. Chichester & New York, NY: J. Wiley.

Saunders, M., Lewis, P., & Thornhill, A. (2016). Research methods for business students (7.th ed.) [7. ed.]. Harlow: Pearson Education Limited. (2016).

Savini, F., Salet, W. & Majoor, M. (2014) Dilemmas of planning: Intervention, regulation, and investment. Planning Theory, published online 22 april 2014.

Schimmel, H. & Sanders, M. (2018) Waalfront: belangenbemiddeling bij gebiedsontwikkeling. Dag van Gelderland, 6 juni 2018.

Stec Groep (2019) Kansen voor versnellen woningmarkt. Whitepaper Stec Groep, 27 maart 2019.

Thorpe, A. (2017) Rethinking Participation, Rethinking Planning. Planning Theory & Practice, vol. 18, no.4, pp. 566-582.

Urhahn (2015) Strategiewijzer voor binnenstedelijke transformaties. Urhahn Stedenbouw & Strategie, 27 november 2015.

Valtonen, E., Falkenbach, H., & van der Krabben, E. (2017). Risk management in public land development projects: Comparative case study in Finland, and the Netherlands. Land Use Policy, 62, 246-257.

Van der Cammen, H. & De Klerk, L. (2012) The Selfmade Land: Culture and Evolution of Urban and Regional Planning in the Netherlands. Spectrum bv, Houten-Amsterdam.

Van der Krabben, E. (2008) A Property Rights Approach to Externality Problems: Planning Based on Compensation Rules. Urban Studies, 46:13, 2869-2890, DOI: 10.1177/0042098009345537

Van der Krabben, E., Hagens, J, Kooijman, S., Harmelink, H., van der Hoek, E. & Lorman, C. (2009) Wijkeconomie: de kleine ondernemer aan het woord. Bureau voor Economie en Omgeving & Radboud Universiteit, 9 juli 2009.

Van der Krabben, E. & Jacobs, H, (2012) Public land development as a strategic tool for redevelopment: Reflections on the Dutch experience. Land Use Policy 2013, vol.30, pp. 774-783.

Van der Krabben, E. & Lenferink, S. (2018) The introduction of urban land readjustment legislation as an institutional innovation in Dutch land policy. Habitat International 2018, vol.75, pp. 114-121.

Van der Krabben, E., Pen, C.J & De Feijter, F. (2015) De markt voor bedrijventerreinen: uitkomsten van onderzoek en beleid. Radboud Universiteit en Platform31. Gepubliceerd: februari 2015.

Van der Spek, M. & Ligtermoet, D. (1998) Functiemenging: Kansen en Bedreigingen voor het Mobiliteitsbeleid. In Rooilijn, nr.6, pp. 303-308.

Van Duin, C., Stoeldraijer, L., Van Roon, D. & Harmsen, C. (2016) Huishoudensprognose 2015-2060: jongeren en ouderen langer thuis. Centraal Bureau voor de Statistiek, Den Haag.

Van Loon, I. (2013) Praktijkcongres Gebiedsontwikkeling 2013: 'Werkzame ontwikkelstrategieën, Sessie F: Waalfront Nijmegen; masterplan nieuwe stijl. Accessed at 4 april 2019, retrieved from: <https://www.gebiedsontwikkeling.nu/artikelen/sessie-f-waalfront-nijmegen-masterplan-nieuwe-stijl/>

Verheul, W.J., Daamen, T., Heurkens, E., Hobma, F. & Vriends, R. (2017) Gebiedstransformaties: Ruimte voor durf en diversiteit. Afdeling Urban Development Management, Technische Universiteit Delft, 2017.

VROM (2004), Nota Ruimte, Den Haag: ministerie van VROM.

VROM-raad (2006), Werklandschappen; een regionale strategie voor bedrijventerreinen, Advies nr. 53, Den Haag: VROM-raad.

Witherspoon, R.E., J.P. Abbett, & R.M. Gladstone (1976) Mixed-use Development. Washington, DC: ULI, 1976.

Zahnow, R. (2018). Mixed land use: Implications for violence and property crime. *City & Community*, 17(4), 1119-1142. doi:10.1111/cico.12337

Znidarsic, I. (2018) 'Volledige transparantie is de sleutel: Albemarle krijgt te maken met 6700 nieuwe woningen in 'achtertuin''. In: *Chemie Magazine*, november 2018.

Zones Urbaines Sensibles (2015) De Nieuwe Stad: ambitiedocument 1.0. ZUS in opdracht van Gemeente Amersfoort en Schipper Bosch, 2 februari 2015.

Zonneveld, J. (2015) Eilandgevoel op voormalig industrieterrein; Cruquiusgebied in Oost verandert in nieuwe stadswijk. In: *NUL20*, tijdschrift voor woonbeleid in de regio Amsterdam, november 2018, no. 83

List of figures and tables

FIGURE 1: RESEARCH MODEL (FOLLOWING A MULTIPLE CASESTUDY DESIGN)	11
FIGURE 2: AXIAL SYSTEM OF PLANNING STRATEGY RELATED TO SCALE OF PROJECT AREA.....	25
FIGURE 3: CONCEPTUAL FRAMEWORK	39
TABLE 1: ALTERNATIVE LAND DEVELOPMENT MODELS (OWN ILLUSTRATION BASED ON VAN DER KRABBen & JACOBS, 2012)	28
TABLE 2: RELATION BETWEEN AREA CHARACTERISTICS AND MUNICIPAL DEVELOPMENT STRATEGY (OWN ILLUSTRATION BASED ON URHAHN, 2015)	36
TABLE 3: ANALYSIS OF THE FOUR OBSTACLE CATEGORIES FOR THE HAVENKWARTIER-DISTRICT (OWN ILLUSTRATION)	59
TABLE 4: ANALYSIS OF THE FOUR OBSTACLE CATEGORIES FOR THE BINCKHORST-DISTRICT (OWN ILLUSTRATION)	65
TABLE 5: ANALYSIS OF THE FOUR OBSTACLE CATEGORIES FOR THE CRUQUIUS-ISLAND (OWN ILLUSTRATION)	71
PICTURE 1: LOCATION AND AERIAL PHOTO OF THE HAVENKWARTIER-DISTRICT	42
PICTURE 2: LOCATION AND AERIAL PHOTO OF THE Binckhorst-DISTRICT	44
PICTURE 3: LOCATION AND AERIAL PHOTO OF THE CRUQUIUS-ISLAND	48
PICTURE 4: SUBAREAS WITHIN THE HAVENKWARTIER-DISTRICT	53

Appendix

List of interview participants

Name	Role within area development	Area development project	Date
Wout van Hees	CEO Development Company Waalfront	Waalfront Nijmegen	16th April 2019
Hester Ombre	Project leader Area Development Municipality of Amsterdam	Cruquius-island Amsterdam	23rd April 2019
Anke Rolsma	Policy officer Economic Affairs Municipality of The Hague	Binckhorst The Hague	24th April 2019
Han Bruggink	Senior Advisor Business Team Municipality of Amersfoort	Oliemolenkwartier Amersfoort	29th April 2019
Ivor Visser	Senior project manager Municipality of Deventer	Havenkwartier Deventer	8th May 2019
Wieneke van Overmeeren	Process manager Achtersluispolder Municipality of Zaanstad	Achtersluispolder Zaanstad	10th May 2019
Moniek Koops	Customer advisor physical environment Municipality of Deventer	Havenkwartier Deventer	3rd June 2019
Mart Overbeek	Plan economist Municipality of The Hague	Binckhorst The Hague	5th June 2019
Coen Verhaegh	Vice president of business association BLF (Binckhorst, Laakhaven, Fruitweg)	Binckhorst The Hague	5th June 2019
John van der Goes	Senior project inspector Municipality of The Hague	Binckhorst The Hague	14th June 2019
Bert Landeweerd	Plan economist Municipality of Deventer	Havenkwartier Deventer	18th June 2019
		Havenkwartier Deventer	26th June 2019
Cherylle Lieuw-Fo	Senior staff member Permits Municipality of Amsterdam	Cruquius-island Amsterdam	4th July 2019
		Cruquius-island Amsterdam	11th July 2019
Bart van Huit	Plan economist Municipality of Amsterdam	Cruquius-island Amsterdam	12th July 2019

Interview-guides

This is an example of one of the interview-guides used during the empirical data collection for this research project. The categories used in this guide are similar to the categories in other interview-guides, but the specific questions differ, because the situations in the case areas vary as well.

Interviewguide Mart Overbeek (Den Haag)

GRONDBEZIT:

- Waar in de Binckhorst heeft de gemeente reeds gronden verworven? In een eerder stadium (op basis van een voorgaan plan) of ten behoeve van het huidige plan?
- Heeft de gemeente nog plannen voor toekomstige verwerving?
- Wordt er samenwerking gezocht met particuliere grondeigenaren zonder uitkoping?
- Hoe wordt er omgegaan met de situatie in delen van de Binckhorst, waar de gemeente minder grondbezit heeft? Hoe houdt de gemeente hier regie op ontwikkelingen?

PUBLIEKE RUIMTE:

- Wie is er verantwoordelijk voor de kosten van de publieke ruimte (hoe zijn kosten verzekerd)?
- Particulier: hoe is een bijdrage aan de publieke ruimte vastgelegd met ontwikkelaars?
- Is de gemeente bereid zelf grote investeringen in de publieke ruimte te doen?
 - o Hoe wil de gemeente deze kosten opvangen? Uit grondverkoop of uit reserveringen voor stedelijke ontwikkeling?

INFRASTRUCTUUR EN PARKEREN:

- Welke rol speelt de aanleg van de Rotterdamsebaan in de ontwikkeling van de Binckhorst?
 - o Zorgt dit voor extra druk op de ontwikkelingen vanwege de grote investeringen die de gemeente hierin heeft gestoken?
 - o Geeft het een stimulans voor ontwikkelaars om zich te mengen in het gebied?
- Hoe worden de kosten voor parkeren, infrastructuur en OV gedekt? Voorziet de gemeente daarin of dragen ontwikkelaars hieraan bij?
- De aanwezigheid van LPG-routes in het gebied zorgt voor problemen t.a.v. woningbouw. Hoe wordt hier mee omgegaan in financiële zin (eventueel uitkopen)?

OBSTAKELS:

- Hebben er gedurende het ontwikkelproces in de Binckhorst zich obstakels voorgedaan die financiële consequenties hebben gehad voor de grondexploitatie van het gebied/de deelgebieden?
- Hoe is er met deze obstakels omgegaan? Welke maatregelen zijn er genomen?
- Concrete voorbeelden?

METHODEN OM WERKEN TE BEHOUDEN:

- De gemeente wil werken graag behouden voor de Binckhorst: zijn er in financiële zin nog mogelijkheden om hierin te sturen? Zo ja, op welke manieren?
- Zijn er initiatieven vanuit zittende bedrijven om mee te denken over mogelijkheden om zichzelf te behouden voor het gebied?
 - o Innovatieve voorbeelden?

SUCCEFACTOREN STRATEGIE:

- Op welke manieren ondersteunt het Omgevingsplan het rondkrijgen van het financiële plaatje voor de ontwikkeling van deelgebieden in de Binckhorst?
 - Welke aspecten van de huidige manier van kostenverzekering ziet u als succesfactoren?
- Bemoedijkt het omgevingsplan ook op enige manier het financieel rond krijgen van plannen voor deelgebieden?
 - Zo ja, bestaan er concrete voorbeelden?