LEARNING
within urban area development
The case of HAFENCITY HAMBURG
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Learning within urban area development: the case of HafenCity Hamburg

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Preface

Whether we like it or not, learning is part of our everyday life. It is a life long process that can be intensified at periods in our lifetime, for instance during our educational career, working life, social life, and through personal experiences. This strongly applies for my graduation journey. A period of extensive learning and applying all the acquired knowledge gathered during my educational career. It was a period in which I learned more about urban area development and in particular about waterfront developments and the challenges they bring with them. It was also a period of exploring completely new theories for me about the concepts of ‘learning and knowledge’. But most of all it was an existing and enjoyable journey in which I gained more personal and professional experience.

The months I spend exploring the concepts of ‘learning and knowledge’ within urban area development were ambitious and intense, but ultimately led to this master thesis in which I try to reveal the learning process within the waterfront redevelopment project entitled HafenCity Hamburg. It can be stated that at this moment in time the field of urban area development is changing and being aware of the learning process and gather knowledge at an early stage in the development process affects spatial development projects in a positive manner.

With great pleasure I attended the two year master track Real Estate & Housing at the faculty of Architecture at the Technical University of Delft. I am glad that I have made the decision to continue studying after my bachelor degree in Real Estate. In the two years of the master track I learned more about scientific research, discussed the profession comprehensively, and met new inspiring and interesting people.

Writing a master thesis can sometimes be a lonely and individual process, however there were times that I received help and support during this graduation journey. I would like to thank Tom and Vincent, my mentors during this research process, for their inspiring talks, motivation, support, and guidance in the realisation of this research: both process and content wise. In addition, I would like to thank the people who were willing to talk to me about HafenCity Hamburg: Hape Schneider, Robert Oschatz, and Joerg Knieling.

Special thanks goes to my mother and my brother for supporting me during my educational career. Their interest, enthusiasm, encouragement, and support stimulated me to study even harder. Besides, I want to thank Kiki and Lisanne for the wonderful times I spend with them during these two years, you both have become my dearest friends. Kiki and Lisanne, thanks for the many cups of tea, coffee, lunches, motivational talks, support, and laughter. I also want to thank Roderick who lend me his fantastic camera gear, so I could make beautiful pictures during my study trip to HafenCity Hamburg. Furthermore, I would like to thank Robert who supported me, but most of all listened and was there for me during this graduation period. I am glad we could experience this journey together and I can not wait to start a new adventure with you...

Wendy de Hoog

Delft, 25th of June 2012
Abstract

Learning is often perceived as a very complex and many-sided matter that is fuelled by social interaction and participation. It is therefore no wonder that in today’s knowledge and information-led society the concepts of ‘lifelong learning and knowledge’ have become more popular in relation to both the formation and implementation of policies and strategies, including those around the planning and realisation of spatial development projects. The overarching purpose of this master thesis is therefore to explore the role of learning and knowledge within the urban area development project HafenCity Hamburg by focussing on the learning activities and the impacts these learning activities have on the project’s master plan development.

In order to reveal the learning process within HafenCity Hamburg a literature review about urban area development, learning, and knowledge is conducted, accompanied with an empirical research to get a deeper understanding about the learning process. In this research process a critical discourse analysis is used as a tool to interpret the learning process in HafenCity Hamburg and to find an explanation concerning the changes in the various master plans.

The results of this research suggest that the changes in the master plans imply a learning process. The discourse analysis supports the idea that the identified learning activities fuel the learning process and up to a certain extent affects the project’s master plan development. Evidence also suggests that learning within HafenCity Hamburg can be seen as a process as well as a product. Learning as a process in HafenCity can be seen as deploying a series of learning activities over time, leading to some durable changes in regard to the development and planning process of HafenCity Hamburg. Learning as a product in HafenCity is the result of the learning process i.e. the consequence of learning, which is the knowledge generated by the learning activities that led to certain changes in the master plans. Besides, it can be concluded that learning within urban area development projects is strongly associated with an adaptive and even reactive learning process resulting in an enduring change in the development and or planning process in regard to the quality of the content, process, and/or individual building projects.

Describing the learning process within HafenCity Hamburg implicates that learning is present within spatial development projects and that this exploratory research established a foundation for further research and future explorations in this domain of learning within urban area development.

Keywords: learning, learning process, learning activities, knowledge, urban area development, master plan, HafenCity Hamburg
Brown field development, is the development of an area or premises that has been previously used for industrial or commercial purposes, but has subsequently become under-used, vacant, abandoned, derelict, or contaminated and is redeveloped in (an)other function(s). This term is the opposite of undeveloped or 'greenfield' land.

Behavioural change, refers to transformation or modification of human behaviour.

Cognitive or cognition, refers to mental processes. These mental processes include attention, memory, producing and understanding language, solving problems, and making decisions. Cognition refers to the processing of information, applying knowledge, and changing preferences and can be natural or artificial, conscious or unconscious.

Collaborative learning, is employed in connection with approaches where a group of people try to learn and develop something together (Illeris 2007).

Collective learning, is employed in the special contexts in which a group of people with wide-ranging uniform backgrounds in a field enter a learning context where the social situation contributes to them learning the same thing (Illeris 2007).

Community of practice, a group formed by people who engage in a process of collective learning in a shared domain of human endeavour: a tribe learning to survive, a band of artists seeking new forms of expression, a group engineers working on similar problems, a clique of pupils defining their indent in the school, a gathering of first-time managers helping each other cope (Wenger 2006).

Content dimension of learning, the content of learning has the character of acquiring knowledge, skills, opinions, understanding, insights, meaning, attitudes, qualifications, and/or competence (Illeris 2007).

Development company, the company responsible for managing and developing an area. In this case the development company HafenCity Hamburg GmbH is responsible for managing the entire development project HafenCity Hamburg.

Discourse, generally refers to written or spoken communication attached to any given social practice. Here, the planning discourse of the master plan development is discussed to indicate if a learning process is present and if the learning activities affected the changes in the master plans.

Explicit, fully and clearly expressed or demonstrated. Explicit knowledge is rational, factual, and objective and can be expressed in a formal and systematic language and can be shared in the form of data, scientific formulae, specifications, manuals etc..

Freehold of land, the permanent or absolute ownership of a piece of land or property with the freedom to dispose of it at will.

HafenCity Hamburg is a waterfront redevelopment project in Hamburg, Germany. It is the largest redevelopment project in Europe at this moment and comprises an integrated development framework of housing, offices, leisure, and retail.

Implicit, implied rather than expressly stated. Implicit has the same meaning as the term tacit. Implicit knowledge is difficult to transfer to another person by means of writing or verbalising it. It involves learning and acquiring skills and in the field of knowledge management the concept refers to knowledge that is possessed only by individuals, such as expertise, beliefs, values, and practices.
Incentive dimension of learning, covers the matters concerning the scope and character of the mental energy that is the driving force of learning i.e. typically the motivation, emotion, attitudes, and volition invested by the individual in a learning situation or course of learning (Illeris 2007).

Incremental changes, are continuous improvements to the established framework.

Interaction dimension of learning, the interaction between the individual and the environment stimulates learning and can take form in perception, transmission, experience, imitation, activity, and participation. The more a learner engages and involves in social interaction and participation, the greater the learning possibilities are (Illeris 2007).

Joint building venture within HafenCity Hamburg, are cooperatives of future residents who purchase the land, co-design and co-construct their own buildings, whilst HafenCity Hamburg GmbH is the coordinating agency behind the development project and facilitates the whole process. The result of this process is that often these joint building ventures are able to realise prices below market rates.

Knowledge (within this research), is information processed in the mind of human beings combined with experiences, values, beliefs, interpretation, reflection, context, and social interaction, in which knowledge is seen as the content or product of the learning process.

Learning (within this research), is a multidimensional process between several dimensions that results in an enduring change stimulated by social interaction between individuals and the environment. In case of urban area development, learning is seen as a process in which learning activities generate (new) knowledge (content) that influences the decision-making process and its accompanying discourse. In addition, it is assumed that in this research learning is a collaborative process fuelled by individual learning that leads to certain changes in the master plans.

Learning process, is seen as a dynamic process in which a string of learning activities generate (new) knowledge. Learning is not something that is only related to individuals it also concerns groups of people and their social interaction and participation with the society. Learning here refers to the collaborative process of generating knowledge that leads to actions during the development and planning process.

Master plan development, the master plan development takes place in the planning phase of the urban area development process and can consist of creating urban planning structures, building programs, and phasing for the entire urban area development project.

Social infrastructure, is a subset of the infrastructure sector and typically includes assets that accommodate social services. Examples of social infrastructure include schools, universities, hospitals, prisons, and community housing (NZSIF 2012).

Social learning, is employed in connection with the interaction dimension in individual learning (Illeris 2007).

Subsidiary, subsidiary company, or daughter company is a company that can be completely or partly owned and wholly controlled by another company. In this case the development company HafenCity Hamburg GmbH is a City-State owned enterprise, which means that the control is in hands of the City-State of Hamburg.

Sustainable development, is according to the development company HafenCity Hamburg GmbH the awareness and care in the use of resources to guarantee their availability for the long term (HafenCity Hamburg GmbH 2012b).

Tacit, has the same meaning as implicit.

Topography, surface of an area with its natural or artificial slopes and inclines. The whole topography of HafenCity Hamburg has been artificially created and raised up to 7.5 or 8 meters above sea level to protect the area against flooding.

Urban area development, is a collaborative, long-term, and complex development process of a defined area, in which a physical and functional change occurs and value is created through an integrated approach and cooperation between public and private parties.
Urban area development (within this research), is understood as a collaborative, knowledge-intensive learning process in which learning through social interaction and participation in the development process leads to new progressive insights that influences both the development process and content of spatial development projects.

Urban area development process, the urban area development process consist of four phases: initiatory phase, planning phase, realisation phase, and maintenance phase (see Appendix A for more information).

Urbanity, is according to the development company HafenCity Hamburg GmbH the metropolitan feel of an urban space. Urbanity basically arises from an appropriate urban structure made up of a variety of land uses in and outside buildings, as well as the presence of a large number of people of different types (HafenCity Hamburg GmbH 2012b).
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1. Introduction

“Mistakes are lessons of wisdom. The past cannot be changed. The future is yet in your power.”

(Hugh White)

1.1 Learning and knowledge

Daily we gain experience, we apply knowledge, and we learn. However, mostly it occurs outside the conscious realm or intentionality of human beings. As Alexander, Schallert & Reynolds (2009) denote “learners cannot give an explicit rendering of when learning occurred, how learning happened, or how they were changed”. Learning is therefore a very complex and many-sided matter and can be seen as a life long process fuelled by social interactions. It starts when we are young, go to school and learn from experiences, learn from social interactions, and later learn in our social and working life. Learning is a continuous interaction process between the content (what we learn), the incentive (why we learn) and the social interaction process between the individual and the environment (see § 5.4). This indicates that learning does not solely depends on a single individual. On the contrary, according to Illeris (2007) “learning is always embedded in a social and societal context that provides impulses and sets frames for what we can learn and how we learn”. The basic assumption of learning is that it implies some sort of cognitive and/or behavioural change. Hence, enduring change implies a learning process that consist of certain activities that generate (new) knowledge i.e. newly created knowledge facilitates change and implies learning.

In this research, learning is seen as a dynamic process consisting of a string of learning activities that generate (new) knowledge. Learning is therefore also (un)consciously present in the urban area development process, because it is a collaborative development process in which numerous actors and disciplines actively learn, create, acquire, and share knowledge in order to develop and realise a spatial development project. Constant social interaction is present between the involved actors and the context of the urban area development, whether it concerns policies, development strategies, contracts, building programs, spatial quality, surrounding conditions, citizens participation etc.. Put differently, learning occurs between the involved actors and the environment, in which contextual conditions, such as strategic, economic, political, societal, and social developments frame the learning process. Hence, urban area development can be seen as a continuous collaborative and knowledge-intensive learning process. Whereas, learning (the process) produces new knowledge (the content) and impacts the decision-making process and quality of the spatial development project. Consequently, learning and knowledge are intertwined in an iterative, mutually reinforcing process; while learning produces new knowledge and where knowledge also influence future learning (Vera & Crossan 2003). Whereas, knowledge is framed by individual experiences, values, beliefs, context, and social interactions.

1.2 Problem analysis

In today’s knowledge and information-led society, concepts like ‘lifelong learning and knowledge’ have become popular in relation to both the formation and implementation of policies and strategies in different highly specialised practices, including those around the planning and realisation of spatial development projects. Hence, it is no surprise that the concepts of ‘learning and knowledge’ have also penetrated the Dutch debate around urban area development. The bottlenecks that have occurred in this field as a result of the international credit crunch and economic crisis have fuelled this debate. Slowly but surely, public and private actors are becoming aware of the fact that the field of urban area development is going through some dramatic changes and that new strategies need to be generated in order to achieve results. It is safe to say that learning processes will play a (more) dominant role in the generation and implementation of such strategies.
In recent years, urban area development has become a new game, with new players, and with new rules and can only be improved if new competences and skills are developed. Learning and knowledge can therefore be seen as valuable activities in the urban area development process. Hence, the overarching purpose of this master thesis is focused on the role of learning within urban area development with special attention towards the planning process of master plans, because an addition or alteration to the master plan implies that the development company has decided to change some parts of the master plan that were previously planned, which in this research implies a learning process.

From a learning perspective, urban area development is seen as a collaborative and knowledge-intensive process of interaction, where relevant knowledge is created, acquired, and shared early on in the development process, and where progressive insights lead to a ‘better’ formulated content of urban area development plans and projects. In this research, learning is seen as a process in which learning activities produce new knowledge (the content) and ultimately leads to changes in the master plans i.e. learning leads to changes in the established urban framework. In practice, the awareness that urban area development can be seen as a collaborative and knowledge-intensive learning process seems relatively low. This needs to change, because the world is constantly changing; new ideas, approaches, strategies, and policies rapidly emerge. New problems arise and new solutions are sought. What this means is that we constantly need to learn and share our knowledge to achieve results. Moreover, awareness of the learning process leads to opportunities in the development process, because knowledge means power, which leads to beneficial innovations and changes regarding the quality of the content and process of a spatial development project.

Literature indicates that learning and knowledge are valuable activities on an individual, group, and organisational level (Wenger 1999; Illeris 2007; Nonaka 1994; Dierkes et al., 2001). This also applies for the urban area development process. Hence, research is necessary to indicate if there is a learning process present in urban area development projects and if learning activities affect the changes in master plans.

But what is learning and how can we stimulate learning in a project organisation and what kind of influence has learning on the content and process of an urban area development project? Besides, how can knowledge be created, acquired, shared, and used during and in future urban area development projects? Learning and knowledge are underexposed topics in the field of urban area development and therefore the two central issues in this graduation research.

1.2.1 Problem statement

In response to the problem analysis the following problem statement is articulated:

The active challenge of this research is to get a profound understanding of the learning process and its learning activities that produce (new) knowledge and to what extent these learning activities influence the changes in the master plans. It seems that through learning relevant knowledge is created, acquired, and shared early on in the development process, which leads to progressive insights, innovations, and changes that effects the quality of the development and planning process. But is learning the only reason why spatial plans evolve?

By means of a literature review and a case study analysis, the learning process within the urban area development project HafenCity Hamburg is made tangible in order to provide recommendations about learning and their impacts on the master plan development.

1.3 Research objectives

The objective of this research is more than just answering the stated research question in the next paragraph. This research is curiosity driven and explores the underexposed concepts of ‘learning and knowledge’ within the field of urban area development and can be classified as a highly theoretical and fundamental research. Hence, the first objective of this research is to make the learning process in an urban area development project (more) tangible in order to provide a profound understanding about the influence of learning and knowledge in the urban area development process leading to knowledge enrichment of the field. The second objective is to explore the concepts of ‘learning and knowledge’ within the urban development process in order to make an inspiring and innovative academic contribution regarding the professionalisation of the field.
The third objective is to provide progressive insights and useful recommendations regarding learning and knowledge in urban area development projects. Finally, the fourth objective of this research is to provide a theoretical framework for future research concerning learning within urban area development.

1.4 Research questions

Questions immediately arise when the concepts of ‘learning and knowledge’ are mentioned. For instance, what is learning, how does the learning process works, are there different types of learning, are there learning barriers? Besides, what is knowledge, how can it be created, acquired, and shared? But most of all how does learning and knowledge influence the development and planning process of a spatial development project?

1.4.1 Main research questions

In order to achieve the research objectives, one main research question is formulated, which is consequently decomposed into three detailed research questions. Assuming that there is a learning process present in the urban area development project HafenCity Hamburg, the following main research question is articulated:

Which learning activities can be identified in the development process of HafenCity Hamburg and to what extent have these learning activities affected the changes in the project’s master plans and projects?

1.4.2 Detailed research questions

1. Which learning activities are deployed in the development process of HafenCity Hamburg?
2. Which changes are present in the project’s master plan development and projects?
3. To what extent can the indicated changes in the master plans be related to the identified learning activities?

This research consults and builds upon four theoretical domains to answer these detailed research questions: theories dealing with urban area development, theories dealing with learning, theories dealing with knowledge, and theories about critical discourse analyses in order to interpret the changes in the master plans that can be indicated as learning.

1.4.3 Clarification of definitions

In our everyday life we are rarely concerned about the meaning of definitions we constantly use. An intuitive and comprehensive idea of the meaning of a definition is usually more than enough for a conversation. However, not clearly defined definitions can lead to confusion and ambiguity in this graduation research. Hence, the important definitions of the terms used in this graduation research and in the research questions are articulated below of which some are based on the literature review discussed in the chapters 3,4 and 5.

HafenCity Hamburg is a waterfront redevelopment project in Hamburg, Germany. It is the largest redevelopment project in Europe at this moment and comprises an integrated development framework of housing, offices, leisure, and retail.

Urban area development is a collaborative, long-term, and complex development process of a defined area, in which a physical and functional change occurs and value is created through an integrated approach and cooperation between public and private parties.

Urban area development process, urban area development is often described as a process. This urban area development process is divided into four phases: initiatory, planning, realisation and maintenance phase. In appendix A an overview of the urban area development process can be found.

Learning process, is seen as a dynamic process in which learning activities generate (new) knowledge. Learning is not something that is only related to individuals it also concerns groups of people and their social interaction and participation with the society. Learning here refers to the collaborative process of generating knowledge that leads to certain actions during the development and planning process.
Master plan development, the master plan development takes place in the planning phase of the urban area development process and consist of creating urban planning structures, building programs, and phasing for the entire urban area development project.

Discourse, generally refers to written or spoken communication attached to any given social practice. Here, the planning discourse of the master plan development is discussed to indicate if a learning process is present and if the learning activities affected the changes in the master plans.

1.5 Relevance

The relevance of this research is expressed in societal and scientific relevance and is articulated below.

1.5.1 Societal relevance

The (public) attention for the relatively new field of urban area development is growing. At the moment, both public and private parties, who are involved in the urban area development process, are aware of the fact that the field is highly susceptible to change. Whereas, urban area development has become a new game, with new players, and with new rules as a result of the international credit crunch and economic crisis. New ideas, approaches, strategies, and policies rapidly emerge, while new problems arise and new solutions are sought. What this means is that we constantly need to learn and create, acquire, and share knowledge to achieve results. Which means that the concepts of ‘learning and knowledge’ can be regarded as valuable activities in the urban area development process to improve the quality of spatial development projects, both content and process-wise. It is of societal relevance that the concepts of ‘learning and knowledge’ are explored in order to improve the content and process of urban area development projects. This probably will lead, for instance to a more accurate balance between the demand and supply of real estate, innovative solutions, shorter development time frames, enhancement of the decision-making process etc.. A remark in this context is necessary, because there are other factors that can contribute to the improvement of the content and process of urban area development projects. However, in this case learning and knowledge are the central issues under investigation. It can be concluded that the society in general, the profession, and all actors involved in the development process can benefit from the outcomes of this research.

1.5.2 Scientific relevance

Extensive research has been done by scholars and observers from various disciplines, such as sociology, psychology, economics, and management regarding the concepts of ‘learning and knowledge’. However, as of this day it seems that no academic studies have addressed the learning processes within urban area development. Making the learning process more tangible and describing the impacts of learning on the development and planning process will deliver new material that fuels the Dutch debate concerning the improvement of the field of urban area development.
1.6 Reader’s guide

In this introductory chapter an outline of the research is presented by introducing the concepts of ‘learning and knowledge’. Subsequently, the problem analysis and the formulated problem statement were discussed. Next, the research objectives and the research questions were formulated. Besides, the relevance of this master thesis is explained on societal and scientific grounds.

Figure 1.1 provides a schematic overview of the chapters in this master thesis. The first chapter is dedicated to introducing the research topics learning and knowledge. In the second chapter, the research methodology and the operationalisation of the learning process are discussed. The third chapter is devoted to the literature review about urban area development and how learning is present in this development process. Besides, the phenomenon of waterfront development is discussed, because HafenCity Hamburg is a waterfront development project and waterfront development projects are characterised by their learning process (one of the reason for choosing the HafenCity Hamburg project as a case study). The fourth chapter explains what knowledge is and how it is linked to the learning activities in this research. Chapter five discusses the learning theory including the definition of learning, the difference between individual, collaborative, and collective learning, the learning process and its dimensions, the course of learning, and the learning barriers. Chapter six provides a conceptual model formulated as a result of the literature review about urban area development, learning, and knowledge. Chapters seven, eight, and nine are devoted to the case study analysis about HafenCity Hamburg including an introduction about the waterfront redevelopment project HafenCity Hamburg, the learning activities, and the master plan analysis. The chapter 10 is devoted to answering the research question and gives recommendations about learning and knowledge within urban area development. The final chapter of this master thesis gives a reflection on the followed research process, research methods, and reflects upon the societal and scientific contributions of this research.

It can be stated that this research has essentially been a learning process, exploring the methods and concepts of ‘learning and knowledge’ within urban area development. While this process continues, the purpose of this research is an exploratory research and presents what is learned so far.

Figure 1.1 Schematic overview chapters in this master thesis
2. Research methodology

“If we knew what it was we were doing, it would not be called research, would it?”

(Albert Einstein)

Studying the learning process and learning activities within urban area development in a meaningful way involves both theoretical and methodological challenges. First, it is difficult to define and capture what the meaning of learning in urban area development is. Second, it is difficult to empirically investigate the learning process and learning activities, since a substantial part of the learning process is cognitive in nature and therefore implicit. Most of the time learning occurs outside the realm of conscious control or intentionality (Epstein 2001; Polanyi 1966). Hence, usually no outward or visible observable signs exist showing that learning has taken place. Consequently, it is hard to determine if learning takes place and what influence it has on the planning process and realisation of spatial development projects. Additionally, numerous features of the urban development process can influence the content of the development and planning process including political, social, and economic domination and the amount of power the involved actors have. Nevertheless, this research is focusing on the contribution of learning within the urban development process with a special focus on the learning activities that influenced the planning process of the master plan development. These difficulties underline the need for methodological guidelines that enable the empirical analysis of the learning process in HafenCity Hamburg. In this chapter the research methodology is described by first explaining the research process of this graduation research. Subsequently, the used research methods are described, which includes an extensive literature review about urban area development, waterfront developments, knowledge, and learning in order to provide an analytic framework for the empirical research. In addition, a case study analysis is used to empirically investigate the learning process in its real-life context. Next, the research tactics are discussed in order to acquire relevant data supporting this research. Furthermore, the critical discourse analysis is discussed which is used as a tool to operationalise the learning process. Finally, a research design is presented, which functions as the outline of this report.

2.1 Research process

The research process can be both regarded as a linear and an iterative process. At first it seems that there is a linear process in which the research activities are ordered in a logical and consecutive process (figure 2.1). However, the research process is much more iterative, which means that there is a constant cyclic movement between the various research activities in order to achieve the intended end result. In this case the iterative process takes place between the theoretical framework (literature review), the empirical research, and the research findings. According to Verschuren & Doorewaard (2000), an iterative process can be described as “an on-going process of reflection and adjustments of the results until no significant changes occur in the results”.

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2.2 Research methods: literature review and case study approach

Research methods can be seen as the instruments through which the data is collected and analysed. Due to the iterative character of the research process a dynamic and cyclical research process occurs in which various research methods are used. In this research, theoretical and empirical research is conducted in order to answer the research questions. The research methods include a literature review and a case study research.

2.2.1 Literature review

The literature review is used to obtain a profound understanding of the research topics: urban area development and waterfront development in particularly, knowledge, and learning. The outcomes of the literature review are captured in an analytic frame, which functions as a framework to collect the data during the empirical inquiry. The literature review varies in diversity and depth, from national to international books, articles, graduation thesis’s, reports, and magazines.

2.2.2 Case study research

According to Yin (1984) "a case study research is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used". Besides, a case study research allows the exploration and understanding of complex issues and can be considered as a robust research method particularly when a holistic, in-depth investigation is required (Zainal 2007). Throughout a case study method an understanding of the behavioural conditions through the actor’s perspective are obtained (Zainal 2007). By including qualitative data, a case study helps explaining the process and the outcome of a phenomenon through complete observation, reconstruction, and analysis of the cases under investigation (Tellis 1997).

In this research, the case study allows an exploration in regard to the learning process present in HafenCity Hamburg. It provides a deeper understanding of the learning process in which changes through the actor’s perspective are obtained in order to make the learning process (more) tangible. Here, the learning process is made explicit by analysing the changes in the master plans, because changes in the master plans imply a learning process. The case study gives an adequate rendering of the followed development process and the changes present in the discourse of the planning process and the master plan development. Due to the importance of the case study a comprehensive explanation of the selected case study along with the criteria is given in the next subparagraph.

2.2.2.1 Case study selection

Noted by Swanborn (2000), a case study research is characterised by an intensive or extensive approach to a social phenomenon. The extensive approach is a case study research where the relation between various variables is researched throughout several cases. Intensive case study research mainly focuses on one case in which various relations within the case are researched. Hence, extensive research has a wide research character and intensive research has a more in-depth research character.
In this research, an intensive case study research method is opted, mainly because the research has an exploratory character in which first the learning process has to be identified and second must be made tangible. An intensive case study approach is selected to obtain a profound understanding of the learning process and how learning activities influence the changes in the master plan development. In addition, an extensive case study approach would not be possible given the time, resources, the complexity, and the exploratory character of this research.

In the mid-1960’s the phenomenon of waterfront developments emerged and started with the first waterfront development project of the Baltimore’s Inner Harbour. Ever since, waterfront development projects have spread over the world. The process of transformation and redevelopment of waterfronts is characterised by a learning process (see §3.2). It is therefore interesting to select a recent waterfront development project to investigate if a learning process is present in the development project and if they also have learned from other waterfront development projects. The selecting criteria for the case study are based on pragmatic and substantive grounds. The pragmatic and substantive selection criteria are:

• The case should be within Europe due to time, budget, and the possibility to visit;
• The case should concern a waterfront development project with several adjusted master plans, and
• The case should have enough available information, resources, and there must be a willingness to cooperate.

The selected case study is the waterfront redevelopment project HafenCity Hamburg. This development project meets all three criteria, but most interesting is that the regeneration of the waterfront area in Hamburg started rather late and led to a more carefully planned project were lessons learned from the past and from other waterfront redevelopments are incorporated in the development and planning process. Besides, some parts of the development are completed and other parts are still under construction, it has three revised master plans, it is well documented, the availability of information is adequate, it is within distance, time and budget, and cooperation is possible.

2.3 Research tactics: observation, interviews, and documents

Qualitative research tactics are used for the collection of data. According to Denzin & Lincoln (2000), “qualitative research is a situated activity that locates the observer in the world. It consists of a set of interpretive, material practices that makes the world visible. These practices turn the world into a series of representations including field notes, interviews, conversations, photographs, recordings and memos”. There is a fairly wide consensus that qualitative research is a naturalistic and interpretative approach concerned with understanding the meanings which people attach to phenomena (actions, decisions, belief, values) within their social world (Ritchie & Lewis 2003). Qualitative research is furthermore a description of experiences, behaviours and preferences (Voordt 2010) and is a systematic approach to find deeper understanding and meaning about the subject (Oel 2010).

In order to obtain relevant information, the following qualitative research tactics are used: observation, interviews, and documents. By personally observing the development site in Hamburg by means of a study trip, relevant data is obtained and the real-life context of the spatial development is observed. Besides, a guided tour is arranged to get familiar with the project and to obtain useful data. By means of interviews with experts, data is collected about attitudes, opinions, thoughts, feelings, and knowledge about the learning processes within HafenCity Hamburg. Most important questions of the interview are, if the development company is aware of a learning process, how they manage changes in the master plan, what the successes and failures in regard to the planning process were etc.. The interview is a structured and orally conducted interview with structured open questions to obtain as much in-depth information as possible. In addition, an extensive and in-depth study of documents is conducted to obtain as much information as possible in regard to the development process, planning process, and the master plans. Studied documents are the three available master plans, articles, news articles, and research papers in regard to the development and planning process of HafenCity Hamburg.
2.4 Operationalisation of learning: discourse analysis

Across social sciences, a critical discourse analysis is used in a variety of ways and is often strongly influenced by the work of Michel Foucault (Fairclough 2003). The roots of critical discourse analysis lie in classical Rhetoric, Text-linguistics and Socio-linguistics, as well as in Applied Linguistics and Pragmatics. The notions of ideology, power, hierarchy, gender, and sociological variables are all seen as relevant for an interpretation or explanation of text (Weiss & Wodak 2003). A critical discourse analysis is an interdisciplinary approach to the study of discourse that regards language as a form of social practice and particularly focusses on the relationship between language and power and the way social and political domination are visible in writing and speech.

The term ‘discourse’ is basically a way of speaking about the reality in a coherent set of assumptions about that reality. A discourse refers to meanings, metaphors, representations, images, stories, statements etc., which together form a particular version of a certain event. It is a way of representing the reality, where language and texts have a strong influence on how the created reality is perceived and how power is distributed. Here, the term ‘discourse’ generally refers to written and spoken communication in which communication is seen very broadly in the form of written and spoken text as well as visual images. According to Fairclough (2003), discourse signals also the particular view of language in use as an element of social life, which is closely interconnected with other elements. Elements of social events in texts have a causal effect i.e. they bring changes. Most immediately, texts can bring about changes in our knowledge (learning), our beliefs, our attitudes, values etc.. Longer-term causal effects, for instance are the prolonged experience of advertisement and other commercial texts contributes to shaping people’s identities as ‘consumers’, or their gender identities. Texts can also start wars, or contribute to changes in education, or to changes in industrial relations etc.. Their effects can include changes in the material world, such as changes in urban design, or architecture, and design of particular types of buildings. In sum, texts have causal effects upon, and contribute to changes in, people (beliefs, attitudes, etc.), actions, social relations, and the material world.

Hence, to operationalise the learning process in HafenCity Hamburg a critical discourse analysis is used. Discourse analysis, is increasingly seen as a useful approach to understanding a range of issues in spatial planning: power, knowledge, ideology, persuasion, social difference, and institutional framing (Maccallum & Hopkins 2011). Plans are among the most durable products of spatial planning, and as such offer a revealing window into the worlds of planners and developers. The texts in regard to the planning process (policy documents, spatial plans, press releases) describe events and conditions and is providing snapshots of discourses and practices over time in which critical discourse in particular is useful to study social change.

However, there is no blueprint for conducting a critical discourse analysis. It depends on the type of research and the questions that are asked. In this research the critical discourse analysis is used as a tool to interpret the learning process in HafenCity Hamburg. First of all, it is important to look at the frame of the entire spatial development project and how the project portraits itself to the world. The frame of the spatial development is shaped through texts, metaphors, representations, images, stories, statements etc.. The created frame can affect certain changes in the urban design. In other words, how something is presented (framed) influences the choices people make and is an extension of the agenda setting theory. Next, by analysing the discourse of the master plans, the changes in the master plans that imply learning are explained. This means that the planning discourse of the master plans (2000, 2006 & 2010) and the changes are analysed by means of a critical discourse analysis.

2.5 Research design

The entire research process can be divided in several phases, which are translated into a research design. The research design is a structural, schematic and visual representation of the steps that need to be taken in order to answer the main research question and to reach the intended end result (Verschuren & Doorewaard 2000). Each phase within the research design has its own goals, objectives, and research methods. Figure 2.2 provides a schematic overview of the research design.
2.5.1 Part I: Introduction and analysis
The first part of the research design includes an introduction and a short analysis about learning and knowledge. Besides, the problem analysis and the problem statement are formulated and subsequently the research questions are discussed. In addition, the research methodology is explained concerning the methods, tactics, and operationalisation of the learning process.

2.5.2 Part II: Theoretical framework (literature review)
The second part of the research design consists of a theoretical framework that functions as the theoretical foundation of this master thesis. The theoretical framework includes a literature review in which a collection of interrelated concepts are explored, such as urban area development, waterfront development, knowledge, and learning. The result of the literature review is an analytic framework that is used during the empirical inquiry. Besides, a conceptual model is produced in which the relationship between urban area development, learning, and knowledge is explained.

2.5.3 Part III: Empirical research (case study research)
This part of the research design includes the empirical inquiry in regard to the learning process and learning activities deployed in HafenCity Hamburg. The development company, the urban development process, the planning process, the development strategies, and the master plans are analysed to indicate if a learning process is present in HafenCity Hamburg and how the learning activities impacted the changes in the master plans. The end product of the empirical research is an inventory of all the data necessary to answer the main and detailed research questions.

2.5.4 Part IV: Conclusions and recommendations
The final part of the research design includes final conclusions in regard to learning and knowledge within urban area development, answering the research questions, gives recommendations, and ends with a reflection on the followed research process, research methods, and societal and scientific contributions.
The active challenge is to get a profound understanding of the learning process and its learning activities that produce (new) knowledge.

Urban area development
Learning
Knowledge

Analytic framework & conceptual model

Urban area development
Learning activities
Master plan analysis

Process
Content
Context
Content
Knowledge creation
Knowledge acquisition
Knowledge sharing

Changes
Cumulative learning
Assimilative learning
Accommodative learning
Transformative learning

Discourse
Strategic
Political
Social

Final conclusion, answering research question, recommendations, reflection on research process

Figure 2.2 Research design
3. Urban area development

Thousands of people with various disciplines and knowledge specialisations are daily involved in the urban area development process. Hence, the urban area development process can be seen as a knowledge-intensive process in which the involved actors collaborative learn and gather knowledge through social interaction and participation. From a learning perspective this means that creating and mobilising knowledge early on in the development process leads to (new) progressive insights which results in a ‘better’ content and process of urban area development projects. In practice, the awareness that the urban area development process can be seen as a learning process is relatively low. However, being aware of the learning process in urban area development projects is essential, because the world is constantly changing. The need to learn and share knowledge becomes (more) dominant in the generation and implementation of development strategies. To link the urban area development process with learning and knowledge, a basic understanding of what urban area development embodies is required. Therefore, this chapter briefly discusses the origin and definition of urban area development, how learning is associated with urban area development, how the urban area development process is managed, and ends with an analytic framework for analysing the development process in HafenCity Hamburg. Since the case study involves a waterfront development project, the origin, the port-city interface, the transformation process, and the lessons learned in waterfront development projects are briefly discussed in order to provide background information about the challenges of those types of development projects.

3.1 Urban area development

3.1.1 Origin

In the Dutch spatial planning practice a collaborative process between public and private parties were a collection of aspirations, interests, parties, disciplines, and cash flows come together to (re)develop an area is called ‘gebiedsontwikkeling’. The most accurate translation in jargon is ‘urban area development’. As the term indicates it most neutrally refers to spatial development projects of various geographical sizes, both in and outside existing urban territories (Daamen 2010) in which the context, content, actors, and the availability of financial means are leading in the urban area development process. Urban area development was originated by enlarging the scope of a project, called ‘scoping’, in a way that the public land development costs were compensated by land transaction revenues paid by private parties (Daamen 2010). This neoliberal shift in the European planning system is increasingly associated with the term urban area development and has strong similarities in the Dutch spatial planning practice with ‘ontwikkelingsplanologie’ in which the hierarchical designation of land uses by governmental bodies made way for a more entrepreneurial development approach (Daamen 2010). After the turn of the century, urban area development became a ‘instrument’ or ‘way of working’ in which the focus is on the alignment of public and private interests integrated in planning activities and spatial investments that lead to the development of an area. Where not only spatial development is the primary goal, but where also social values are pursued.

“The art of simplicity is a puzzle of complexity.”

(Doug Horton)
Hence, the term urban area development refers to a collaboration ambition between public and private parties to develop an area and create added value. In most cases this collaboration is realised throughout public-private partnerships.

### 3.1.2 Definition urban area development

Providing a comprehensive and generally acceptable definition of urban area development is difficult, because in practice, it seems that the term is still in the making (Rooy 2009). Recent literature shows that from all the various definitions, descriptions, and explanations there are some common features that describe urban area development (Bakker 2005; Daamen 2005; Pleijte 2008; Verlaat & Wigmans 2010a; Zeeuw 2007):

- The goal of urban area development is a physical and/or functional change of a defined area;
- The content of urban area development focuses on creating spatial constellations wherein various functions, such as infrastructure, residential, businesses, and recreation can develop in harmony;
- Urban area development involves various actors and disciplines from the public as well as from the private sector, each with different interests, and
- It is a complex, integrated, and long-term process.

It is evident from these common features that urban area development is a collaborative and complex process of social interaction in which individual and collective knowledge is needed and shared in order to create large-scale spatial development projects. It can be expressed that an urban area development process is seen as a network, a project organisation, or a group of people that share the same passion: the development of an area. This network of actors emerges out of a necessity to interact and are, on the one hand, consciously planned in the sense that actors deliberately interact and attempt to structure these interactions with organisations and rules, but on the other hand, are also unplanned as a result of coincidental interactions and strategies and previously created rules (Klijn, Steijn & Edelenbos 2010). In other words, in the perspective of learning, the urban area development process is seen as a knowledge-intensive process where actors learn through social interaction with each other and the environment. Put differently, due to the multiplicity of actors and disciplines involved in the development process each of the actors brings and shares its own expertise, knowledge, perspectives, and experience (implicit or explicit) in order to contribute to the content and/or process of a spatial development project. However, learning and creating knowledge mostly occurs outside the conscious realm of human beings and is therefore implicit in nature.

At present, most urban area development projects have an integral character where different features from various disciplines are combined into a coherent program, such as infrastructure, housing, offices, leisure, nature, water, and recreation. This integral approach is necessary, because of the complexity of the process and an urban area development project does not only concerns the spatial development, it also transgresses on a political, economic, and social level (Verlaat & Wigmans 2010a). Hence, this integral character of urban area development stresses the importance that learning and creating, acquiring, and sharing knowledge are essential and valuable assets towards achieving a satisfactory spatial project.

In the context of learning the following working definition of urban area development is articulated in this master thesis:

> *Urban area development is understood as a collaborative, knowledge-intensive learning process in which learning through social interaction and participation in the development process leads to new progressive insights that influences both the development process and content of spatial development projects*
3.1.3 Management process of urban area development

In general, urban area development has become increasingly complex in recent years due to the multiplicity of actors and disciplines involved and the complexity of political, economic, and social developments (Verlaat & Wigmans 2010a). Consequently, an increasing number of procedures needs to be followed during the urban area development process. Moreover, an important fact is that urban area development nowadays progressively relates to the redevelopment of existing urban areas, which are far more complex than 'traditional' developments, where previously agrarian areas were transformed into urban areas (Verlaat & Wigmans 2010a). This is also the case with HafenCity Hamburg, it concerns both the regeneration of the city centre and is at the same time a waterfront redevelopment project with its own challenges.

Many complex decision-making processes take place on content and process level in urban area development projects. Management theories and principles about steering the content and process of an spatial development project have no authoritative theoretical framework in the academic literature. Management theories and principles regarding urban area development are therefore derived from process management and project management theories. Process management is originated from the public administration literature and focuses on the interaction between actors within a wide range of transformation processes (Bekkering et al., 2001; De Bruijn et al., 2002; Edelenbosch 2000; Klijn et al., 2000; Teisman 2001). In recent years, research has been done within the field of process management concentrating on spatial developments. The result is that a content-process oriented way of working is recommended due to the complexity, the many actors involved, and the long-term process. This content-process oriented way of working means that content experts need to be involved in the urban area development process and that a variety of possible problem definitions and solutions need to be generated. De Bruijn et al., (2004) claims that the content-process oriented approach enhances the change on learning and that 'better’ substantive solutions to the complex spatial developments will be increased. Thus, process management is more orientated towards steering substantiation, involvement, and support for the spatial development and supervises the decision-making process, whereas project management involves the application of knowledge, skills, competences, tools, and techniques to steer the content of a spatial development by focussing on money, organisation, time, information, and quality aspects of the spatial development. Both process and project management are essential for managing urban area development projects.

3.1.4 Analytic framework

An analysis of the development process of HafenCity Hamburg is essential to understand the conditions and the urban development frame in which the development company operates in. Besides, in order to make the learning process with its accompanying learning activities and changes visible it is important to understand the different mechanisms between context, content, actors, financial means, and the management of the entire development process of HafenCity Hamburg. Figure 3.1 illustrates the four components of the urban area development process along with the management component which will be analysed during the empirical inquiry.

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Figure 3.1 Ingredients of the urban area development process
Source: own editing Verlaat & Wigmans 2010a
According to Verlaat & Wigmans (2010a), the contents of urban area development is mainly determined by spatial, social, political, economic, and policy developments (context). In which the content is integral part of the development process along with other process ingredients. Besides the content, the involved actors with their different governance levels, perspectives, interests, core competencies, knowledge specialisations, values, and powers have an influence on the development process along with the financial means to realise the desired spatial development.

The result of each literature review in this master thesis is an analytic framework in order to collect data during the case study analysis. The features that are investigated in regard to the urban area development process are the context, content, actors, financial means, and the management of the entire urban area development of HafenCity Hamburg. Figure 3.2 illustrates the entire analytic framework in which the frame for the urban area development process is highlighted.

**3.2 Waterfront development**

Waterfront developments seem to travel to port cities around the globe. In each city the challenges of waterfront development projects become progressively visible and with each completed waterfront development project lessons could be drawn and incorporated into the next waterfront development. Renowned are the waterfront developments of Bilbao and Barcelona or controversial ones like Canary Wharf in London. More recent waterfront developments of which some completed, some under construction, or some even in the planning phase are Stockholm Waterfront (Stockholm), HafenCity Hamburg (Hamburg), Stadshavens Rotterdam (Rotterdam), and The Thames Gateway (London).

Breen & Rigby (1994) concluded that waterfront development projects can be regarded as ‘worldwide urban success stories’ turning old and underused waterfronts into attractive urban locations with symbolic architecture and high quality urban designs. The economic and cultural successes of the first waterfront developments were repeated in many place. Nevertheless, there is also a downside, most of the waterfront development projects failed to solve the wider port city problems and neglected the social and cultural sides of these projects. Hence, we learned that the immaterial dimensions of waterfront development projects are likely to stay underexposed (Daamen 2010). Hence, the case study in this research also involves a waterfront development project in a major port city, therefore the course of waterfront development projects are briefly explored in the next subparagraphs.

**3.2.1 Port-city interface**

Urban waterfronts have historically played a crucial role in the processes of urbanisation in port cities around the world; whether viewed from the perspective of the growth of the built environment, the economy or socio-cultural systems and institutions. Many coastal and human settlements owe their origin and prosperity to water transport and trade. From ancient time until recent decades, such urban settlements and their ports were normally intimately related in both functional and spatial terms (Hoyle & Pinder 1992b). Changes in maritime transport and spatial dimensions of port infrastructures influenced the port-city interface dramatically.
Whereas the port was formerly known as a spot of commodities, the modern port evolved to a horizontal cross-
section of different product chains (Merckx, Notteboom & Winkelmans n.d.). Due to these trends, the port-
city interface evolved. Although every port has its own characteristics (geographical, political, economical, and
technological), Hoyle (1998) generalised the different stages in the port-city interface as indicated in table 3.1. For most medieval port cities in Europe (London, Antwerp, Rotterdam, Genoa, Naples, Marseille, etc.) the evolution of the port-city interface to a large extent follows the model of Hoyle.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Symbol</th>
<th>Period</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primitive port/city</td>
<td></td>
<td>Ancient/medieval</td>
<td>Close spatial and functional association between city and port</td>
</tr>
<tr>
<td>Expanding port/city</td>
<td></td>
<td>19th - early 20th century</td>
<td>Rapid commercial/industrial growth forces port to develop beyond city confines, with linear quays and break-bulk industries</td>
</tr>
<tr>
<td>Modern industrial port/city</td>
<td></td>
<td>mid - 20th century</td>
<td>Industrial growth (especially oil refining) and introduction of containers/ro-ro require separation/space</td>
</tr>
<tr>
<td>Retreat from the waterfront</td>
<td></td>
<td>1960s - 1980s</td>
<td>Changes in maritime technology induce growth of separate maritime industrial development areas</td>
</tr>
<tr>
<td>Redevelopment of waterfront</td>
<td></td>
<td>1970s - 1990s</td>
<td>Large-scale modern port consumes large areas of land/water space: urban renewal of original core</td>
</tr>
<tr>
<td>Renewal of port/city links</td>
<td></td>
<td>1980 - 2000+</td>
<td>Globalisation and inter-modalism transform port roles; port-city associations renewed; urban redevelopment enhances port-city integration.</td>
</tr>
</tbody>
</table>

Table 3.1 Different stages in the traditional port-city interface

Source: Hoyle 1998

The gradual separation of port facilities from the city has resulted in the abandonment of the docklands close to the city-centre. The most efficient and effective response to the evolution of the relationship between city and ports was through waterfront redevelopment. According to Hall (1993), the progressive abandonment of docklands by port activities started in the 1950s in America and happened all over the world in the following two decades. Hall (1993) relates this process to four economic factors:

- Progressive freight containerisation and the consequent migration of ports to more spacious extra-
  urban sites;
- The rapid decline in passenger traffic after the arrival of the first generation of transcontinental airplanes in the late 1950s;
- The dramatic increase in taker-size from the 1950s onwards, which put a premium on deep water locations, and
- An increase in the use of ro-ro ships (roll on - roll off ships), which concentrated on traffic locations with good access to national roads and rail networks.

According to Hoyle (1988), almost simultaneously a process of deindustrialization of urban port areas took place. The gradual retreat from the waterfront opened up opportunities for the re-use of prime locations in the inner city that could accommodate housing, offices, retail, and leisure. In most cases the success of the waterfront developments was linked with the change from an industrial economy to a service-based economy (Minca 1995).

Since 1970, waterfront developments are an international known phenomenon, which started with the most notably urban redevelopment of Baltimore’s Inner Harbour in North America. They converted old and underused waterfront property into an economically viable location. Gradually the urban waterfront development spread to Europe and elsewhere since the 1980s (Gospodina 2001).
The last decades the waterfront development phenomenon intensified. The new wave of waterfront developments that has recently emerged, such as the waterfront development project of Hafencity Hamburg, have become vital sites of promise for cities seeking economic growth and socio-cultural development in the post-industrial period (Desfor & Laidley 2011). According to Desfor & Laidley (2011), policy makers, planners, and developers around the world are looking to waterfronts as locations for massive investments that can potentially elevate particular metropolitan regions within globalised urban hierarchies and concurrently reconstitute or create new forms of social interaction in dislocated or disused central city locations. Waterfront development projects have been hailed both as spaces of promise and as crucial territorial wedges in the twenty-first-century competitive growth strategies.

3.2.2 The process of transformation and (re)development of waterfronts

The term ‘revitalisation’ of port and waterfront has different meanings attached to diverse processes and planning directions. Urban planners are concentrating on changing former ports into locations for housing, offices, tourism, leisure, and service, whereas port planners focus on internal port development, such as the relocation of container terminals. The term revitalisation of port and waterfront has no decisive definition, however it entails the complex process of change use, rejuvenation and regeneration, redesign and remodelling at the intersection of diverse interests that are connected at the interface of the city and the port (Schubert 2011). The organising capacity between spatial quality, market, and means along with the influences of the context and creating support is very difficult in waterfront development projects and forms major challenges. Over the last decades one has learned that waterfront developments are sites of promises. Nevertheless, due to its complexity, involved stakeholders, and the fact that it are attractive development sites, many waterfront developments take more then 20 years to develop and realise.

Waterfront development projects emerged rapidly and a considerably amount of lessons have been learned. The cycle of dereliction, neglect, planning, implementation, and revitalisation of old harbour areas and the necessary construction of new port infrastructures are all influenced by a complex network of actors struggling to promote their interest (Schubert 2011). According to Schubert (2011) there is a historical pattern in waterfront development projects. The first stage is the dereliction and relocation of terminals and port uses. The second stage is the neglect of the derelict areas. In the third stage planning, concepts, and design for former port areas are made and in the fourth stage the implementation and construction of the spatial plans are realised. The fifth stage entails the revitalisation and enhancement of nearby areas. In figure 3.3 the five stages of waterfront development projects are shown.

![Figure 3.3 The five stages in the historical pattern of waterfront development](image)

Generally, all transformations began with the oldest parts of the port focusing on the redevelopment of warehouses and slowly moved to more peripheral areas. Within the historical pattern different generations of waterfronts can be distinguished (Schubert 2011). The first generation of waterfront development projects emerged in the mid-1960s in North America where the underused port areas became apparent. These cities included Baltimore, Boston and San Francisco. A ‘learning by doing’ or ‘project-led’ approach was frequently adopted in these cities (Harvey 1990). The second generation of waterfront projects began in 1980s, when dramatic changes took hold as containerisation technologies began to dominate shipping. The waterfront development projects during that period became larger in scale due to the land available and former port related land was transformed into offices and leisure.
In the beginning of the 1990s, the third generation of waterfront development projects evolved that adopted a new approach, which included participatory planning and integration of the local inhabitants in the planning process. A step-by-step process was followed in which design competitions, mega events, and leisure were integrated in the plan to promote the spatial development. The fourth generation of waterfront development projects is harder to distinguish from the third generation. The shift from small scale project-based to a wider regional perspective on waterfront development is noticeable. Public-private partnerships, professional planning management, and the global competition among waterfront revitalisation projects dominates the fourth generation. The new wave of waterfront redevelopment projects is exploit for city marketing strategies, the global competition between cities, and economical reasons. It can be stated that the waterfront development phenomenon has gone through a learning process expressed in the different waterfront development generations. HafenCity Hamburg can be grouped under the third and fourth generation of waterfront developments, because they were rather late in the redevelopment of their harbour areas, lessons learned from previous waterfront developments are incorporated in the development strategy.

### 3.2.3 Lessons learned from waterfront development projects

Recent research of the Waterfront Communities Project (2012) has indicated several key learning points regarding waterfront development projects. These key learning points can be incorporated in future waterfront development projects that belong to the fourth generation of waterfront development projects. They argue that successful regeneration requires a range of key issues that need to be addressed more or less simultaneously. Recommendations for waterfront regeneration in Europe according to the research of the Waterfront Communities Project (2012) are:

- The quality of an urban vision influences all aspects of waterfront regeneration;
- Moving from vision to a sophisticated development strategy is essential;
- Leadership in public planning and achieving social benefit and private profit is a key challenge;
- Achieving social integration through participation benefits all aspects of the regeneration;
- Public investment in transport and infrastructure is key to unlock economic and social benefits;
- Land ownership can be a critical factor;
- Urban design needs to achieve a ‘paradigm of urban complexity’, and
- Learning through action research approaches.

### 3.3 Summary

It can be stated that urban area development is a relatively new field and has strong similarities in the Dutch spatial planning practice with ‘ontwikkelingsplanologie’ in which the hierarchical designation of land uses by governmental bodies made way for a more entrepreneurial development approach (Daamen 2010). Urban area development can be described as a complex, integrated, and long-term process in which public and private parties work together to develop an area to create added value. From the perspective of learning, urban area development is understood as a collaborative, knowledge-intensive learning process in which learning through social interaction and participation in the development process leads to new progressive insights that influences the development process and content of spatial development projects. Creating, acquiring, and sharing knowledge early on in the development process leads to (new) progressive insights, which stimulates experiments, innovations, and changes. In practice, there is little awareness about the fact that the urban development process can be seen as a learning process. Nevertheless, learning and knowledge are regarded as valuable assets in the literature and therefore also for actors who are involved in the urban area development process. To understand the urban area development process followed in HafenCity Hamburg the five components of the urban area development process are used: context, content, actors, financial means, and management.
Besides, the literature review about urban area development in general, the waterfront redevelopment phenomenon in particular is discussed in this chapter, because the case study research also involves a waterfront redevelopment project. Waterfront redevelopment projects seem to travel around the world and started to emerge in the mid-1960’s in North America. Waterfront redevelopment projects can be regarded as ‘world wide success stories’, but also have a downside. Most of the time the development process takes more than 20 years due to the complexity, involved stakeholders, and the fact that it are attractive development sites. The containerisation of the transport industry and the shift from a industrial-economy towards a more service-based economy triggered the opportunity and need to transform old abandoned harbour areas into attractive spatial developments that most of the time comprises one or more functions, such as housing, offices, retail, and leisure. The waterfront development projects show a learning pattern in which lessons from former waterfront development projects are incorporated in new waterfront development projects. Besides, research has indicated that several key learning points can be incorporated in future waterfront development projects, for instance that the quality of an urban vision influences all aspects of waterfront regenerations, moving from a vision to a sophisticated development strategy is essential, public participation benefits all aspects of waterfront regeneration, and that public investments in transport and infrastructure are key to unlock economic and social benefits.
In all organisations, new knowledge is the lifeblood of experimentation, innovation, and change (Inkpen 1998) whereas (new) knowledge is produced by learning. Learning and knowledge are intertwined in an iterative, mutually reinforcing process: while learning (the process) produces new knowledge (the content), knowledge also impacts future learning (Vera & Crossan 2003). Before being able to understand the way learning is linked with knowledge in a spatial development project, one has to understand what knowledge is. Knowledge is a broad and abstract notion that is described by many scholars, although no clear consensus is reached about what knowledge exactly is. Therefore, the objective of this chapter is not to join this never-ending discourse about knowledge, but to explain only those characteristics of knowledge that have implications for developing the analytic framework for the empirical inquiry about the learning process in HafenCity Hamburg. The literature review about knowledge is used to categorise the learning activities present in HafenCity Hamburg and to indicate which knowledge they generate in the knowledge management process. This chapter first describes the different perspectives on knowledge and how they relate to urban area development. Subsequently, the distinction between data, information, and knowledge is explained. Next, the important distinction between implicit and explicit knowledge is described. In addition, the knowledge management process is discussed, which helps indicating the learning activities present in HafenCity Hamburg. Finally, the analytic framework is presented, which is used during the empirical inquiry.

4.1 Perspectives on knowledge

There are different perspectives on knowledge among scholars and practitioners. The three perspectives mentioned here are relabelled according to Boer (2005) as ‘potential knowledge’, ‘personal knowing’, and ‘social knowing’. The first perspective is that knowledge is perceived as an object and defined as ‘true belief’. Here knowledge is considered to be an integral, self-sufficient substance, and theoretical independent of the situations in which it is learned and used (Brown et al., 1989). In other words, it can be labelled as potential knowledge. The second perspective on knowledge stresses that knowledge is embedded in individuals (Polanyi 1998), whereas only people convert knowledge i.e. ‘the knowing’ into actions and the minds of human beings transform information into knowledge and create new knowledge. Put differently, personal knowing. The third perspective defines knowledge as social knowing in which knowledge resides in a community rather than in one individual. This perspectives is strongly linked with the social learning theory of Lave and Wenger (1991) discussed in the next chapter. All three perspectives on knowledge appear in some sort of way in the urban area development process. For example, the context of a spatial development project generates potential knowledge. Personal knowledge is created among the involved actors by obtaining information and transform the knowledge into certain actions in the development process. Whereas knowledge also can be obtained from a more social perspective of integration and participation, for example through design workshop or citizen participation. Therefore, it can be concluded that learning and knowledge take place on a individual, group, and organisational level, involving both behavioural and cognitive changes (Crossan et al., 1999). However, according to Nonaka & Takeuchi (1995), new knowledge always begins with the individual and expands through social interaction.
4.2 Data, information, and knowledge

One way of defining knowledge is by distinguishing it from data and information. Kock et al., (1997) concur that knowledge, information, and data are closely related. However, a distinction between the three abstract concepts can be made and are hierarchal ordered (figure 4.1). A commonly held view is that data are raw numbers and facts, whereas information is processed data, and knowledge is authenticated information (Boer 2005). The distinction between information and knowledge is not found in their content, structure, accuracy, or utility, but in the fact that knowledge is processed in the minds of individuals. As Davenport & Prusak (1998) describe "knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers". In other words, information is converted to knowledge once it is processed in the minds of human beings. When knowledge is articulated it becomes information once again and is presented in the form of texts, graphics, words, or other symbolic forms. Other scholars define knowledge as follows, Davenport, De Long & Beers (1997) argue that "knowledge is information that has been combined with experience, context, interpretation and reflection". According to Perrott (2007), "knowledge is actionable information". For Bresnen et al., (2003), "knowledge is often tacit, intangible and context-dependent and it is articulated in the changing responsibilities, roles, attitudes and values in the work environment". It can be concluded from these definitions that processing information in the human mind generates knowledge in which experiences, values, beliefs, context, and social interaction play a role in interpreting the information and transform it into knowledge.

As Boersma & Stegwee (1996) indicate, knowledge can be embedded in different entities other than human beings. Besides human knowledge (where knowledge is contained in the heads of the members of an organisation), there is mechanised knowledge (where knowledge necessary to care out a specific task has been incorporated in the hardware of the machine), or documented knowledge (where knowledge has been stored in the form of archives, books, documents, ledgers, instructions, charts, design specifications etc.) and automated knowledge (where knowledge has been stored electronically and can be accessed by computer programs that support specific tasks). In this research, knowledge is one of the key components in order to make the learning process more tangible, because as previous stated knowledge is produced by learning. Therefore, the learning activities present in HafenCity Hamburg which fuel the learning process and generate knowledge are linked with the knowledge management process, discussed in §4.4. In this case documented knowledge and knowledge from human beings are used to identify the learning activities.

Reflecting on the different perspectives of knowledge and the distinction between data, information, and knowledge the working definition of knowledge in this research is expressed as follows.

‘Knowledge is information processed in the mind of human beings combined with experiences, values, beliefs, interpretation, reflection, context, and social interaction. In which knowledge is seen as the content or product of the learning process’

4.3 Implicit and explicit knowledge

Another way to classify knowledge in the knowledge management literature is to make a distinction between implicit and explicit knowledge. Michael Polanyi (1966) was the first to introduce the distinction between implicit (tacit) and explicit knowledge. Whereas implicit knowledge is difficult to transfer to another person by means of writing or verbalising it.
It involves learning and acquiring skills and in knowledge management the concept refers to knowledge that is possessed only by individuals, such as expertise, beliefs, values and practices. Explicit knowledge is rational, factual, and objective and can be expressed in a formal and systematic language and can be shared in the form of data, scientific formulae, specifications, manuals etc..

4.4 Knowledge management process

The field of knowledge management developed quickly over the last decade and academic literature has demonstrated increasing diversity and specialisation (Easterby-Smith & Lyles 2003). This has for instance led to several knowledge management frameworks and knowledge management processes. The academic literature discusses several aspects of the knowledge management process separately and most common aspects mentioned are knowledge creation, knowledge acquisition, knowledge sharing/distribution, knowledge utilisation, and knowledge storage. Each aspect of the knowledge management process has its own theory, frameworks, models, tools etc.. Despite the small differences in labelling the knowledge processes, most scholars identify (a subset of) the knowledge processes depicted in figure 4.2.

In this research three aspects of the knowledge management process are used to analyse, clarify, and categorise the learning activities that occurred in the HafenCity Hamburg development process. These are knowledge creation, knowledge acquisition, and knowledge sharing. The reason for choosing these three aspects is because they relate the most to the development and planning process in a spatial development project in which knowledge is created, acquired, and shared among the involved actors in the beginning of the development process. Another reason for selecting these three aspects is because these aspects have a influence on the content of the master plan and the development process, which are investigated in this research to make the learning process (more) tangible. Despite the fact that only three aspects of the knowledge management process are used during the empirical inquiry, all aspects of the knowledge management process are briefly described in the next subparagraphs.
4.4.1 Knowledge creation

The knowledge spiral of knowledge creation of Nonaka & Takeuchi (1995) differentiates between the learning processes and the learning content (knowledge) and they explain the knowledge creation process by using the distinction between implicit and explicit knowledge. Nonaka & Takeuchi (1995) suggest four basic modes of knowledge creation: socialisation, externalisation, internalisation, and combination and four types of content: sympathised knowledge, conceptual knowledge, operational knowledge, and systemic knowledge (Vera & Crossan 2003). In which Mintzberg et al., (1998) summarises these four modes of knowledge conversion as: “Socialisation describes the implicit sharing of implicit knowledge, often without the use of language - for example, through experience...Externalisation converts implicit knowledge to explicit knowledge, often through the use of metaphors and analysis - special uses of languages. Combination combines and passes formally codified knowledge from one person to another... Internalisation takes explicit knowledge back to the implicit form, as people internalise it, as in ‘learning by doing’. Learning must therefore take place with the body as in the mind". In other words, knowledge creation is the process of forming new ideas and knowledge through interactions between implicit and explicit knowledge via four patterns of socialisation, externalisation, combination, and internalisation (SECI-model). The SECI-model is about continuous transfer, combination, and conversion of the different types of knowledge, as users practice, interact, and learn. It is a continual cycle triggered by actions, such as team interactions, dialogue, metaphors, coordination, documentation, experimentation, and learning by doing etc.. Knowledge creation can be viewed as an upward spiral process from the individual level to the collective group level, and then to the organisational level.

4.4.2 Knowledge acquisition

Knowledge acquisition refers to the knowledge that an organisation tries to obtain from internal and external sources to frame the spatial development project. Sources include employees, suppliers, competitors, partners/alliances, customers, citizens, external experts, and communities of practice.

4.4.3 Organisational learning

The term organisational learning may refer to individual learning within a organisation, the entire organisation learning as a collective body, or anywhere in between these extremes (Bennet & Bennet n.d.). After the process of acquiring knowledge and transform the information into knowledge that can be shared, learning takes place. The book of Cyert & March (1963) proposes the general theory of organisational learning as part of a model of decision making within organisations. Specific ideas on organisational learning outlined in the book are “that through organisational learning processes the organisation adapts to its environment” or “the view that organisations learn from experience” and “an organisation changes its behaviour in response to short-run feedback from the environment according to some fairly well-defined rules” (Cyert & March 1963). The result of organisational learning is that people learn from their actions and that they together formulate ‘better’ solutions for a problem.

4.4.4 Knowledge sharing

Knowledge sharing is considered to be a “social relational process through which individuals try to establish a shared understanding about reality and to establish the (potential) ability to transform this understanding into (collaborative) actions which yield performance, by using diverse combinations of signs (e.g. language, gestures, illustrations) and tools (e.g. physical objects, communication technologies, mental models)” (Boer 2005). Knowledge sharing is the communication process that is aimed to enable someone to do something (to solve a problem, use a certain strategy etc.) or in the future by using a variety of communication means. Knowledge sharing is a social communication process that is really important in the urban area development process. A shared understanding between the different actors about the goals, ambitions, strategies are essential to achieve results. Besides, sharing knowledge among actors involved in the spatial development project, knowledge is also shared among other parties in the field of urban area development in order to learn from each other, for instance through conferences and exhibitions.
4.4.5 Knowledge utilisation
In this stage of the knowledge management process the knowledge created, acquired, and shared is utilised to support the decision-making process and leads to experimentation, innovations, and changes. Where knowledge utilisation can be seen as an activity.

4.4.6 Knowledge storage
The storage of information in computer-based data systems, books, manuals, documents etc., in order to accesses the gained knowledge at another point in time.

4.5 Analytic framework
The three aspects of the knowledge management process: knowledge creation, knowledge acquisition, and knowledge sharing are used to categorise the learning activities deployed in HafenCity Hamburg. Figure 4.3 illustrates the analytic framework regarding knowledge generation.

4.6 Summary
Knowledge can be viewed from several perspectives and a distinction between data, information, and knowledge and between implicit and explicit knowledge can be made. Whereas, data are raw numbers and facts while information is processed data and knowledge is authenticated information (Boer 2005). Put differently, the working definition of knowledge in this research can be described as information that is processed in the mind of human beings and is framed by experiences, values, beliefs, context, and social interactions. In which knowledge is seen as the content or product of the learning process. Another aspect of knowledge is that it can be implicit (practical knowledge which is hard to transfer by verbalising it or writing it down) and explicit knowledge (rational, factual, and objective knowledge expressed in the form of data, documents, manuals etc.). Although knowledge is an abstract concept it gained a lot of scientific attention over the last decade. Academics express the fact that knowledge is of great value for an organisation’s competitive advantage and where new knowledge leads to experimentation, innovation, and change. It can be stated that learning and knowledge are closely connected with each other in a iterative process in which the process of learning produces new knowledge. While learning creates new knowledge, knowledge also effects future learning (assimilative learning, see §5.5.2). In other words, learning processes are ongoing and iterative and existing knowledge impacts future learning.

In order to make the learning process in HafenCity Hamburg more explicit and to categorise the learning activities that are present in HafenCity Hamburg, some aspects of the knowledge management process are used. These include knowledge creation, knowledge acquisition, and knowledge sharing. Knowledge creation according to Nonaka & Takeuchi (1995) differentiates between the learning processes and the learning content (knowledge) and they explain the knowledge creation process by using the distinction between implicit and explicit knowledge.
Nonaka & Takeuchi (1995) suggest four basic modes of knowledge creation: socialisation, externalisation, internalisation, and combination and four types of content: sympathised knowledge, conceptual knowledge, operational knowledge, and systemic knowledge (Vera & Crossan 2003). Knowledge acquisition refers to the acquisition process of knowledge internally within an organisation, but also externally prior and during the development process. Knowledge sharing is considered a social communication process through which individuals try to establish a shared understanding about the reality and transform this understanding into actions. These three knowledge aspects closely relate to the development and planning process of a spatial development project in which (new) knowledge is created, acquired, and shared among actors to shape and frame the process and content of a spatial development project. This is why these three aspects outline the analytic framework for clarifying and categorising the learning activities present in the case study research of HafenCity Hamburg.
5. Learning

“Learning never exhausts the mind.”

(Leonardo da Vinci)

The first reaction of most people to the term learning is largely based on the assumption that learning is an individual process, that it has a beginning and an end, that it is best separated from the rest of our activities, and that it is the result of teaching (Wenger 1999). Hence, the concept of learning is immediately linked with the images of classrooms, training sessions, teachers, textbooks, homework, and exercises. However, learning is an integral part of our lives and is seen as a life long process. Learning is something we can assume, whether we see it or not, whether we like the way it goes or not, whether what we are learning is to repeat the past or to shake it off. Even failing to learn what is expected in a given situation usually involves learning something else instead (Wenger 1999). According to Säljö (2009) learning has always been difficult to define and most introductory textbooks and all authoritative texts on the state of research acknowledge this fact. Scholars have been struggling between the various definitions of learning and the different learning theories and therefore learning is regard as a never-ending discourse. Just like no single definition of knowledge exists, also little agreement exists as to what learning is and how it occurs. Hence, the objective of this chapter is to explain only the characteristics of learning that help to make the learning process of HafenCity Hamburg explicit and tangible. In this perspective, the learning process is seen as a process in which knowledge is produced that impacts the decision-making process and leads to certain changes in the master plan. In which the urban area development process is seen as a collaborative and knowledge-intensive learning process fuelled by social interactions. This chapter explains the learning process from a individual perspective, because in the end all learning starts at an individual level. However, in case of HafenCity Hamburg the collaborative learning process of the entire development company is described, because they collaborative learned and made changes to the master plans. This chapter first discusses the different psychological perspectives of learning. Then a comprehensive explanation of the definition of learning is given along with a working definition of learning for this research. Subsequently, the difference between individual learning, collective learning, and collaborative learning is explained. Next, the process and the different dimensions of learning are elaborated. Furthermore, the four learning typologies, the course of learning, and the learning barriers of learning are discussed. Finally, this chapter ends with an analytic framework including the aspects of learning that will be used during the empirical inquiry.

5.1 Perspectives on learning

Different psychological perspectives are used by scholars to explore and explain the different learning theories. In this case, individual learning can be analysed from several different psychological perspectives: biological, learning, cognitive, sociocultural, and psychodynamic (DeFillippi & Ornstein 2003). All perspective try to explain the behavioural change that occurs when someone learns. From a biological perspective, theories and models seek to explain human behaviour as the result of physiology and anatomy. In which the biological perspective is concerned with explaining behaviour rooted in brain science. The learning perspective focuses on observable behaviour in which behaviourism and social learning theory are the most prominent. Behaviourism focuses on behaviour modification via stimulus-response pairs and selective reinforcement in which the learning process is focused on changing behaviour in a desired direction and is shaped through positive or negative reinforcement, whereas the behaviourist view implies that an individual must personally experience the consequences of his/her behaviour in order to ‘learn’, while the social learning theory more broadly defines the process of learning (DeFillippi & Ornstein 2003).
The social learning theory suggests that people can learn by watching others’ behaviour followed by observing and evaluating the consequences experienced by these others (Bandura 1977). This approach differs from traditional behaviourism suggesting that (1) people can learn by observation, (2) perception and interpretation play a role in learning, and (3) motivating beliefs can impact individual learning (DeFillippi & Ornstein 2003). Another distinction between behaviourism and social learning theory is that traditional behaviourism does not acknowledge cognitive processes, let alone explain them. Social learning theory on the other hand, does recognise that there is a cognitive mediation between observation and future behaviour. Another way of explaining learning is from a cognitive perspective, which seeks to explain people’s behaviour by understanding their thinking, reasoning, and memory. In other words, explaining their cognitions. The underlying assumption of this perspective is that an understanding of human behaviour cannot be effective without a complete awareness of the ‘origins and consequences of people’s cognitions’ (Tavris & Wade 1995). The cognitive perspectives views learning as transformation in the cognitive structures, such as thinking, reasoning, insight, information processing, memory, perception etc. Another perspective is the sociocultural perspective, which concentrates on how the context in which people live can be examined to better understand them. This approach looks at the relationship between an individual and his/her environment (DeFillippi & Ornstein 2003). Finally, the psychodynamic perspective implies that learning is predicated on previous experiences (conscious or unconscious), based on development stage and impacted by unresolved conflicts. This approach tries to incorporate the biological, learning, cognitive, and sociocultural nature of human life into developing an understanding of human behaviour (Tavris & Wade 1995). Each of the perspectives emphasises on different aspects of learning and understanding human behaviour. The focus in this research is on the learning perspective in which the behavioural and cognitive changes are associated with social interactions.

5.2 Definition of learning

It seems that learning can be viewed from different perspectives, theories, epistemologies, aspects, and contents. Although learning is hard to characterise, learning has been the focal point of many researches. Most literature on learning ends up with a definition that contains expressions such as “change in a subject’s behaviour or behaviour potential” (Bower & Hilgard 1981), or as “any change in an individual that expresses itself in a relatively stable form of behaviour” (Borger & Seaborn 1982), or as “a process that results in a relatively enduring change in a person or persons” (Alexander, Schallert & Reynolds 2009) as essential elements of what learning entails (Säljö 2009). Generally authors are also concerned to separate learning from other processes, such as maturation, development, and accidental changes in a person’s capacities (Säljö 2009). These definitions stipulate the fact that the term learning is not easy to define and that every definition can be challenged.

Most textbooks from the 1960s and 1970s argue that learning is a ‘change in behaviour’. This approach posits that all (or at least most) human behaviour happens as a result of learning (DeFillippi & Ornstein 2003). However, an immediate observation has to be made regarding this definition. Learning is considerably more complex than just behavioural change. Many different theories and insights about how people learn are published since the last decades of the nineteenth century. Each emphasises on different aspects of learning, perspectives, epistemological platforms, and content (Illeris 2007). Some learning theories have been overtaken by new knowledge and standards, but overall, a clear picture of a wide variety of behavioural approaches and interpretations is given and each of those learning theories are therefore useful for different purposes. To some extent these differences in emphasis reflect on a deliberate focus on a slice of the multidimensional problem of learning and to some extent they reflect more on fundamental differences in assumptions about the nature of knowledge, knowing, and knowers and consequently about what matters in learning (Wenger 1999).

It can be concluded that the concept of learning lies within the field of psychology and that various learning theories are drawn upon each other and overlap. Due to the multidimensional problem of learning, defining learning only as a ‘change in behaviour’ is not sufficient. In the present definition of learning, elements of how persons perceive and reciprocally respond to its affordances physically, psychologically, and socially are taken into account (Alexander, Schallert & Reynolds 2009).
The notion of what learning entails has become much more complex and diverse and behaviours and cognitive processes are no longer sufficient for providing a conceptualisation of learning; there are many factors that have to be considered such as time, situation, and reciprocity between individuals and cultural practices (Säljö 2009). Yet, learning can be seen as a life-long process and an integral part of the everyday life (Wenger 1999). Literature also indicates that learning is no longer an individual activity, but also groups, organisations, and communities learn (Wenger 1999; Hutchins 1995a,b; Bouza 2004; Wertsch 2002). According to Illeris (2007), four different main meanings can be distinguished that most frequently occur when the term learning is used in a non-specific manner in everyday life:

1. The term learning can refer to the outcomes of a learning processes that takes place in the individual. Learning here means what has been learned or the change that has taken place;

2. The term learning can refer to the mental processes that take place in the individual and can lead to such changes or outcomes as covered by the first explanation (1);

3. The term learning can refer to both the interaction processes between individuals and their material and social environment, which directly or indirectly, are preconditions for the learning process covered by the second explanation (2), and

4. The term learning is very often employed not only in everyday language, but also in official and professional contexts, more or less synonymously with the term teaching.

The first three meanings all have significance and justification in this research. However, it is often difficult to see which meaning is being referred to, and sometimes these matters can only be separated analytically and not in practice. Therefore, according to Alexander, Schallert & Reynolds (2009), beginning to understand the true nature of human learning cannot begin without embracing its multidimensional and interactional complexity. More specifically, it is not enough to propose a working definition of learning or even to provide a detailed accounting of any one of its constituent parts (learner characteristics). Rather, a critical description of the several dimensions of learning and a description of the complex interactions among those dimensions form the basis of the definition of learning. Alexander, Schallert & Reynolds (2009) have formulated nine principles of learning, which covers the entire spectrum of the term learning:

- Principle 1: Learning is change;
- Principle 2: Learning is inevitable, essential, and ubiquitous;
- Principle 3: Learning can be resisted;
- Principle 4: Learning may be disadvantageous;
- Principle 5: Learning can be tacit and incidental as well as conscious and intentional;
- Principle 6: Learning is framed by our humanness;
- Principle 7: Learning refers to both a process and a product;
- Principle 8: Learning is different at different points in time, and
- Principle 9: Learning is interactional.

Noted by Alexander, Schallert & Reynolds (2009) a fundamental characteristic of learning for human beings is that change occurs. This notion of change applies whether the focus is on simpler learning or more complex learning of abstract principles. Change can occur in the development of an individual or a group where person-environment interactions take place, but change can also be regarded as a process of the capacities of the brain/mind and the adaptive nature inherent in human beings when they mature. Therefore, change can be explicit or implicit and learning occurs inevitably due to the fact that we are human beings. In fact, one cannot prevent learning from occurring (inevitable), nor can one hope to survive unless learning happens (essential). Moreover, learning occurs ubiquitous when we enter the world. Despite, the inevitable, essential, and ubiquitous fact of learning, there are instances when humans resist learning (and the change it implies).
In fact, there are many times we learn in spite of ourselves. It seems clear that learning has positive connotations, but it is also important to highlight that learning can be disadvantageous. According to Alexander, Schallert & Reynolds (2009) learning cannot be limited only to what is valued, accepted, or acceptable. They argue that learning can also mean learning unacceptable attitudes and behaviours. The interpretation of learning can be explained by the fact that we sometimes wish we had never learned (smoking) or that learning can be satisfying for one person or group, but undesirable for a broader social group. However, most of the time learning occurs outside the realm of conscious control or intentionality (Epstein 2001; Polanyi 1966). Hence, learning can be seen as implicit and incidental. According to Alexander, Schallert & Reynolds (2009) “learners cannot give an explicit rendering of when learning occurred, how learning happened, or how they were changed”. Learning can also be referred to as a product and a process. When learning is considered as a process, learning is seen as a set of operations through time resulting in a relatively durable change. Learning seen as a product, is the result of learning; the outcome of the process (the consequences of learning). Because learning can be seen as a process, the learning process itself is affected by where the learner is in a progression to increasing expertise and acquisition in a domain. Learning occurs differently at different ages, and the process of learning changes, reflecting the accumulation of experiences that give rise to more complex understanding and more intricate relationships among individuals or the relations between persons and environment (Bereiter 2002; Wentzel 1999). Alexander, Schallert & Reynolds (2009) assume that learning is also interactional due to the fact that learning occurs through the interaction with a dynamically changing world. The world matters to how learning takes place and learners are influenced by, and at the same time pushed back, take from, change, control, and create the environment in which learning is situated.

With these different views on learning, a working definition of what is understood as learning in this research is articulated below.

5.3 Individual, collective, and collaborative learning

In most learning research different aspects of learning are mentioned, for instance individual learning, collective learning, collaborative learning, social learning, and organisational learning. Yet, all learning starts at an individual level in which individual learning is regarded as acquiring knowledge and skills (see §5.4). Most learning theorist acknowledge that the underlying theme of individual learning is that one learns from experience. The well-known psychologist David Kolb introduced ‘experimental learning’ which shows how individuals learn from experience. The learning model of Kolb expresses four stages of learning in which ‘concrete experiences’ (feeling) provides a basis for ‘observations and reflection’ (watching). These observations and reflections are assimilated and distilled into ‘abstract concepts’ (thinking). Abstract concepts produce new implications for action which can be ‘actively tested’ (doing) and in turn creates new experiences (figure 5.1).
Another type of learning is collective learning which is especially associated with the labour movement and learning in working life, as well as the concepts of ‘organisational learning’ and the ‘learning organisation’. Collective learning is employed in the special contexts in which a group of people with wide-ranging uniform backgrounds in a field enter a learning context where the social situation contributes to them learning the same thing (Illeris 2007). Collective learning could take form in a community of practice, where a group of people who share a passion for something interact regularly to learn from each other. Whereas collaborative learning is employed in connection with approaches where a group of people try to learn and develop something together (Illeris 2007). In this case, the HafenCity Hamburg GmbH (the development company) learns collaborative through interaction with colleagues, actors, and the environment. Another form of learning is social learning also referred as situated learning. It is the part of individual learning that concerns social interaction with others and the environment. All learning is situated which means that through social interaction the learner becomes integrated in a societal and social context. Put differently, social learning states that people learn within a social context (see §5.4.3).

5.4 The processes and dimensions of learning

To get a profound understanding of individual learning and the process it entails the learning model of Illeris (2007) is used. This model will help to understand and make the learning process in HafenCity Hamburg more tangible. Illeris (2007) defines learning as a very complex and many-sided matter including “any process that in living organisms leads to permanent capacity change and which is not solely due to biological maturation or ageing”. This definition is very broad and implies that processes, such as socialisation, qualification, and competence development are regarded as special types of learning processes or special angles from which learning can be viewed. The definition also implies that limitations and other matters that can mean a narrowing or distortion of what is learned are also regarded as something one learns. Although the definition of Illeris (2007) is broad he takes the content, incentives, and environment of learning in consideration. Which relates to the working definition of learning formulated in this research (see §5.2).

Illeris (2007) argues in his theory that learning is based on two fundamental assumptions. First, that learning contains two essential processes; an external interaction process between the learner and its social, cultural, and material environment and an internal psychological process of acquisition and elaboration of knowledge in which new impulses are connected with the results of prior learning. Both these processes must be active prior to the learning process and most of the time they are simultaneous and thus will not be experienced as a separate process, but they can also take place completely or partially at different times (Illeris 2007). Up to a point in the 1980s learning research normally only concerned itself with the acquisition process (Illeris 2007), such as the behaviourist and cognitive learning theories.
However, since the 1990s learning researchers, such as Jarvis (1987) and Wenger (1999) pointed out that learning is also a social and interactive matter and that learning can only be understood as a social process, with an individual and social level of learning. Although both processes can be studied separately, yet it is quite crucial to understand both processes of interaction and acquisition to clearly define what the learning process is. The second fundamental assumption is that learning includes three dimensions: content (what we learn), incentive (the motives for learning), and interaction (interaction between the individual and the environment). All three dimensions are then placed in a societal context (figure 5.2).

The construction of Illeris learning model starts with the external interaction process as a vertical double arrow between the environment and the individual. The internal psychological process of acquisition is placed as a horizontal double arrow between the poles of cognition (content) and psychodynamics (incentives). The interaction process between the internal psychological process of cognition (dealing with the learning content) and the emotional or psychodynamic pole (providing the necessary mental energy of the process) are equal. The double arrows can now span out a triangular field between three angles, which portraits the three dimensions that are always involved in the learning process (figure 5.2).

![Figure 5.2 The fundamental processes of learning](Source: Illeris 2007)

The content dimension can be described as knowledge or skills and builds up the understanding and ability of the learner (Illeris 2010). In this dimension the learner constructs meaning and the ability to deal with the challenges of practical life and thereby develops a personal functionality. In other words, the content dimension is about what we learn and signal words are knowledge, understanding, and skills i.e. an attempt to develop meaning. The emotional dimension or incentive dimension encompasses mental energy, feelings, and motivations and functions to secure the mental balance of the learner (Illeris 2010). Simultaneously within this dimension the learner develops a personal sensibility. These two dimensions are always initiated by impulses from the third dimension, the external interaction process between the individual and the environment. The cognitive learning process is driven by emotions, such as desire, interest, necessity, or compulsion and the emotional learning is influenced by the cognition or understanding of new information (Illeris 2010).
In other words, new information can change the emotional condition. The social dimension of interaction between the individual and the environment consist of external interaction processes, such as participation, communication, and cooperation. According to Illeris (2010), it serves as the personal integration in communities and society and thereby also builds up the sociality of the learner. As learning always takes place in the context of a specific society, which sets the basic conditions for the learning possibilities, all three dimensions are placed in a circle which portrays the specific society. The whole learning model of Illeris is shown in figure 5.3.

It can be stated that the learning model of Illeris shows the general processes and dimensions of learning. It not only focuses on the internal psychological process of acquisition and elaboration, but it also involves the social process of learning between the individual and the environment. The acquisition process can be seen as individual learning and the interaction process can be seen as social learning. The triangle illustrates the tension field of learning in general and of any specific learning activity as stretched out between the development of functionality, sensibility, and sociality. This learning model fits well with the working definition of learning formulated in §5.2, because it approaches learning as a multidimensional process between the content, incentive, and interaction dimension. The content of all three dimensions are briefly elaborated in the next subparagraphs.
5.4.1 Content dimension

The content dimension of learning is about what is learned. Fundamentally, all learning has a content, otherwise there is no point in speaking of learning. The content of learning could have the character of acquiring knowledge, skills, opinions, understanding, insight, meaning, attitudes, qualifications, and/or competence (Illeris 2007). Learning can also be understood in a more broader perspective and has the character of more general cultural acquisition, or it could be related to the method of working, or have the character of ‘learning to learn’ (Illeris 2007). Learning is also more than just acquiring knowledge, skills, and competence. An increasingly urgent content field for learning is learning about ourselves, getting to know oneself, understanding one’s reaction, preferences, and weak and strong points etc., as a prerequisite for making meaningful decisions and managing one’s own life course. In this research the content dimension is focussing on the acquisition of knowledge, understanding, and insights that improve the quality of the spatial development project.

5.4.2 Incentive dimension

The incentive dimension of learning covers the matters concerning the scope and character of the mental energy that is the driving force of learning i.e. typically motivation, emotion, attitudes, and volition invested by the individual in a learning situation or course of learning (Illeris 2007). The incentives become part of the learning process, because they mobilise the energy that is necessary to learn. Incentives influence the quality of the learning that takes place. So, what is learned is influenced by the nature and strength of the mental energy, at the same time the motivation, the emotions, the attitudes, and the volition are influenced by the content side of learning. In connection with assimilative learning, the incentive dimension functions largely unconsciously, while learning is typical more conscious in nature in connection with accommodative and transformative learning (see §5.5).

5.4.3 Interaction dimension

According to Illeris (2007), all learning is ‘situated’ i.e. that it takes places in a certain context of a social and societal environment, which through interaction with the learner becomes and integrated part of the learning. In this way the learning comes to reflect the social and societal conditions for possibilities and contributes to the participants’ socialisation in relation to existing social conditions. The learning situation does not only influence the learning, but it is also part of the learning. In the last decades this interaction dimension with the environment has been seriously included in the learning research, where situated learning was first introduced by Jean Lave and Etienne Wenger with the book entitled Situated Learning (Lave & Wenger 1991). Lave & Wenger (1991) introduce the concept of situated learning in which learning takes place in a community of practice. A community of practice is a group of people who share a passion for something they do and interact regularly to learn how to do it better. The characteristics of a community of practice may vary; some are explicitly mentioned, have names, and have a quite formal organisation. However, many do not and are very fluid and informal (Smith 2003; 2009). Initially, people join a community of practice and learn at the periphery. Their tasks, at this stage, are less key to the community than others, but as they become more competent they become more involved in the main processes of that particular community. Newcomers master the knowledge and skills and move from legitimate peripheral participation into full participation (Lave & Wenger 1991). Rather than looking to learning as the acquisition of certain forms of knowledge and social relationships, participation becomes more important and the social engagements provide the proper context for learning. A person’s intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a socio-cultural practice (learning as experience). This social process, includes, indeed it subsumes, the learning of knowledgeable skills (Lave & Wenger 1991). The community provides a sense of belonging and learning in that particular community can be described as learning by doing and participating in the social context of that community.

As Illeris (2007) states, the learning situation can always be regarded as both in the immediate situation that the learner or learners find themselves in e.g. at a school, a workplace, or leisure-time activity and as a societal situation that is more generally influenced by the norms and structures of the society in question in the widest possible sense.
In general, there are limitless possibilities of variation for the way in which the learner and the environment interact with each other. In practice, the interaction can take form in perception, transmission, experience, imitation, activity, participation. The more a learner engages and involves in the interaction process, the greater the learning possibilities are.

5.5 Learning typologies

Many scholars have researched whether there are different types of learning and how and in which areas it is possible to distinguish between such types and arrive at an adequate typology (Illeris 2007). Epistemologist Jean Piaget laid ground for the learning typology with his concepts of ‘assimilation’ and ‘accommodation’ learning. The learning typology covered in this paragraph are decomposed into four types of learning, each fundamental different in nature, activated under different circumstances, and leading to different learning results. The learning typologies relate to the acquisition process of learning (see §5.4) and are characterised by their relation with the mental schemes that organises our knowledge, understanding, thinking, and memory. The learning typologies mentioned here are formulated by Illeris (2007). The reason for choosing this learning typology is because he incorporated different learning views of different learning researcher, such as epistemologist Jean Piaget, Danish psychologist Thomas Nissen, and American psychotherapist Carl Rogers. In addition, this learning typology contributes to this research context and helps explaining what type of learning occurred in HafenCity Hamburg and connect them with the changes in the master plans. Illeris (2007) makes a distinction between four learning types, known as cumulative, assimilative, accommodative, and transformative learning (figure 5.4). The order is not random, but characterised by a degree of complexity and the experienced strain and use of mental energy. In which assimilative learning and accommodative learning promote progressive learning and cumulative and transformative learning are mobilised in more unusual contexts (Illeris 2007).

5.5.1 Cumulative learning (foundation)

Cumulative learning occurs in situations where the learner does not possess any developed mental scheme to which impressions from the environment can be related to i.e. when the first element in a new mental scheme is established (Illeris 2007). Cumulative learning therefore is of particular importance in the earliest years of life where mental schemes are formed. Nevertheless, there are situations in which cumulative learning is required later in our life time in which it may be necessary to learn something that is not connected with previous knowledge. For instance, learning a telephone number by heart or learning how to ride a bike and car. The result of cumulative learning is that to remember the lesson learned or recall them they must correspond with the learning situation. This makes learning not very useful in a rapidly changing world, although cumulative learning is important to human beings as a beginning of something more. Put differently, cumulative learning in this research means that a totally new mental scheme is created and forms the foundation for further learning.
5.5.2 Assimilative learning (development)
With assimilative learning impressions from the environment are incorporated as additions to the mental schemes already existing. Therefore, also associated with additional learning and is the ordinary form of learning that we practice everyday. With assimilative learning, the learner adapts and incorporates impressions from his/her surroundings as an extension and differentiation of mental schemes built up through earlier learning (Illeris 2007). The learning products are knowledge, skills, and experimental opportunities that can be activated in a broad spectrum of situations. In other words, with assimilative learning we build upon already established mental schemes and the products of learning are knowledge and skills. Put differently, assimilative learning in this research means a steady and stable progressive development in which the foundation of the mental frame is improved.

5.5.3 Accommodative learning (reorganisation)
Accommodative learning concerns the partial restructuring of already existing mental schemes. It is a form of learning that is activated in certain situations where impulses from the environment cannot immediately be linked to an established mental scheme due to some inconsistency or something does not fit (Illeris 2007). The process can be very sudden; the learner understands immediately how something works or it can be a prolonged process in which step-by-step a gradual comprehension or solution is reached. Under all circumstances, through accommodative learning and the character of learning changes in a decisive way. Through accommodative learning a high degree of individual understanding and comprehension is formed. This is why there always will be a difference in how we learn and how we recall knowledge even though we ’know’ the same thing, the mental schemes of individuals are different. This is also why there is a relationship between assimilative learning and accommodative learning, because they are more or less linked and mutual dependent. Accommodative learning can be related to the concepts of reflection, critical thinking, and competence development. The result of accommodative learning is that the knowledge is general applicable in different unpredictable situations. In this research accommodative learning means that through critical reflection the built up mental schemes/frames will be partially rebuild. This type of learning is closely related to single-loop learning (see §5.6).

5.5.4 Transformative learning (total transformation)
Transformative learning or significant learning implies total reorganisation of a large number of mental schemes at the same time and with relation to all three dimensions of learning (content, incentive, interaction). As Rogers (1961) formulates “it is learning which makes a difference in the individual’s behaviour, in the course of action he chooses in the future, in his attitudes, and in his personality”. Significant learning is something one only becomes engaged in when faced by a situation or challenge exceeding what one can manage on one’s existing personal basis, but which is unavoidably must win over in order to get further i.e. a crisis is often existential in nature (Illeris 2007). Rapid social developments, globalisation, breaking down boarders and cultures, and traditional patterns bring more people in exile, sudden involuntary unemployment, divorce, and other losses of close relations leads to transformative learning. In this research transformative learning is interpreted as changing the whole established framework and is closely related with double-loop learning (see §5.6).

5.6 Course of learning
Another approach to learning is to look at the course of learning. A well-known sequence learning model is that of the American social and organisational psychologist Chris Argyris (1992). In which he illustrates ‘single-loop learning’ and ‘double loop learning’ in management and organisational development (figure 5.5). Organisations need to fulfil certain goals, in order to fulfil these goals certain actions are performed. These actions lead to certain expected consequences, so a ‘match’ is obtained, or these consequences can be inconsistent with was expected, resulting in a ‘mismatch’. In case of a mismatch it might be possible to attempt another solution within the same frame of reference, making a single-loop in terms of learning. Put differently, single-loop learning involves an incremental change within an existing framework (accommodative learning), whereas double-loop learning involves transformative change and questions the existing framework i.e. testing the underlying assumptions of the framework (transformative learning).
It can be concluded that this learning model helps to explain if certain changes in the master plan are linked with incremental changes (single-loop) or transformative changes (double-loop learning).

5.7 Learning barriers

Relevant is not only understanding what happens when one learns something, but it is equally important and interesting to know what happens when the intended learning does not take place or when learners learned something else instead. Barriers in learning can occur in all three mentioned dimensions (content, incentive and interaction) and often relates to two or all three dimensions. According to Illeris (2007), there are three main types of learning barriers that can be distinguished, namely mis-learning, defence against learning, and resistance to learning. In relation to the content dimension, mis-learning can occur, which means that learning does not correspond with what was intended or communicated as content. Put differently, a misunderstanding or not quite grasping what is going on or in educational terms what was meant to be learned is leading to wrong knowledge and misunderstandings. While mis-learning is largely connected with the content dimensions of learning, the learning barrier in the incentive dimensions deals with a unconscious mental defence mechanism against learning resulting in prevented or distorted learning. In terms of learning, defence mechanisms can be rejection (does not led impulses into the conscious, so no learning occurs), blocking (it appears automatically and blocks impulses, such as a phobia), and distortion (the unacceptable impulse is not perceived as it is, but is distorted into something acceptable) (Illeris 2007). Defence against learning is a necessity in the modern knowledge led society, partly because the learning possibilities exceed our capability to manage them all. In our everyday lives there is a selective defence mechanism against the volume of learning impulses which we meet everyday through the constant stream of changes. In the interaction dimensions of learning a resistance against learning can arise when the individual feels a certain pressure which he/she finds personally unacceptable. This resistance is activated when learning is forced, for example within institutionalised education programmes. It can be stated that there are certain barriers that need to be overcome in order to learn. However, it should be noted that in practice it is difficult to distinguish directly between which form of learning barrier one deals with especially concerning defence and resistance mechanisms.

5.8 Analytic framework

Now that only the relevant characteristics of learning for this research are discussed an analytic framework, necessary for the empirical inquiry, can be presented. Figure 5.6 illustrates the analytic framework concerning the operationalisation of the learning process (highlighted). The framework is part of the overall analytic framework concerning urban area development, knowledge, and learning. Each change in the master plans that can be indicated as learning is linked with a learning typology discussed in §5.5. Furthermore, by means of a discourse analysis it is indicated if the change is a result of strategic, political, and/or social power/domination.
5.9 Summary

Today we are living in a globalised knowledge society with increasingly keener international competition in which the competence level of members of the society, and thus also their learning, forms a key parameter of competition (Illeris 2007). Hence, there is a certain pressure to learn and achieve results in urban area development, because of the competition between cities to attract inhabitants, offices, visitors, tourists etc. Learning and knowledge become therefore also (more) dominant in urban area development, because it not only concerns the spatial development, but also transgresses to political, social, societal, and economic development of a city. Investigating if learning takes place in a spatial development project and what the impacts of learning are is of great value for future spatial development projects.

Although it is hard to define what learning exactly is, this chapter tried to explain that learning is much more than just behavioural and cognitive change and that it is an interplay between the content, the incentive, and the interaction dimension of learning and between the individual and the environment. The working definition of learning in this research is described as ‘learning is a multidimensional process between several dimensions that results in an enduring change stimulated by social interaction between individuals and the environment. In case of urban area development, learning is seen as a process in which learning activities generate (new) knowledge that influences the decision-making process and its accompanying discourse. In addition, it is assumed that in this research learning is a collaborative process fuelled by individual learning that leads to certain changes in the master plan’. In other words, learning can be seen as adaptive and even reactive process that leads to an enduring change stimulated by social interaction and participation in a certain society. Consequently, learning and knowledge are intertwined in an iterative, mutually reinforcing process; while learning produces new knowledge and where knowledge also influence future learning (Vera & Crossan 2003). It can be concluded from this literature review that learning is a multidimensional matter and that it can be analysed from several different perspectives, epistemologies, and aspects. In this research a simplified model of the reality is used to make the learning process more tangible to ‘better’ understand what learning means in urban area development and how it influences the development and planning process. Relevant to note is that there are also certain learning barriers that prevent or distort learning during the learning process, such as mis-learning, defence against learning, and resistance against learning.

The literature review resulted in an analytic framework, which is used during the empirical research. Each change in the master plans that can be identified as learning is linked with one of the four learning types: cumulative, assimilative, accommodative, and transformative learning to indicate what type of learning is present in the development of HafenCity Hamburg. In which cumulative learning is associated with establishing a new mental framework, which forms the foundation for further learning. Assimilative learning is a steady, stable, and progressive development in which the established framework is improved by means of generating more knowledge and skills. Accommodative learning can be related to the concepts of reflection, critical thinking, and competence development. In this research accommodative learning means that through critical reflection the built up mental schemes/frames will partially be rebuild.
This type of learning is closely related to single-loop learning. Transformative learning implies total reorganisation of a large number of mental schemes at the same time and with relation to all three dimensions of learning (content, incentive, interaction). Transformative learning is interpreted as changing the whole established framework and is closely related with double-loop learning.
6. Conceptual model

“The concept is the framework within which reality is organized.”

(Kurt Lewin)

The conceptual model shown in figure 6.1 is the result of the literature review about urban area development, knowledge, and learning discussed in the previous chapters. The conceptual model illustrates the relationships between learning, knowledge, and the decision-making process in urban area development. The learning process is seen as a process in which learning activities generate knowledge. Knowledge is therefore the product or content of the learning process. The knowledge generated is then used in the decision-making process during the urban area development process, which leads to certain actions. In this case, the actions in regard to the project’s master plan development are investigated and some actions led to certain changes in the master plans. When the actions are implemented, they fuel the learning process all over again, because if the actions do not achieve the desired effect, single or double loop learning occurs in which the learning process starts again (see §5.6).

![Figure 6.1 Conceptual model](image-url)
7. Case study: introduction of HafenCity Hamburg

“Study the past if you would define the future.”

(Confucius)

Waterfront developments in general and in particular HafenCity Hamburg can be regarded as very complex spatial development projects in which the context, the content, the actors with their different interests, the financial means for realisation, and the management of the entire development project set a frame for the entire urban area development. In which urban area development process is seen as an optimisation process between the market, the spatial quality, and the means. From a learning perspective it is very interesting to analyse HafenCity Hamburg, because they were quite late in redeveloping their waterfront, so it made the development company HafenCity Hamburg GmbH more aware of the positive and negative aspects of such a challenging redevelopment project and lessons learned from the successes and failures of other waterfront development project could be incorporated. This chapter is devoted to the analysis of the urban area development process of HafenCity to understand the frame in which the development company operates in. First, the development process of HafenCity Hamburg is analysed according the created analytic framework based on the urban area development literature, consist the following aspects: context, content, actors, financial means, and management. This chapter ends with a SWOT-analysis (strength, weaknesses, opportunities, and threats analysis).

7.1 Context: Hamburg Germany

The context of an urban area development partly determines the development approach, strategies, and methods. According to Verlaat & Wigmans (2010a), without a clear understanding of the context, an urban area development can lead to a sub-optimum or could even fail. Contextual factors that frame the urban area development in HafenCity Hamburg consist of history, geography, demographics, politics, urban planning policies, and economy.

7.1.1 History

The first historic name of Hamburg was Treva. However, the city owes its modern name from its first permanent building, a castle named Hammaburg, built on the rocky terrain in a marsh between the River Alster and the River Elbe as a defence against the Slavic incursion.

The city’s history begins in 825 and a notable date in history was 1189, in which Hamburg was granted the status of an Imperial Free City. The Free City allowed tax-free access up the Lower Elbe into the North Sea. Due to Hamburg’s proximity to the main trade routes of the North and Baltic Sea and the tax-free access, Hamburg quickly became one of the major ports and trading cities in Northern Europe.
Citizens of Hamburg benefited from this tax free status, which meant that goods imported through the port could be stored or processed anywhere in the city and then re-exported with smaller ships into the hinterland without levies. The next crucial milestone in history was in 1321, when Hamburg joined the Hanse League, a trading guild of the Hanseatic League. The Hanseatic League was an economic alliance of trading cities and their merchant guilds dominated the trading along the coast of Northern Europe. The league was created to protect commercial interest and privileges granted by foreign rulers in cities and countries the merchants visited. It is clear that Hamburg owes it prosperity to the port and its activities. During the second half of 19th century Hamburg quadrupled to 800,000 inhabitants due to the fast growing trading business and became Europe’s third-largest port. The Hamburg-America Line became the world’s largest transatlantic shipping company and Hamburg functioned as a department port for most Germans and Eastern Europeans who wanted to emigrate to the United State of America. At that moment in time the trading business was flourishing and many trading companies all over the world established themselves in Hamburg. Then the second World War made its appearance. However, since the iron curtain came down and the German reunification in 1990 along with the accession of some Eastern European and Baltic States entering the European Union, the Free Hanseatic City of Hamburg has once again began to increase its trade. The port of Hamburg has the ambition of regaining its position as the region’s largest deep-sea port for container shipping and wants to become a major commercial trading centre. With the vision ‘Growing City’, the City-State of Hamburg conceived a long-term development strategy aimed to position Hamburg in the international competition of metropolitan regions and steers on growth both in terms of demographic and economic development. In which they pursue an idea of smart growth, conserving spaces, and sustainable urban area development.

7.1.2 Geography

Germany, officially the Federal Republic of Germany, is a parliamentary republic in Europe. The country consists of sixteen states, while the capital and the largest City-State is Berlin. Germany has only three cities that are a city as well as a state including Berlin, Bremen, and Hamburg. In the northern part of Germany and situated along the river Elbe, the Free and Hanseatic City of Hamburg arises. Directly adjacent to the city-centre of Hamburg, on the northern river banks of the Elbe, Hamburg’s largest redevelopment project of the waterfront is being realised, known as HafenCity Hamburg. The geographical location of Germany within Europe, the metropolitan region of Hamburg, the City-State of Hamburg, and the HafenCity Hamburg development project are shown in figure 7.1.

Figure 7.1 Germany with Europe, metropolitan region of Hamburg within Germany, and HafenCity within Hamburg
7.1.3 Demographics

Conform the statistics of the State population (2011), Hamburg is marked as the second largest city of Germany with approximately 1.8 million inhabitants and a population density of 2,349 inhabitants per square kilometres. Besides, the metropolitan region Hamburg exists out of three federal states including Lower Saxony, Schleswig-Holstein, and Hamburg and has a population of approximately 4.3 million (figure 7.2). The city of Hamburg is still experiencing growth and of the total inhabitants 866,623 are male and 907,601 are female. Only 15% of the local population are immigrants or other persons with non-German citizenship. The average household size is 1.82 persons per household and the total number of households in Hamburg is 983,000 of which 497,000 are one-person households and 486,000 multi-person households.

7.1.4 Politics

Since 1806 the Free Imperial City of Hamburg became a sovereign state with the official title the Free and Hanseatic City of Hamburg. Hamburg is listed as a state as well as a city through the Act of the Constitution and Administration of Hanseatic City of Hamburg, which means that Hamburg City-State has a degree of autonomy and legislative powers in several fields. Due to the City-State characteristics, Hamburg is a municipality as well as a state and the governance deals with state politics and community politics. The City-State parliament, known as the Bürgerschaft, is responsible for the legislature. Subsequently, the Bürgerschaft chooses the government, the executive power of Hamburg, which is called the Senate. The chairman for city-wide and state administration (the Senate) is always the first mayor of Hamburg. The Senate is dividend into nine ministries or departments and each senator is head of a ministry. The Behörde für Stadtentwicklung und Umwelt (Ministry of Urban Development and Environment) is responsible for Hamburg’s overall urban development. In order to ensure that the administration is responsive to citizens’ interests, Hamburg is divided into seven Bezirke (administrative districts) and is subdivided into 105 Stadtteile (quarters). The seven administrative districts are: Hamburg-Mitte, Altona, Eimsbüttel, Hamburg-Nord, Wandsbek, Bergedorf, and Harburg (figure 7.3). All administrative districts have the size of (large) cities with their own city-centre and most of the quarters were former independent cities, towns, or villages and through the Greater Hamburg Act of 1937 merged into the city of Hamburg. Each administrative district is governed by a Bezirksversammlung (District Council) and administered by a Bezirksamtsleiter (Municipal Administrator). The administrative districts are not independent municipalities and their power is limited and subordinated by the Senate of Hamburg.

Figure 7.2 Metropolitan region Hamburg Source: HafenCity Hamburg 2012

Figure 7.3 The seven administrative districts of Hamburg
7.1.5 Urban planning policy

Germany is characterised by its federal structure and has strong legislative, executive, and judicial powers in regard to almost all fields of policies. The key legislative basis for spatial planning in Germany is provided by the Federal Spatial Planning Act in which the aims and principles for spatial planning are stated to ensure a certain level of uniformity. Some of the basic principles of the German spatial planning system are: sustainable (spatial) development, ensuring quality of life in the city as well as in the countryside, hierarchal urbanisation, promotion of poly-central and settlement structures, creating urban networks, and decentralisation of spatial structure. Each state is responsible for its own spatial planning and must transfer the aims of the Federal Spatial Planning Act into its own State Spatial Planning Act. Although the aims and principles are formulated more decisive in the State Spatial Planning Act it still functions as a framework. Each state is responsible for the urban planning on state and regional level and because each state is autonomous the urban planning differs per state. (Knieling & Othengrafen n.d.)

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Table 7.1 Spatial planning system with the various planning levels and instruments  
Source: Knieling & Othengrafen n.d.

In table 7.1 the German spatial planning system and the various planning levels and instruments are shown. In case of the City-State Hamburg, the urban planning levels of the state and municipality are of importance to understand the urban planning policy in Hamburg. The state development plan on state level concerns comprehensive state-wide spatial planning objectives and functions as a document for coordinating all policies and decisions that impact the spatial development on state level. The main spatial planning policy instruments on local governmental level are the preparatory land use plan and the the binding zoning-plan. In case of Hamburg, each of the seven Bezirke (administrative districts) is responsible for formulating the zoning plan and providing building permits. (Knieling & Othengrafen n.d.)

According to Knieling & Othengrafen (n.d.), in the last decade significant changes in the urban planning culture are noted. There is a shift towards more development oriented spatial planning, comprising not only the land use regulations, but also actively tries to contribute to social and economic development. The german spatial planning system can be viewed as a mixture of plan led (land use regulations) and development led (improving regional potentials) system. (Knieling & Othengrafen n.d.)

The urban planning policy for HafenCity Hamburg is more development led, although the City-State of Hamburg has a major influence in ensuring the quality of the urban area development. The development company HafenCity Hamburg GmbH is responsible for the management and development of the entire area. However, the development company is a 100% subsidiary owned by the City-State Hamburg. Thus, the urban development has been led by the City-State of Hamburg, who has the ability to maintain its vision and momentum, because they own all the land, while HafenCity Hamburg GmbH is legally responsible for the development of HafenCity. The urban planning instruments in regard to HafenCity Hamburg are the master plan for the entire development and the zoning plan for each individual neighbourhood. Nonetheless, the master plan is a adjustable framework which changes over time and can incorporate development possibilities a long the way. However, major changes in the master plan must be approved by the Senate.
The Bezirke Hamburg-Mitte was responsible for the zoning plan of HafenCity Hamburg, but HafenCity Hamburg is given a priority area status, which means that since 2006 all zoning plans will be developed by the HafenCity task force in Hamburg’s Urban Development and Environment Ministry (BSU). Building permits are also granted by the Ministry of BSU to speed up administrative procedures. However, the new Urban Development Commission, represented by all political parties in Hamburg’s City Parliament, make the final decision on zoning plans. This greatly reduces the role of Hamburg-Mitte Bezirke where planning affecting HafenCity was concerned (HafenCity Hamburg GmbH 2012b).

7.1.5.1 Major urban planning projects
Planning and political strategies in regard to the urban planning in Hamburg were formulated in 2001 under the leading concept ‘Metropolis Hamburg - a growing city’. The urban policy of Hamburg is focussed on strengthen the metropolitan region and become a national and international centre for economic growth and sustainable demographic growth with emphasis on ensuring the quality of life (Daamen 2007). The vision is to make the city more attractive for middle and high income groups, which previously left the city (Haaren & Daamen 2011). There is a demand for high value dwellings within the city and a vision to provide a mix of subsidised housing. Both rented and cooperative models of development have been encouraged, as well as those for private sale. Part of the concept of the growing city are certain major urban development projects, such as HafenCity Hamburg, Leap across the Elbe, IBA-project, and the Business Improvement Districts. With the advent of HafenCity, the government tries to strengthen the residential and commercial market and HafenCity remains the city’s flagship project both for residential and commercial properties (HWF 2012).

7.1.6 Economy
Hamburg is best known for its important role as Germany’s largest sea port city. The port of Hamburg functions as an infrastructural hub for the northern part of the country and is located 100 km upstream from the North Sea at the river Elbe. The port of Hamburg, which ranks third after Rotterdam and Antwerp, with a transshipment of 7,895,736 twenty-foot equivalent units (TEU) of cargo in the year 2010 (Port of Hamburg 2012), functions as an important economic incentive for the city of Hamburg. The port and its related industries have been formative to the city’s wealth, growth, economic and urban structure since more than five centuries (Brodowski et al., n.d.). Historically, the port has been the city’s economic growth engine and a central part of the identity as a city of trade. However, its contributions to the city’s economy have declined substantially in recent years due to large-scale global developments (Läpple 1998), despite the exceptional performance of throughput (Grossman 2008). Due to these global developments, neither the port’s future economic contributions to the city region nor current throughput projections appear as certain as assumed by city planning and as presented in the public discourse (Hesse 2006). Changing competitive port requirements, technological changes, and changes in the organisation of transport have led to a major transition towards a service-centred, rather than industrially-based metropolis and city, characterised by the emergence of a high quality urban environment with a revitalised waterfront at its heart (Bird 1963; Hoyle et al., 1988; Breen & Rigby 1994). Besides the incentives from the harbour, the economy of Hamburg is flourishing on sectors, such as media, aviation industry, culture, life sciences, and business services. In addition, Hamburg was named European Green Capital in 2011, bringing its greenness and sustainability policies pursued since 2004 to the attention, which also indirectly generated economic incentives for the city.

According to the 2011 federal state ranking conducted by the Initiative Neue Soziale Marktwirtschaft (INSM), Hamburg is the most successful German federal state in economic terms. HWF (2012), the HWF Hamburg Business Development Corporation, reflects on the developments from 2007 to 2010 mentioned in the survey of INSM and notice that Hamburg is leading in gross domestic product, disposable income, and taxing capacity. Hamburg has a gross domestic product, or annual economic output per capita of € 49,638 (2010), the highest in Germany compared to the national average of € 30,566. The disposable income per head of the population of Hamburg was € 24,137 in 2010, whilst the national income average of € 18,983. Furthermore, the taxing capacity as an indicator of its economic power shows that Hamburg has much more economic power than other states.
The taxing capacity of Hamburg is € 4,228 per capita compared to a German average of € 2,128. The number of gainfully employed from 2007 to 2010 increased with 4.4% against an average of 1.9%. It can be concluded that the city and its economy are still experiencing growth.

7.2 Content: HafenCity Hamburg

In this paragraph the content of Europe’s largest waterfront and inner-city redevelopment project, known as HafenCity Hamburg is discussed. HafenCity Hamburg is the most important spatial development project in Germany and illustrates a significant reclamation of the (outer) city centre for housing, offices, and recreation. In which the spatial development re-establishes the connection between the River Elbe and the city centre, giving Hamburg a new direction to grow, down and along the river (Schubert 2011).

7.2.1 Origin of HafenCity Hamburg

The fundamentals for the HafenCity Hamburg project were established in the 1990’s when the idea of a new inner-city district was conceived soon after the fall of the Wall and the Iron Curtain. After the reunification of Germany, Hamburg soon became a central hub in Central Europe and the metropolitan heart in the western part of Germany. Hamburg and the port were growing fast and connections were re-established. The port expanded continuously, first to the eastern part of the north bank of the river Elbe and later to the south banks. This process along with the invention of the freight container in 1956 and the arrival of bigger container ships gave Hamburg the opportunity to rethink their urban planning strategy in regard to the edges of the port area around the city-centre. The existing harbour basins close to city-centre were too small and shallow for the new and bigger container ships and the existing storage space was not big enough; the south bank of the river Elbe offered a solution. Slowly but surely, the northern part of the port area, now better known as HafenCity Hamburg, lost its importance as an industrial location and continued to decline. After a while, the area was obsolete. In 1991 the former first mayor, Henning Voscherau, unofficially commissioned a study to look into the transformation of the inner-city’s abandoned port area. The city proceeded with its plans discreetly over the next decade to avoid disputes with the Port of Hamburg and private building owners, as well as to avoid inflating land costs and property values. With this strategy, the city was able to take control of crucial parts of the area, since the majority of the land was owned by the City-State of Hamburg. However, the buildings on the land mostly belonged to private businesses. Buildings and companies were acquired through the then 100% Hamburg-owned Hamburg Hafen und Lagerhausgesellschaft mbH (now HHLA und Logistik AG) and its 100% city-owned subsidiary, founded in 1995, GHS Gesellschaft für Hafen-und Standortentwicklung (since 2004 HafenCity GmbH) (HafenCity Hamburg GmbH 2012b). Political legitimation for the acquisition of the biggest company on site, the Port of Hamburg, was established through a special fund ‘City and Port’ acted under public law, which means that the land owned by the Port of Hamburg was transferred to the Free and Hanseatic City of Hamburg in return of financing the new container terminal at Altenwater. The intention was that the terminal should be financed out of land sales of HafenCity Hamburg. Thus, the HafenCity development and the special fund under public law not only needs to finance the HafenCity project and its accompanying infrastructure, but also the new container terminal (HafenCity Hamburg GmbH 2012b).

On may the 7th 1997, the former first mayor Henning Voscherau presented ‘Vision HafenCity’ for the first time to the general public. The year before a well-known Hamburger architect, Volkwin Marg, laid out many of the development principles that still function as the basis of the spatial development these days, such as the urban structure and the principle of mixed uses (HafenCity GmbH 2012b). At that time only a few sections were marked for development and had a much smaller scope, which later expanded to the 157 hectares. At the end of April 1999, after intensive initial studies carried out by Hamburg authorities and GHS (Gesellschaft für Hafen-und Standortentwicklung), an international urban planning competition was launched for the draft of the master plan of HafenCity Hamburg and won by the Dutch-German team with Kees Christiaanse/ASTOC. The master plan was approved by the Hamburg Senate on February the 29th of 2000. After ten years of careful planning, the redevelopment of the waterfront takes off.
7.2.2 HafenCity Hamburg project

According to the development company HafenCity Hamburg GmbH, the spatial development project is designated as Hamburg’s most prominent and Europe’s largest inner-city redevelopment project that is being realised at this moment. The development company has estimated a development timeframe of 25 years in which all ten neighbourhoods will be realised. The development company notes that this particular spatial development project is different from other major urban international waterfront development projects, because it has a very central location and the high expectations of quality are reflected in its fine-grained mix of uses, standards of urbanity, ecological sustainability, and innovative development process (HafenCity Hamburg GmbH 2012b).

The intention is to enlarge the existing city-centre (Bezirke Hamburg-Mitte) with 40% and construct a new city quarter containing circa 6,000 dwellings for more than 12,000 residents. The HafenCity Hamburg area covers 157 hectares (including water surface) where a metropolitan mixture of housing, offices, culture, entertainment, commerce, and trade emerges. The project has an extensive mixed use element, comprising 55,000 square meters of retail, several major cultural facilities, and commercial office spaces, which is anticipated to generate employment for circa 45,000 people. The development company notes that the mixed uses, the modern infrastructure and mobility, and the city typography (open spaces) within HafenCity Hamburg contribute the its high quality of urbanity. Urbanity according to the development company basically arises from an appropriate urban structure made up of a variety of land uses in and outside buildings, as well as the presence of a large number of people of different types (HafenCity Hamburg GmbH 2012b). The development company has made great strides to create what they call ‘a new kind of urban experience’ where most varied uses and users come together to create ‘an intensive form of inner city community’ (Lees 2010). They see it as a point of departure from other redevelopments, because they are seeking to create a new kind of urbanity that will be the model for the European city of the 21st century that ‘conceives and realises new forms of inner city coexistence’ (Lees 2010). However, the project is perceived by many as a luxurious project intended for higher income classes and offers a social unilateral supply.

In addition, HafenCity Hamburg is setting leading sustainable standards for the future of Hamburg through what the development company calls ‘sustainable development’. They consider that the intensive re-use of the old docklands, the industrial areas, and recycling the contaminated soil as an enhancement of the ecological value of the area and is therefore indicated as ‘sustainable development’. Although, the sustainable development of HafenCity primarily consist of ecological aspects, they do recognise that economic and social factors are also crucial for sustainable development (HafenCity Hamburg GmbH 2012b). In case of the medium and long term sustainable developments, the structure of HafenCity Hamburg contributes to fulfilling Hamburg’s climatic goal of a 20% cut in CO2 emissions by 2020 and with innovative supply of energy and heat 40% of the emissions are cut (HafenCity Hamburg GmbH 2012b). Since 2008, the sustainability aspects in HafenCity Hamburg are sharpened due to the change of parliament, who are more focussed on green and sustainability factors. In addition, Hamburg was named European Green Capital in 2011. Besides, the development company has introduced its own Ecolabel to stimulate sustainable development in HafenCity Hamburg. The first building in HafenCity Hamburg to be awarded the HafenCity Ecolabel in gold is the Unilever headquarters for German-speaking countries on Strandkai.

Since 2001, the construction of HafenCity Hamburg started and is being developed from west to east and from north to south. The area is still under construction, but includes some completed sections in the western part. The first neighbourhood, Am Sandtorkai/Dalmannkai, is already well-established as residential and work location; 1,700 people live there, with 8,400 employed in 300-plus businesses (Hafencity Hamburg GmbH 2012b). The second neighbourhood, Am Sandtorpark/Grasbrook, was completed at the beginning of 2011 and at present, much of the open space has been completed and a primary school with nursery and kindergarten offering all-day supervision opened in 2009; many families have settled in its proximity. The third neighbourhood, Brooktorkai/Ericus with its two major users, Germanischer Lloyd and Spiegel group was completed in fall 2011. Next, the construction of the residential area in the eastern part of HafenCity will start in 2012, which includes the neighbourhoods Baakenhafen, Oberhafen, and Elbrücken.
Also the construction of the large ‘central park’, called Lohsepark, the green connection between western and eastern HafenCity will be constructed from 2013.

### 7.2.3 Location

HafenCity Hamburg is directly located between the city centre of Hamburg on the north bank of the River Elbe, on the former and abandoned docklands of the Port of Hamburg. The spatial development extends from the Speicherstadt, the old warehouse district, to the Elbrücken, the bridges across the river Elbe (figure 7.4). HafenCity Hamburg is developed from west to east and from north to south and covers 157 hectares of both old and new operational port facilities and is surrounded by several neglected housing estates, the wholesale market, industry, port facilities and railway lines (Schubert 2011). HafenCity Hamburg is perfectly placed to reconnect the port and the city. In the former years the port and the city were strictly segregated through customs gates and fences, because of the tax free port.

![Figure 7.4 HafenCity Hamburg from Speicherstadt (north-west) to the Elbrücken (east)](Source: HafenCity Hamburg GmbH 2012b)

### 7.2.3 Neighbourhoods

Although HafenCity Hamburg is immediately recognisable through its coherent urban ensemble, visible in the urban structure, flood-protected plinths, requirements respecting architectural quality, and urban landscape and sustainability, HafenCity Hamburg counts ten different quarters; each with their own individual profile, identity, building program, and qualities dictated through the planning principles. The subdivision of the ten neighbourhoods was first laid down in the master plan of 2000 and in some cases the allotment or layout of the space is altered and adapted later in line with changes made during the planning process (HafenCity Hamburg GmbH 2012b). Often the layout of the neighbourhoods is determined by the typology of the project area: canals, harbour basins, river Elbe, roads, and the adjacent Speicherstadt. The history of the port with its maritime features and atmosphere is in some neighbourhoods strongly visible and gives the neighbourhood a special character. The transitions between the various neighbourhoods seems to be seamless and fluent and is realised through open spaces, acting as a thematic thread throughout the whole project. The realisation of a variety of neighbourhoods within the new city districts makes it also possible to phase the project and reduce the development risks, since the development covers a period of 25 years. The phasing makes it possible to develop HafenCity Hamburg step-by-step and adequately react on market developments and demands. One of the successes of HafenCity lies in the flexibility of the master plans. Overall, the neighbourhoods vary in terms of use, architecture, and urban typology. The location of the ten neighbourhoods are briefly discussed and shown in figure 7.5. In addition, extensive information about the neighbourhoods is available in Appendix B.
1. **Am Sandtorkai/Dalmannkai**

In the northwest of HafenCity Hamburg the first quarter, Am Sandtorkai/Dalmannkai, was completed in spring 2009 and closely connects the historical Speicherstadt district (former warehouses) with HafenCity. The Dalmannkai, the southern part of the quarter, is the residential focal point of HafenCity Hamburg. This neighbourhood includes owner-occupier and rental apartments build by developers, joint building ventures, cooperative building associations etc., and 1,700 live and work in this neighbourhood. In addition, HafenCity Hamburg’s flagship project the Elbphilharmonie Concert Hall is located in this neighbourhood.

2. **Am Sandtorpark/Grasbrook**

Am Sandtorpark/Grasbrook was completed at the beginning of 2011 and includes a mixture of housing, offices, and the first elementary school in HafenCity Hamburg situated around a park. Mostly, families are attracted to this neighbourhood due to the school, day-care, and green character.

3. **Strandkai**

This quarter is also intended for the use of housing, offices, and services. Most interesting building so far in this neighbourhood is the Unilever headquarter for german-speaking countries, which offers work for 1,200 employees and occupies 25,000 sqm GFA. The building’s ecological sustainability is impressive an for this reason the Unilever building has been awarded many sustainability prices.

1 The Unilever building was awarded the HafenCity Ecolabel in gold in fall 2011. It had already won the BEX award for particularly sustainable, innovative and efficient architecture in July 2009. In November 2009, at the World Architecture Awards in Barcelona, it was designated World’s Best Office Building. Recently the German architectural association (BDA) Hamburg awarded the Unilever building first prize for architecture of the construction years 2008-2010. It also won the readers’ prize from the Welt/Welt am Sonntag newspapers (HafenCity Hamburg GmbH 2012b).
4. Überseequartier
The Überseequartier will function as the heart of HafenCity Hamburg with housing, retail, leisure, and culture facilities. The development of the Überseequartier is in hands of one development consortium, consisting of ING Real Estate, SNS Property Finance and Groß + Partner Grundstücksentwicklungs-Gesellschaft mbH and was selected through an international investor competition which began in 2003.

5. Brooktorkai/Ericus
This quarter is most suited as a corporate location due to infrastructure connections. The neighbourhood offers a mixture of housing and offices and has a specifically maritime character.

6. Elbtorquartier
Here, a knowledge quarter emerges accommodating the HafenCity University, Greenpeace headquarters, Designport Hamburg, and the International Maritime Museum Hamburg. The Elbtorquartier focusses on housing, retail, offices, and gastronomy.

7. Am Lohsepark
A new park connection the green belt which encircles Hamburg is extended in this neighbourhood and connects to the Elbe riverside walking routes along Baakenhafen. In this part the first subsidised homes will be developed. At present, most of the area needed for the development of Lohsepark are in use by a forwarding company until 2017. However, the first sub-areas can be developed from 2012 and will be completed in 2013. According to the development company, the whole park will be in use in 2019 (HafenCity Hamburg GmbH 2012b).

8. Oberhafen
Oberhafen will be dedicated to creative and cultural uses complemented with work-live concepts and sports facilities.

9. Baakenhafen
The entire area is offering 1,800 homes in joint building ventures, building cooperatives, and condominiums, as well as subsidised rental apartments. Also in this quarter the aim is to encourage the typical HafenCity Hamburg mix of uses, which means that office, gastronomy, and recreational features are developed.

10. Elbbrücken
Elbbrücken will be the eastern entrance of HafenCity with three high rise towers built next to the Elbbrücken bridges. This quarter will be characterised by its densely built business environment and complemented with a residential and leisure area.

7.3 Actors: City-State Hamburg, HafenCity Hamburg GmbH & private sector
The three major actors in this spatial development project are the City-State of Hamburg, the development company HafenCity Hamburg GmbH, and the private sector. During the spatial development there is a close working relationship and continuous social interaction between the three actors that fuel the learning process. For instance, HafenCity Hamburg GmbH collaborates with the city’s ministries and incorporates their wishes to create political support for the spatial project, but they also interact with a wide range of predominantly German and international companies acting as investors and occupiers of land in HafenCity Hamburg.

On the one hand, the role of the City-State of Hamburg is to create and provide a framework of the right (planning) policies and incentives. On the other hand, the development company HafenCity Hamburg GmbH is a full subsidiary of the Hamburg City State Government, which means that the City-State of Hamburg acts in its private capacity instead of its public capacity. Put differently, the development company has the role of master developer and oversees the entire development process and is trustee of the special fund ‘City and Port’, while they are indeed operationally dependent on the City-State of Hamburg (OECD 2010).
Here, the development company acts as a lobbyist, attempting to attract private investments into HafenCity Hamburg in a way that it shares risks and costs (Urban Land Institute 2010). As a master developer, the development company is the partner for all private sector developers and investors to participate in the development and supports the newly established local communities regarding the development of the new urban spaces (OECD 2010). Put differently, HafenCity Hamburg GmbH is responsible for bringing the private sector to the table and to make the development happen. To induce private sector success, Jürgen Bruns-Berentelg, CEO of HafenCity Hamburg GmbH, states that,

“The important factors for the private sector successes are: relating the project to the overall strategy of the city; an appropriate spatial strategy; reducing risks; increasing competition; increasing transparency; reducing free rider strategies/coordination time-wise; increasing innovation and quality; and increasing diversity and creating market niches.”

(Urban Land Institute 2007)

The private sector companies involved are mainly property firms, large corporate companies, investors, developers, and smaller companies as well as cooperative building societies and joint building associations. The different powers, influences, and tasks of the three major actors in the development process are summarised in figure 7.6.

Figure 7.6 Governance structure, powers, and tasks of the three major actors in HafenCity Hamburg

Source: OECD 2010
It can be stated that the City-State of Hamburg has a governmental role in which it provides public guidelines, grants planning permits and development plans, partly finances and built projects in HafenCity Hamburg in the form of public-private partnerships, and provides external infrastructure linkages. It can also be noted that the City-State of Hamburg has a lot of power and influence on the planning process, in which the quality of the project can be guaranteed by approving the development plans and providing the building permits. By concentrating non-official functions in the development company, the City-State of Hamburg can ensure the efficiency and quality of the urban development project, yet through intensive division of labor and control also retain a high degree of public accountability (HafenCity Hamburg GmbH 2012b). Nonetheless, the development company has sufficient powers in steering and managing the development process. According to a study of OECD in which the roles of local development companies are analysed stated that the specific tasks of HafenCity Hamburg GmbH are to buy back the privately owned land and buildings and bringing it under the control of the city and relocating companies from the area to other areas in the city. The development company is also charged with developing the master plans for the area, as well as the being responsible for development and realisation of the necessary infrastructure an required amenities (OECD 2010). At its core, HafenCity GmbH carries out two distinct, but highly interrelated functions. At one level, the development company is involved in very high-level and complex project management. This involves managing the project of urban restructuring through planning, implementation, development management, and promotion. This responsibility for ‘urban restructuring’ encompasses also all infrastructures in the area, such as streets, promenades, bridges, flood protection, parks, plazas, and the quay walls. Simultaneously, the development company is charged with managing the performance of the district e.g. making the public realm attractive, keeping signage in good condition, and encouraging people to come to the area. More specifically, the study of the OECD (2010) summarised the responsibilities of the development company as follows:

- Market and sell municipally owned real estate in HafenCity (approximately 98% of the total area to be developed);
- Attract investors and buyers, providing all necessary assistance;
- Develop the location for residential use, services industries, and leisure amenities;
- Coordinate all planning and construction projects;
- Plan and implement land development;
- Manage and administer funds (special fund ‘City and Port’) used for the development of HafenCity;
- Cooperate with relevant Hamburg authorities directly and indirectly with parliamentary committees, and
- Location marketing, public relations, and citizens involvement.

Due to the fact that HafenCity Hamburg GmbH is a full subsidiary of the City-State of Hamburg it means that HafenCity Hamburg GmbH has public/private development responsibilities and private development responsibilities. In figure 7.7 the development responsibilities of HafenCity Hamburg GmbH are shown. The pink dotted line marks those tasks that could potentially shift towards private responsibilities.

The role of the private sector is to invest in the project and develop the individual building sites available in HafenCity Hamburg. According to HafenCity Hamburg GmbH (2012b) the total investment volume is approximately 8 billion euros in private investments and 2.4 billion euros in public investments of which 1.5 billion is financed out of land sales.
The three major actors in the development process of HafenCity Hamburg are discussed, however there are more actors engaged in the development process, which can be seen more as partners. So, besides the involvement of the ministry of Urban Development and Environment also other ministries are included in the development process of HafenCity. Special projects, such as educational and cultural facilities are financed from the budgets of those ministries. In addition, also real estate policies, joint economic promotion efforts, and city marketing are coordinated by the City-State of Hamburg. Other actors who are involved are the Chamber of Commerce, Chamber of Architects, Retail Association, but also universities and research institutes, as well as networks and cooperation agreements with other waterfront development cities are formed, and media and promotion partners.

7.4 Means: financial structure

In 1997 the port and location development company (GHS) was set up to manage the development of HafenCity Hamburg and since 2004 the development company is renamed and better known as HafenCity Hamburg GmbH. Directly with the establishment of the development company a special fund under public law called ‘City and Port’ was created to provide a financial basis for the development of HafenCity Hamburg and the new container terminal in Hamburg-Altenwerder. Almost all the land of the HafenCity Hamburg area was owned by the City-State of Hamburg and transferred to the special fund, free of charge (OECD 2010). According to the study of OECD (2010) about how local development companies operate, this transfer of land was vital for facilitating the redevelopment of the former port area, as political consensus between the Port of Hamburg and the urban development was achieved by financing the new container terminal at Hamburg-Altenwerder of approximately 335 million euros of which was mostly paid out of land sales of HafenCity Hamburg. To finance the public expenditure in the HafenCity Hamburg development the special fund borrows money on terms and conditions similar to those for public sector loans.
The financial responsibilities of HafenCity Hamburg GmbH for the special fund are: sales of the land and areas of HafenCity Hamburg, the lion’s share of public investment, notably roads, bridges, squares, parks, quays, and promenades. According to study of the OECD 2010, the special fund expenditures mount 750 million euros, from which most of the funds are required for relocating companies, clearing land, public flood defences, main and access roads, bridges, quaysides, promenades, parks, planning, promotion, and marketing. Other public infrastructures (the underground subway, road intersections, bridges) educational facilities, academic institutes (HafenCity University), and cultural facilities (Elbphilharmonie Concert Hall, Science centre, International Maritime Museum Hamburg) are funded from the budgets of the various ministries of Hamburg. According to HafenCity Hamburg GmbH (2012b), current numbers show that the total public investment volume is 2.4 billion euros and the private investment volume is approximately 8 billion euros (figure 7.8).

The OECD study stated that for the successful delivery of the HafenCity Hamburg project the leveraging of the private sector investments was essential. It was predicted that on the completion in 2025 between 5 - 5.5 billion euros of private investments will have been secured (78% of the total investment into the project). To facilitate these investments of the private sector in the early stages of the development process, HafenCity Hamburg GmbH was:

- Available as an efficient development company in charge of the whole development both specially and thematically;
- Able to create and communicate a broad but strong image and vision about HafenCity Hamburg;
- Able to set up a risk-reducing and competition-enhancing framework for private investments;
- Able to communicate and cooperate effectively with local and regional developers/investors to create genuine momentum behind the idea of HafenCity Hamburg as a real investment opportunity, and
- Able to offer small individual plots for development to allow a wide range of small, medium, and large-sized investors to be targeted.

The study also noted by that although the financial crisis is visible in Hamburg and has slowed down the rate of private investments, the project’s business model remains strong. The private sector investments have been leveraged in a risk-aware manner and the investment strategy appears sustainable. The key features of the investment strategies are that:

- The project is financed and supported by a diverse range of partners;
- The development is divided into small segments, which can be developed in sequence when finance is available, and
- The development is a mixed-use project, horizontally and vertically.
The study of the OECD (2010) concluded that as a result of the financial and investment strategies, HafenCity Hamburg GmbH seems to be well prepared for a market downturn, as one can be in such a situation, than other large-scale international projects. Momentum behind the project is continuing yet small adaptations are being made due to tighter financial constraints of the private sector.

7.5 Management: development strategy & process

Management of such a large development project as HafenCity Hamburg, where a whole new city district is realised, results in very complex responsibilities and demands a strong management. In 1998, the Free and Hanseatic City of Hamburg entrusted HafenCity Hamburg GmbH (formerly GHS Gesellschaft für Hafen- und Standortentwicklung mbH) with the development of HafenCity Hamburg. As explained before the development company is a full subsidiary of the City-State of Hamburg. Whilst HafenCity Hamburg GmbH has a degree of autonomy to act, they must also work in partnership with the City-State of Hamburg, the Ministry for Urban Development and Environment, and private parties. Their power, influence, and tasks only concern the development of the former harbour areas adjacent to the city-centre, covering 157 hectares. On one hand, the development company is involved in the management of the process and on the other hand they are responsible for adequate project management. The tasks and responsibilities of the development company are mentioned in §7.3. While there is no exact mission statement the development company expresses that,

“HafenCity is underlining Hamburg’s heritage as a maritime city, while simultaneously reinterpreting it for the present day and in doing so creating a model for the development of European cities in the 21st century.”

(OECD 2010)

7.5.1 Organisational structure

The management of HafenCity Hamburg consists out of three boards namely, the executive board, the supervisory board, and the advisory board. The executive board handles the day-to-day business and comprises the Chief Executive Officer (CEO), Jürgen Bruns-Berentelg and the Managing Director, Giselher Schultz-Berndt. The supervisory board was set up in 1995 and is there to supervise the executive board. The supervisory board consist out of five members of the Senate including chairman Olaf Scholtz (first mayor of Hamburg), Vice-chairwoman and senator Jutta Blankau (Ministry Urban Development and Environment), Senator Barbara Kisseler (Ministry of Culture), Senator Frank Horch (Ministry of Economic, Transport and Innovation), and Senator Peter Tschentscher (Ministry of Finance). The advisory board was founded in 2005 comprising at least six expert members together with institutional members including the chairman of the Chamber of Trades, the Chamber of Crafts, the Architects’ Chamber and the City Center Sponsors’ Association. The advisory board, as the name already reveals, is there to advise the management of HafenCity Hamburg and is particularly concerned with the following subjects: continuing development of the master plans, continuing development of development planning, compilation of the development plan, continuing development of the uses concept, as well as communication and marketing.

The organisational structure, which elaborates on the activities, tasks allocation, coordination, and supervision of HafenCity Hamburg GmbH are shown in figure 7.9. The organisational chart visualise the executive board and is subdivided in the management tasks: urban development fund & corporate planning and administration, area development, communication & marketing, and infrastructure. Additional, also the activities that are externally acquired through commissioning the private sector and outsourcing are included in the organisational chart. There are different knowledge specialisation involved in the development process and knowledge is acquired through internal and external sources that fuel the learning process.
7.5.2 Development strategy and process

In the aim of maintaining an international position as a major port and its regional position in Europe, the Senate of Hamburg formulated a comprehensive, long-term strategic vision for the development of the city called ‘Metropolis Hamburg - a growing city'. Within this smart growth strategy one of the key projects is called ‘Leap across the Elbe'. A major regeneration project, which includes the HafenCity Hamburg project, the Harburg Inner Port, and Wilhelmsbrug (Waterfront communities project 2007). In other words, HafenCity Hamburg is part of an overall strategic urban regeneration scheme.

According to HafenCity Hamburg GmbH there are a variety of mechanisms in place to encourage comprehensive sustainable development within the project itself; economically, socially, and ecologically. The aim of the HafenCity Hamburg GmbH is setting new (development) standards for future European urban development projects with its innovative development process. The development company stated that the overall aim of the spatial development is to create a new district in which a fine grained mix of uses and high standards of urbanity, ecological, and sustainability are being pursued. CEO Jürgen Bruns-Berentelg suggest that,

“HafenCity is different. Economic development is not the centre of our focus, but rather the urban development process in the broadest sense. We want to join economic, social, cultural, and architectural forces in a way that translates into lasting urbanity.”

(Steinborn 2007)
The followed development approach can be regarded as an integrated approach in which HafenCity Hamburg GmbH addresses both the hard and soft elements of urban area development and is pursuing a long-term growth strategy based on innovation, quality, and sustainability, whilst exploring new directions and opportunities. It means that, according to CEO Jürgen Bruns-Berentelg that,

“Urban quality is characterised not just by physical quality, appeal or attractiveness of the place, but also inclusivity and diversity and its sustainability and mix. It should be open and accessible to lots of people.”

(OECD 2010)

To pursue this model of holistic and integrated development, HafenCity Hamburg GmbH seeks a diverse and heterogeneous involvement in the project from groups often outside the development process. For instance, through public participation or affinity groups that are encouraged to contribute to the development process.

The development strategy followed by HafenCity Hamburg GmbH is highly flexible, integrated, and open for new innovative developments in which economic, social, cultural, ecological and sustainable development is encouraged and where urban quality plays a major role. What the project has made a success so far, in terms of development strategy, is its flexibility to adjust the master plans and adopt new innovative approaches. For instance, HafenCity Hamburg GmbH is able to develop new ideas and frameworks, which produce an innovative and distinctive approach to city development. This way of developing allows and supports a learning process throughout the entire development process in which new insights are created and added to the master plans.

7.5.2.1 Urbanity development strategy
The development framework of HafenCity Hamburg is based on what the development company calls ‘urbanity’. The basic principle for the development strategy is based on creating urbanity by mixing public spaces, culture and entertainment spaces, residential and office spaces, and consumption spaces (figure 7.10). Urbanity according to the development company HafenCity Hamburg GmbH is the metropolitan feeling of an urban space. Urbanity basically arises from an appropriate urban structure made up of a variety of land uses in and outside buildings, as well as the presence of a large number of people of different types (HafenCity Hamburg GmbH 2012b).
Social integration plays a major role in both the development strategy and in the pursuit of high urban quality. By differentiating in land use, architecture, horizontal and vertical mixed uses, and offering different housing types for different target groups (families, seniors, dink households, middle- and high class households etc.) at different prices levels in the form of owner-occupier and rental housing creates according to the development company a strong mixture of social integration along with the public spaces and amenities for recreation. Public open spaces, parks, squares, and promenades are realised in HafenCity Hamburg to connect the various forms of architecture, uses, and neighbourhoods, but is also there to support social integration and offering residents, employees, students, visitors, tourists, and cultural consumers a place to meet and interact. The development process can therefore also be seen as a people-centred approach, as illustrated in the efforts made for social integration. Moreover, many institutions and networks are established to build the social infrastructure within HafenCity Hamburg. According to HafenCity Hamburg GmbH, the involved institutions and networks are shown in figure 7.11.

### 7.5.2.2 Land development strategy

HafenCity Hamburg GmbH pulls the strings as manager of the development and oversees all the development activities. In order to achieve high quality, both conceptual and architectural, the following land development strategy is used. For each of the ten neighbourhoods an allotment (zoning plan) is made in which mixed use and quality standards are set in order to achieve ‘urbanity’. In figure 7.12 an example of an allotment is shown in which different investors and developers are involved who develop housing for different groups. In addition, also the horizontal mixed-use (different land uses) and the vertical mixed-use (mixing uses in one building) is shown in figure 7.12.
To reduce risks, HafenCity Hamburg GmbH offers smaller plots to several investors or developers and not just the entire area to one development consortium, because with this development approach the risk is distributed among all the investors and developers and not just to one consortium. This also makes it more easier to substitute one another.

Investors, property developers, owner-occupier associations, private owners, joint ventures, residential building cooperatives, housing associations etc., all have the opportunity to develop and realise a project within HafenCity Hamburg. The tenders who are interested in buying an individual plot are invited for plots scheduled for residential use; the results of the competition decide who will get the plot. In most cases, however, it is not necessarily the highest bidder that is successful. The crucial factor for awarding the land development contract is the quality of the mixed use concepts submitted and the declared objective of creating a fine grained mix of uses (HafenCity Hamburg GmbH 2012b). Whatever the type of land use is, since 1 October 2006, all zoning plans are debated by the Commission for Urban Development, represented by all political parties in Hamburg’s City Parliament and the Land Commission must ratify the land development contract in order to proceed. This because HafenCity Hamburg is designated as priority project. Then an exclusive option period of 1.5 years is offered to the winner of the plot with an obligation to plan. The investor, developer, or user then has to proceed (in conjunction with the City-State of Hamburg), with an architectural competition, may commission site survey, and has to prepare for building approval. Throughout this process, HafenCity Hamburg GmbH, the authorities, and the buyer will remain in constant dialog. Thus, the winner of the tender (investor, developer, or user) and HafenCity Hamburg GmbH define a development plan for a specific plot and the investor, developer, or user will own the plot after the building permit is approved. According to HafenCity Hamburg GmbH, the advantage of this development strategy and process for the investor, developer, or user is that financing of the purchase price is postponed until after the building permit is granted; until then they have adequate time to hone the quality of the product, secure finances, and perhaps acquire additional users. The advantage of this development strategy and process for HafenCity Hamburg GmbH and the City-State of Hamburg is that they retain the ability to ensure the building’s quality by intervening during the development process, which lasts for one and a half years after award of the option, thus ensuring that the originally submitted use concepts and time schedules will be adhered to, since the purchase cannot go through until the building permit is received. This encourages cooperation, with both city and investor, developer, or user by optimising risks, costs, quality and time scales. This development strategy applies for residential use. If companies want to establish themselves on one of the plots for offices and 60% to 70% of the building or site is for their own purposes they can apply directly to HafenCity Hamburg GmbH without competition.
According to HafenCity Hamburg GmbH and the City-State of Hamburg the aim is to set international
standards for conceptual and architectural quality. It is important to them, not only to attract powerful and
financially strong investors, but also to find developers willing to cooperate in setting high quality standards
and in pursuing innovative paths. They state that HafenCity Hamburg is therefore not primarily a major real
estate project in which individual undertakings need to be realised as quickly and efficiently as possible, but
within the context of a new definition of city, the end product is intended to be a model for urban quality.

7.5.2.3 Sustainable development strategy

In the context of the smart and sustainable urban planning strategy of the City-State of Hamburg also
HafenCity Hamburg GmbH formulated a sustainable development strategy. HafenCity Hamburg GmbH
(2010a) stated in their “Sustainable Construction in HafenCity’ report that the sustainability strategy is
essentially based on five levels:

1. Reuse of an old port and industrial area;
2. Higher urban density and high degree of mixed-use in the proposed core area of HafenCity, leading to
efficient and sustainable land use;
3. A sustainable transport concept, which includes connecting the underground railway in HafenCity
with the existing town centre, hydrogen-fuelled buses, and promoting HafenCity as a ‘walkable’ city;
4. A local and district heating network based on very low carbon limits, which uses a significant amount
of renewable energy sources, and
5. A certification system for buildings.

The first three aspects can be regarded as planning norms and the other two levels are a result from market
processes and mechanisms. The concepts for heating and energy supply are based on two deals already made in
2003 and 2009, while the certification of buildings with the newly introduced Ecolabel by the development
company is an ongoing market development and learning process. Learning to see how the companies react on
the building certificate, how the certificate would be perceived and applied, but also applying new knowledge
in terms of the sustainable development.

7.6 Conclusion

To summarise, the urban area development process of HafenCity Hamburg is analysed by means of the model
of Verlaat & Wigmans (2010a) in which the context, content, actors, financial means, and the management of
the development process are discussed. It can be concluded from this analysis that Hamburg has a long history
of being an important port and trading city in which Hamburg owes its wealth, growth, economic prosperity,
and urban structure to the port and its activities. However, due to several contextual changes, such as
globalisation, the shift form a industrial-based metropolis towards a service-centred metropolis, and important
changes in the transport industry opened up opportunities for the redevelopment of the abandoned waterfront
adjacent to the city-centre of Hamburg in which the HafenCity Hamburg spatial development project is part of
a larger urban planning strategy of the City-State of Hamburg called “Metropolis Hamburg - a growing city’.
The HafenCity Hamburg project contains a metropolitan mix of housing, offices, retail, entertainment, and
several public open spaces in which according to the development company a feel of urbanity is created. The
spatial development is led by a full subsidiary development company of the City-State of Hamburg, which
means that the development company has a certain degree of autonomy, but is operationally dependent on the
City-State of Hamburg. Therefore, the three major actors in the development process are the City-State of
Hamburg, the development company entitled HafenCity Hamburg GmbH, and the private sector. All are
actively involved in the learning process and producing new and useful insights which ultimately have led to
changes in the master plans which are discussed in chapter 9.
The development company’s approach towards developing the area is a mixture between a plan and development-led approach in which certain planning norms, quality standards, land uses according to the building program are fixed, while the master plan has also a high degree of flexibility to react on development opportunities. To conclude, analysing the content, actors, financial means, and management and development process of HafenCity Hamburg it can be stated that the development approach of HafenCity Hamburg GmbH has some major strengths and brings along certain opportunities, but there are also some weaknesses and threats towards this development approach. In table 7.2 an overview of the SWOT analysis (Strength, Weaknesses, Opportunities, and Threats analysis) is shown.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>• Very effective division of labour between public and public/private sector</td>
<td>• High costs of regeneration and infrastructure development in a spatially segmented waterfront location with the risk of not meeting ‘break even’ between income from land sales and expenditure at the end of the project period</td>
</tr>
<tr>
<td>• Flexibility of the master plan and its ability to respond to external changes</td>
<td>• Ability to respond quickly and effectively, meaning the development has proceeded at a quicker pace than expected</td>
</tr>
<tr>
<td>• Ability to respond quickly and effectively, meaning the development has proceeded at a quicker pace than expected</td>
<td>• Mixed use development will allow HafenCity to respond to future changes in demand and circumstances</td>
</tr>
<tr>
<td>• Mixed use development will allow HafenCity to respond to future changes in demand and circumstances</td>
<td>• People-centred approach to development efforts to build social integration, meaning it is not purely economic driven</td>
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<td>• People-centred approach to development efforts to build social integration, meaning it is not purely economic driven</td>
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<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• Built on principles of ecological sustainability, which is increasingly popular with developers and companies, so it can be leveraged</td>
<td>• Avoiding an exclusionary character of the area in spite of high cost and quality standards</td>
</tr>
<tr>
<td>• Based on a large number of market participants and a strategy of spatial segmentation, competition, and innovation have been held high and thus quality could be raised significantly</td>
<td>• In order to shape a sustainable urbaneity between neighbourhoods and visitor/employers aspirations, development of a new balance between the public and private realm is a challenge</td>
</tr>
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Table 7.2 SWOT analysis of the development approach of HafenCity Hamburg GmbH  
Source: OECD 2010
Learning, knowledge, and experience are inextricably connected and can be regarded as valuable assets in the complex process of urban area development. We constantly learn, create, acquire, and share knowledge to manage the urban area development process and to achieve results. From a learning perspective, the process of learning consists of certain learning activities that generate (new) knowledge, which influences the decision-making process and leads to certain actions in the development and planning process. Here, the actions are associated with changes in the master plans that indicate a learning process. Put differently, knowledge is generated by certain learning activities during the learning process that influences the planning discourse leading to changes in the master plan. These activities can be explained as remarkable moments or activities during the development and planning process. In this chapter some of the learning activities deployed by the development company HafenCity Hamburg GmbH are discussed in order to pinpoint which activities have influenced the planning process. These learning activities are categorised by means of the three aspects of the knowledge management process: knowledge creation, knowledge acquisition, and knowledge sharing (see chapter 4). The learning activities are categorised to indicate what kind of knowledge they generate. Besides, it makes it more easier to link certain activities with specific changes in the master plans. This chapter first indicates which learning activities are deployed by the development company and are subdivided into the three categories. Subsequently, it turned out that much attention is given by the development company to public participation and promotion of the project among the general public. Hence, these activities are also mentioned in order to learn from them. In addition, the influence of the learning activities on the planning discourse are discussed.

8.1 Knowledge creation

Knowledge creation is an important aspect of learning, because through continuous transfer, combination, and conversion of the different types of knowledge one learns. It is a continual cycle triggered by actions, such as team interactions, dialogue, metaphors, coordination, documentation, experimentation, and learning by doing (Nonaka & Takeuchi 1995). Knowledge creation can be viewed as an upward spiral process from the individual level to the collective group level, and then to the organisational level. In this case, it concerns the knowledge created by the development company that influences the planning process, thus at organisational level. Knowledge at organisational level is created by sharing common experiences, use of individual know-how, use of documents, databases, know-how of daily operations, organisational routines, and culture of an organisation. However, this research is not about knowledge management and organisational learning in organisations, it is about identifying the learning process in urban area development and how learning influences the development and planning process, focussing in particular on the changes in the master plans that imply learning.
Despite the fact that knowledge management and organisational learning address some important issues of learning in urban area development, given the timeframe of this research and the focus of learning within urban area development with special attention to planning process, as stated in the research objectives and questions, the learning activities associated with knowledge creation in an organisation are excluded in this research. Only the learning activities that influenced the planning and development process are mentioned in this research. How knowledge is created and used within the development company would be an interesting topic for future research.

8.2 Knowledge acquisition

Another key element of learning is the acquisition of knowledge. Knowledge acquisition here refers to the knowledge that an organisation, in this case HafenCity Hamburg GmbH, tries to obtain from internal and external sources to frame their spatial development project. Sources can include, staff members, partners/alliances, competitors, external experts, citizens, community of practices etc.. A variety of knowledge is acquired by the development company through different sources that influenced the development and planning process. Prior to the development and planning process three distinct learning activities became visible:

- **‘Study trips’**. Knowledge was acquired by visiting other waterfront development projects. HafenCity Hamburg GmbH gained momentum, because they were rather late in redeveloping their waterfront, which led to numerous possibilities to learn from the successes and failures of other waterfront redevelopment projects. As Mr. Schneider (2012), assistant of the executives of HafenCity Hamburg GmbH in the interview explained (Appendix C), prior to the development process HafenCity Hamburg GmbH visited other waterfront development projects, such as Sydney, Buenos Aires, London and other smaller waterfront developments to acquire useful insights and to learn from such waterfront development projects. However, he states that although you can learn from other waterfront development projects and be aware of the followed development process, the context of each urban area development is unique and different, so one must transform and combine the learned lessons accordingly to the context in which the spatial development project is realised.

- **‘Design study’**. In the beginning of the development process, in 1996, a well-known architect from Hamburg, Professor Volkwin Marg presented the first study about the urban regeneration in which he laid down some of the design principles that are still in use today, such as the mix-used strategy. Here it can be stated that an external source is used to acquire knowledge about the possibilities of the area.

- **‘Expert symposium’**. The expert symposium was held in 1998 to support the planning process. HafenCity Hamburg GmbH organised and expert symposium about which property investments and market trends to include in the master plan. The expert symposium included three workshops about 1) HafenCity as a location for leisure, tourism, and retail, 2) HafenCity as a residential location, and 3) HafenCity as a location for innovative service-economy (HafenCity Hamburg GmbH 1998). This learning activity indicates that through expert meetings and workshops external knowledge is acquired in regard to shaping the content of the master plan.

According to HafenCity Hamburg GmbH (2006), the first master plan was a result of an extensive dialogue in the early stages of the planning process in which ideas were exchanged interdisciplinary, a international town planning competition was held, outcomes of public planning debates were incorporated, and were political decision-making played all an equal role. All these activities mentioned can be regard as learning activities during the planning process. In the beginning of the planning process knowledge was acquired through intensive dialogues with experts and further on in the implementation process dialogue with citizens and citizens participation gained more influence. Some of these learning activities during the planning process are highlighted below:

- **‘International urban design competition’**. Through a international design competition external knowledge was acquired and used during the planning process. The design competition was won by KCAP and ASTOC, two experienced architectural firms and planners who are involved in many waterfront development projects.
Thus, by having two experienced planners involved in the planning process led to a great amount of sharing experiences and knowledge i.e. learning, which ultimately produced a well functioning urban structure that is included in the master plans.

- **‘Design competitions for open spaces’**. The open spaces are also tendered through a design competition to capture the knowledge and experience of external experts to achieve high quality open spaces.

- **‘Architectural design competition’**. For each individual building plot a architectural design competition is required in order to ensure the quality of the building, but also the quality of the entire spatial development project. Experience, know-how, and knowledge is acquired by the development company through involving external experts.

- **‘Public events and symposia’**. Through organising public events and symposia external knowledge is acquired regarding certain aspects of the spatial development. In March 2008 a symposium entitled ‘Planning Urbanity: life, work space in the new downtown’ with international prominent participants took place to answer the central question whether urbanity can be planned. In June 2009, HafenCity Hamburg GmbH organised a two-day symposium called ‘Better living in green and blue - public spaces in waterfront projects’ as part of the Hamburg Architecture Summer. National and international speakers were invited, for instance from Spain, The Netherlands, Denmark, Switzerland, and Germany to discuss the importance of public space, especially in the vicinity of water. Papers, podium discussions, and working groups generate (new) knowledge that fuelled the planning process (HafenCity Hamburg GmbH 2012b).

- **‘Expert dialogue’**. Before the start of the development of the neighbourhood Oberhafen an expert dialogue was held in order to obtain knowledge about the development approach for this part of HafenCity Hamburg. The event was called ‘Spaces of transformation, Culture, and Creativity’. Participants discussed the development process and the general possibilities to develop the area into a neighbourhood that specialises in culture and creative economies. The event was organised by HafenCity Hamburg GmbH, Hamburg Kreativ Gesellschaft, and Kampnagel in March 2011. With this learning activity it becomes clear that the development company is acquiring knowledge from external experts and citizens to give shape to the content of the master plan and frame the development strategy and approach for the neighbourhood Oberhafen.

- **‘Advisory board’**. The board was founded in 2005 and comprises at least six expert members who advise the management of HafenCity Hamburg GmbH on fundamental issues related to the development of HafenCity Hamburg, such as continuing development of the master plan, continuing development of development planning, compilation of the development plan, continuing development of the uses concept, as well as communication and marketing. Members include the chairman of the Chamber of Trades, the Chamber of Crafts, the Architects’ Chamber and the City Center Sponsors’ Association, but also Kees Christiaanse (designer of the master plan) and professors (HafenCity Hamburg GmbH 2012b).

Another form of knowledge acquisition is through public participation. Although, at the beginning of the development process, no inhabitants were actually living at the development site, the public was partly involved in the development process of HafenCity Hamburg. The initial strategy of HafenCity Hamburg GmbH was therefore mainly focussed on informing and bring citizens from elsewhere in Hamburg into the area by using different means of publicity events, but also through public involvement in the development and planning process. According to Smith & Garcia Ferrari (2012), the involvement through public participation in HafenCity Hamburg shows an ascending scale in relation to Arnstein’s ladder of participation (from no power towards degrees of citizens power). It started with no direct power being given to citizens in the early stage of the development process, because important strategic decisions regarding the development were taken by the city authorities. When the master plan was approved by the Senate, participation mostly concerned given information to citizens. Subsequently, the participation levels rose and consultation and small-scale initiatives were formulated and citizens perceived some forms of delegated power during the implementation phase.
With the revision of the master plan for the eastern part forms of consultation by citizens were incorporated through public presentations and discussions to gather feedback and acquire knowledge about the needs and demands of citizens. Learning activities in regard to acquiring knowledge through public participation are (Waterfront Communities project 2007):

- **‘Dialog im Kesselhaus’**. These include regular local public discussions on different topics related to the HafenCity Hamburg development, for example ‘HafenCity and Arts’ which dealt with specific ideas for art projects, the appoint of an ‘arts coordinator, affordable housing for artist, an architecture academy, and an art competition, etc.. Another example is the HafenCity Dialogue by Rem Koolhaas, a public event were the revised design of the Science Center was presented.

- **‘Open spaces participation’**. The architectural firm EMBT (Barcelona) has developed and designed the concept for the Sandtorpark as an integral part of the overall open space planning of western HafenCity Hamburg. An ongoing participation process involving local actors and organisations accompanies the statutory land use-plan initiated in November 2005 by the Department of Urban Planning and Environment and HafenCity Hamburg GmbH. Another great example of local involvement is the temporary Treasure Island playground, which was opened in the summer of 2008. Under local residents of HafenCity the need for a playground emerged and HafenCity Hamburg GmbH decided to built a temporary playground and as soon as Grasbrookpark is ready the playground will be replaced by a significantly larger playground. The playground is developed in cooperation and through intensive participation with children and their parents from the local community (Interview Robert Oschatz 2012).

- **‘Information events’**. Information events are held for people living and working in HafenCity Hamburg to discuss a variety of topics. HafenCity Dialogues gives Hamburgers the opportunity to discuss critical questions with experts, developers, or politicians. In addition, once a month since 2004, a 45-minute television program featuring HafenCity Hamburg information and discussions has been broadcasted on the local channel Hamburg 1 (HafenCity Hamburg GmbH 2012b) to acquire and share knowledge.

- **‘Involving citizens through events’**. Events, such as the Art Competition to establish arts and culture in the HafenCity jointly sponsored by HafenCity and the ‘Hamburgische Kulturstiftung’ (Hamburg Art Foundation) cultural events in HafenCity, such as HSH Nordbank Run, Zurich Masters (Beach-Volleyball), HafenCity Motion (different events in the context of the Hamburg harbour party) and temporary art installations are held to attract citizens to the project.

- **‘Integration of local actors and organisations’**. The development process include cooperation with the Hamburg Art Foundation, ‘Jugend in Arbeit’ (a project for unemployed juveniles), and cooperation with ‘Stiftung Maritim’ (to operate the traditional harbour, owner of historic ships).

Knowledge is also acquired during and after the realisation of the spatial development project by means of (academic) research about the different mechanisms in urban area development. Learning activities in this regard are (Waterfront Communities project 2007):

- **‘Move of Katharinen-School and Building of Community Centre’**. This research project concerning HafenCity Hamburg is given assistance by the German research project VERA, part of the German Ministry of Education and Research and supervised by the National Research Centre for Environment and Health (GSF). The project’s aim is to elaborate on different patterns of work and life and the interaction with urban spaces. By mapping these patterns in a time-geographic and computer based way they will identify conflicts and interrelations with urban spaces.

- **‘Time-political reality experiments’**. Is a research project in HafenCity Hamburg in which time-political issues are identified in collaboration with regional holders from policy/administration, market, and civil society. The relevant problems and questions are then processed by teams composed of researchers, practitioners, and end users. Researchers support the work through scientific analysis as well as by making results accessible for planning and participation.
The outcome of a reality experiment could generate scientifically-founded practical changes in the planning processes (e.g. newly designed time structures, new service supplies, etc). Scientific methods are used to identify how these results might be replicated in different contexts in order to inform broader academic and professional debate.

Reality experiments are successful if they manage to establish continuous professional communication and cooperation in an increasing network of actors, thereby helping to build up trust-based relationships to underpin the mutual translation of different logics and ‘languages’ of different actors involved in the projects, such as academics and practitioners.

- **‘Research projects’**. On behalf of HafenCity Hamburg GmbH, the HafenCity University preforms a lot of research concerning the spatial development. For example, the HafenCity University delivered an ethnographic research into the use of HafenCity’s open spaces in 2008/2009 (Kreutz n.d.).

### 8.3 Knowledge sharing

HafenCity Hamburg GmbH has the ambition to become a leading European example for spatial development of the 21st century with innovative and high quality standards, a fine grained mix of uses, spectacular architecture, and being a model for sustainable urban growth with climate-friendly living. Hence, the created frame suggest that Hamburg is a growing and dynamically developing city, as well as a model for other European cities to follow. CEO Jürgen Bruns-Berentelg, stresses that,

> "HafenCity Hamburg GmbH would like to intensify the discussion about the future of the city, and invite other cities to share their ideas with us – while at the same time keeping a lookout for the things we can learn from other international urban development projects." (HafenCity Hamburg GmbH 2012a)

Knowledge sharing fuels the learning process. According to Boer (2005) “knowledge sharing is considered to be a social relational process through which individuals try to establish a shared understanding about reality and to establish the (potential) ability to transform this understanding into (collaborative) actions which yield performance, by using diverse combinations of signs (e.g. language, gestures, illustrations) and tools (e.g. physical objects, communication technologies, mental models)”. It is therefore a communication process that is aimed to enable someone to do something direct or in the future by using a variety of communication means. In the urban development process sharing knowledge leads to innovative and new approaches that deal with the complexity of spatial developments. HafenCity Hamburg GmbH is involved in numerous activities in which knowledge about the project is shared in order to consolidate the establish frame of being a learning model for other development projects, which can be marked as knowledge sharing activities. These learning activities that are associated with knowledge sharing are:

- **‘Exhibitions’**. Numerous times the project showcased itself at the MIPIM, the international real estate show for professionals, in which four days of intense networking, conferences, think thanks, and successful projects are discussed. Furthermore, HafenCity Hamburg was shown at the EXPO real 2011, which is another exhibition event to share and discuss the urban development trends. And as of March 2012 the HafenCity Hamburg project and the IBA project are shown at the EU parliament in Brussels. The exhibition is part of an international tour in which the exhibition is designed to attract visitors to Hamburg as well as stimulating an international dialogue about the question how cities can grow, while creating a sustainable metropolis of the future (HafenCity Hamburg GmbH 2012a).

- **‘Conferences’**. HafenCity Hamburg GmbH is speaking at numerous conferences, for instance at the Boston Society of Architect’s BuildBoston 2011, were they spoke about the comprehensive, integrative and participative approach of Hamburg’s urban development and the lessons Boston could learn from Hamburg.
The conference included presentations, network meetings, exchange meetings, roundtables, and ended in a continued dialogue between Boston and Hamburg through visiting the construction site in June 2011 and once more to attend the International Building Exhibition (IBA) in 2013 in Hamburg.

- **‘Research project’**. HafenCity Hamburg GmbH is part of a learning network of nine cities from around the North Sea, who all are rediscovering their waterfront and striving to reconnect the city with the sea. The partner cities are: Oslo, Goteborg, Odense, Schiedam, Edinburgh, Aalborg, Hull, and Gateshead. Each city is experimenting with new ways to tackle particular challenges of waterfront developments, such as integrating new and existing communities, transport links, citizen participation, mixed use with affordable housing etc. (Waterfront Communities Project 2012). Examination of all the themes as whole, rather than individually, generates a considerable amount of learned lessons about the interrelated nature of the issues which influence waterfront developments. The partner cities are learning from one another through regular transnational meetings, joint study visits, and by presenting their findings at the conference held in March 2007. The project published a toolkit setting out recommendations for waterfront regeneration in Europe and produced a database of ‘good practices’.

- **‘Cooperation agreement’**. HafenCity Hamburg GmbH has also signed a cooperation agreement with Stadshavens Rotterdam and The Thames Gateway in March 2009. The agreement is characterised by open exchange of information and best practices in collective meetings. It is envisaged that these meetings will grow into a long-term relationship and takes the form of an international review. The results of this relationship will be beneficial for all participants and may possibly develop into a collective strategy towards the European Union and other international forums (Bruns-Berentelg, Andrews & Beekman 2009).

- **‘Knowledge sharing on site’**. HafenCity Hamburg GmbH makes it possible to visit information centres in HafenCity Hamburg itself, providing extensive information about the project and the development and planning process. Beside, visiting the info centres it is possible to join guided tours throughout the site to get familiar with the project and its developments. Furthermore, a ‘View Point’ is situated at the end of the Kibbelsteg nearby the Unilever building of which the entire HafenCity Hamburg construction site can be observed. In the enclosed observation platform information boards introduce the entire HafenCity Hamburg project and present its future design. The View Point is temporary and can be re-erected at another locations. The view point’s aims are: to inform the public about the complete project of the HafenCity; to attract visitors to the historic harbour areas; to increase awareness and interest on the dynamic growth of the new district; and to combine information with interesting architecture (Waterfront communities projects 2007).

### 8.4 Promotion through public events

After discussing the learning activities that generated knowledge for and during the planning process another interesting activity was set in motion by the development company; the promotion of the project among citizens of Hamburg. From the outset, the development company was aware of the fact that the area and the spatial project should be heavily promoted among the citizens of Hamburg. Until 2003, the port and the city were excluded through douane fences marking the borderline between city and port. Although the new development was centrally located between the old city-centre and the water, public awareness of the possibilities of the spatial development needed to be raised. Through a series of public events the awareness among citizens of Hamburg was raised and attracted thousands of curious visitors into the planned spatial development at a very early stage in the development process in order to create public support. Some of the public events are:

- **‘The HafenCity Run’**. A charity run through the HafenCity Hamburg construction site.
- **‘Arrival of cruise ships’**. Cruise ship Queen Mary 2 attracted more than 300,000 people to the site.
- **‘Zurich Masters’**. A beach volleyball event.
• ‘Summer in HafenCity’. An event held for the first time in 2006 at the Magellan Terraces, which comprised a tango, author readings taking the stage, BauTraum (planning and building for children), and a streets theatre. However, in the meanwhile a lot more parks and squares are finished and in the summer of 2011 twenty-four events were planned including new themes, such as swing summer (swinging under the open sky), poetry slam (battle in a flood of words), leselotte ahoi (family picnic with readings in the park), games, and street music on the quay to attract people.

• ‘Open heritage day’. Heritages are open to the public and can be freely visited.

• ‘Topping-out events’. A ceremony that is held when the last beam is placed at the top of a building or the overall completion of the building’s structure or an intermediate point. A great example was the topping-out event of the Elbphilharmonie Concert Hall, when it opened its doors to visitors for a weekend, which attracted national and international media.

• ‘Street parties’. Festive openings to celebrate the openings of buildings or open spaces.

8.5 Effects learning activities on planning discourse

The learning process and its accompanying learning activities have a certain influence on the development and planning process of HafenCity Hamburg. Creating, acquiring, and sharing knowledge has made the development company more aware of the complexity of urban area development and in particular the challenges of waterfront development projects. Hence, it can be stated that by looking at the indicated leaning activities that the development company has paid much attention to creating, acquiring, and sharing knowledge to frame and shape the content of the spatial plans. The learning process and the learning activities have made HafenCity Hamburg a carefully planned development project with some innovative mechanisms at its core, such as the urbanity strategy, land development strategy, mixed use concepts, sustainability strategy, urban topography, and the infrastructural connections with the city-centre. The product of the learning process, the created, acquired, and shared knowledge, resulted in a development approach that can be regarded as an integrated approach in which the development company addresses both hard and soft elements of urban area development, which are translated in the content of the master plans. The development company pursues a long term growth strategy based on innovation, quality, and sustainability, whilst exploring new directions and opportunities. Also the downside of many other waterfront development projects are addressed in this development project (neglecting social and cultural sides of waterfront development projects). The development company has learned from other waterfront development projects that social integration must play a major role in both the development strategy and in the pursuit of high urban quality and in creating urbanity in order to address the social elements of urban area development. Learning activities are therefore important for framing and shaping the content of the spatial development of HafenCity, but it is difficult to pinpoint which learning activity contributed to which decision or action prior and during the planning process. In regard to knowledge acquisition, the learning activities, such as the study trips, design study, and the expert symposium have shaped and framed the initial content of the master plan of 2000 supported with the external knowledge acquired from the designers of the master plan. From the beginning of the planning process it was clear for both the development company and the designers of the master plan that the master plan needed to function as a flexible framework, while a combination of fixed design principles and operationally manageable rules were accounted for in the master plan. Learning from other urban developments and other waterfront development projects made the development company more aware of the fact that the master plan had to be an adaptive spatial plan that could react to development opportunities. A learning activity that explicitly changed the content of the master plan is the temporary Treasure Island playground. Local residents of HafenCity expressed the need for a playground and through the ‘open space participation’ learning activity a temporary playground was opened in the summer of 2008 in cooperation and through intensive participation with children and their parents from the local community of HafenCity Hamburg. The influence of the learning activities on the planning discourse are most noticeable in the revision of the master plan for the eastern part.
Through a series of public events, expert dialogue, and citizen participation, a development approach for the neighbourhood Oberhafen is created, but also feedback about the content of the revised master plan was given and comments were incorporated, for instance the demand for subsidised housing. To a certain extent it can be concluded that learning and the learning activities framed and shaped the development and planning process of HafenCity Hamburg, but it can be stated that it is an intertwined process of deploying learning activities to generate knowledge, experience, and contextual developments (finances, economy, politics, society).

8.6 Conclusion

HafenCity Hamburg GmbH created and organised many events to acquire and share knowledge in order to learn, receive feedback, and shape the spatial development of HafenCity Hamburg. The acquired knowledge is up to a certain extent used during the planning discourse, because study trips, design studies, expert meetings, discussions, workshops, roundtables, public participation, research project etc., all contributed to the learning process of HafenCity Hamburg and to a certain extent defined the planning discourse of HafenCity Hamburg. These learning activities can all be indicated as remarkable moments in time in which something happened to the quality of the content, process, and/or an object in HafenCity Hamburg. However, the influence of each individual learning activity on the planning discourse and the change it brought in the master plans is hard to define. Multiple factors influence the changes in the master plan, for instance personal and organisational know-how, experience, created, acquired, and shared knowledge, but also strategic, political, social, and economic developments. However, it seems that knowledge is a powerful tool in framing and shaping an urban area development project and in particular master plans. It has come to the attention that experience, know-how, and generating knowledge are valuable assets in the urban area development process, but what is the underlying theory, success, or influence of experience and know-how on the development process? Donald Schön (1983) partly explains this by introducing the term artistry. Donald Schön (1983), describes artistry as “every competent practitioner can recognise phenomena...for which he cannot give a reasonably accurate or complete description. In his day to day practice he makes innumerable judgments of quality for which he cannot state adequate criteria, and he displays rules for which he cannot state the rules and procedures”. Our experience confirms that practitioners in urban area development learn the artistry in practice (learning by doing). They learn from the unexplainable, seemingly intuitive, and describing elements and pieces of knowing and understanding that lead to skilful execution of performances. A great example of artistry is found within CEO Jürgen Bruns-Berentelg of HafenCity Hamburg GmbH. He is a trained urban geographer with in-depth knowledge about critical urban theory. He is familiar with the work of many leading academics in this field and has a lot of experience in major spatial development projects, such as Berlin Central Station or the Sony Center in Potsdamer Platz in Berlin. Besides, he regularly publishes articles about pending questions regarding urban development. All this experience, know-how, artistry must certainly influenced the actions in the development and planning process, but also the success of HafenCity Hamburg. Combining the generated knowledge from the learning activities with experience, personal and organisational know-how, artistry leads to changes in the master plan, but makes it hard to pinpoint which learning activity was responsible for which change.
9. Case Study: master plan analysis

“A good plan is like a road map: it shows the final destination and usually the best way to get there.”

(H. Stanley Judd)

In the last past decades various waterfronts, such as Sydney, Vancouver, Cape town, Barcelona, and London were redeveloped into urban areas. Most of them functioned as engines for the regeneration of the city and HafenCity Hamburg is no exception of the waterfront redevelopment phenomenon. As with many (re)development projects, at the beginning of the project the engine is struggling, but when time passes, the more one can learn from the successes and weaknesses of the project itself, but also from other completed waterfront redevelopment projects. The learning activities are often exposed prior and during the planning and realisation phase or during the first few years of deployment of the area. HafenCity Hamburg gained momentum, because they learned from the successes and mistakes from other (waterfront) development projects and pursued from the very beginning an attractive functional mix of uses by combining the development priorities of Sydney (tourism and retail), Amsterdam (living), and London (offices) (Meyhöfer 2011).

In many ways there can be learned from the development of HafenCity Hamburg, both process and content-wise. To make the learning process in HafenCity Hamburg tangible the planning discourse of the master plans are analysed by means of a critical discourse analysis, because changes in the master plan imply a learning process. A discourse analysis is a useful approach to understand a range of issues in spatial planning: power, knowledge, framing etc., in which plans are the most durable products of spatial planning and offer a revealing window into the world of planners and developers and provide a snapshot of the planning discourse. In this case the discourse analysis is used to interpret the changes in the master plans as learning. Whereas learning is seen as a process of change and where the content of that process can be indicated as knowledge (broadly construed to include explicit knowledge, tacit know-how, etc.) (Carroll, Rudolph & Hatakenaka 2003) generated by learning activities. From a learning perspective, changes, alterations, and additions written down in the master plans imply a learning process. Whether these changes in the master plans are attributable to learning are analysed and discussed in this chapter.

This chapter starts with explaining the urban frame created by the City-State of Hamburg and HafenCity Hamburg GmbH. Framing an enormous urban development project, such as HafenCity Hamburg, is of importance, because it helps understanding complex situations and how people perceive the project. Frames are set by the City-State of Hamburg and the development company and are noticeable in forms of a larger urban planning strategy, master plans, development objectives, and design frameworks. Subsequently, the learning process within the project’s master plan development is analysed from the perspective of the development company, because they are responsible for the entire spatial development and the changes in the master plans. The master plans that are analysed include the initial master plan of 2000, the updated international version of the master plan of 2006, and the revised master plan for the eastern part of 2010. This chapter ends with a conclusion about the presence of learning within the HafenCity Hamburg spatial development.
9.1 Framing urban development

Noted by Majoor (2011), large-scale urban development projects are important milestones in the development agenda of cities. When large-scale development projects are deployed to achieve economic and social reconstruction they form an important position on the policy agenda and function as symbolic icons for strategic urban planning and city marketing of a city. Because of this, framing a spatial development project plays an important role in the way involved actors and the general public perceive the project. Hence, framing has a strong influence on the development discourse of the entire spatial project. Schön & Rein (1994) argue that in order to create coordination in complex situations, the involved actors have to go through the process of framing and reframing. Urban area development is a complex situation in which multiple actors with various perspectives, goals, aims, and interests develop an area. Schön & Rein (1994) also note that frames are the underlying, often implicit, structures of believes, perception, and appreciation of actors. Ultimately, they help individuals or groups to make sense and understand complex situations and ensure self-interest. In a way frames can motivate a range of actors to act in a certain way or facilitate collective action. They make a distinction between rhetorical and action frames. Rhetorical frames are important for persuasion, justification, and symbolic display, while action frames influence shaping laws, regulations, allocation decisions, institutional mechanisms, sanctions, incentives, procedures, and patterns of behaviour that determines what policies in action actually means. Coaffee & Healey (2003) suggest that both frames are related to each other. Persuasive rhetoric frames can influence the decision-making process and thus influence the action frame. In other words, in this research the rhetoric frames (framing of the entire spatial development) can influence the discourse of the planning process and therefore also the project’s master plan developments i.e. the changes in the master plans of HafenCity Hamburg are subjected to rhetoric frames fuelled by strategic, political and social domination of power, which ultimately influence the action frames.

Framing of the development project HafenCity Hamburg is done by both the Hamburg City-State (Ministry of Urban Development and Environment) and the development company HafenCity Hamburg GmbH responsible for managing and developing the entire project. The planning discourse of HafenCity Hamburg shows that the development project is part of the larger urban planning strategy of the City-State of Hamburg entitled ‘Metropolis Hamburg - a growing city’ in which the city pursues the concept of ‘smart growth’. According to the city it means that they want to become the national and international centre of economic growth, while emphasising and ensuring the ‘quality of life’ and stimulating sustainable development. The development project HafenCity Hamburg is framed as the flagship project of Hamburg as well as in Germany and Europe by both actors. They position themselves as a leader in urban design and practice and investing billions of euros in the process of doing so (Schuetze 2011). The city’s overall aim is to create a dense, mixed-use, economically, and physically attractive extension of the inner city and contribute to the positioning of Hamburg internationally (Smith & Garcia Ferrari 2012). The frame of the spatial development conceived by the development company is articulated as follows,

“A new downtown is growing: HafenCity, currently Europe’s largest inner-city development project, is a blueprint for the development of an European city on the waterfront. Hamburg is setting new standards in developing a city. What sets it apart from other major urban international development projects on the water is the area’s very central location and the high expectations of quality reflected, for instance in its fine grained mix of uses, standards of urbanity, ecological sustainability, and innovative development process.”

(HafenCity Hamburg GmbH 2012b)

As this statement suggests, the development company is framing HafenCity Hamburg as a new, innovative, and high quality urban development project that is not related to waterfront development projects we already know. In the meanwhile, Hamburg’s identity as a maritime city is being reinforced, while HafenCity Hamburg simultaneously becomes a model for sustainable urban development of the 21st century in Europe. The development project is already regarded as a showcase for major international urban development projects and receives national and international attention.
As Mr. Kerstan, the chairman of Hamburg’s Green Party says,

“\[This is a big opportunity for Hamburg to position itself in an international context and to let it be known that it is one of the leaders in one of the biggest debates of 21st century in the future of urban space.\]”

(Schuetze 2011)

Here, it is clear that rhetoric frames are made that function to legitimise the spatial development and are used as a symbolic display in which the development project is perceived as a sustainable and innovative urban development approach and an urban development model for the 21st century. This frame is presented by the City-State of Hamburg, the development company, and is magnified by the media. Communication through media has an impact on how the project is perceived and how people frame the project for themselves i.e. frames structure believes, perception, and appreciation. Almost every article about HafenCity Hamburg is full of praise about the project. As Fairclough (2003) states texts have a casual effect and brings change in our knowledge, our beliefs, our attitudes, and our values and prolonged experience of this positive frame of HafenCity Hamburg that is presented contributes to shaping the identity of people and their believes in the success of the project. Hence, the rhetoric frames influenced the action frames and investors, developers, and interested buyers of homes, office space, or retail space are lining up. Here, one can see that the frame motivates a range of actors and in a certain way facilitates collective actions. It is also noticeable that public investments in the project are justified by the actors. For instance, the same Mr. Kerstan, chairman of the Green Party states that,

“\[It is a big investment in our future. The community must invest in the future.\]”

(Schuetze 2011)

The large-scale projects that Hamburg is currently building, such as HafenCity, International Garden Show (IGS), and International Building Exhibition (IBA), show a city and a successive city government that is willing to think big in the discourse of spatial planning. They portrait themselves as a city that is not just focussing on the content of managing problems of the present, but bare in mind the future perspectives of the city in a broader frame of attracting economic prosperity, sustainable demographic growth, tourism etc..

9.1.1 Framing spatial developments

Already briefly mentioned is the urban planning strategy of the City-State of Hamburg called ‘Metropolis Hamburg - a growing city’. This urban planning strategy is the dominant urban planning frame for present and future urban developments in Hamburg. This urban planning frame is launched by the Senate of Hamburg in 2001, to become the economic centre of growth, while ensuring sustainable development and the ‘quality of life’. Objectives, tasks, and implementation strategies for Hamburg’s future urban developments up to 2020 are formulated and connects the many individual projects in the city with each other (Behörde für Stadtentwicklung und Umwelt 2007). The status of Hamburg as a city as well as a Federal State gives its Senate a high degree of independence in determining economic and urban development policies in which urban area development projects are guided by the city’s ministry of Urban Development and Environment. The discourse of urban planning shows that since the 1980’s waterfront regeneration in Hamburg started with the so-called ‘String of Pearls’ project. At that time most of the port area was owned by City-State of Hamburg and therefore have a strong position and influence on the regeneration of the waterfronts in Hamburg. The ‘String of Pearls’ project comprised a series of sites on the north bank of the river Elbe west of the city centre that significantly gentrified the area, because of its market-led approach (Schubert 2011). Then in 1990’s the City-State opted a new and more strategic approach onwards the development of HafenCity and a shift in the urban planning discourse is noticeable. This shift can be interpreted as learning from a previous development project and critical reflection of the followed development approach. Hence, the shift in the development approach by the city resembles accommodative learning, in which new mental frameworks for the development approach are built leading to change in the next development project, in this case HafenCity Hamburg.
The City-State of Hamburg took a more proactive, and planned approach in case of the development of HafenCity Hamburg and planned a major extension of the city centre (Smith & Garcia Ferrari 2012). As the development company HafenCity Hamburg GmbH states at a presentation in Oslo,

“The City-State of Hamburg has not rushed unprepared into the HafenCity Hamburg project, but moreover was able to call upon the wealth of previous experience and knowledge. Indeed, one could even say that the HafenCity Hamburg project may not even have evolved, had it not been for the pioneering role of the ‘String of Pearls’.”

(HafenCity Hamburg GmbH 2004)

Here, the statement suggests that learning is also associated with learning from experiences and actions. According to Smith & Garcia Ferrari (2012), after the successful implementation of HafenCity Hamburg in the inner city, the City-State of Hamburg introduced another waterfront development project called ‘Leap across the Elbe’ in mid 2000, within a regional development perspective. HafenCity Hamburg and the ‘Leap across the Elbe’ project are both part of the larger urban planning strategy of the city entitled ‘Metropolis Hamburg - a growing city’. The ‘Leap across the Elbe’ project covers from north to south, HafenCity Hamburg, Harburg Inner Port, and at the middle the Wilhelmsbrug Island. Here, the Senate who initiated the project is determined to pursue the concept of ‘smart growth’. Also in this development project the development strategy is slightly changed towards more citizens participation during the planning process and can be marked as assimilative learning, in which new impressions from the environment (citizens participation) are incorporated into the existing development framework and planning discourse. In both waterfront regeneration projects initiatives for citizen participation are used during the planning process. The City-State of Hamburg promoted and implemented different strategies for citizen participation. In the ‘Leap across the Elbe’ project citizen groups can participate in international expert design workshops, while in HafenCity Hamburg participation was used to secure the benefits for the ‘public good’ (Smith & Garcia Ferrari 2012). The ‘Metropolis Hamburg - a growing city’ is the dominant urban planning frame in which the development company of HafenCity Hamburg GmbH operates in and where political powers dominate.

9.1.2 Framing HafenCity Hamburg

As indicated in the previous subparagraphs the development of HafenCity Hamburg is linked to strategic decisions related to urban planning, sustainable development, and economic significance of Hamburg in Germany and in Europe, formulated by the City-State of Hamburg. Here, political dominations/powers are framing the possibilities for the urban development of HafenCity Hamburg. The regeneration of the waterfront with the development project HafenCity Hamburg was initiated by the City-State of Hamburg. They had the advantage of being the landowner of most of the abandonment port area and have a strong power position and influence in steering the redevelopment of HafenCity Hamburg to ensure the intended vision and quality through planning instruments, such as the master plans, zoning plans, and granting building permits. The HafenCity Hamburg development is framed by the produced master plans, development objectives, and the design frameworks. The master plans of HafenCity Hamburg function as the development framework for the realisation of the project i.e. the project is framed by the contents of the master plans. So far, there are three master plans; the first published in 2000, the second in 2006 (which is marked as a new and international edition of the first one but does not contain any textual or visual changes) and the third in 2010 (which is a revision for the eastern part of HafenCity Hamburg). Plans are the most durable products of spatial planning and offer a revealing insight in the world of planners and developers at that moment in time and show in a certain way the discourse of the balance in power among the involved stakeholders. Texts not only describe events and conditions, but also provide a snapshot of discourses and practices of their time i.e. any discursive event is seen as being simultaneously a piece of text, and instance of discursive practice, and an instance of social practice (Fairlough 1992). In this case the discourse of the master plan development (2000, 2006 & 2010) is used to indicate the learning process present in HafenCity Hamburg and interpret certain changes as learning.
9.1.2.1 Master plans

The master plans are framing the development of HafenCity Hamburg and outline the urban development concept and strategy for the extension and enlargement of the Hamburg city-centre. The master plans function as legal documents in which the primary planning characteristics and land uses in HafenCity are formulated textual and visual along with the objectives and procedures for the spatial development (HafenCity Hamburg GmbH 2012b). According to CEO Jürgen Bruns-Berentelg, who states in the master plan of 2006 that,

“The master plan cannot be perceived as merely an urban design framework, but also as the precursor to an equally important realisation strategy. Thus it be read ‘against the grain’, i.e. from the perspective of its desired objectives, not necessarily just from its implied strategic rules.”

(HafenCity Hamburg GmbH 2006)

In other words, the master plan can be perceived as a flexible and adjustable framework for the development of HafenCity Hamburg in which the desired objectives are incorporated in the master plans and steer the spatial development. The development company HafenCity Hamburg GmbH also states in regard to the master plans,

“We have not reinvented the wheel in HafenCity. With respect to density, height structure, and the grammar of urban planning we have mainly orientated ourselves on the historic centre of Hamburg, without transparently copying or imitating it. Urban development exercises reservation. It does not interfere, it does not forcefully attempt to be new. Urban development is perhaps best described in the words of Mies van de Rohe in his reference to architecture: you don’t have to re-invent architecture every Monday. And we didn’t with respect to our urban development. Some architects regard the urban development of HafenCity as boring. We get the impression they are confusing the task of urban development with that of architecture. Urban development does not need to be prominent in itself, but rather act as a frame to encompass future development. It is like a seedling box, a passe-partout, giving the necessary stability and context to a range of diverse architecture.

The project is structured to take 20 years to complete, although no one can really say precisely how realistic that estimation is. This raises a precondition that those involved in urban development tend to forget or want to forget: the proposed structure has to withstand and last that length of time. It has to be robust enough to survive the economic ups and downs and conflicting architectural opinions, while simultaneously leaving enough room to accommodate any requirements and needs that have yet to emerge. It is a matter of flexibility and durability and, despite apparent openness, is simultaneously a matter of maintaining urban planning conciseness and avoiding populist measures. This is not always simple. Flexibility demands the willingness of all participants to adopt a higher procedural standard. In Hamburg, we have managed to maintain this for five years now.”

(HafenCity Hamburg GmbH 2004)

The textual discourse in this statement shows the meaning behind the reason why the master plans are so flexible. One of the successes of HafenCity Hamburg is because of this flexible, clear, and robust structure of the master plans, which offers the opportunity to react, to vary, and modify during the realisation process when opportunities, contextual changes, or new knowledge presents itself. As CEO Jürgen Bruns-Berentelg points out,

“Despite the existence of a master plan, the residents and other stakeholders have an input into the ongoing project. Research has been going on for five years now. It is a learning process with no blueprint”

(Schaer 2010)
In this statement the textual discourse shows that the term ‘blueprint’ is used differently than in the other statement at page 102, where blueprint is used to emphasize the fact that the HafenCity Hamburg development project can be used as a (learning) model for sustainable urban area development in the 21st century. In this statement mentioned above the term blueprint indicates that the project itself has been a learning process. In addition, this statement also shows that the development company is aware of the learning process within the project itself and tries to listen and incorporate the input of residents and stakeholders up to a certain extent. The textual discourse points out a certain degree of social power that the residents and stakeholders have on the project’s master plan development. However, it must be noted that the master plans are framed as an agreement between the development company and the Senate, which means that any alterations or additions to the master plans indicate a break of that agreement. This suggests that each change must be justified by the development company in order to get political support for those changes, because ultimately the Senate has the power to approve or dismiss the master plans. To be clear, the development company HafenCity Hamburg is responsible for formulating the master plans and the Senate has to approve the plans. The Bezirke Hamburg-Mitte was responsible for the zoning plan of HafenCity Hamburg, but HafenCity Hamburg is given a priority area status, which means that since 2006 all zoning plans will be developed by the HafenCity task force in Hamburg’s Urban Development and Environment Ministry (BSU). Building permits are also granted by the Ministry of BSU to speed up administrative procedures. However, the new Urban Development Commission, represented by all political parties in Hamburg’s City Parliament, make the final decision on zoning plans. This greatly reduces the role of Hamburg-Mitte Bezirke where planning affecting HafenCity was concerned and gives more power to the City-State of Hamburg to steer the quality of the development project. The master plans can therefore be regarded as a planning instrument to secure and control the initial vision, aims, objectives, and quality of the entire development i.e. frame the development project.

9.1.2.1.1 Discourse master plan development

Plans have been referred to as both the key tool of planners and the key discursive frame for planning (Tett & Wolfe 1991). The planning discourse of the master plan development starts in 1991, when the former mayor commissioned a study into the regeneration of the inner city waterfront and in 1996 the outcomes of the initial study by Hamburg architect, Professor Volkwin Marg, were presented. At that time the project was still confidential, but on May the 7th in 1997 the initial vision for HafenCity Hamburg was presented by the first mayor of Hamburg, Henning Voscherau. In his speech at the Hamburg’s Übersee Club he made the case that, HafenCity Hamburg will be the project to regain Hamburg’s waterfront and to transform the former port area into an extension of the inner city; one that should be metropolitan, but neighbourly, socially including and design driven (Hafencity Hamburg GmbH 2012b)

Here rhetoric frames of persuasion, justification, and symbolic display are noticeable. At that time the vision only included narrow sections right on the waterfront which was later justified and expanded over the 157 hectares that we now call HafenCity Hamburg. The planning discourse continues after the presentation of the HafenCity vision. In April 1999 an international idea competition was launched by the development company for designing HafenCity’s master plan, after a series of initial planning studies that were carried out by the City-State of Hamburg and the former development company GHS resulting in The Master Plan Concept for HafenCity Hamburg (1999), in which planning parameters were tested and analyses of flood control, effects on traffic and plan defining factors, such as noise, historic pollution, flora and fauna, and odour were carried out. It functioned as the framework for the international idea competition. The competition was won by the Dutch-German planning architects KCAP and ASTOC.

The role of the planners was to define an urban structure/design for HafenCity Hamburg and give requirements in relation to the ground floor usages, activities on street level, and accessibility principles/parking garages (Daamen & Gils 2006). According KCAP (2012), “practical planning experience has demonstrated that traditional planning instruments are unsuitable tools for guiding redevelopment projects of this scale and complexity and argues that master plans are often overtaken by short term events and that therefore the quality can no longer be controlled”.
Hence, the master plan of HafenCity Hamburg is designed to be a flexible plan that can be adjusted accordingly if changes and opportunities emerge. Hence, a combination of fixed basics design principles and operationally manageable rules is accounted for in the master plans. As KCAP explains about the planning discourse,

“The design process allowed testing how various combinations of fixed design principles and rules reacted to different urban planning structures, programs, densities, and growth prognoses. The result provided an abundance of information for the development of a concrete spatial design which is incorporated in the master plan.”

(KCAP 2012)

One of the fixed design principles is the way HafenCity Hamburg opens up towards the old Speicherstadt, allowing interlinkages between the old city-centre and HafenCity Hamburg (figure 9.1). By positively shaping the urban design towards the old city-centre a connection between the old and new city district and towards the river Elbe is made. Not all lines of sights are incorporated due to the elevation of the plinths against tidal water.

Not only the lines of sights created towards the river Elbe are fixed, but from the beginning on the accessibility of HafenCity Hamburg played an important role in the design process and in stimulating the potential future building activity. Interrelations between the various parts, mostly harbour basins, of HafenCity Hamburg were made to positively influence the accessibility (figure 9.2).

Another fixed design principle is the placement of iconic buildings in the urban fabric (figure 9.3). According to ASTOC (2012), “in order to create discretely independent urban quarters, the urban magnets (iconic buildings) were not located around the centre, but in an outer and inner triangle, precisely placing buildings that would be able to shape the different quarters with their dedicated functions”.

Each of the different quarters has its own specific qualities and limitations and along with the flexible manageable rules the master plan generates maximum freedom for programmatic interpretation and architectural design and at the same time the fixed design principles preserve the old harbour structure and desired quality (KCAP 2012). In summary, the master plans are framing the urban development. According to KCAP and ASTOC Architects and Planners,

“The master plan of HafenCity Hamburg is the code of conduct for anyone involved in the planning process.”

(Meyhöfer 2011)
9.1.2.2 Development objectives
The management of the entire spatial development is led by the development company HafenCity Hamburg GmbH. It is a quasi-autonomous non-governmental organisation (NGO) which is fully owned by the Free and Hanseatic City of Hamburg, which means that the development company is operationally dependent on the City-State. Nevertheless, the company is responsible for the development and realisation of the project. Their task is to formulate and produce the master plans. In the master plans of 2000 & 2006 they opt various development objectives in order to achieve the vision and aims framed by the development company and the City-State of Hamburg (mentioned in §9.1). Here, the developments objectives are framing the planning discourse of the master plan development. The development company states in the master plan of 2006 that,

“The long term challenge for the planning and realisation of HafenCity Hamburg is to strike the right balance between growth and integration, economic stimulation and social considerations, international and local criteria, and between innovation and tradition.”

(HafenCity Hamburg GmbH 2006)

To strike the right balance the development company therefore allows a high degree of flexibility within the master plans, but they state that it must not override the original plan and intention, which is to stimulate a successful and sustainable development of Hamburg. This is why the development company places a great emphasis on the balance between fixed orientation points and room to manoeuvre. The most important development objectives that frame the spatial development are articulated bellow in accordance with the master plan of 2000 & 2006. An overview of all development objectives can be found in Appendix D.

Mix of land uses
- Strengthen the residential role of HafenCity Hamburg in order to respond to a diversifying, increasingly demand-driven housing market and to diminish the housing shortage in the city-centre;
- Strengthen the city-centre of Hamburg with new and enhanced infrastructure that will support retail, entertainment, leisure, culture, and tourism, and

Structure
- As the city of Hamburg has limited land resources available, the land on the site is to be used economically. Meaning an average floor space index of 2.5 (relatively high building density), with a total target of 1.5 million square meters of gross floor space to be developed;
- The mix of uses, the design of public spaces, and the architecture of the buildings must all meet exceptionally high standards of quality;
- To ensure diversity and sustainable development scaling of the plots and diversification of ownership is regarded as important. Division in small plots is preferable in order to make it possible for medium-sized business, small building contractors, building cooperatives and individuals to invest in the project (see §7.5.2 Development strategy and process).

Public waterfront spaces
- The quay areas will be transformed into wide promenades open to public. The planning process will pay particular attention to the embankments as well as the ground floor and elevated ground floor zones with respect to tidal water level variations;

Integration into the city
- Infrastructural nodes, bridges, and roads must be newly built or renovated to secure the integration with the city;
Sustainability and ecology

- Economical use of energy will be a key factor in order to reduce climate-changing influences to a minimum. Efforts will be made to incorporate sustainability and all opportunities for saving natural resources in the production of energy;

The development objectives function as a framework during the planning discourse of the master plan development. It can be stated that these development objectives formulated by the HafenCity Hamburg GmbH framed the planning possibilities and the development approach and strategy for the spatial development. All development objectives are up to a certain extent incorporated in the master plans. Some more present than others or enhanced during the planning process, such as the sustainability standards. It can be noted from a textual discourse perspective that the HafenCity Hamburg GmbH incorporated the spatial planning aims of the City-State of Hamburg to get political support for the project. These are for instance, the repositioning of Hamburg as a economic focal point by including offices, strengthen the residential role of the inner-city by offering housing, but also improving the infrastructure and the ambiguously formulated sustainable development objectives.

9.1.2.3 Design frameworks

During the planning discourse of the master plans, the development company translated the development objectives into three design frameworks, which were leading frameworks during the planning process. The three design frameworks manifest throughout the urban design of HafenCity Hamburg and strongly relate to the planning approach set forth at the start of the development (Co & Roderick 2011). Each of the design frameworks and development strategies (see §7.5.2) created by the development company seems to be carefully planned leaving no room for spontaneity. As CEO of the development company Jürgen Bruns-Berentelg states,

“No, there is not really room for spontaneity. It is not easy because with a newly created city, the question is how it holds together. The danger is that of creating a post-modern amalgamation.”

(Hawley 2007)

As Dr. Michael Bose, a senior lecturer on regional planning at the HafenCity University responds to that statement,

“We want something that has a specific identity, referring to European city planners. Some buildings should look nice and surprising and everything, but the identity of the city should be reflected. We do not want chaos and we don not want monotony. But within that spectrum, I think Europeans are more afraid of chaos. They tend toward more planning and control.”

(Hawley 2007)

It can be stated that with the formulated development objectives, development strategies, development approach, and design frameworks the development company tries to frame the spatial project to make sense of the complexity of the situation in order to steer and manage this enormous urban development. Below the three design frameworks are elaborated.

9.1.2.3.1 New city topography as framework

The creation of public spaces at the waterfront plays an important role in the urbanity development strategy of HafenCity Hamburg. Hence, HafenCity Hamburg is framing itself as ‘A city of plazas, parks, and promenades’ to stress the importance of public urban spaces in spatial development projects (Kreutz n.d.). Public spaces, promenades, squares, and parks therefore play a crucial role in the urban fabric of the new district, linking various parts of HafenCity together. The linkages between the various open spaces does not only provide a connection between the various neighbourhoods, forms of architecture and uses, but they also function as high quality elements in the built environment to stimulate social interaction.
The urban open space in HafenCity Hamburg is significant and 24% of the total land area is devoted to public spaces, parks, squares, and promenades. Another interesting fact is that 13% of the privately owned open spaces are accessible to the public through public obligations or right of way (HafenCity Hamburg GmbH 2012b). What is striking to see is that all of the open spaces are realised along the river Elbe or on surfaces of the harbour basins to make a strong connection with the water and the harbour. The idea of public use of the riverfront areas and the harbour basins is inspired on the restructuring and appreciation of water surface for public use, one of the development objective mentioned in the previous subparagraph. With this development objective in mind, a new urban topography is created (figure 9.4).

![Figure 9.4 New urban typography](Source: Google images 2012)

The new urban topography protects HafenCity Hamburg against tidal water levels, emergency flooding, and occasional storms. Surrounding HafenCity by dikes was no option, because it would have caused series of distinct disadvantages. Much of the charm of the area is created by the large amount of water surface, dikes would have deprived the view and the connection with the water and the harbour. Another disadvantage was that in order to enclose the entire area of HafenCity with dikes it had to be completed before any construction could take place, which would have caused technical and economical disadvantages and would have put the successive development of HafenCity Hamburg at risk. The ground level at the beginning of the development was 4.5 meters above sea level, but in order to secure the spatial development the entire area is elevated up to eight meters above sea level. A system of plinths and bases allows the development to occur quickly, without larger operations (such as reclamation). All buildings stand on eight meter high artificial bases that provide space for underground parking, which means that almost all stationary traffic can be accommodated out of sight. No additional sites for above ground parking blocks will be needed as a result of this new topography (HafenCity Hamburg GmbH 2012b). Furthermore, roads and bridges are also being built at least 7.5 meters above sea level to assure a safe passage during storms or extreme flooding. Development of the lowest floors is made possible by plinths and design elements such as water-tight hatches (figure 9.5).

![Figure 9.5 Flooding](Source: Google images 2012)
Due to this topography the plinths often took shape in the form of public spaces, promenades, squares, and parks along the waterline. The open space development as a whole can be experienced on two and sometimes three levels by using a variety of stairs, walks, ramps, and bridges. Dealing with the large tidal variation in water levels and the open space development objective allowed a new city topography to emerge during the planing process, which puts its own stamp on the character and quality of the district.

9.1.2.3.2 New urban mobility as framework

HafenCity is linked to a complex and efficient transport network to guarantee the accessibility of HafenCity Hamburg with the city centre and within HafenCity itself. New infrastructure formed the foundation of this urban development and has even led to some of the successes of HafenCity Hamburg, because without sufficient infrastructure residents and organisations would not have considered HafenCity Hamburg as an option to accommodate themselves. So, here a strategic decision in the planning process was made to attract investors, developers, and residents towards the spatial development project. Due to the fact that HafenCity Hamburg is located on an island, designers were presented with a challenge considering how to extend the transportation network to an area with such topographical variation. Despite its proximity to the city centre, HafenCity Hamburg might be considered as isolated, because of the built barrier of the warehouse complex Speicherstadt, between the city centre and HafenCity Hamburg. However, the importance of developing connections to and from the area, as well as in the area itself was considered as crucial for the development of HafenCity Hamburg by the designers as well as the development company itself. As ASTOC, one of the designers of the master plan explains,

“Architectural knowledge enables us to anticipate and positively shape the consequences of urban planning interventions for the architecture that they involve. The first and most important factor for gauging potential future building activity is the question of access. This is where design comes in: in the said project, it has turned the structures that ran parallel to the Elbe River by ninety degrees. The middle part, the overseas quarter, hence does not become a continuation of the Speicherstadt, but opens up the HafenCity towards the Elbe River and the inner city.”

(ASTOC 2012)

Here, one can see that the urban structure strategically enhances the connection with the inner-city to attract people. According to HafenCity Hamburg GmbH (2004), a vital link is planned to Hamburg’s inner city via a route through the Speicherstadt and past the former Domplatz. The emphasis is therefore, not only on the construction of HafenCity Hamburg, but also on functional and spatial links to the existing city and city-centre. Unlike many other spatial development projects non-motorised users were prioritised in the development of the infrastructure. Because non-motorised users were considered as a priority in the planning process, the mix and variety of uses for residential, work, leisure, and culture are realised at close proximity of each other to guarantee short distances and to stimulate making use of footpaths and cycle routes (figure 9.6).
According to development company, pedestrians have two and a half times more kilometres of path at their disposal than motorised users (HafenCity Hamburg GmbH 2012b). Spaces in between the many stand-alone buildings often provide public or publicly accessible throughways; pedestrians therefore sometimes have a variety of routes to choose from to the same destination. In most cases motorised and non-motorised users are separated from each other. The development company wanted to encourage walking and cycling without making it prohibitively difficult to access the area while using public or private vehicles. In the early stages of the planning process creating an sustainable urban structure was regarded as important by the development company. CEO of the development company Jürgen Bruns-Berentelg explains,

"With its attractive pathways and excellent connections to public transport, HafenCity encourages people to leave their cars at home. The intensive mix of uses and the density of buildings create attractive short distances, which can be easily covered on foot or by bicycle - and mostly even run along the waterfront."

(HafenCity Hamburg GmbH 2012b)

In this case the development company tries to persuade residents to use the walkway and bicycle lanes and justifies the fact that the project is being a sustainable development, because of this urban structure and consolidate the frame that is being set in which HafenCity Hamburg is portrayed as the sustainable development project of the future. However, providing walkways and bicycle lanes is one of the features of sustainable development.

9.1.2.3.3 Sustainability as framework

HafenCity Hamburg is setting high standards for the future through sustainable urban development of its brown fields, but this was not always the case during the planning discourse. According to HafenCity Hamburg GmbH (2012b) sustainable development is the awareness and care in the use of resources to guarantee their availability for the long term. The first step in HafenCity’s sustainable development framework is the re-use of its brown fields and the redevelopment of the disused port areas into a new city district. Avoiding the consumption of previously undeveloped land, HafenCity was able to improve the value and quality of the old industrial port area by replacing some parts of the contaminated areas with new soil (Co & Roderick 2011) and considerably enhancing its ecological value. The intensive use of the area through a high building density has made the ground function as a resource in the development process as well.

Although the development of HafenCity Hamburg consists primarily of ecological aspects, the development company states that also economic and social factors are regarded as crucial in the development process (HafenCity Hamburg GmbH 2012b). Furthermore, the urban structure characterised by its horizontal and vertical mix of uses, close-knit network of non-motorised routes, large expanses of water, and the building structure help to reduce the so-called ‘heat island effect’ in the city in summer, which cuts demand for air-conditioning and enhances a comfortable place to live and work. In addition, the goals of ecological sustainability at site level are that all buildings are connected to district heating networks and uses a mixture of energy sources from solar thermal and fuel cell power (Co & Roderick 2011). Decentralised heat supply combined with fuel-cell technology, geothermal energy and solar thermal energy produces an efficient blend of energy with CO2 emissions of 175g/kWh (in comparison: conventional gas-based heat supply produces average CO2 emissions of 240g/kWh) (HafenCity Hamburg GmbH 2012b). To encourage sustainable development within the individual projects on site, HafenCity Hamburg GmbH developed Germany’s first certification for sustainable development in 2007. Since then the development company is awarding the gold Ecolabel for extraordinary attainment and the silver Ecolabel award for special attainment in realising sustainable buildings. The award is designed to motivate and stimulate private and public developers of a plot to handle resources responsible and evaluates on ecological, economic, and social sustainability. According to HafenCity Hamburg GmbH (2012b) certification of the Ecolabel is divided into five categories: 1) sustainable management of energy resources; 2) sustainable management of public goods; 3) use of eco-friendly construction materials; 4) special consideration of health and well-being; 5) sustainable facility operations.
It seems that the Ecolabel is a huge success and the gold Ecolabel is awarded among 305,000 square meters; buildings include the Katharinenschule primary school, the Unilever building, the Spiegel group publishing building, the HafenCity University building, the Commercial Center building, the NIDUS joint venture building as well as an ensemble in Elbtorquartier to be occupied, among others, by Greenpeace Deutschland and the design centre designexport (figure 9.7).

With the master plans, the development objectives along with the design frameworks the development company provided a planning direction/framework for the planning discourse in HafenCity Hamburg. Further influence of the development company in the planning discourse is discussed in next paragraph in which the learning process and the changes made in the master plans by the development company are explained.

9.2 Learning process within the master plans

In the past twelve years of the spatial development of HafenCity Hamburg, three master plans are produced (2000, 2006 & 2010) each including some changes, alterations, and additions, which means that the changes imply a learning process. The first master plan was approved by the Senate in 2000 and functioned as a basis, foundation, and framework for the development of HafenCity Hamburg. In general it can be stated that the master plan dating from 2000 has proved to be a beneficial framework for the development of HafenCity Hamburg. The urban development concepts, such as urbanity, topography, mobility, sustainability, and the fine grained mix of uses are to a greater or lesser extent incorporated in the realisation of the first quarters. In figure 9.8 the master plan of 2000 is shown and according to HafenCity Hamburg GmbH,

“
A well balanced mix between urbanity and public/open spaces, connections between old and new developments, interaction between the buildings and the water, and innovative designs have turned HafenCity Hamburg into a high quality built environment.”

(HafenCity Hamburg 2012b)

However, in the timeframe dating from the initial master plan of 2000 and the master plan of 2006 some alterations, modifications, and additions were incorporated during the planning process. However, these changes are textual and visual not incorporated in the master plan of 2006. HafenCity Hamburg GmbH argues, that the master plan of 2006 is an international version of the master plan of 2000 and states in the master plan of 2006 that,

“Several significant changes could be realised during the past six years (between the first master plan of 2000 & 2006) that have provided an important contribution to HafenCity’s development success. These alterations have not been decided upon as changes to the master plan, but rather as step-by-step amendments approved by the Senate.”

(HafenCity Hamburg GmbH 2006)
This statement indicates that HafenCity Hamburg GmbH is not aware or does not acknowledge the fact that changes in the master plan imply a learning process. Instead the changes are viewed upon as amendments approved by the Senate and therefore a result of political consensus. In an interview with Mr. Schneider, assistant to the executives of HafenCity Hamburg GmbH, he explained that the changes are a result of the development process, which influenced the spatial development in a decisive way, but the changes were not regarded as learning. He states that the master plans provide a spatial definition of the area and function as structural frames, which needed to be developed step-by-step and during that process alterations were made. This answer clearly emphasises the fact that the step-by-step approach in which alterations are incorporated in the master plans definitely implies a learning process, because new knowledge is generated and leads to new actions, which influenced the planning discourse i.e. the master plans evolved because of learning. However, the development company does not identify the changes as a learning process. From the interview it can be concluded that there was a certain resistance against the interpretation of the term ‘learning’. In Mr. Schneider’s view learning was strongly associated with improving from past mistakes or inefficiencies instead of looking towards learning and change from a more positive perspective i.e. double loop learning instead of single loop learning. This demonstrates that there is an adherence towards the created framework of being a new and innovative development project that functions as a role model (i.e. learning model) for urban development in the 21st century. Hence, the development company is aware of a certain learning process (see previous quotes in §9.1), although the changes are not regarded as the result of that learning process. Nonetheless, the changes in the master plans imply that there definitely is a learning process present in the spatial development of HafenCity Hamburg.

Since 2000 the western and central part of HafenCity are completed or under construction. The eastern part of HafenCity is still in the planning phase and in 2010 the revision of the master plan for the eastern part was approved by the Senate after several workshop, design studies, and expert meetings. In the revision of the master plan for the eastern part, the neighbourhoods Baakenhafen, Oberhafen, and Elbbrücken were further designed in which each neighbourhood has now its own identity. In figure 9.9 the master plan for the eastern part of HafenCity is shown. As Dieter Läpple, a city development professor at the Technical University of Hamburg-Harburg, states about the development strategy and master plans,
The big advantage is that it is flexible. It is being built in steps, so that they can learn from their mistakes.

(Tzortzis 2012)

9.2.1 Changes in the master plans
By comparing the three master plans with each other by means of a critical discourse analysis several changes became apparent. Table 9.1 gives an overview of all the changes present in the master plans of 2000, 2006, and 2010. Some of the changes imply learning and can be associated with one of the four learning typologies; cumulative learning, assimilative learning, accommodative learning, and transformative learning (see §5.5). In addition, the discourse analysis is used as a tool to interpret the changes, which resulted in several key influences that facilitated the changes in the master plans. The changes, time frames, learning types, and key influences are all mentioned in table 9.1. The discourse of all changes are discussed in the next subparagraphs.

9.2.2 Changes related to assimilative learning
Assimilative learning in this research refers to a steady, stable, and progressive development in which the foundation of the frame i.e. the master plan is improved. Put differently, all changes that resemble assimilative learning concern the improvement of the urban frame established in the master plan of 2000. Assimilative learning can be compared to additional learning in which the learning products are knowledge, skills, and experimental opportunities. The three changes that are associated with assimilative learning are: the increase in density, the temporary playground, and the increase in sustainability standards.
### Table 9.1 Framework changes in the master plans

<table>
<thead>
<tr>
<th>Change</th>
<th>Timeframe</th>
<th>Learning type</th>
<th>Key influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition of land</td>
<td>2000 - 2006</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Release of restricted areas</td>
<td>2000 - 2006</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Alteration development time frames</td>
<td>2000 - 2006</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Alteration land development strategy (tender process)</td>
<td>2000 - 2006</td>
<td>Accommodative learning</td>
<td>To improve the feeling of urbanity (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To divide risks (strategic influence)</td>
</tr>
<tr>
<td>Increase in density</td>
<td>2000 - 2006 - 2010</td>
<td>Assimilative learning</td>
<td>To improve the feeling of urbanity (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addition public transport</td>
<td>2000 - 2006</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Addition educational facilities</td>
<td>2000 - 2006</td>
<td>-</td>
<td>Approved by the Senate (political influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To improve social structure, urbanity strategy, job opportunities (strategic influence)</td>
</tr>
<tr>
<td>Addition cultural facilities</td>
<td>2000 - 2006</td>
<td>-</td>
<td>To promote cultural character (social/strategic influence)</td>
</tr>
<tr>
<td>Addition temporary playground</td>
<td>2006 - 2010</td>
<td>Assimilative learning</td>
<td>The need for a playground among local residents (societal influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alteration land use eastern part</td>
<td>2006 - 2010</td>
<td>Accommodative learning</td>
<td>Contextual changes (strategic/social influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lack recognisable identity (strategic influence)</td>
</tr>
<tr>
<td>Increase in sustainability</td>
<td>2000 - 2006 - 2010</td>
<td>Assimilative learning</td>
<td>Motivating/stimulating investors (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Leverage to improve the quality of the built environment (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Goals of the government (political influence)</td>
</tr>
<tr>
<td>Alteration development approach Oberhafen</td>
<td>2006 - 2010</td>
<td>Accommodative learning</td>
<td>Connection with ‘museum mile’ (strategic/social influence)</td>
</tr>
</tbody>
</table>

### 9.2.2.1 Increase in density

The most substantial alteration is the increase in density in the entire project. In the master plan of 2000 the total built area was approximately 1.5 million square meters of gross floor area (GFA) and according to the current planning status 1.8 million square meters of GFA is planned and additional revisions could probably lead to an estimate of at least 2 million square meters of GFA (HafenCity Hamburg GmbH 2006). In general, the increase in density progressed consistently during the planning process. The planning discourse from the first realised neighbourhoods up to the revision of the master plan for the eastern part indicates that the density did not increase by changing the building heights, but to place the individual buildings closer together (figure 9.8). The discourse shows that from the first realised neighbourhoods, Am Sandtorkai and Dalmannkai, the development company learned that the density could be increased. The development company argues that they increased the density to improve the feeling of urbanity (one of the development strategies) and this could only be reached by placing the buildings closer to each other, while still maintaining the views of the water. The increased density is perceived by the development company as important and necessary, especially to improve the urban character and stimulate closer social interaction (HafenCity Hamburg GmbH 2006). The development company justifies this change by linking it to creating the feeling of urbanity. As CEO Jürgen Bruns-Berentelg explains about urbanity,

> "We are doing something very ambitious here. Yes, we are building buildings. But we are also producing social and cultural environments for the next century. After all, a city is not only a commercial product, but also a public good."

(Schaer 2010)

However, it can be debated if this is the only reason for increasing the density and that perhaps the increase in revenues of the land sales are the economic and strategic underlying arguments for changing the density. However, this did not become apparent while performing the discourse analysis. Nonetheless, the balance between the urban character and the open spaces in the western part is not affected by the increase in density.
Moreover, the urban character in the western part resembles more the feeling of a city-centre than the first eight developments at Am Sandtorkai. However, some concerns can be expressed for the eastern part, because the planned density is rather high in comparison with the western part and large amounts of closed buildings blocks are placed very close together.

From a learning perspective this change can be interpret as assimilative learning, because the development company learned from the outcomes of the first eight realised buildings at Am Sandtorkai and changed their established framework to improve the feeling of urbanity. However, this change can also be interpreted as changing the parameters of the density by placing the building blocks closer together. The discourse only partly explains why the change in the master plans occurred and no tangible learning activities are found that support the learning process regarding this change.

9.2.2.2 Temporary playground

In the summer of 2008 the temporary playground called ‘Treasure Islands’ emerged on site, next to the View Point and close to the Unilever building (figure 9.10). During the public discussions and through the open spaces participation (both indicated as learning activities in chapter 8) it became apparent to the development company that the need for a playground emerged among families who are living in HafenCity Hamburg. In the master plans there is room reserved for three large playgrounds in Grasbrookpark from 2012/2013, in Lohsepark from 2013, and at BaakenHafen. However, the need for a playground emerged much sooner than anticipated and planned, therefore the development company decided to build a temporary playground, because of the newly acquired knowledge. The temporary playground comprises 850 square meters of space to play and an all-weather playhouse that was set up and designed by a parents’ initiative. The playground is developed and designed in cooperation and through intensive participation with the development company and parents and children from the local community. Stefan Schmid, a parent living in HafenCity explains the reason why he was involved in the design process of the temporary playground,

“You cannot create family friendliness by just providing a whole lot of play areas. But of course play and adventure areas are indispensable too, that is why I got involved in landscaping the Treasure Island playground on Grosser Grasbrook on a voluntary basis and designed the play house for free. A neighbourhood only takes on an individual identity if people get involved in it.”

(HafenCity Hamburg GmbH 2012b)

This process of mutual understanding, learning, and acquiring knowledge through public discussions and open space participation facilitated the addition of a temporary playground i.e. changed the master plans and resembles assimilative learning. The discourse shows that the established framework (master plan) is improved by new acquired knowledge through learning from local residents and the development company uses that knowledge during the planning process to improve the urban frame. Besides, the knowledge of local residents is actively used during the planning and design process through intensive public participation. In other words, the learning process is actively fuelled by social interaction and participation with the environment and the result of learning is therefore socially and societally marked.
9.2.2.3 Increase in sustainability

The discourse analysis shows that the sustainability standards are progressively increased during the planning process from 2000 up to the revision of the master plan in 2010. The sustainability standards that were mentioned in the master plan of 2000 were ambiguously formulated and most were based on ecological sustainability standards. Addressing the fact that the redevelopment of the former port area can be perceived as a sustainable development in which the use of climate friendly energy and the use of environmentally compatible building materials were mentioned. Sustainability was included in the master plan of 2000 as a guiding ambition and no exact meaning was given to the substance of sustainability. Investors, developers, and users could initially volunteer to built a sustainable building. The discourse analysis shows that in the meanwhile the sustainability concept of HafenCity Hamburg and the implementation of measures has changed dramatically. Around 2007-2008 the intentions for a sustainable area and development have strongly increased and nowadays HafenCity Hamburg is internationally regarded as a sustainable urban area development (Jones Lang LaSalle 2009).

After 2006 the sustainability concept and measures in HafenCity Hamburg are more precisely formulated during the planning process and are still improving. The discourse analysis shows that during this time sustainable development became a ‘hot item’ fuelled by political debates and was intensified in the media. However, the motivation for sustainable development started in the beginning of the 90’s when the City-State of Hamburg was the first metropole to make use of the support of the German government in regard to stimulating development in metropoles. To apply for support of the German government, the Senate of Hamburg formulated the goal of stimulating sustainable and qualitative growth of the city and to preserve its unique charm and high quality of life for future generations (Jones Lang LaSalle 2009). During that time, in 1997 the Senate of Hamburg was formed by the political party SPD and the GAL (green party). During that period the green party made itself strong for the fact that durability and sustainability must be embedded in the planning process of HafenCity Hamburg. Leading to the first ambiguously formulated sustainability standards in the master plan of 2000. However, the challenge for the development company was to formulate sustainability standards for both area and building level. The development company realised and understand that a successive formulation of the sustainability concept must take into account the market developments. At the same time the development company realised that techniques and solutions would be smarter and affordable if investors, contractors, and suppliers would gain experience with sustainable buildings (Jones Lang LaSalle 2009) i.e. learned from their experiences. One of the goals of the development company was to fulfil the role of role-model. That is why at the beginning of the development the sustainability standards were ‘softly’ formulated in the master plan of 2000. Since 2000 the attention towards sustainable development progressively intensified and in 2007 the development company formulated strict sustainability standards. Now the sustainability standards are incorporated in the tender procedure, so the voluntary nature of sustainability disappeared (see text box 9.1 about the sustainability standards on area and building level).

During the development of the western and central part, the development company learned that the sustainability concept turned out to be a sufficient strategic move to leverage the quality of the overall urban development and is magnified in the eastern part of the development. According the development company about the sustainability standards,

“The high standards set in the western part will be out done in the eastern part.”

(HafenCity Hamburg GmbH 2012b)
Sustainability standards on area level

• Re-use of an existing area

  The City-State of Hamburg wants to redevelopment all ‘brownfield’ in Hamburg instead of using ‘greenfield’ areas for the extension and growth of the city.

• Multiple land use

  HafenCity Hamburg is not surrounded by dikes, which makes HafenCity Hamburg more vulnerable for flooding during storms. The new city topography allows flooding, because buildings and roads are built 8 meters above sea level. The lower placed promenades, parks, parking garage are protected against flooding with water tight hatches allowing the land to be used for several purposes.

• New urban mobility

  HafenCity Hamburg is linked to an efficient public transport network of busses and in the future by the new subway line (U4). Besides, in the master plan non-motorised users are prioritised by providing a network for cyclists and pedestrians.

• Mixed use concept

  In the master plan horizontal and vertical mix of uses are directive. Besides mixing different functions, such as housing, offices, retail, entertainment, and leisure, also within the individual buildings a mixture of different uses is required. The ground floor level of individual buildings needs to be accessible to the public and belongs to the public realm and needs to provide several facilities.

• High quality open spaces

  The master plans steer towards achieving high quality architectural developments and the realisation of high quality open spaces by means of design competitions. Hence, as a result high quality urban living is provided and at the same time investors and developers are able to generate more revenue through higher rental and sales revenues, which opens up the investment budget for more sustainable developments and innovations (Jones Lang LaSalle 2009).

• Central energy system

  In addition HafenCity Hamburg GmbH acts as an electricity supplier. They buy renewable electricity in bulk and provide local users of energy. HafenCity Hamburg is also connected with the district heating and the development company strives to lower energy consumption and reducing CO2 emissions.

• Noise

  The port activities south from HafenCity Hamburg are causing noise pollution and dwellings in HafenCity Hamburg are therefore not allowed, but the noise is reduced by isolating the dwellings, which is an important aspect of the master plan of 2010.

Sustainability standards on building level

• Introduction Eco-label

  In order to motivate and stimulate private and public investors and developers to build sustainable an sustainability certificate is introduced by the development company.

• Decentralised energy systems

  Hamburg stimulates the development of decentralised energy systems, such as solar energy and fuel cell powered heat pumps to improve sustainability performances.
The discourse analysis showed that a reason for the intensification of the sustainability character of HafenCity Hamburg for the eastern part has to do with political domination of powers. The Greens (GAL), a political party who since 2008 ruled the Free Hanseatic City in coalition with the CDU increased the sustainability goals for the city and are therefore also translated in the revision of the eastern part of the master plan, due to the fact that the Senate must approve the master plans. In addition, the City-State of Hamburg wanted to become the Green Capital of Europe, so sustainability standards were raised. In 2011 Hamburg received the award for being the green capital of Europe and as Herlind Gundelach, Hamburg’s Senator for Urban Development and Environment states about the green capital award,

“There was a need to adopt measures by the city to balance economic and ecological benefits. The award recognises the achievements made so far and functions as a point of leverage for making further improvements. We see ourselves as a learning city, and we want to use the title European Green Capital 2011 to inspire and to be inspired, and to learn from others.”

(Forster 2011)

It can be stated that the increase in sustainability mostly concerns strategic and political influences. However, much attention is given to ecological sustainability leaving social and economical aspects behind in the development of HafenCity Hamburg.

As text box 9.1 illustrates, one of the stimulants for sustainability on building level is the introduction of HafenCity Hamburg’s own ‘Eco-label’, which can be awarded in gold and silver. With the introduction of the Eco-label one can see market mechanism in action, in which the development company strategically built upon the principles of ecological sustainability, which was and still is increasingly popular among investors, developers, and companies, so it can be leveraged to increase innovations and the quality of the built environment and justify the development as a sustainable development in order to persuade developers and investors to built sustainable. According to HafenCity Hamburg GmbH (2012b) sustainable development is the awareness and care in the use of resources to guarantee their availability for the long term. The certification for sustainability development was introduced in 2007 and is designed to motivate and stimulate private and public developers of a plot to handle resources responsible and evaluates on ecological, economic, and social sustainability criteria.

For the eastern part the sustainability standards are high. The development company wants to achieve that the share of gold-certified building in the central and eastern quarters will be at least 50 percent and the share of residential buildings will presumably reach 100 percent (Bühler 2011). In other words, almost all developments must reach the gold-certificate standards in the eastern part. Not only that, but the sustainability strategy for the eastern part also includes innovative heating supply with an extremely low CO2 index of 89 g/kWh and the use of primarily renewable energy sources. Besides the ecological aspects, HafenCity Hamburg is also aiming to continue the sustainable urban structure in the eastern part as CEO Jürgen Bruns-Berentelg explains,

“With its attractive pathways and excellent connections to public transport, HafenCity encourages people to leave their cars at home. The intensive mix of uses and the density of buildings create attractive short distances, which can be easily covered on foot or by bicycle - and mostly even run along the waterfront.”

(HafenCity Hamburg GmbH 2012b)

The above described discourse concerning the increase in sustainability standards can be associated with assimilative learning. The discourse analysis shows that in 2000 the first attempt in regard to sustainable development is established by the development company by formulating ambiguously sustainability standards. In the time period between 2000-2007 new knowledge is created, acquired, and shared about sustainable buildings through intensive academic research in Europe. The newly acquired knowledge is used by the development company to create their own strict sustainability standards on area and building level resulting in their own Eco-label to motivate and stimulate private and public developers to built sustainable.
While planning the developments for eastern part, the successive sustainability concepts are incorporated, improved, and intensified in the revision of the master plan for the eastern part of HafenCity Hamburg. Due to knowledge, technical improvements, and first-hand experience the sustainability concepts were improved, which resembles assimilative learning in which the established frame (the master plans) are improved by acquiring knowledge, skills, and experience.

9.2.3 Changes related to accommodative learning

Accommodative learning is related to the concepts of reflection and critical thinking. In this research accommodative learning means that through critical reflection the built up schemes/frames will partially be rebuild due to learning. This type of learning is closely related to single-loop learning (see §5.6). The changes that resemble accommodative learning is the alteration in the land development strategy, the alteration of the land use in the eastern part, and the alteration of the development approach for the neighbourhood Oberhafen.

9.2.3.1 Alteration land development strategy

The most significant change that influenced the entire planning process is the change in land development strategy i.e. the tender procedure for an individual building plot. Parts of the established framework, the land development strategy, are changed during the planning discourse because of critical reflection and thinking. The discourse analysis shows that the development company has the ambition to reduce the risks of the City-State of Hamburg, investors, developers, and users by providing a fine grained mix of uses and to diversify the development by scaling the individual building plots into small building plots in order to make it possible for medium-sized business, small building contractors, building cooperatives, and individuals to invest in the project (HafenCity Hamburg GmbH 2000). The first eight individual building projects realised at Am Standtorkai can be seen as pilot cases for testing the land development strategy and defined the future development of HafenCity Hamburg (figure 9.11).

Prior to the development of the first eight building at Am Standtorkai, the development company took a closer look at the property market and the residential characteristics of the people of Hamburg (learning activity expert symposium). One of the most significant findings was the great demand for urban living quarters; people desired to live in the city centre (HafenCity Hamburg GmbH 2004). Besides, individual units should not be excessively large as research for apartment buildings in Berlin during the 90's conclude (HafenCity Hamburg GmbH 2004). The discourse analysis shows that the planning process of the first eight building at Am Standtorkai proceeds and that the development company ran a fairly modest and parallel individual competition resulting in eight different property developers and eight different architects. The tendering process of those eight individual building plots were awarded to the highest bidder, which automatically led to upper market developments for higher income property buyers. Soon after realisation of the first eight buildings, HafenCity Hamburg GmbH realised and learned that this land development strategy was not the desired strategy to create urbanity, social integration, and differentiation, and it was important for the development company to realise a broad ownership structure of small scale tenures in order to ensure the necessary stability and reduce the city’s dependence on an individual investor (HafenCity Hamburg GmbH 2000).
According to HafenCity Hamburg GmbH (2012b), urbanity is the metropolitan feeling of urban space in which the appropriate urban structure is made up of a variety of land uses in and outside buildings, as well as the presence of a large number of people of different types. CEO Jürgen Bruns-Berentelg, stresses that,

“Urbanity does not develop by itself. One needs squares that function well as community spaces. You have to create the conditions for people to move around. It is a question of the mixture of the various uses. We have tried to do that by including residential buildings, office space, cultural offerings and shops.”

(Hawley 2007)

Jürgen Bruns-Berentelg vision of urbanity often seems to be carefully planned and studied. By critical rethinking, reflecting, and redeveloping the land development strategy some aspects of the established framework are rebuild in order to improve the mixture between purchase and rental homes, attract different users, attract different investors and developers, and create different living concepts. It can be stated from a learning point of view that the land development strategy changed and resembles assimilative and single-loop learning in which the desired outcomes of the first eight buildings did not live up to the actual desired result (mismatch) and another solution within the same frame of reference was sought. However, the discourse analysis also shows that the land development strategy changed because of strong critics from the inhabitants of Hamburg, who perceived HafenCity Hamburg as a development for higher income classes. So, in order to secure land revenues and attract potential buyers and residents the land development strategy changed due to social and societal influences/domination.

In this case the framing conditions of the land development strategy were altered in order to provided housing for a broader target group, to provide a more socially differentiated structure within HafenCity Hamburg, and to enhance the urbanity concept they desired. In the new frame for the land development strategy the land price for an individual building plot is fixed and not necessarily the highest bidder will get the plot, but the crucial factor for awarding the contract is the quality of the mixed use concept, ground floor level usages, and social and ecological factors play a major role in awarding the development contract. This change in land development strategy led in the next development phases to smaller and various kinds of investors and developers, which were focussed on different target groups.

A great example of the newly applied land development strategy manifests itself on the Dalmannkai, located opposite of Am Standtorkai (figure 9.12). The cityscape of the Dalmannkai alone includes 15 buildings developed by 27 developers and 26 architectural firms to create a wide diversity. The discourse analysis shows that the urban development of the Dalmannkai has been further developed first by means of a workshop (learning activity), followed by the tendering procedure of the individual sites and the implementation of competitive procedures in cooperation with each investor.

Figure 9.12 Dalmannkai
Source: own editing HafenCity Hamburg GmbH 2012b, Google images 2012
Each investor involved eight different architectural firms and after the design competition three or four architects for each site were selected, who needed to work closely together. According to the development company HafenCity Hamburg GmbH (2004), architects needed to work closely together and some architects have stated that they may be able to sing the same tune, but problems arise when they have to draft joint-plans. So, the land development strategy of HafenCity Hamburg is experimental and innovative and resulted in high quality architecture, social integration, and reduced risks by involving several investors and developers.

In the immediate neighbourhood, lifestyles are as disparate as the architecture. Young working singles, families, empty nester, and seniors are represented in the neighbourhood. Many of the apartments are financially within reach of mid-income-earners, while some apartments are still in the luxury segment (HafenCity Hamburg GmbH 2011). Much more affordable housing was realised through building cooperatives and three joint building ventures, which led to a mixture of rental apartments and owner-occupier apartments. Although, the rental apartments are still in the higher rental segment (€10 - €14 per square meter) (Interview Oschatz 2012).

Housing for mid-incomes and the social structure in HafenCity Hamburg improved significantly. To intensify the social structure HafenCity Hamburg GmbH decided that in the eastern part of HafenCity Hamburg subsidised public rented housing will be built. Thus, by learning from the outcomes of the land development strategy use for the first eight pilot projects and from strong critics given by the general public the development company changed its land development approach, which ended in an improved land development approach beneficial for the overall development success of HafenCity Hamburg.

9.2.3.2 Alteration land uses eastern part

The discourse analysis shows a change in the land uses for the three eastern neighbourhoods when looking at the revised master plan of 2010. The originally formulated land uses for the three eastern neighbourhoods in the initial master plan of 2000 are changed from mainly business and services orientated towards adding more residential functions due to critical reflection of the initial established frames by the development company and the urban planner Kees Christiaanse of KCAP and due to development opportunities and changing contextual developments.

Baakenhafen is designated as a place to live and for leisure, Oberhafen will function as a creative and cultural cluster, and Elbbrücken as a location for business and housing (figure 9.13).

The discourse analysis shows that development company argues that the land uses for the eastern part were changed, because they lacked recognisable individual identities and no specific plans had been conceived for their successful urban integration or the degree of density, which are now included in the revised master plan of 2010.

It is safe to say that changing surrounding conditions and political, social, and economic factors had a major influence on the planning discourse of the eastern part. Looking at the eastern part of HafenCity Hamburg, the surrounding conditions have remarkably changed during the last twelve years of development, which also influenced the learning process.
Before, the eastern part was regarded as a difficult place to reach and to integrate into the existing inner-city and the western and central part of HafenCity Hamburg. The eastern part is surrounded by intersecting traffic routes, such as railway tracks and traffic routes, which generate a lot of noise and isolates them from the other parts of HafenCity Hamburg and the city centre. However, with the appearance of the new subway U4 (due to political powers), the area is much more accessible and can be regarded much more as a part of the inner-city and HafenCity Hamburg. The more central location of the eastern part is also reinforced with the ‘Leap across the Elbe’ project and other ambitious projects, such as the International Building Exhibition (IBA) and the International Garden Show (IGS), located on an island south of the Elbe in front of the eastern part. In addition, to reduce the traffic noise intelligent urban planning and technical concepts are used to provide more housing than initially was planned, which explains the change in land use and adding more residential use.

The discourse analysis also shows that the planned urban structure of the eastern part is critically reflected and room has been made for subsidised housing, which was first not included in the initial master plan of 2000. More attention is given to making HafenCity Hamburg more affordable for lower income households, especially after criticism of the residents of Hamburg about the lack of social rented housing and that HafenCity Hamburg is a socially exclusive area. Critics argued that HafenCity Hamburg lacked social diversity and the the apartments, despite the various options of ownership, among cooperative models, are all for the higher-income tenants and property buyers (Grubbauer 2011). Due to these critics, the city of Hamburg decided to provide special support to building groups to counter the high rates of property prices in HafenCity Hamburg. Also HafenCity Hamburg GmbH changed its land use strategy and will provide more homes for mid-income earners and some subsidised rented homes will emerge in the eastern part.

In addition, the planned urbanity for the eastern part feels a little bit forced at this moment. But perhaps only until the residents have been embedded in the area it is possible to make a judgement if the planned urbanity strategy works. As Loretta Lees, professor of Human Geography at King’s College University of London explains, “social engineering urbanity will not work down the line, but there has been given great attention detail in HafenCity Hamburg that it may prove me and others wrong...the risk now is that the effect of the financial crisis on developers and investors may lead to the disappearance of some of the conceptual ideas down the line”. If all the residents are middle class or upper class, you will not get mixing in the true sense (Baker n.d.). Thus the change in land use and adding social house is mainly to create social support for the project and legitimise the urbanity strategy. A great example is presented at Am Lohsepark, where a mixture of rented, subsidised, and owned apartments are realised for families, disabled, and students, which will strongly contribute to the social structure of HafenCity Hamburg and thus is beneficial for the urbanity strategy.

The discourse analysis shows that the content of the revision of the master plan of 2010 was introduced and discussed from spring 2010 in a series of public presentations and discussions (learning activities public events and information events discussed in chapter 8). From those learning activities it could be concluded that the onward development of the master plan was very positively received. Although, some critical points were made regarding urban density, housing, social mix, and traffic (HafenCity Hamburg GmbH 2012b). After the events the draft of the master plan was given one more critical perusal and was redefined once more before being presented to the Senate of Hamburg.

Thus, the master plan is critically reflected by the development company, KCAP, and through a series of public discussions, leading to the new revised master plan of 2010. From a learning perspective this implies accommodative learning in which some parts of the established framework are changed due to critical reflection, newly generated knowledge, and changing circumstances. This change really portrays the many sides of learning in which the adaptive and reactive process of changing contextual developments are incorporated in the learning process and leads to certain decisions and actions. In this case partly changing the land use of the eastern part due to new development opportunities, changing circumstances, and newly acquired knowledge. It is an interplay between what is learned from the development of the western and central part of HafenCity, newly acquired knowledge, critical reflections, and changing circumstances.
9.2.3.3 Alteration development approach Oberhafen

The discourse analysis shows that since 2010 changes are made in the development approach in regard to the development and realisation of the Oberhafen neighbourhood. In the initial master plan of 2000 the planned land use was devoted to business, trades, and services. However, the land use has totally changed into cultural and creative use in order to make a connection with the 'museum mile' present in the city-centre. Here the conventional HafenCity Hamburg development process of building new spatial projects on empty construction sites turned 360 degrees. Instead of an urban concept being the objective of development, the development approach is focused on finding new uses and a conceptual design for the re-use of existing buildings (HafenCity Hamburg GmbH 2012b). The existing buildings concern old warehouse buildings used by the rail operator Deutsche Bahn. These old warehouses and sheds will be converted into creative and cultural spaces, which gives this neighbourhood its own identity of a dynamic creative and cultural cluster. HafenCity Hamburg GmbH foresees a gradual development of the site after 2015. Notable is that the plots will not be sold, but remain the permanent property of the special fund ‘City and Port’ of HafenCity Hamburg GmbH, in order to retain control over the development (HafenCity Hamburg GmbH 2012b). In the coming years the development company will work out a detailed concept for the area through intensive dialog with Hamburg Kreativ GmbH and will organise workshops to exchange ideas with creative enterprises and many other creative individuals (learning activity expert dialogue discussed in chapter 8). Also a kick-off symposium at the end of March 2011 was held to generate the first input for the development of Oberhafen followed by other events and discussions. This development approach can be associated with a dialogue-oriented development approach in which knowledge is generated by events, discussions, workshops etc..

The discourse shows that the development approach for the Oberhafen is partly changed by re-using existing buildings and that the plots remain the permanent property of HafenCity Hamburg GmbH. Besides, this development approach is more dialogue-oriented and leaves room for public participation. This suggests accommodative learning. However, the discourse analysis did not reveal why the development company changed its development approach in case of developing Oberhafen. Only the symposium, dialogues, workshops etc., suggest that the development company is creating, acquiring, and sharing knowledge i.e. is involved in a learning process in regard to the development and realisation of Oberhafen.

9.2.4 Changes non-related to learning

There are also changes noticeable that can not be associated with one of the four learning typologies, because the changes are related with changing circumstances during the development process. However, they do imply that changing contextual developments only have meaning when they become ‘learned’ by those involved in the development process. Actively understanding and dealing with these changing circumstances ultimately involves learning, because dealing with changing circumstances can be seen as a adaptive and even reactive process and requires intuition, know-how, experience, artistry, and knowledge, which are (implicitly) the products of learning. Changes that can not be related to the learning typologies are: acquisition of land, release of restricted areas, alterations of development time frames, addition public transport, and addition of educational and cultural facilities.

9.2.4.1 Land acquisition

The Free and Hanseatic City of Hamburg is the principal land owner in HafenCity Hamburg. However, from the beginning of the planning process some remaining sites were still owned by for instance the German Railways and private parties. Figure 9.14 illustrates the land ownership from before 1997 and in 2007. The discourse shows that in the six years between 2000-2006, the sites were purchased by the special fund ‘City and Port’ to ensure optimal and ahead-of-schedule of flood control and land development, but also to ensure the possibility to discuss land use options and building concepts in accordance with the public interests (HafenCity Hamburg GmbH 2006). Without this change and securing the land position the development approach from west to east and from north to south would be jeopardized.
The discourse analysis reveals another significant change that influenced the discourse of the planning process, which is the early release of the restricted areas in the development area, so that the intended development process from west to east and from north to south could be continued. The master plan of 2000 shows a significant amount of restricted areas around the central area of HafenCity Hamburg, close to the Magdeburger Hafen (see figure 9.14). The awareness of the restricted areas and the foreseen difficulties in regard to the realisation of the intended development process, from west to east, are briefly described in the master plan of 2000, but no detailed approach is given how to tackle these restricted areas. However, the discourse shows that since 2000 most formerly restricted areas are made available for the development earlier than expected by relocating the existing facilities of various companies in exchange for a reimbursement of their relocation costs, including construction of new business premises (HafenCity Hamburg GmbH 2006). In this case, the release of the restricted areas was beneficial for the development process, because the restricted areas became available on time and therefore the intended north-south and west-east development process and the development of the Überseequartier was not jeopardised. However, if this was not the case, the development process and strategy had to change drastically, because it would jeopardise the realisation of the central part of HafenCity Hamburg. A lesson that can be learned is that owning all the land has a significant influence on the development process.

### 9.2.4.3 Alteration development time frames

The discourse analysis indicates that the development time frames are altered due to changing circumstances. Due to the earlier availability of the restricted areas, parts of HafenCity, such as Ericusspitze, northern Überseequartier, Standtorpark, Grasbrook, and areas east of Magdeburger Hafen are developed sooner than planned (HafenCity Hamburg GmbH 2006). Strandkai and the north of Baakenhafen will be developed later than planned, because the land is currently used for cruise ship logistics, underground railway construction, and construction of site logistics (HafenCity Hamburg GmbH 2006).

### 9.2.4.4 Addition public transport

The master plan of 2000 indicates that an efficient public transport system for HafenCity is a fundamental requirement in order to ensure that the development is attractive and that property can be marketed at a good price (HafenCity Hamburg GmbH 2000).

The discourse shows that several public transport systems or combinations of different systems have been evaluated by the development company, such as already existing systems (regional railway, urban railway,
underground railway, and buses) and alternative automatic people mover systems, which do not depend on roads (like the London Docklands Light Railway and the “H-Bahn” in Dortmund) (HafenCity Hamburg GmbH 2000). Since 2000 plans for integrating local transport links into the newly created street car network are provided by bus services and in the west and north by existing nearby subway stations at Baumwell (U3) and Meßberg (U1). However, while the development company introduced the ambition to develop a subway line in the initial master plan of 2000 it wasn’t till 2006 the Senate approved the subway line U4, which emphasizes the political power of the Senate and City-State of Hamburg regarding this spatial development. The introduction of a new subway line into HafenCity Hamburg changed the content of the planning process in a decisive way. The connection with the inner-city is reinforced, development time frames are altered, the density is increased, and the central and eastern parts became more accessible. The discourse analysis also shows political domination of power by the City-State of Hamburg by the amount of money they invest in the new subway line. The line is financed with budgetary funds of the City-State Hamburg as well as with federal subsidies. The cost of external access to HafenCity, the planned reconstruction of Deichtorplatz, as well as bridges to be built between HafenCity and other city neighbourhoods, is also financed out of Hamburg’s state budget (HafenCity Hamburg GmbH 2012b).

9.2.4.5 Additional educational facilities

Another change in the master plans is the addition of educational facilities. In the initial master plan of 2000 the ambition to develop educational facilities was ambiguously formulated resulting in general calculations regarding the amount of educational facilities needed, based on the planned number of dwellings. The discourse analysis shows that a final decision regarding educational facilities would be made during the planning discourse in correspondence with the official development planning procedures (HafenCity Hamburg GmbH 2000). It can be stated that the ambition and foundation for educational was established in 2000 and during the planning process from 2000 to 2006 the frame progressively developed due to acquired knowledge, development opportunities and possibilities, and approval of the Senate, which means that this change can be associated with an adaptive and reactive approach of the development company towards changing contextual developments.

In the master plan of 2006 two educational facilities (elementary school and university) were added by the development company. The development company argues that this change in the master plan would strengthen the residential position of HafenCity Hamburg, promoting family living, strengthen the development strategy of urbanity, positively influences the social infrastructure, strengthen the integration with the city-centre, and to strengthen job opportunities. To justify and legitimise the urbanity strategy formulated by the development company, educational facilities are added to strengthen the social structure and the urban mixture.

Another strategic reason to add educational facilities is to attract future residents into the project and is attuned with the larger urban planning strategy of the City-State of Hamburg, who wishes to attract families back into the city-centre. In other words, the master plan evolved due to strategic reasons to attract future residents and to secure the urbanity strategy. Another reason why the educational facilities are added is because the Senate approved the addition later on in the planning process. Put differently, strategic and political powers influenced the decision of adding educational facilities to the master plans.

An example of political influence is noticeable in the development and realisation of the St. Katharinen School, an elementary school in HafenCity Hamburg (figure 9.15). In the interview with Mr. Schneider,
assistant of the executives of HafenCity Hamburg GmbH, he explained that due to political reasons the elementary school was not included in the first master plan of 2000. However, when the need for renovation work at an existing elementary school (St. Katharinen School) located in the city-centre emerged the chance was offered to relocate and rebuild the elementary school in HafenCity Hamburg. Hence, the addition of the elementary school was approved by the Senate due to political powers. This alteration of the master plan indicates that not all ambitions of the development company can be achieved at once and that political powers have an impact on the planning process. Another important decision that led to the modification of the master plan of 2006 is the addition of the HafenCity University, which includes an architectural academy in civil engineering, geomatics, architecture, and city planning (figure 9.16). This change is justified by the development company by expressing the fact that the university stimulates job opportunities and its accompanying students will have a positive influence on the social structure and the service industries in the neighbouring districts (HafenCity Hamburg GmbH 2006).

It can be concluded that dealing with political, social, and economical factors influences the planning discourse and therefore also influences the learning process. In this case the learning process is associated with creating political support for developments and as shown in the example political support can lead to alterations in the master plan.

### 9.2.4.6 Addition cultural facilities

Another change in the master plan is the addition of cultural facilities. The cultural facilities were ambiguously formulated in the master plan of 2000 and during the planning process from 2000-2006 the cultural program has taken shape. The discourse analysis shows that the argumentation of the development company for this change is to promote the cultural character and image of Hamburg, to attract national and international visitors, to reinforce economic prosperity, and to reinforce the rhetoric frame of symbolic display.

The master plan of 2006 defines exceptional locations within HafenCity Hamburg and that these areas should not be used profanely, but should follow the traditional rules that have been set and applied in many European cities: exceptional area, exceptional use, exceptional architecture (HafenCity Hamburg GmbH 2004). These exceptional location are in accordance with the design principles planned by KCAP and ASTOC (see figure 9.3).

The most controversial cultural project in HafenCity Hamburg is the Elbphilharmonie Concert Hall built on the rooftop of the Kaispeicher A building located at Kaiserhöft (figure 9.18). Before the idea of the concert hall emerged, the development company commenced planning the building concept ‘Media City Port’, which had to be the flagship project of the media industry (figure 9.17).
Besides the port, the economy of Hamburg is flourishing in the media sector. Hamburg is probably the most important city for the printed media as well as for new media. A few years ago media companies were in the position to pay high rates of rent for exceptional locations in the city. The Media City Port should have been the prestigious architectural statement on the Elbe. From around 120 participants, Benthem Crouwel won the design competition and their concepts included a media academy, number of new media companies, restaurants, and exhibition areas intended for a permanent media exposition (HafenCity Hamburg GmbH 2004). However, the concept failed due to economical reasons, lack of users, and investors. This moment in the planning process indicates the start of a learning process, in which new ideas and new knowledge is created and acquired to improve the established frame and new opportunities and alternative building concepts for the Media City Port were discussed. The idea of a the Elbphilharmonie Concert Hall was later produced by private investors. Hence, this change can therefore be associated with lending private investors the opportunity to develop and realise the concert hall (open mind). The Elbphilharmonie Concert Hall is designed by the architectural firm Herzog and de Meuron. The project, which was initially planned for another location in HafenCity, will be put into operation by a project developer. The project has caused a storm of enthusiasm in the city and there is widespread acceptance of the project draft throughout the political spectrum (HafenCity Hamburg GmbH 2004). During the planning discourse the cultural project became HafenCity’s flagship project both for the development company and the City-State of Hamburg. The Elbphilharmonie is perceived as a symbol for the HafenCity Hamburg development and is a major step towards the city’s overall marketing strategy as a cultural and creative city (Brodowski et al., n.d.). Hence, from a learning perspective adding the concept of an iconic concert hall such as the Elbphilharmonie is on par with the Sydney Opera House, where the Opera House became the symbol for Sydney’s waterfront regeneration.

However, recently there are major political and social debates about the building costs and the prolonged construction times of the Elbphilharmonie. The estimated investment volume at the beginning of the planning process was around €60-70 million and is significantly higher than the modest budget the city is able to offer (HafenCity Hamburg GmbH 2004). For this reason the project is based on an alternative financial plan: in addition to the two concert halls, a hotel and several luxury apartments are also planned, which are subsequently to cover part of the financing. In addition, the city has to provide the land free of charge and will probably also have to fill the financial gap along with private investors (HafenCity Hamburg GmbH 2004). However, in November 2008 the total cost climbed to €480 million and the public sector financed share reached an estimate of €323 million. The costs are justified by the city government, because the city government is betting that the problems, and most of all the growing expenses will be forgotten when the Elbphilharmonie is completed and stands as the new symbol for Hamburg. According to Mr. Walter, Hamburg’s chief planning director says,

“If we had said from the very beginning that we needed 300 million euros for the building, I am sure that the city would have agreed, because it’s a wonderful project for Hamburg. I am personally completely convinced that in 100 years, people will look back with pride on the fact that our generation succeeded in creating it.”

(Kulish 2009)
Christian Plock, manager of Hamburg’s Association of Taxpayers questions the political decisions by stating that,

“*Our impression was that the politicians decided they absolutely had to have it before they really gave any thought to the planning. We are not against it in principle, just the dilettante manner in which it was done. The project made the national taxpayers association’s ‘black book’ of wasted tax revenue for all of Germany in 2009.*”

(Kulish 2009)

Political dominations of the city’s governmental power are clearly noticeable in this individual building project along with the planning discourse. The Elbphilharmonie is designated as the landmark for Hamburg and obviously against any price. Money that could have been spend elsewhere in the city.

Another prominent building feature is the Science Center designed by Rem Koolhaas at the tip of the Überseequartier, which is one of the iconic buildings that was laid down in the design principles. Whether the Science Center will actually be built is still an open question, since the public share of funding (once planned to be €46 million) is no longer available, and operation of the center by the State no longer appears feasible. Therefore, the Science Center is wholly dependent on the generosity of sponsors (HafenCity Hamburg GmbH 2012b). A learned lesson is that despite desired development ambitions, financial means also determine the content of the master plans and compromises must be made.

Nonetheless, the cultural facilities are shaping the cultural program of HafenCity Hamburg with their prominent locations, architectural quality, their uses, and attracts national and international visitors. The magnitude of these developments for HafenCity Hamburg and Hamburg itself as a city were unimaginable at the time the master plan was conceived (HafenCity Hamburg GmbH 2006). These cultural additions to the master plan have made HafenCity Hamburg well known amongst investors, developers, professionals, residents, tourist etc., nationally and internationally. The cultural facilities also gave the whole area a positive impulse and act as significant nodes within HafenCity Hamburg, attracting people at different times of the day.

The discourse analysis shows that learning is also an reactive and adaptive process of dealing with contextual changes, such as economic, political, social, and societal developments. However, changing contextual developments only have meaning when they become ‘learned’ by those involved in the development process and actively deal with those changing circumstances by making adequate decisions leading to actions.

9.3 Conclusion

HafenCity Hamburg already started learning from other spatial development projects (Meyhöfer 2011; Tzortzis 2012), but most importantly from the urban development itself. Waterfront regeneration in Hamburg started rather late, the development company ceased the opportunity to learn from other spatial development projects and from the very beginning pursued an attractive functional mix of uses by combining living (Amsterdam), offices (London), and tourism and leisure (Sydney). Besides, well-thought mechanisms, such as the urbanity strategy, land development strategy, and the sustainability strategy worked in favour of the development success of HafenCity Hamburg.

It can be concluded that framing an enormous development project, such as HafenCity Hamburg, is very important in order to create coordination in complex situations. Framing helps structuring beliefs, perception, and appreciation and can motivate actors to act in a certain way or facilitate collective actions. This is strongly noticeable in the way the Hamburg City-State and the development company have framed the HafenCity Hamburg project. The project is used to achieve the goals of the City-State of Hamburg to be an attractive, economic, and sustainable city. Hence, the project is nationally and internationally framed as a learning model for sustainable development of the 21st century for other European cities. Besides, by positively framing HafenCity Hamburg action frames are created that influenced the regulations, allocation decisions, incentives, procedures during the planning discourse.
Frameworks are also established in the planning discourse and the entire development of HafenCity Hamburg is framed by the larger urban planning strategy of the City-State of Hamburg, the master plans, the development objectives, and the design frameworks. During the planning process some frames are adjusted or modified in order to cope with contextual developments.

It can be concluded that there definitely is a learning process present in the planning discourse of the HafenCity Hamburg spatial development. Although, the development company is not aware of this learning process or does not acknowledge the fact that changes in the master plans imply a learning process. Two types of learning are present in the planning process of HafenCity Hamburg: assimilative learning and accommodative learning. In which assimilative and accommodative learning promotes progressive learning. It can be indicated that assimilative learning is more associated with improving the established framework to gain strategic advantage, while accommodative learning also concerns creating political and social support for the development. Besides, it is clear that single-loop learning courses are notable in the master plan development by means of critical reflection and changing parts of the established frame. However, all forms of learning are closely related with economic, political, and social developments. In other words, the learning process is fuelled by changes in the economic, political, and/or social context and are also influenced by the powers of the actors. For instance, the strong position of Hamburg’s government is notable, making use of its legislative and financial powers, as well as of its strategic leverage as landowner. The political domination of the Senate has a strong influence on the content and quality of the planning discourse. The Senate find themselves in a good position both as an authoritative structure and as an allocative structure ensuring the public good (Smith & Garcia Ferrari 2012).

Some of the changes can be linked with the discussed learning activities in the previous chapter, such as the study trips, design study, expert symposium, the design competitions, expert dialogues, public dialogues, and open space participation. This string of learning activities implies that the knowledge generated during these activities is to a certain extent used in the planning process. However, the discourse analysis did not provide extensive explicit information about which knowledge generated by the learning activities led to certain decisions or actions during the planning process. It only expressed which learning activities were used during the planning process that led to certain changes in the master plans. It can be concluded that the learning activities influenced the planning process and the decision-making process and led to certain changes in the master plans.

From a planning point of view there are lessons to be learned. The flexibility of the master plan has seemingly helped generate enormous design richness and quality, whilst delivering a uniform and coherent cityscape (PRP, Urbed & Design for Homes 2008). Besides, great emphasis is given to the quality of materials and detailing and this was only possible in consultation with the development company and the investors, developers, and architects. Working closely together in the planning process helped HafenCity Hamburg GmbH to preserve control over the quality of the design. In addition, adding design elements and features to overcome site challenges, such as the tidal water elevation, created playful physical connections and interesting and surprising elements, such as the floating docks and the different terraces nearby the water. Another lesson to be learned is that organising many events (learning activities) fuelled the learning process and much knowledge is generated prior and during the planning process that shaped the contents of the master plans.

It can be concluded that being aware of the learning process has an influence on the development discourse of the entire spatial development. In case of HafenCity Hamburg it led to a well-planned development vision, approach, and strategy. Development mechanisms, such as the urbanity strategy, land development strategy, and the sustainability strategy are created early on in the development and planning process, because the development company was able to create, acquire, and share knowledge at the beginning of the project. Knowledge is therefore a powerful asset in the development process, which is generated by learning.
10. Conclusions

We experience a learning process on a daily basis, whether this is learning something new, gaining experience, developing new skills or competences, creating and acquiring new knowledge, or improving something we already know. It is a lifelong process between the individual and his or her material and social environment and the inner mental process of acquisition and elaboration of knowledge in which new impulses are connected with the results of prior learning. Hence, learning is embedded in the individual and has a social and societal character, which means that the result of learning is always socially and societally marked (Illeris 2007). Fundamentally, learning is a process between the content, the incentive, and the interaction dimension, where learning generates knowledge, skills, competences, abilities, understandings, emotions, and attitudes. In this perspective, learning is a valuable asset in any organisation. Especially in a world that is constantly changing and where new ideas, approaches, strategies, and policies rapidly emerge. What this means is that we constantly need to learn, adapt, react, and generate knowledge to achieve results. In the field of urban area development this means that being aware of the learning process and properly managing the learning and knowledge management process leads to new innovative insights, which can be used during the urban development process. With this research the concepts of ‘learning and knowledge’ within urban area development are explored and made tangible in order to make an inspiring and innovative academic contribution regarding the professionalisation of the field. This final chapter discusses the research findings, elaborates on the role of learning and knowledge within urban area development, and gives recommendations in regard to learning and future research.

10.1 Recollection of the research questions

The concepts of ‘learning and knowledge’ are both intensively studied by scholars from various disciplines, such as psychology, sociology, economics, and management. However, the role of learning and knowledge within urban area development and the effects on the development and planning process of spatial development projects seems never done before. Hence, this research can be marked as a curiosity-driven and exploratory research. The active challenge of this research is to get a profound understanding of the learning process and its accompanying learning activities that generate (new) knowledge and to what extent the learning activities affected the changes in the project’s master plan development. The first step towards understanding learning within urban area development starts with answering the formulated main research question, which is further decomposed in three detailed research questions.

Which learning activities can be identified in the development process of HafenCity Hamburg and to what extent have these learning activities affected the changes in the project’s master plans and projects?

1. Which learning activities are deployed in the development process of HafenCity Hamburg?
2. Which changes are present in the project’s master plan development and projects?
3. To what extent can the indicated changes in the master plan development be related to the identified learning activities?

With the use of an extensive literature review about urban area development, knowledge, and learning and by means of an empirical inquiry about the learning process in HafenCity Hamburg, the detailed and main research questions can be (partly) answered.
The extensive literature review made it possible to get a profound understanding about urban area development, waterfront development, knowledge, and learning resulting in an analytic framework (figure 10.1) to analyse the learning process and learning activities present in HafenCity Hamburg. With the use of the empirical inquiry data is collected about the followed urban area development process, the learning activities, and the changes in the master plans of 2000, 2006, and 2010 that imply learning. To operationalise the learning process in HafenCity Hamburg a discourse analysis is used to interpret and understand the changes in the master plans. With these research methods it is possible to answer all detailed research questions and partly answer the main research question.

10.2 Learning within urban area development

Learning is an integral part of our lives, whether we like it or not, and is seen as a lifelong process. The study of the nature of learning and understanding its mode of functioning and significance is a tremendously complex matter. Scholars have been struggling between the various definitions of learning and the different learning theories. Defining the nature of learning and its functioning can be marked as a never-ending discourse. In the perspective of this research, the discourse analysis confirms that learning within urban area development can be seen as a process in which learning activities generate (new) knowledge that impacts the decision-making process and leads to certain decisions, actions, and changes in the project’s master plan development. It can also be concluded from the discourse analysis that learning within spatial development projects is strongly associated with an adaptive and even reactive learning process resulting in an enduring change in the development and or planning process in regard to the quality of the content, process, and/or individual building projects. Whereas the urban area development process can be seen as a collaborative and knowledge-intensive learning process fuelled by social interaction and participation.

10.2.1 Learning process

The discourse analysis suggests that learning within HafenCity Hamburg can be seen as a process as well as a product. Learning as a process in HafenCity can be seen as deploying a series of learning activities over time, leading to some durable changes in regard to the development and planning process of HafenCity Hamburg. Learning as a product in HafenCity is the result of the learning process i.e. the consequence of learning, which is the knowledge generated by the learning activities that led to certain changes in the master plans.

Initially, the discourse analysis suggested that a learning process within the spatial development of HafenCity Hamburg is present, because the development company spend a great amount of attention towards creating, acquiring, and sharing knowledge to frame and shape the process and content of the project and its accompanying spatial plans i.e. the development company is actively trying to learn. Prior to the development process the discourse analysis showed that the development company started learning from other waterfront development projects. Hamburg is rather late in redeveloping their waterfronts and abandoned port areas, which led to the opportunity the learn from the successes and mistakes of other waterfront redevelopment projects.
The development company learned from other waterfront redevelopment projects through the exposure of their different development approaches and questioning the followed development approach and strategy. Key principles and lessons were extracted and transformed accordingly to the HafenCity Hamburg context. Hence, the development company already begun learning from other waterfront redevelopment projects by concentrating form the beginning of the development process on not just offices, as in the docklands, or housing, as in Amsterdam, or leisure and tourism, as in sydney, but the development company and planners opted for a horizontal and vertical mixed use concept of housing, offices, retail, leisure, and entertainment i.e. combining the key lessons of other waterfront redevelopment projects.

However, most importantly, the discourse analysis showed a learning process within the development of HafenCity Hamburg itself. The learning process with its accompanying learning activities led to new progressive insights, innovations, and changes in the master plans. Due to learning and creating and acquiring knowledge in the early stages of the development process led to a well-planed urban framework and structure, development approach, and development strategy. Besides, well-thought development mechanisms are set into place by the development company, such as the urbanity strategy, land development strategy, sustainability strategy, and the mixed use concept. Evidence from the research findings and discourse analysis also suggest that the learning process in spatial development projects is closely related and influenced by contextual developments, such as economic, political, social, and societal changes. Hence, a clear distinction between learning and reacting on contextual developments and changing circumstances is difficult to make, because it is an adaptive and even reactive process between learning and the contextual developments. However, the discourse analysis makes it clear that contextual changes only have meaning when they become ‘learned’ by the actors involved in the project. The discourse analysis shows that dealing with changing circumstances fuels the learning process and even stimulates learning in order to find innovative solutions that tackle the changing circumstances. From the discourse analysis it can be stated that the changes in the master plans are a result of both learning and generating (new) knowledge by deploying the learning activities and adapting and reacting on strategic, economic, political, social, and societal developments. It can be concluded that it is an interplay between learning, knowledge, experience, artistry, contextual developments, and development opportunities that impacts the project’s master plan development. In general, it seems that being aware of the learning process means being more conscious about creating, acquiring, and sharing knowledge early on in the development and planning process in order to frame the development process and content. Hence, learning seems to be an interesting explanation for the fact the master plans change and evolve during the development process. However, it seems certainly not the only reason why spatial plans evolve, other factors involved are time, money, opportunities, logic, reasoning etc. Nonetheless, the results of this research have also shown that HafenCity Hamburg itself functions as a learning model for other development projects. It therefore can be stated that learning is a continuous cycle of copying, combining, and transforming knowledge, experience, and skills in order to improve the outcomes of urban area development projects.

10.2.2 Learning activities

Expressed in the discourse analysis, the development company has deployed many activities prior and during the development and planning process to acquire and share knowledge i.e. actively tried to learn. Through time, a string of learning activities formed a pattern of activities and events that can be indicated as a learning process. By means of the deployed learning activities the development company collected information and converted into knowledge, which is ultimately used during the decision-making process and led to certain actions and changes in regard to the project’s master plan development.

The results of the research has demonstrated that the learning activities can be divided in knowledge acquisition and knowledge sharing activities. The discourse analysis showed that the knowledge acquisition activities can be subdivided in activities prior to the development process, during the planning process, concerning public participation, and research projects. In table 10.1 the identified learning activities in HafenCity Hamburg concerning the knowledge acquisition activities are shown.
Evidence from the research suggests that in general it seems that learning activities prior to development process concern the acquisition of knowledge in regard to the possibilities of the spatial development and framing the process and content of the spatial development. Knowledge acquisition activities prior to development process are study trips, design studies, and an expert symposium. By means of the design study possibilities concerning the urban structure are laid down and some of the design principles that are still in use today, such as the mix use concept are formulated during this learning activity. Another example is the expert symposium, which is used to acquire knowledge and learn more about the market trends and property investment possibilities. During this learning activity the functional mix for housing, offices, retail, leisure, and entertainment is created.

The discourse analysis showed that during the planning process knowledge acquisition activities are more focused on acquiring external knowledge concerning the detailed content of the master plans. Learning activities are for instance, design competitions for the master plan, public open spaces, and individual building projects, but also public events, symposia, and expert dialogues are organised to answer ‘burning questions’ concerning the spatial development. An example of a learning activity during the development process is the organised symposium entitled ‘Planning Urbanity: life, work space in the new downtown’. Prominent international participants were invited to discuss and answer the central question whether urbanity can be planned. Through this events knowledge was created and acquired by the development company. Another example of a learning activity that generated knowledge was through the expert dialogue. The development company acquired knowledge during the expert dialogue through workshops and discussions in order to formulate a development strategy for the neighbourhood Oberhafen. Here, participants discussed the development process and the general possibilities to develop the area into a neighbourhood that specialises in culture and creative economies.

<table>
<thead>
<tr>
<th>Knowledge acquisition activities</th>
<th>Activities</th>
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| Prior to the development process | • Study trips  
• Design study  
• Expert symposium |
| During the development process   | • Design competition (master plan, open spaces, architecture)  
• Public events & symposia  
• Expert dialogue  
• Advisory board |
| Public participation             | • Dialogue im Kesselhaus  
• Open space participation  
• Information events  
• Events  
• Integration of local actors and organisations |
| Research projects                | • Move Katharinnen-school  
• Time-political reality events  
• Research projects of the HafenCity University |

Table 10.1 Identified knowledge acquisition activities
Besides, organising learning activities prior and during the planning process, learning activities can be focussed on public participation in which knowledge is acquired from citizens by means of organising dialogues, design workshops, and events to improve the content of the master plans. While, the before mentioned learning activities are focussed on acquiring knowledge in order to frame and shape the content and process from professionals, public participation involves knowledge from citizens who are affected by the spatial development. The discourse analysis showed that the development company organises on a regular base public discussions on different topics related to the HafenCity Hamburg development, such as art installation at the development site or for instance the revised design of the Science Center designed by Rem Koolhaas. Besides, through public events residents have the opportunity to discuss critical questions with experts, developers, and/or politicians.

The discourse analysis also expresses that the development company acquires external knowledge about the influences the spatial developments in HafenCity Hamburg have on for instance the urbanity concept or the influence of public spaces by means of research, mostly performed by the HafenCity University for civil engineering, geomatics, architecture, and city planning.

Evidence from the discourse analysis also shows that the development company organises events in which information about the HafenCity Hamburg development project is shared with other professionals in the field. Activities that concern knowledge sharing are more about promoting HafenCity Hamburg nationally and internationally and share knowledge and strategies about the project itself through exhibitions, conferences, research projects, and learning agreements. Table 10.2 illustrates the learning activities that concern knowledge sharing activities.

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<th>Knowledge acquisition activities</th>
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<td>Activities</td>
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<tr>
<td>Events</td>
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<tr>
<td>• Exhibitions</td>
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<tr>
<td>• Conferences</td>
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<tr>
<td>Research</td>
</tr>
<tr>
<td>• Waterfront communities research project around the North-Sea</td>
</tr>
<tr>
<td>Agreements</td>
</tr>
<tr>
<td>• Stadshavens Rotterdam</td>
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<td>• The Thames Gateway</td>
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<tr>
<td>On site</td>
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<tr>
<td>• Information pavilions</td>
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<tr>
<td>• Guided tours</td>
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<tr>
<td>• The view point</td>
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</tbody>
</table>

Table 10.2 Identified knowledge sharing activities

Numerous times the development company showcased the HafenCity Hamburg project at the MIPIM, the international real estate show for professionals, in which four days of intense networking, conferences, think thanks, and successful projects are discussed. Furthermore, HafenCity Hamburg was shown at the EXPO real 2011, which is another exhibition event to share and discuss the urban development trends. And as of March 2012 the HafenCity Hamburg project and the IBA project are shown at the EU parliament in Brussels. The exhibition is part of an international tour in which the exhibition is designed to attract visitors to Hamburg as well as stimulating an international dialogue about the question how cities can grow, while creating a sustainable metropolis of the future (HafenCity Hamburg GmbH 2012b).
The discourse analysis also showed other interesting (learning) activities that the development company deployed to promote the project among citizens in Hamburg. Activities and events included a charity run through the development site, arrival of large cruise ships, summer in HafenCity, topping out events, and street parties.

It can be concluded from the research results that the development company HafenCity Hamburg GmbH deployed many resources to acquire knowledge in order to shape and frame the development process and content of the master plans. This led to a well-planned urban structure, development approach and strategy, and some innovative solutions, such as the flood protection control. The evidence from the research and the discourse analysis supports the idea that these identified learning activities fuelled the learning process and up to a certain extent affected the project’s master plan development.

### 10.2.3 Effects learning activities on the master plan development

First of all, the findings of this research enhance our understanding of learning and knowledge within urban area development. Second, the results of this research indicated that both the learning process and learning activities are present in the development of HafenCity Hamburg, as discussed and presented in the previous subparagraphs. Now, the only question remains, is to what extent the identified learning activities affected the changes in the master plans and the actual realised building projects in HafenCity Hamburg?

The changes in the master plans imply that learning has taken place in the development of HafenCity Hamburg, which is confirmed by the discourse analysis. In general, it seems clear that the learning process and the learning activities have affected the content of the master plans and the development process up to a certain extent, both implicitly and explicitly. The master plan analysis illustrates that during the development of HafenCity Hamburg several modifications, additions, and alterations occurred in the master plans of 2000, 2006, and 2010. Table 10.3 illustrates the changes that are associated with one of the four learning types mentioned by Knud Illeris (2007), a Danish scientists and professor of lifelong learning.

<table>
<thead>
<tr>
<th>Learning typology</th>
<th>Changes in the project’s master plans</th>
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<tbody>
<tr>
<td>Assimilative learning</td>
<td>• Increase in density</td>
</tr>
<tr>
<td></td>
<td>• Addition temporary playground</td>
</tr>
<tr>
<td></td>
<td>• Increase in sustainability</td>
</tr>
<tr>
<td>Accommodative learning</td>
<td>• Alteration land development strategy</td>
</tr>
<tr>
<td></td>
<td>• Alteration land use eastern part</td>
</tr>
<tr>
<td></td>
<td>• Alteration development approach Oberhafen</td>
</tr>
</tbody>
</table>

Table 10.3 Changes in the project’s master plans associated with two learning typologies

Several changes in the master plans are associated with assimilative and accommodative learning. Assimilative learning resembles progressive or additional learning in which the established framework is improved. In other words, a stable and progressive development of the master plans is visible. Accommodative learning is associated with single-loop learning in which parts of the established frame are rebuild due to critical reflection.

The discourse analysis shows that all learning activities influenced the project’s master plan development. However, it is hard to exactly pinpoint which learning activity is responsible for which change in the master plans. Evidence suggests that the changes in the master plans are more the result of an interplay between all the gathered knowledge through learning activities combined with personal experience, artistry, know-how, skills, and adapting and reacting on changing circumstances. However, the results of the research have indicated that learning activities used prior to the development process are affecting and shaping the urban structure and the general content of the master plans.
For instance, from the very beginning of the development of HafenCity Hamburg, the development company pursued an attractive functional mix of uses by combining the development priorities of Sydney (tourism and retail), Amsterdam (housing), and London (offices). This indicates that the learning activity concerning the study trips implicitly contributed to the learning process and affected the content of the master plan by copying the successes of other waterfront redevelopment projects and transform them accordingly to the HafenCity Hamburg context. Besides, the expert symposium held in 1998 contributed to the content of the master plan by analysing the market trends and asking experts and investors about which content was suitable for this development by means of three workshops about 1) HafenCity as a location for leisure, tourism, and retail, 2) HafenCity as a residential location, and 3) HafenCity as a location for innovative service-economy. It can not be explicitly stated that these specific workshops shaped the building program of HafenCity, but implicitly it can be stated that the knowledge generated with those workshop are intertwined in the project’s master plan development. The evidence from the research expressed in the discourse analysis also suggests that learning activities during the planning discourse implicitly affected the content of the master plans and the realised projects. For instance, the knowledge and experience of the designers of the master plan framed and shaped the master plans and the public events, symposia, and expert dialogues also generated new knowledge that is used during the decision-making process that led to certain actions and changes in the master plans. Despite, the fact that implicitly all learning activities affected the changes in the master plans, some learning activities can explicitly linked with a certain change in the master plans. For instance, through public discussions and open space participation, both knowledge acquisition activities, a temporary playground was added to the master plan. Besides, through the expert symposium, workshops, and critical reflection of the development company itself an alteration was made regarding the land development strategy (tender procedure of land). In other words, parts of the land development strategy were rebuild in order to improve the feeling of urbanity and divide development risks. This change resulted in smaller and various kinds of investors and developers, which were focussed on different target groups, but also led to rental and owner-occupier homes. Learning activities that influenced the revision of the master plan for the eastern part were for instance, public discussions, public events, and information events. From those learning activities it could be concluded that the onward development of the master plan was very positively received by the citizens of Hamburg. Although, some critical points were made regarding urban density, housing, social mix, and traffic (HafenCity Hamburg GmbH 2012b). After the events the draft of the master plan was given one more critical perusal and was redefined once more before being presented to the Senate of Hamburg. Besides, in regard to the change in development approach for the Oberhafen neighbourhood, learning activities, such as symposium, dialogues, and workshops are held to create, acquire, and share knowledge i.e. those learning activities stimulate active learning. Hence, in general it can be concluded that the learning activities implicitly and explicitly have shaped or changed the project’s master plan development.

10.3 General conclusions

Evidence from the research suggests that there definitely is a learning process present in the development of HafenCity Hamburg and that the learning activities contributed to framing, shaping, and changing the content of the master plans, but to what extent the learning activities affected the changes in the project’s master plan development and the actual realised projects remains partly uncertain. Not all learning activities can be explicitly linked to certain changes or individual realised projects. Overall it can be concluded that learning is a explanation for the changes in the master plan, but the changes are closely related and influenced by contextual changes, powers of the stakeholders, the established frame of the development project, and are the result of compromises. From the discourse analysis it can be concluded that through learning the master plans of Hafencity Hamburg evolved, but it is certainly not the only reason. It is a interplay between learning, applying previous experiences and skills, personal know-how, artistry and reacting on changing circumstances that influence the spatial development project, such as economic, political, strategic, social, and societal developments. It has come to the attention that experience, know-how, and generating knowledge are valuable assets in the urban area development process.
Donald Schön (1983) partly explains this by introducing the term artistry. Donald Schön (1983), describes artistry as “every competent practitioner can recognise phenomena...for which he cannot give a reasonably accurate or complete description. In his day to day practice he makes innumerable judgments of quality for which he cannot state adequate criteria, and he displays rules for which he cannot state the rules and procedures”. Our experience confirms that practitioners in urban area development learn the artistry in practice (learning by doing). They learn from the unexplainable, seemingly intuitive, and describing elements and pieces of knowing and understanding that lead to skilful execution of performances.

The results of this research provide the groundwork for further research about the role and impacts of learning and its accompanying learning activities within urban area development projects. Although the main research question is only partly answered, the results of the research produced some useful insights and general conclusions concerning learning within urban area development. Useful insights and general conclusions are:

- Changes in the master plans suggest that there is a learning process with its accompanying learning activities present in urban area development projects and the discourse analysis supports the idea that the identified learning activities fuel the learning process and up to a certain extent affect the project’s master plan development;
- Learning within urban area development projects can be seen as a process in which a string of learning activities deployed over time generate (new) knowledge that impacts the decision-making process and leads to certain decisions, actions, and changes in the project’s master plan development;
- Learning within urban area development projects can also be seen as a product, hence the result of the learning process i.e. the consequence of learning, which is the knowledge generated by the learning activities that led to certain changes in the master plans;
- Learning within urban area development projects is strongly associated with an adaptive and even reactive learning process resulting in an enduring change in the development and or planning process in regard to the quality of the content, process, and/or individual building projects.
- Learning within urban area development projects leads to progressive insights and innovative solutions that influence the development and planning process in regard to the content, process, and/or individual building projects;
- Learning activities contributed to framing, shaping, and changing the content of the master plan, but to what extent the learning activities affected the changes in the project’s master plan development and the actual realised projects remains partly uncertain. Not all learning activities can be explicitly linked to certain changes or individual realised project, and
- Evidently so, learning within urban area development projects is not the only reason why spatial plans evolve. It is an interplay between learning, previous knowledge, experience and skills, artistry, new knowledge, and changing circumstances, such as economic, political, strategic, social, and societal developments.

### 10.4 Limitations of the research

This research about learning and knowledge within urban area development was from the very beginning a pilot research intended to lay down the groundwork for future research. Basically, the literature review explores and describes the theories and methods about learning and knowledge in order to formulate a working definition about learning and knowledge that is used in this research to analyse the learning process in HafenCity Hamburg. With this research the first step towards understanding learning, knowledge and the impacts they have on the planning discourse has been made. The results of the research indicate that there is a learning process present and that the learning activities up to a certain point affected the project’s master plan development when analysing the changes in the master plans. However, the findings in this research are subjected to a number of limitations.
First and most important, it partly remains uncertain exactly to what extent the identified learning activities affected the changes in the project’s master plans and projects. The ability to indicate the learning activities that affected the changes in the master plans and projects remains difficult, because the research has indicated that the changes in the master plan are related to learning, but also other factors influence the changes in the master plan, such as previous knowledge, experiences, skills, artistry, logic, reasoning, and changing circumstances. Hence, it is therefore difficult to pinpoint to what extent the learning activities have affected the changes. Besides, learning still remains and will partly remain an implicit process of individuals. However, this limitation could be overcome by doing more intensive research about the indicated learning activities and their effects on the planning discourse. Performing more interviews with more employees of the development company probably would contribute towards finding a more complete answer about the effects of the learning activities on the changes in the master plan. Therefore, further research is necessary to revise the results of this research leading to a more comprehensive explanation about the impacts of learning on the development and planning process of spatial development projects.

The second limitation of this research is that only one case study is analysed. The reason for opting only one case study is based on the fact that this is an exploratory research in which it was extremely important to identify the learning process and its accompanying learning activities and make the impacts of learning and knowledge more tangible in the planning process. To validate the outcomes of this research it is recommended that further research among several case studies is required to confirm the effects of the learning activities on the project’s master plan development.

The third limitation is the lack of prior research on the learning process within urban area development. Several scholars have investigated the topics of learning and knowledge, but within urban area development learning and knowledge seems to be unexplored. However, this limitation is also regarded as an opportunity to create and develop a new framework that can be used for future research.

10.5 Contribution

The concepts of ‘learning and knowledge’ within urban area development were fairly unexplored in the academic world. Hence, the results of this research build upon the existing body of knowledge about learning and knowledge in general, but most importantly also contributes to introducing new perspectives about learning and knowledge within the field of urban area development, especially focusing on learning within the project’s master plan development.

In recent years, urban area development has become a new game, with new players, and with new rules and can only be improved if new competences and skills are developed. It is safe to say that learning and knowledge will play a (more) dominant role in the generation and implementation of spatial development projects. Being more aware of the learning process means creating, acquiring, and sharing knowledge early on in the development and planning process, which leads to progressive insights and innovative solutions that probably improves the quality of the process and content of urban area development plans and projects. Although, in practice the awareness of the learning process seems relatively low. This research therefore contributes to making an inspiring and innovative academic contribution in regard to knowledge enrichment of the academic world and practice. Making the learning process more tangible and describing the impacts of learning on the development and planning process delivered new material to fuel the Dutch debate concerning the improvement of urban area development. Eventually, learning and knowledge will lead for instance to a more precise formulated vision and development strategy, an accurate balance between demand and supply, innovative solutions, shorter development time frames, enhancement of the decision-making process, and improvement of the overall quality of the development, which are all of societal relevance. Up to this point the research did not produce specific utility potentials in terms of applicability in the industry and society, but laid down the groundwork for further research in the academic world.
10.6 Recommendations

Based upon the results of this research the recommendations are two-fold. First general recommendations regarding learning are given and second recommendations for further research are suggested.

10.6.1 Learning

The research results have indicated that learning influences the development and planning process. Being aware of the learning process and properly managing the learning process could lead to efficient use of knowledge, progressive insights, innovative solutions, and improvement of the process and content of spatial development projects. Hence, recommendations in regard to learning are articulated below:

- Be aware of the fact that all learning starts at an individual level, so therefore stimulate competence development in order to use the knowledge of employees;
- Facilitate the learning process in an organisation and stimulate employees to learn and generate knowledge in order to improve the development process and the content of master plans, and
- Be aware of the knowledge creation process in an organisation. Each employee possesses knowledge that can be used in the development process. It only needs be made explicit in order to use it. A method that can be used to understand and structure the knowledge creation process in urban area development is the SECI-model (socialisation, externalisation, combination, and internalisation model) of Nonaka & Takeuchi (1995).

10.6.2 Future research

This research only begins to reveal the importance of learning and knowledge within urban area development projects. It seems that the changes in the master plans are evidence of a learning process, but no clear assumptions can be made in regard to what extent the learning activities affected the changes in the master plans. This research only made it clear that looking at the changes in the master plans from a learning perspective revealed some interesting insights about why plans evolve, improve, and change over time and suggests that learning is partly the reason for that change. However, some questions still remain uncertain, for instance is a learning process present in every development project, can other learning activities be found in other development projects, which learning activities affected which changes, how can learning be managed and steered etc.. Hence, recommendations for future research are:

- The effects of the learning activities on the changes in the master plans is made more tangible in this research, but partly remains uncertain. Further research therefore could be based on the indicated learning activities in this research, in which a connection between the learning activities, the changes, and the realised building projects is made. In order to investigate the effects of the learning activities on the changes in the master plan it would be preferred to analysis the decision-making process of the development company during the master plan development by means of qualitative research methods such as process-tracing, interviews, observations, and a discourse analysis in regard to documents that describe the decision-making process during the master plan development;
- The conclusions of this research are based upon the findings of the literature review and one selected case study, for more validity of this research extra case studies can help to explain to influence of learning on the master plan development, and
- To avoid bias in the interpretation of the case study, future research could consider interviewing multiple experts with the same background and story to tell. In case of HafenCity Hamburg, it would be preferred to interview multiple employees of the development company, some councillors or senator from the Ministry of Urban Development and Environment of the Senate of Hamburg, and with the designers of the master plan.
II. Reflection

“By three methods we may learn wisdom: first by reflection, which is noblest; second by imitation, which is easiest; and third by experience, which is the bitterest.”

(Confucius)

This chapter reflects upon the followed research process and research methods. In addition, the societal and scientific relevance discussed in the introductory chapter are reflected upon. Writing a master thesis is an exiting, overwhelming, and difficult process in which you learn a lot of about the field you are studying, about doing research, and about yourself. It is a period of ups and downs, but in the end it is all worth it when you see your master thesis laying in front of you.

The research process of writing a master thesis is linear and iterative in nature. At first it seems that it is a linear process of writing a research proposal, doing a literature review, making a theoretical framework, collecting data, doing an empirical inquiry, and interpreting the research findings. However, it is much more complex and iterative in nature. It is a cyclical movement of going back and forth between the literature, the empirical inquiry, and the research findings, trying to connect everything with each other. Writing a master thesis is an ongoing process of learning, generating knowledge, and interpreting the findings and is associated with reflecting and adjusting the results until no significant changes occur in the results. Looking back and reflecting on the followed research process it can be concluded that this research was very iterative in nature. In a way it was a an exploration of all the available information and trying to find a way to connect all of the relevant data and knowledge into a satisfactory research and master thesis. I went back and forth between the literature and the information I collected with the case study. In this research it was very difficult to find a theory or approach to make the learning process tangible. I struggled with this part the most, because at times it was very overwhelming and frustrating not to find the right approach to tackle this tough problem of making learning tangible, because most of the time it occurs outside the conscious realm and is therefore implicit in nature. My advice is to read, interpret, and also try to sometimes separate theory from practice and than look at it all over again.

Reflecting upon the research methods it seems that the literature review and the case study analysis are sufficient research approaches to tackle learning and knowledge within urban area development. The literature review resulted in a profound understanding about the research topics, but much more can be learned about learning, because it is a many-sided matter. Finding literature about learning and knowledge within urban area development was a difficult task, because little is written about this subject. Therefore I approached learning more from a general perspective to understand the basics of learning. The literature review provided a sound base for the empirical research to investigate the learning process in HafenCity Hamburg. With the use of documentations (books, articles, internet), observations, visiting the development site, and interviews the data was collected about the case study. Reflecting upon the case study method it turned out the be a good way of examining the urban development process in HafenCity Hamburg. Enough information and resources were available for data collection. Visiting the actual development site is also recommended in order to really experience and grasp the development project. I also arranged an interview with the development company to get a deeper understanding about the followed learning process. However, the interview did not meet my expectations. They were very reluctant in providing information about learning, because in their view learning was associated with improving from past mistakes or inefficiencies instead of looking towards learning from a more positive perspective.
Making the learning process tangible was also a difficult task, because much learning occurs outside the conscious realm and is therefore implicit in nature. By means of a discourse analysis the changes in the master plans are analysed and interpreted. I struggled with understanding and using the discourse analysis to find the meaning behind the changes in the master plan. Reflecting on the discourse analysis it is a useful tool to understand a range of issues in spatial planning, such as power, knowledge, ideology, persuasion etc.. A comprehensive discourse analysis could be the answer to interpret the effects of the learning activities on the changes in the master plan.

This research can be indicated as a highly theoretical and methodological research in which the first attempt towards understanding learning within urban area development is made. Extensive research about learning has been done among scholars from various disciplines, such as sociology, psychology, economics, and management. However, little was known about learning and knowledge within urban area development. This research therefore provides a step in the right direction to understand the role of learning within urban area development. Reflecting upon this research of making the learning process (more) tangible and describing the learning activities, delivered academic and new material to fuel the Dutch debate concerning the improvement of urban area development. From a societal perspective, being aware of the learning process and creating, acquiring, and sharing knowledge early on in the development process leads to progressive insights, innovation, and probably enhance the quality of the process and the content of spatial plans, which leads to a win-win situation for everyone including the society.

To conclude, writing a master thesis takes a tremendous effort, perseverance, motivation, and dedication.
Summary

Introduction
In an economy where information and knowledge play a dominant role, where new developments rapidly succeed each other, and where continuous improvements and innovations are critical, it can be stated that learning and knowledge are essential for the continues and existence of organisations. In the last decades research about learning and knowledge intensified and became more diverse, decisive, but also more complex. It seems that learning and knowledge can be viewed from different perspectives, theories, and epistemologies. In today’s knowledge and information-led society the concepts of ‘life long learning and knowledge’ have become more popular in relation to both the formation and implementation of policies and strategies in highly specialised areas, including those around the planning and realisation of spatial development projects. Hence, it is no surprise that the concepts of ‘life-long learning and knowledge’ have raised the attention in the Dutch debate around urban area development. The bottlenecks that have occurred in the field of urban area development as a result of the international credit crunch and economic crisis have even fuelled this debate. In a world that is constantly changing and where new policies, approaches, strategies, and ideas rapidly emerge the need to learn and share knowledge becomes (more) dominant in order to find solutions and to achieve results. In recent years, urban area development has become a new game, with new players, and with new rules. Slowly but surely public and private parties become aware of the fact that something has to change and that learning and knowledge could be valuable assets in this urban area development process. But what is learning and to what extent does it affects the development and planning process of spatial development projects? Besides, what is knowledge, how can knowledge be created and used during and in future urban area development projects? Learning and knowledge are underexposed topics in the field of urban area development and therefore the two central issues of this graduation research. The overarching purpose of this master thesis is therefore to explore the role of learning and knowledge within urban area development. In order to investigate the role of learning and knowledge, the spatial development project entitled HafenCity Hamburg is used as a case study in this master thesis. The active challenge of this graduation research is to get a profound understanding of the concepts of ‘learning and knowledge’ and to what extent they impact the development and planning process. This exploratory and curiosity-driven research resulted in the following main research question:

Which learning activities can be identified in the development process of HafenCity Hamburg and to what extent have these learning activities affected the changes in the project’s master plans and projects?

Derived from this main research question it becomes clear that this research is focussed on certain activities in the urban area development process that can be identified as learning in which knowledge is created, acquired, or shared during the development process. Besides, it can be interpret that learning implies some sort of change in the project’s master plan development.

Objectives
The objective of this research is not only answering the main research question. This research is curiosity-driven and explores the underexposed concepts of ‘learning an d knowledge’ within urban area development. The objectives are therefore to make an inspiring contribution in the academic field in regard to the professionalisation of the field, but also to enrich the field with knowledge about the learning process and provide progressive insights and useful recommendations about learning and knowledge within urban area development. The final objective of this research is that it needs to function as a theoretical foundation for future research.
Research methods

In order to answer the stated main research question this research makes use of two research methods. The first research method that is used in this graduation research is an extensive literature review about urban area development, waterfront development, knowledge, and learning to get familiar with the research topics and to obtain a profound understanding of the concepts of ‘learning and knowledge’. The second research method is part of the empirical research; the case study research. The intensive case study allows an exploration in regard to the learning processes present in HafenCity Hamburg. It provides a deeper understanding of the learning process in which changes through the actor’s perspective are obtained in order to make the learning process (more) tangible. Here, the learning process is made explicit by analysing the changes in the master plans by means of a critical discourse analysis, because changes imply a learning process. A critical discourse analysis is increasingly seen as a useful approach to understand a range of issues in spatial planning, such as power, knowledge, ideology, persuasion, social difference, and institutional framing (Maccallum & Hopkins 2011). Plans are among the most durable products of spatial planning, and as such offer a revealing window into the worlds of planners and developers. The texts in regard to the planning process (policy documents, spatial plans, press releases, presenter notes) describe events and conditions and is providing snapshots of discourses and practices over time in which critical discourse in particular is useful to study social change. In this research the critical discourse analysis is used as a tool to interpret the learning process in HafenCity Hamburg by studying and analysing the three published master plans of 2000, 2006 & 2010. During this research the data is collected throughout multiple sources; observation, interviews, and documents.

Literature results: urban area development

Urban area development is a relatively new field and has strong similarities in the Dutch spatial planning practice with ‘ontwikkelingsplanologie’ in which the hierarchical designation of the land uses by governmental bodies made room for a more entrepreneurial development approach (Daamen 2010). After the turn of the century, urban area development became a ‘instrument’ or ‘way of working’ in which the focus is on the alignment of public and private interests integrated in planning activities and spatial investments that lead to the development of an area. In practice, urban area development is hard to define, because the term or definition is still in the making. However, from the literature it can be concluded that urban area development is a collaborative, long-term, and complex development process of a defined area, in which a physical and/or functional change occurs and value is created through an integrated approach and cooperation between public and private parties. From the perspective of learning, urban area development in this research is understood as a collaborative, knowledge-intensive learning process in which learning through social interaction and participation in the development process leads to new progressive insights that influence both the content and process of spatial development projects. However, in practice the awareness that urban area development can be seen as a collaborative, knowledge-intensive learning process is relatively low. Nevertheless, learning and knowledge become more prominent in urban area development, because the world and the field of urban area development are constantly changing; new ideas, development approach, development strategies, and policies rapidly emerge in which learning and sharing knowledge is needed to achieve results. Learning is therefore (un)consciously present in the urban area development process, because it is a collaborative development process in which numerous actors and knowledge disciplines actively learn, create, acquire, and share knowledge in order to develop and realise a spatial development project.

Literature results: knowledge

It is safe to say that learning produces knowledge, but what is knowledge? Knowledge has several dimensions and a distinction between data, information, and knowledge and between implicit and explicit knowledge can be made. Data are raw numbers and facts, while information is processed data, and knowledge is authenticated information (Boer 2005). Put differently, knowledge in this research is described as information that is processed in the mind of human beings and framed by experiences, values, beliefs, context, and social interactions. In which knowledge is seen as the content or product of the learning process. Another aspect of knowledge is that it can be implicit (practical knowledge which is hard to transfer by verbalising it or writing it down) and explicit knowledge (rational, factual, and objective knowledge expressed in the form of data, documents, manuals etc.).
Although knowledge is an abstract concept it gained a lot of scientific attention over the last decade. In which academics express the fact that knowledge is of great value for an organisation’s competitive advantage and where new knowledge leads to experimentation, innovation, and change. The learning activities that generated knowledge prior, during, and after the urban area development process are in this research identified and categorised in knowledge creation, knowledge acquisition, and knowledge sharing activities. These three knowledge aspects closely relate to the development and planning process of a spatial development project in which new knowledge is created, acquired, and shared among actors to shape and frame the process and content of a spatial development project.

**Literature results: learning**

Daily we gain experience, we apply knowledge, and we learn. However, mostly it occurs outside the conscious realm or intentionality of human beings. As Alexander, Schallert & Reynolds (2009) denote “learners cannot give an explicit rendering of when learning occurred, how learning happened, or how they were changed”. Learning is therefore a very complex and many-sided matter and can be seen as a lifelong process fuelled by social interactions. It starts when we are young go to school and learn from experiences, learn from social interaction, and later learn in our social and working life. Learning is a continuous interaction process between the content (what we learn), the incentive (why we learn) and the social interaction process between the individual and the environment. This indicates that learning does not solely depends on a single individual. On the contrary, according to Illeris (2007) “learning is always embedded in a social and societal context that provides impulses and sets frames for what we can learn and how we learn”. The basic assumption of learning is that it implies some sort of cognitive and/or behavioural change. In this research learning is seen as a multidimensional process between several dimensions that results in an enduring change stimulated by social interaction between individuals and the environment. In case of urban area development learning is seen as a process in which learning activities generate (new) knowledge that influences the development and planning process. In addition, in this research it is assumed that learning is a collaborative process stimulated by individual learning that leads to collaborative changes in the master plans. Basically, this means that the learning process consists of a string of activities that produce knowledge that is used during the development process and can lead to certain changes in the master plans that can be indicated as learning. In a way that newly created, acquired, or shared knowledge facilitates change. Literature indicates that four types of learning can be distinguished, which are used in this research to indicate if the changes in the master plans can be linked with a learning type. The four learning typologies are: cumulative learning, assimilative learning, accommodative learning, and transformative learning. In which cumulative learning is associated with establishing a new mental framework, which forms the foundation for further learning. Assimilative learning is a steady, stable, and progressive development in which the established framework is improved by means of generating more knowledge and skills. Accommodative learning can be related to the concepts of reflection, critical thinking, and competence development. The result of accommodative learning is that the knowledge is general applicable in different unpredictable situations. In this research accommodative learning means that through critical reflection the built up mental schemes/frames will partially be rebuild. This type of learning is closely related to single-loop learning. Transformative learning or significant learning implies total reorganisation of a large number of mental schemes at the same time and with relation to all three dimensions of learning (content, incentive, interaction). Transformative learning is interpreted as changing the whole established framework and is closely related with double-loop learning. Derived from the literature about learning it can be stated that learning implies an enduring change, whereas learning (the process) produces new knowledge (the content) and impacts the decision-making process and quality of the spatial development project. Consequently, learning and knowledge are intertwined in an iterative, mutually reinforcing process; while learning produces new knowledge and where knowledge also influences future learning (Vera & Crossan 2003).

**Case study results: urban area development process**

The spatial development project HafenCity Hamburg is situated in the city centre of Hamburg at the river banks of the Elbe. The urban area development process of HafenCity Hamburg is analysed by means of the model of Verlaat & Wigmans (2010a) in which the context, content, actors, financial means, and the management of the development process are discussed.
It can be concluded from this analysis that Hamburg has a long history of being an important port and trading city, in which Hamburg owes its wealth, growth, economic prosperity, and urban structure to the port and its activities. However, due to several contextual changes, such as globalisation, the shift from an industrial-based metropolis towards a service-centred metropolis, and important changes in the transport industry opened up opportunities for the redevelopment of the abandoned waterfront adjacent to the city-centre of Hamburg and resulted in the spatial development project HafenCity Hamburg. The HafenCity Hamburg spatial development project is part of a larger urban planning strategy of the City-State of Hamburg called ‘Metropolis Hamburg - a growing city’. The HafenCity Hamburg project contains a metropolitan mix of housing, offices, retail, entertainment, and several public open spaces in which according to the development company a feel of urbanity is created. The spatial development is led by a full subsidiary development company of the City-State of Hamburg, which means that the development company has a certain degree of autonomy, but is operationally dependent on the City-State of Hamburg. The three major actors in the development process are the City-State of Hamburg, the development company entitled HafenCity Hamburg GmbH, and the private sector. All three actors are actively involved in the learning process and generating new and useful insights which ultimately has led to changes in the master plans. The development company’s approach towards developing the area is a mixture between a plan and development-led approach in which certain planning norms, quality standards, land uses according to the building program are fixed, while the master plans have also a high degree of flexibility to react on development opportunities. To conclude, analysing the content, actors, financial means, and management and development process of HafenCity Hamburg it can be stated that the development approach of HafenCity Hamburg GmbH has some major strengths and brings along certain opportunities, but there are also some weaknesses and threats towards this development approach (see table 12.1).

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Very effective division of labour between public and public/private sector</td>
<td>• High costs of regeneration and infrastructure development in a spatially segmented waterfront location with the risk of not meeting ‘break even’ between income from land sales and expenditure at the end of the project period</td>
</tr>
<tr>
<td>• Flexibility of the master plan and its ability to respond to external changes</td>
<td></td>
</tr>
<tr>
<td>• Ability to respond quickly and effectively, meaning the development has proceeded at a quicker pace than expected</td>
<td></td>
</tr>
<tr>
<td>• Mixed use development will allow HafenCity to respond to future changes in demand and circumstances</td>
<td></td>
</tr>
<tr>
<td>• People-centred approach to development efforts to build social integration, meaning it is not purely economic driven</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Built on principles of ecological sustainability, which is increasingly popular with developers and companies, so it can be leveraged</td>
<td>• Avoiding an exclusionary character of the area in spite of high cost and quality standards</td>
</tr>
<tr>
<td>• Based on a large number of market participants and a strategy of spatial segmentation, competition, and innovation have been held high and thus quality could be raised significantly</td>
<td>• In order to shape a sustainable urbanity between neighbourhoods and visitor/employers aspirations, development of a new balance between the public and private realm is a challenge</td>
</tr>
</tbody>
</table>

Table 12.1 SWOT analysis of the development approach of HafenCity Hamburg GmbH

Source: OECD 2010
Case study results: learning activities

The development company HafenCity Hamburg GmbH organised many activities and events to acquire and share knowledge in order to learn, receive feedback, and shape the HafenCity Hamburg project. The learning activities in this research are identified as a string of activities that generated knowledge prior and throughout the urban area development process. These learning activities can all be indicated as remarkable moments in time in which something happened to the quality of the content, process, and/or an object in HafenCity Hamburg. The learning activities present in this spatial development project are divided in knowledge acquisition activities, knowledge sharing activities, and promotion activities. The learning activities that resemble knowledge acquisition activities in HafenCity Hamburg are for instance, study trips, design studies, expert symposium, expert meetings, discussions, workshops, roundtables, public participation, research projects etc., of which all learning activities contributed to the learning process in HafenCity Hamburg and up to a certain point defined the planning discourse of HafenCity Hamburg. Knowledge sharing activities in this development process are closely linked to sharing knowledge about the development project with other professionals in the field by means of presenting the development project at exhibitions, conferences, and in research projects about waterfront developments. The knowledge sharing activities stimulated the learning process in the spatial project itself, but also stimulated the learning and knowledge dialogue in the field of real estate and urban area development with special attention towards sustainable urban development. Besides knowledge acquisition and sharing activities, the evidence from the discourse analysis suggest that promotion activities also played a major role in this spatial development project. From the beginning, the development company was aware of the fact that the area and the spatial development project needed to be heavily promoted among the citizens of Hamburg. Until 2003, the port and the city were excluded through douane fences marking the borderline between city and port. Although the new development is centrally located between the old city-centre and the water, public awareness of the possibilities of the spatial development needed to be raised. Through a series of public events the awareness among citizens of Hamburg was raised and attracted thousands of curious visitors into the planned spatial development at a very early stage in the development process in order to create public support for the project and attract potential residents. Promotion activities are for instance, a charity run through the development site, arrival of cruise ships, summer festival in HafenCity, open heritage day, topping out events etc.. The influence of each individual learning activity on the planning process and the change it brought to the master plans is very hard to pinpoint, because all the activities combined have contributed up to a certain point to the planning discourse and the changes in the master plans. However, the discourse analysis shows that multiple factors influenced the changes in the master plans, for instance personal and organisational know-how, experience, artistry, created, acquired, and shared knowledge, but also strategic, political, social, and economic developments. However, it seems that knowledge is a powerful tool in framing and shaping an urban area development project and in particular master plans.

In regard to knowledge acquisition, the learning activities, such as the study trips, design study, and the expert symposium have shaped and framed the initial content of the master plan of 2000 supported with the external knowledge acquired from the designers of the master plan. A learning activity that explicitly changed the content of the master plan is the temporary ‘Treasure Island’ playground. Local residents of HafenCity expressed the need for a playground and through the ‘open space participation’ learning activity a temporary playground was opened in the summer of 2008 in cooperation and through intensive participation with children and their parents from the local community of HafenCity Hamburg. The discourse analysis shows that the influence of the learning activities on the planning discourse are most noticeable in the revision of the master plan for the eastern part. Through a series of public events, expert dialogues, and citizen participation, a development approach for the neighbourhood Oberhafen is created, but also feedback about the content of the revised master plan was given and comments were incorporated, for instance the demand for subsidised housing. To a certain extent it can be concluded that learning and the learning activities framed and shaped the development and planning process of HafenCity Hamburg, but it remains partly uncertain to what extent the learning activities have contributed to the changes.
Case study results: master plan analysis

First of all, during the discourse analysis it became clear that the development company started learning from other waterfront development projects prior to the development process in order to frame and shape their spatial development. The regeneration of the waterfront in Hamburg started rather late and the development company ceased the opportunity to learn from the successes and mistakes from other waterfront development projects. One of the lessons learned is that from the beginning on the development company pursued an attractive functional mix of uses combining living (Amsterdam), offices (London), and leisure and tourism (Sydney) in one spatial development project. Another lesson learned from other waterfront development projects is the importance of transport and infrastructure to unlock economic and social benefits. The development company therefore created an urban mobility framework as one of the leading design frameworks during the planning process of the master plans.

Looking more closely to the changes in the master plans of 2000 (the first master plan), 2006 (the second master plan marked as an international edition) and 2010 (the third master plan a revision for the eastern part of HafenCity Hamburg) the discourse analysis suggests that a learning process has taken place in the planning process of HafenCity Hamburg. Although, the development company is not aware of this learning process, or does not want to acknowledge the fact that changes in the master plans imply a learning process. The changes in the master plans are listed in Table 12.2.

<table>
<thead>
<tr>
<th>Change</th>
<th>Timeframe</th>
<th>Learning type</th>
<th>Key influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition of land</td>
<td>2000 - 2006</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Release of restricted areas</td>
<td>2000 - 2006</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alteration development time frames</td>
<td>2000 - 2006</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Alteration land development strategy (tender process)</td>
<td>2000 - 2006</td>
<td>Accommodative learning</td>
<td>To improve the feeling of urbanity (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To divide risks (strategic influence)</td>
</tr>
<tr>
<td>Increase in density</td>
<td>2000 - 2006 - 2010</td>
<td>Assimilative learning</td>
<td>To improve the feeling of urbanity (strategic influence)</td>
</tr>
<tr>
<td>Addition public transport</td>
<td>2000 - 2006</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Addition educational facilities</td>
<td>2000 - 2006</td>
<td>-</td>
<td>Approved by the Senate (political influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To improve social structure, urbanity strategy, job opportunities (strategic influence)</td>
</tr>
<tr>
<td>Addition cultural facilities</td>
<td>2000 - 2006</td>
<td>-</td>
<td>To promote cultural character (social/strategic influence)</td>
</tr>
<tr>
<td>Addition temporary playground</td>
<td>2006 - 2010</td>
<td>Assimilative learning</td>
<td>The need for a playground among local residents (societal influence)</td>
</tr>
<tr>
<td>Alteration land use eastern part</td>
<td>2006 - 2010</td>
<td>Accommodative learning</td>
<td>Contextual changes (strategic/social influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lack recognisable identity (strategic influence)</td>
</tr>
<tr>
<td>Increase in sustainability</td>
<td>2000 - 2006 - 2010</td>
<td>Assimilative learning</td>
<td>Motivating/stimulating investors (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Leverage to improve the quality of the built environment (strategic influence)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Goals of the government (political influence)</td>
</tr>
<tr>
<td>Alteration development approach Oberhafen</td>
<td>2006 - 2010</td>
<td>Accommodative learning</td>
<td>Connection with ‘museum mile’ (strategic/social influence)</td>
</tr>
</tbody>
</table>

Table 12.2 Framework changes in the master plans

Two types of learning are present in the planning process of HafenCity Hamburg: assimilative learning and accommodative learning. Both, assimilative and accommodative learning promote progressive learning. However, all changes in the master plans are closely related to economic, political, strategic, societal, and social developments. In other words, the learning process is an adaptive and even reactive process that is fuelled by social interactions, personal know-how, experience, artistry, knowledge, and contextual developments, such as economic, politic, social, and societal development. Whereas contextual changes only have meaning when they become ‘learned’ by those involved in the spatial development project.
Some of the changes can be linked with the identified learning activities, such as the study trips, design study, expert symposium, the design competitions, expert dialogues, public dialogues, and open space participation. This string of learning activities implies that the knowledge generated during these activities is to a certain extent used in the planning process. However, the discourse analysis did not provide extensive explicit information about which knowledge generated by the learning activities led to certain decisions or actions during the planning process. It only expressed which learning activities were used during the planning process to generate knowledge that led to certain changes in the master plans.

From a planning point of view there are lessons to be learned for future spatial development projects. The flexibility of the master plan has seemingly helped generate enormous design richness and quality, whilst delivering a uniform and coherent citiescape (PRP, Urbed & Design for Homes 2008). Besides, great emphasis is given to the quality of materials and detailing and this was only possible in consultation with the development company and the investors, developers, and architects. Working closely together in the planning process helped HafenCity Hamburg GmbH to preserve control over the quality of the design. In addition, adding design elements and features to overcome site challenges, such as the tidal water elevation, created playful physical connections and interesting and surprising elements, such as the floating docks and the different terraces nearby the water. Another lesson to be learned is that organising many events (learning activities) fuelled the learning process and much knowledge is generated prior and during the planning process that shaped the development process and the contents of the master plans.

It can be concluded that being aware of the learning process has an influence on the development discourse of the entire spatial development. In case of HafenCity Hamburg it led to a well-planned development vision, development approach, and development strategy. Development mechanisms, such as the urbanity strategy, land development strategy, and the sustainability strategy are created early on in the development and planning process, because the development company was able to create, acquire, and share knowledge at the beginning of the project. Knowledge is therefore a powerful asset in the development process, which is generated by learning.

Conclusions
The results of this research produced some useful insights and general conclusions concerning learning within urban area development. Useful insights and general conclusions are:

- Changes in the master plans suggest that there is a learning process with its accompanying learning activities present in urban area development projects and the discourse analysis supports the idea that the identified learning activities fuel the learning process and up to a certain extent affect the project’s master plan development;

- Learning within urban area development projects can be seen as a process in which a string of learning activities deployed over time generate (new) knowledge that impacts the decision-making process and leads to certain decisions, actions, and changes in the project’s master plan development;

- Learning within urban area development projects can also be seen as a product, hence the result of the learning process i.e. the consequence of learning, which is the knowledge generated by the learning activities that led to certain changes in the master plans;

- Learning within urban area development projects is strongly associated with an adaptive and even reactive learning process resulting in an enduring change in the development and or planning process in regard to the quality of the content, process, and/or individual building projects.

- Learning within urban area development projects leads to progressive insights and innovative solutions that influence the development and planning process in regard to the content, process, and/or individual building projects;
• Learning activities contributed to framing, shaping, and changing the content of the master plan, but to what extent the learning activities affected the changes in the project’s master plan development and the actual realised projects remains partly uncertain. Not all learning activities can be explicitly linked to certain changes or individual realised project, and

• Evidently so, learning within urban area development projects is not the only reason why spatial plans evolve. It is an interplay between learning, previous knowledge, experience and skills, artistry, new knowledge, and changing circumstances, such as economic, political, strategic, social, and societal developments.

Recommendations

This research only begins to reveal the importance of learning and knowledge within urban area development projects. It seems that the changes in the master plans are evidence of a learning process, but no clear assumptions can be made in regard to what extent the learning activities affected the changes in the master plans. This research only made it clear that looking at the changes in the master plans from a learning perspective revealed some interesting insights about why plans evolve, improve, and change over time and suggests that learning is partly the reason for that change. However, some questions still remain uncertain, for instance is a learning process present in every development project, can other learning activities be found in other development projects, which learning activities affected which changes, how can learning be managed and steered etc.. Hence, recommendations for future research are:

• The effects of the learning activities on the changes in the master plans is made more tangible in this research, but partly remains uncertain. Further research therefore could be based on the indicated learning activities in this research, in which a connection between the learning activities, the changes, and the realised building projects is made. In order to investigate the effects of the learning activities on the changes in the master plan it would be preferred to analysis the decision-making process of the development company during the master plan development by means of qualitative research methods such as process-tracing, interviews, observations, and a discourse analysis in regard to documents that described the decision-making process during the master plan development;

• The conclusions of this research are based upon the findings of the literature review and on one selected case study, for more validity of this research extra case studies can help to explain to influence of learning on the master plan development, and

• To avoid bias in the interpretation of the case study, future research could consider interviewing multiple experts with the same background and story to tell. In case of HafenCity Hamburg, it would be preferred to interview multiple employees of the development company, some councillors or senator from the Ministry of Urban Development and Environment of the Senate of Hamburg, and with the designers of the master plan.
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Interviews

Schneider, H. Assistant of the executives of HafenCity Hamburg GmbH

Oschatz, R. Tour guide through HafenCity Hamburg

Knieling, J. Professor at HafenCity University
Appendix A
Development process

Urban area development is a complex, integrated, and long term development process characterised by its integral character and involvement of various actors and disciplines i.e. knowledge specialisations. The urban area development process, shown in figure 13.1 is characterised by four phases: the initiatory phase, the planning phase, the realisation phase, and the maintenance phase (Verlaat & Wigmans 2010b). In which the first three phases are orientated towards land exploitation and urban area development and the last phase more towards urban management (Van Vuuren 2009). Each phases has its own character, goals, and objectives and results in a decision moment, an agreement or project document. Learning and knowledge creation, acquisition, sharing, and utilisation are present in each of the development phases, although most learning and knowledge creation and acquisition occurs in the initiatory, planning, and realisation phase.

The development process shown in figure 13.1 embodies an abstract and general representation of the urban area development process. In practice, the development process is anything but linear and is more characterised by its iterative process. Moreover, any urban area development is unique, so certain activities or documents can occur earlier or later in the process.

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Figure 13.1 Urban area development process along with plan documents and contracts

Source: own editing of Nijhoff 2010
Initiatory phase
Usually a urban area development project does not start from a defined project, but often a social problem, or opportunity, or 'sense of urgency' is the start of a spatial development project (Zeeuw 2007). This also is the case with HafenCity Hamburg, where derelict old port areas became available for other uses, which led to a major redevelopment project resulting in the enlargement of the city-centre by 40%. Besides, the overall urban strategy of the city of Hamburg contributed to the renewal of Hamburg's waterfront.

In the initiatory phase an initiative and an ambition is born to proceed a certain urban area development. In this phase a global exploration of ideas, social and political factors, and infrastructural facilities are explored. Moreover, the potential involved actors are identified. Traditionally, the initiative lies primarily with public parties, however private parties are increasingly taking the lead in urban area development (Daamen 2005). In case of HafenCity Hamburg, the public sector took the initiative to explore the possibilities of redeveloping the area. The organising capacity of this phase is to achieve and create a common ambition among all the involved actors. In other words, 'to get everyone on the same page'.

Planning phase
The planning phase is the most intensive and complex phase in which the urban development project is defined, designed, and elaborated. This is also the phase in which the most learning and knowledge creation, acquisition, and sharing takes place. The shared ambition from the previous phase is translated into a master plan with a corresponding building program and urban plan. Besides, a feasibility study is proceeded in terms of available means. In this phase all aspects must be integrated in the master plan in such a way that it generates the best possible spatial and functionally quality and must be feasible and the same time. Also the risks and powers are divided among the public and private parties involved in the development process. This phase is therefore characterised by its iterative process of defining the spatial project (program of requirements), designing the master plan accompanied with a building program, and testing the availability of financial means. In other words, the master plan is critical reviewed and if necessary other alternatives and variants are designed until a satisfactory outcome for all involved actors is reached. Most importantly a cooperation agreement and realisation agreement between the involved actors is signed.

Realisation phase
The master plan that was elaborated in the previous phase is actually realised by the involved actors that entered the cooperation agreement in this phase. Specific points of attention in the realisation phase are having a clear understanding about tasks, responsibilities, and about the cost and benefits of the involved actors. Most of the time during the realisation phase the circumstances change, because it is such a long-term development process. Therefore, a master plan is seldom executed in exactly the way its was elaborated. Usually the spatial development is phased to deal with these uncertainties and risks. It is finding the right balance between fixed orientation points and room to manoeuvre.

Maintenance phase
The maintenance phase follows after the realisation of the area. During this phase, a difference can be made between the maintenance of the public space and the buildings. All the different projects within the urban area development project are transferred to the end users and is called building exploitation. Usually, the maintenance of the open space is the responsibility of the municipality and are transferred to them.
Appendix B

Neighbourhoods

Am Sandtorkai/Dalmannkai

In the northwest of HafenCity the first quarter, Am Sandtorkai/Dalmannkai, was completed in spring 2009 and is closely connected with the city-centre of Hamburg. Am Sandtorkai, the northern part of the neighbourhood, connects the historical Speicherstadt district (former warehouses) with HafenCity whilst helping to create a multitude of different visual perspectives. The Dalmannkai, the southern part of the quarter, is the residential focal point of HafenCity. This, together with the residential construction at Am Sandtorkai will enable the southern part of the city centre to regain its role as a key housing area (HafenCity Master plan 2006).

The Sandtor-hafen forms the neighbourhoods core, with the pontoons of the Traditional Ship Harbour providing a floating plaza for 30 ships. Most of the neighbourhood’s use is dedicated to residential use, offices, and services encompassing 1,700 people who live and work there. The quarter offers a socially differentiated structure and many apartments are in reach of mid-income-earners, while some are in the luxury segment. Much of the more affordable housing was realised through building cooperatives and joint building ventures. The mixture of architecture in the neighbourhood is differentiated as well, considering that on Dalmannkai alone, 15 buildings were realised by 27 developers and 26 architectural firms, so it creates a wide diversity. In total 24 buildings were realised and the most controversial building is the Elbphilharmonie concert hall built upon the imposing Kaispeicher A warehouse building which was constructed in the early 1960’s. Viewed from Landungsbrücken/Altona, it is the most prominent point of HafenCity and the Elbphilharmonie concert hall functions as a landmark building.

The entire quarter is artificially raised with 8 meters above sea level to protect the site against flood, because the tide rises and falls twice a day by more than 3 meters. The urban spaces extend over two levels. While all buildings and roads are built on the artificially raised land, embankment promenades remain at 4 to 5.5m above sea level. The difference in height is particularly noticeable in the north of Sandtorkai. The Magellan and Marco Polo Terraces, the largest squares in the locality and in the whole of HafenCity, function as a central meeting point in the area where people can meet and interact.

Am Sandtorpark/Grasbrook

Directly adjacent to Am Sandtorkai/Dalmannkai, the second largest and realised quarter of HafenCity called Am Sandtorpark/Grasbrook was completed at the beginning of 2011. The neighbourhood proceeds its role as residential and office area. Due to the ideal conditions, such as a primary school, after-school care or all-day supervision, and a green park at its heart, mostly families are attracted to this neighbourhood. Besides housing, offices are realised for growing companies as well as well-established companies. The neighbourhood’s architectonic landmarks are well represented and includes the Hamburg-America-Center and the Coffee Plaza designed by Richard Meier. By accommodating four wind energy companies (GE Wind Energy GmbH, WKU Windkraftunion AG, Power Wind GmbH and Areva Wind GmbH) and the company E-collection which presents the latest concepts of alternative energy, the neighbourhood’s itself has become a model of sustainability (HafenCity Hamburg Quarters 2012).
**Strandkai**

Almost completely surrounded by water and parks and at the tip of HafenCity, Strandkai offers a splendid view on the river Elbe and the Port of Hamburg. Also this quarter is intended for the us of housing, offices, and services. Hybrid perimeter blocks, structured in 6-7 story building ensembles, punctuated by high tower tops and individual towers, stand-alone or integrated, dominate this neighbourhood. Most interesting building so far in this neighbourhood is the Unilever headquarter for german-speaking countries which offers work for 1,200 employees and occuppies 25,000 sqm GFA. The building's ecological sustainability is impressive an for this reason the Unilever building has been awarded many sustainability prizes. The interior of the Unilever office building impresses with an atrium in which a mall with shops sells typically Unilever products, and runs through the ground floor linking the Marco Polo Terraces to the newly landscaped Elbe waterfront promenade.

**Überseequartier**

The Überseequartier will function as the heart of HafenCity where retail, leisure, and culture will meet each other and were features will be typical of a city centre. In combination with the cruise ship terminal, hence the name ‘Überseequartier’ which means ‘overseas quarter’ this area is becoming an attractive area and focal point for landmarks. The northern part of the boulevard is the most densely built space in HafenCity so far which supports the city centre atmosphere. Since 2010 the northern part of the quarter is completed and accommodates around 340 rental apartments (classical housing forms, duplex apartments, integrated townhouses) retailers, catering business, shops, and galleries like banks, fresh food market, hotel, bars, and fashion designers. Also the new subway station of the U4 line was completed in October 2010.

The retailers of the quarter are clustered in 16 free-standing buildings instead of being located in a closed shopping mall, giving visitors the benefit of shopping in an urban atmosphere near the waterfront (HafenCity Hamburg GmbH 2012b). The Überseeboulevard, which meanders like a river through the shopping area, stretches out from the Speicherstadt to the River Elbe. Special attention is given to the open space in the quarter which features places to stroll, sitting down and relax; sometimes open up into a generously proportioned boulevard, squares or terraces as well as sheltered spaces for local residents.

The majority of the development of the Überseequartier is in hands of one body, the Dutch-German consortium (consisting of ING Real Estate, SNS Property Finance and Groß + Partner Grundstücksentwicklungsgesellschaft mbH) (HafenCity Hamburg GmbH 2012b) and was selected through an international investor competition which began in 2003.

**Brooktorkai/Ericus**

The Brooktorkai/Ericus quarter is located at the main gateway to HafenCity for people coming from the main station, the former city wall area, and the eastern part of the city centre. A new major road bridge, Shanghaibrücke, connects the two banks of the Brooktorhafen harbour with each other and together with the extension of the open space on the bridge itself for pedestrians and cyclist, the bridge forms the backbone of the close-knit footpath system in HafenCity. Owing to its good infrastructure, and given the service and trade tradition of the neighbouring mercantile district (Kontorhausviertel) to the north, this quarter is most suited as a corporate location. The neighbourhood offers a mixture of housing and offices and has a specifically maritime character. Also here the open space is generously presented in the form of a 30 meters stone sofa on the Brooktorkai promenade looking out over the harbour basin and spacious steps, spacious steps at Ericusspitze invite strolling passersby to change levels; steps for sitting or walking on to a raised plaza with views over the Ericus canal and Oberhafen harbour basin.

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2 The Unilever building was awarded the HafenCity Ecolabel in gold in fall 2011. It had already won the BEX award for particularly sustainable, innovative and efficient architecture in July 2009. In November 2009, at the World Architecture Awards in Barcelona, it was designated World’s Best Office Building. Recently the German architectural association (BDA) Hamburg awarded the Unilever building first prize for architecture of the construction years 2008-2010. It also won the readers’ prize from the Welt/Welt am Sonntag newspapers (HafenCity Hamburg Quarters 2012).
Elbtorquartier
An innovative and knowledge quarter emerges between Magdeburger Hafen, Brooktorhafen and Am Lohsepark neighbourhood, the adjacent neighbourhood to the east of Elbtorquartier. Accommodating the HafenCity University, Greenpeace headquarters, Designport Hamburg, and International Maritime Museum Hamburg. The Elbtorquartier focusses on housing, retail, offices, and gastronomy and with the completion of the HafenCity Hamburg University, the Elbtorquartier can be defined as a knowledge quarter. To make a connection with the Überseequartier and the Baakhafen, three bridges for pedestrians and cyclist are constructed. The buildings on the southern edge of the Elbtorquartier together with the eastern edge of the Überseequartier, and the western edge of the Baakhafen quarter form the landmarks of the neighbourhoods and amplifies the connection between the three quarters and visualises the heart of HafenCity.

The variety of homes in this quarter is strongly presented offering typologies with a flexible layout for multi-generation to lofts offering living an working in duplexes, through barrier-free apartments for seniors. Room for the creative sector is also reserved in this part of HafenCity by offering sound-proof living and working space for musicians, sound, and film specialists. Furthermore, the NIDUS project offers open plan layouts used for shops, apartments, studios, and showrooms for the creative sector.

Am Lohsepark
An inviting urban space is taking shape in central HafenCity with the Lohspark as its green soul. The park links the eastern section of the former city walls with the Elbe riverside walking routes along Baakenhafen. Apart from its wider ranging importance as green recreation space, the park will provide open recreation space for the nearby residential areas. Its north-south orientation divides up the densely developed areas to the east of the park. The homes overlooking the park are developed by different associations such as a cooperative housing corporation which offers rental apartments, subsidised homes and includes an integrative residential project for people with an without a disability. Privately owned apartments are offered and four joint building ventures made up of around 75 individual owner-builders that is being management by Stattbau Hamburg and Conplan GmbH are part of the residential development. This is the first quarter in HafenCity were it is possible to realise subsidised homes. At present, most of the areas needed for the development of Lohsepark are in use by a forwarding company until 2017. However, the first sub-areas can be developed from 2012 and will be completion in 2013. By 2019 the whole park will be at the public's disposal (HafenCity Hamburg GmbH 2012b).

Oberhafen
Today, Oberhafen will be dedicated to creative and cultural uses. However, in today's present the area is still in use as a rail depot. Most of the buildings are still occupied and primarily used for logistics activities at least until 2014. For this part of HafenCity an other development process is deployed. Instead of realising an new urban concept, the point of departure is finding new uses for the existing buildings. Also the plots will not be sold, but remain the permanent property of the special fund for City and Port (HafenCity Hamburg GmbH) to retain control over the development. Through intense dialogs between HafenCity Hamburg GmbH, Hamburg Kreative GmbH and other creative enterprises a suited development concept is worked out. A kick-off symposium ate the end of March 2011 generated the first imputes. Besides the fact that the creative and cultural uses dominate the area, there is also room for sport facilities and leisure facilities.

Baakenhafen
Within a few years Baakenhafen will be one of HafenCity’s most urbane and high-quality neighbourhoods. The entire site stretches out along more than 1 kilometres of waterfront and is HafenCity’s most largest harbour basin. The entire area is offering 1,800 homes in joint building ventures, building cooperatives, and condominium, as well as subsidised rental apartments. Also in this quarter the aim is to encourage the typical HafenCity mix of uses, which means that office, gastronomy, and recreational features are developed. The Am Lohsepark will be extended down to the river Elbe and waterside promenades and green spaces will be realised.
There will also be three new bridges realised, running north-south, to provide internal and external connections and along with the U4 subway stop the Baakenhafen neighbourhood is very well connected to the other infrastructure in HafenCity and Hamburg.

**Elbbrücken**

Elbbrücken will be the eye-catching eastern entrance of HafenCity with three striking high rise towers built next to the Elbbrücken bridges. This quarter will be characterised by its densely built business environment and complemented with a residential and leisure area. Eastern HafenCity will have excellent transport infrastructure. The very quality of the new and existing road links, however, will lead to heightened exposure to traffic noise in some places. For such locations, intelligent urban planning and technical concepts will therefore be applied (HafenCity Hamburg GmbH 2012b).
Appendix C
Interviews

List of interviewees

<table>
<thead>
<tr>
<th>No.</th>
<th>Date</th>
<th>Name</th>
<th>Organisation</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>27-03-2012</td>
<td>H. Schneider</td>
<td>Assistant of the executives / HafenCity Hamburg GmbH</td>
<td>HafenCity Hamburg GmbH Office</td>
</tr>
<tr>
<td>2</td>
<td>27-03-2012</td>
<td>R. Oschatz</td>
<td>Info centre Kesselhaus (guided tour)</td>
<td>Through HafenCity Hamburg site</td>
</tr>
<tr>
<td>3</td>
<td>27-03-2012</td>
<td>J. Knieling</td>
<td>Professor Stadplanung und Regionalentwicklung / HafenCity University</td>
<td>Espresso bar in Info centre Kesselhaus</td>
</tr>
</tbody>
</table>

Table 14.1 List of interviewees

List of basic interview questions

General

• What is your personal role in this spatial development project?

• What, according to you, are the main issues HafenCity Hamburg is facing today?

• What, according to you, are the main lessons learned in the development of HafenCity so far and have those new insights led to changes in the development process?

• What, according to you, are the crucial next steps in the project’s development?

Master plan development

• What activities took place prior to development of the master plan that influenced the content of the master plan development and can those activities be marked as learning?

• What lessons were learned from other waterfront development projects and are they implemented in some sort of way in the master plan?

• Can you tell me more about the revision of the master plan for the eastern part. What are the lessons learned from the development and realisation of the first neighbourhoods, what worked and what not and are those lessons learned implemented in the revision of the master plan for the eastern part?

Master plan realisation

• Is the realisation an exact copy of the master plan or are there any changes made during the realisation qua building program, mixed use, public spaces etc due to new insights?

• In which of the neighbourhoods/buildings occurred the most changes and why?

Strategic

• How is knowledge acquired (internally and externally) and created during the development process?

• How is learning stimulated and knowledge shared among the organisation and colleagues?
**Summary interview H. Schneider**

Hape Schneider is assistant of the executives of the development company HafenCity Hamburg GmbH. I started the interview by introducing the subject of this master thesis and how I defined learning within urban area development in this research. He explained that he finds learning a very difficult subject and that he had difficulties in answering the interview questions. He explained that in his view we can only learn from the project itself rather than from other (waterfront) development projects, because the context of each spatial development is different and you only see the results of the process instead of experience the development process itself. His reaction towards learning and his interpretation of learning was rather negative throughout the interview, which made it a very difficult and laboured interview. From the interview it can be interpreted that there was a certain resistance against the interpretation of learning. In Mr. Schneider view learning was strongly associated with improving from past mistakes or inefficiencies instead of looking towards learning and change from a more positive perspective. He argued that the changes in the master plans were a result of the development process which influenced the spatial development in a decisive way. However, the changes were not regarded as learning, but as step-by-step adjustments approved by the Senate. He stated that the master plans provided a spatial definition for the area and functioned as a structural frame in which the building program, GFA, urban structure, strategy for the ground floor accessibility, and development strategy were fixed. Within this structural frame he told me that the exact building program of the individual plots are defined by the investor, developer, architect, and the development company itself.

After a while, some of the changes were discussed in the interview. Most significant changes he mentioned are the change in land development strategy at the beginning of the project, in which the first eight building projects at Am Sandtorkai functioned as pilot projects, the change in adding educational facilities, and adding subsidised housing in the eastern part. He explained that the land development strategy changed, because the land development strategy of the first eight buildings led to up-market condominiums, because the land was sold for the highest price. The development company wanted more variation in end users, rental prices, sale-prices, mixed use concepts, so therefore the land development strategy changed. At this moment in time the price for the individual building plots is fixed and the plot is given to the investor or developer with the best living concepts, mixed use concepts, ground floor accessibility plan, and ecological sustainability standards. Another change is the addition of educational facilities. Mr. Schneider told me that the educational facilities are added later on in the development process, because the need for educational facilities emerged later on and was stimulated and approved by the Senate in 2006 in regard to the realisation of the elementary school. However, the need for educational facilities was mentioned in the master plan of 2000 by the development company, but rather ambiguously formulated. Mr. Schneider explained that the ambition was there to realise educational facilities, but they had to wait for the right moment (approval of the Senate). Another change he mentioned is the addition of subsidised housing. Adding subsidised housing later on the development process and in the master plans is justified by the development company because they argued that in the city-centre 30% was already subsidised housing and at the beginning of the realisation of the HafenCity Hamburg project it was rather clear that it would be a high-cost development, so therefore subsidised housing was excluded. Although, Mr. Schneider admits that there must be a social balance in the neighbourhoods to function well. Other topics that were briefly discussed were the increase in sustainability standards, the flood protections, and the realisation of the subway. Besides he told me that prior to the development of HafenCity Hamburg they visited other waterfront development project such as Buenos Aires, Sydney, London, and some other spatial projects.

**Summary interview R. Oschatz**

Robert Oschatz gave me a guided tour through the development site of HafenCity Hamburg. The tour started in the info centre Kesselhaus around the maquette of the entire development site. He explained that the maquette is updated every time when the building plans of the individual plots are approved in order to update the inhabitants of Hamburg about the state of development. Outside we visited the realised neighbourhoods and we talked about the changes between the three master plans. He explained that the most significant changes were the progressive increase in density, the increase in sustainability in the eastern part, the variation in architecture and attracting several smaller investors and developers, and the addition of social housing
focussed on families and students. Besides, we talked about the urbanity framework, the innovative flood protection, and the invented Ecolabel by the development company. In addition, he told me more about public participation by means of workshops and dialogues.

**Summary interview J. Knieling**

Joerg Knieling is professor at the HafenCity University specialised in city planning and regional urban planning. He told me more about some significant changes between the three master plans from a more academic perspective. He explained that the change in the land development strategy partly changed because of hard critics of the inhabitants of Hamburg. The citizens of Hamburg argued that the development of HafenCity Hamburg only focussed on higher income classes and that mid-income and lower-income classes were excluded from the spatial development by not providing adequate housing for these groups. He told me that the development company changed its strategy in order to provide more adequate housing for mid- and lower income housing by improving the urbanity strategy and to create social support. However, according to Joerg Knieling, the urbanity strategy can be argued from a more academic perspective, because what is urbanity, how is it realised, does the strategy works in HafenCity or must time tell if urbanity is reached. In addition, he also mentioned to search for papers and articles about community building by Marcus Menzl. Another change he acknowledges is the increase in sustainability. He told me that the sustainability standards changed over time, but this is partly due to changing realities and technology. He suggest that investigating the exact changes in the sustainability standards could be an interesting addition to my research.
Appendix D
Development objectives

Mix of land uses

- Strengthen the residential role of HafenCity Hamburg in order to respond to a diversifying, increasingly demand-driven housing market and to diminish the housing shortage in the city-centre;
- Strengthen the reposition of Hamburg as a focal point of economic activity by offering opportunities for businesses and services in HafenCity Hamburg;
- Strengthen the city-centre of Hamburg with new and enhanced infrastructure that will support retail, entertainment, leisure, culture, and tourism, and
- Strengthen the mixed uses concept by offering a diverse yet physically small-scale mix of all the previous mentioned uses, from residential to industrial.

Structure

- As the city of Hamburg has limited land resources available, the land on the site is to be used economically. Meaning an average floor space index of 2.5 (relatively high building density), with a total target of 1.5 million square meters of gross floor space to be developed;
- Individual quarters will be developed (from west to east) and need to be able to function as self-contained units whilst remaining human scale and local identity;
- The mix of uses, the design of public spaces, and the architecture of the buildings must all meet exceptionally high standards of quality;
- To ensure diversity and sustainable development scaling of the plots and diversification of ownership is regarded as important. Division in small plots is preferable in order to make it possible for medium-sized business, small building contractors, building cooperatives and individuals to invest in the project (see §7.5.2 Development strategy and process).

Public waterfront spaces

- The quay areas will be transformed into wide promenades open to public. The planning process will pay particular attention to the embankments as well as the ground floor and elevated ground floor zones with respect to tidal water level variations;
- The central public and green spaces will be connected by a network of smaller squares within the individual quarters;
- Buildings, as much as possible, will have a river view by elongated harbour basins and through irregular building lines, which creates an interesting and exciting urban layout.
**Integration into the city**
- Infrastructural nodes, bridges, and roads must be newly built or renovated to secure the integration with the city;
- In the initial stages of the development of HafenCity Hamburg, busses will be used as public transport. A new-style tram system or a new metro is necessary to connect HafenCity Hamburg with the city-centre, and
- Flood protection is necessary due to tidal water level and is provided by ground level elevation of the total area.

**Sustainability and ecology**
- Economical use of energy will be a key factor in order to reduce climate-changing influences to a minimum. Efforts will be made to incorporate sustainability and all opportunities for saving natural resources in the production of energy;
- Consistent use of environmentally compatible building materials will play an important role in the construction of HafenCity Hamburg;
- Most embankments and quay walls of the tidal harbour basins and canals will be retained because of their suitability as a refuge for endangered plant and animal species of the Elbe estuary.