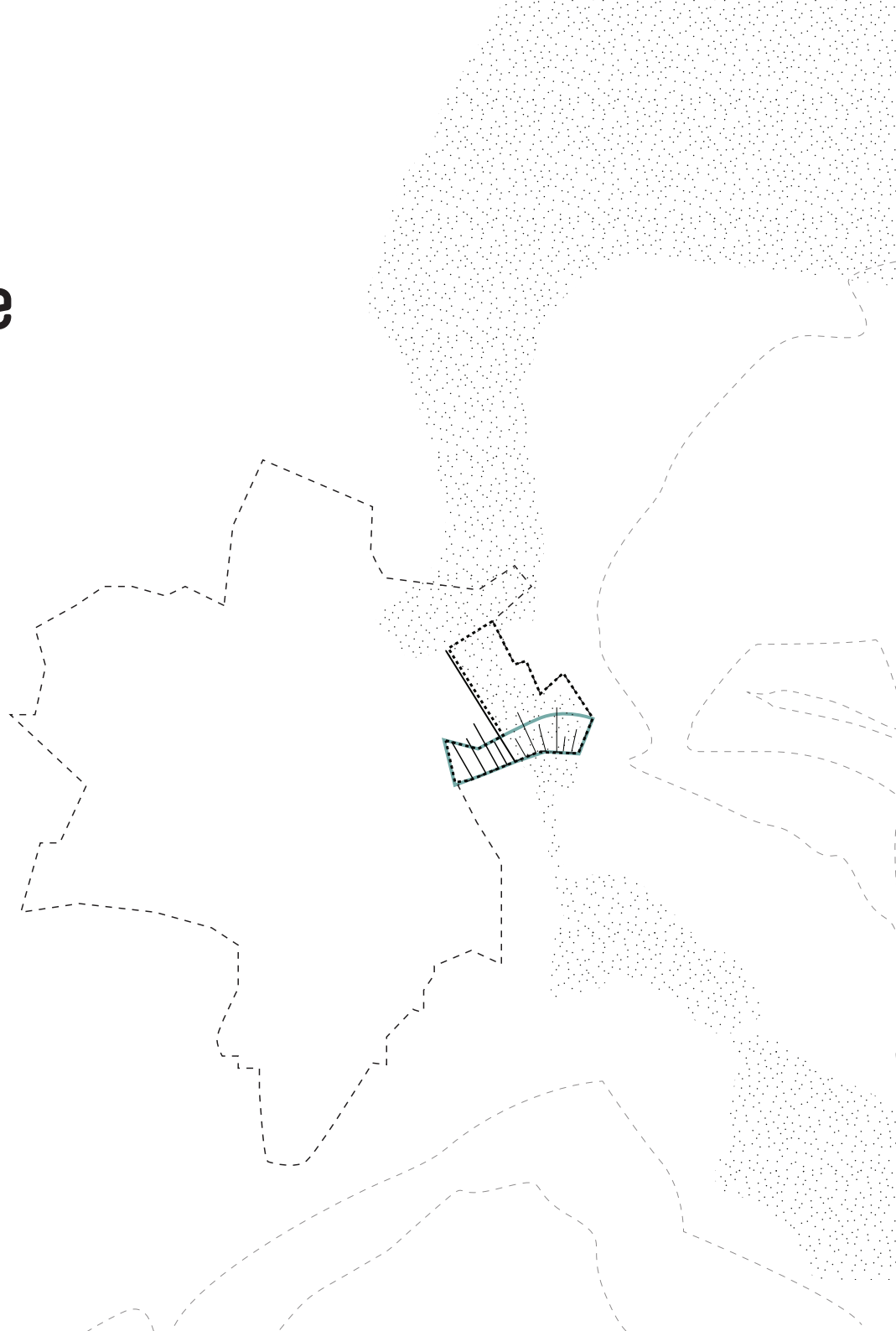
Framed space vs. Free space

Degrees of freedom in urbanism

A design study for Hirzbrunnen South, Basel, Switzerland



Sarah Oudenaarden, Urban Regeneration Studio, TU Delft, 2014

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Sarah Oudenaarden, June 2014

P4 Thesis
Free space vs. framed space

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PREFACE

'We adore chaos,
because we love to produce order.' -
- M. C. Escher

This report includes the description of the graduation project 'Free space vs. Framed space' about the area Hirzbrunnen South in Basel, Switzerland. This project is a part of the Urban Regeneration Studio of the department of Urbanism at Delft University of Technology (TU Delft), The Netherlands.

Hirzbrunnen South is an urban fragment, isolated by train tracks along the Rhine, close to the city edge of Basel. In addition to residential clusters, the area includes left over functions such as sports fields and allotment gardens. The different functions create bordered islands within the area. Despite its borders, the recreational function of the gardens allows the tenants to plan their own space. The allotment gardens possess a quality of freedom in planning, which is rare in urban environments.

Since the start of the project, I was fascinated by this quality of the freedom of planning already existing in the fragment and my aim was to use this fascination to make a proposal to regenerate the area of Hirzbrunnen South. This topic connects to my aim to form a personal position in the professional understanding of the complex city and the role of the urban designer during this graduation project. With choosing this topic I would like to gather insights on extend of intervention in urbanism by planners and designers and the initiative by the users of spaces.

The fragment of Hirzbrunnen South is currently an area of attention of the Kanton Basel-Stadt, as one of the regeneration areas on the city edge of Basel. Therefore, I developed this project in consultation with the Department of Urban Planning of the Municipality of Basel-Stadt

Summarized in the quotation of Escher is the essence of this fascination; we love to create order as urban designers, but what will happen when more freedom of planning is allowed? This personal interest in the topic of freedom of planning was the first input for the direction of the project, which resulted in the focus on the theme Control and complexity. The aspect control has a direct connection to the urban fragment of Hirzbrunnen because the control is the main cause of its isolated position. Next to that, Complexity describes the relation between the fragment and its parts and the whole it is forming with the surrounding city and landscape. As well, following the complexity-theory, the whole is more and different than the sum of its parts. Therefore I approached the re-design of Hirzbrunnen within the scope of Control and Complexity.

As outlined in the title of this thesis: Free space vs. Framed space, I search for the differences between space free to plan by the user and controlled space by authorities in urban and landscape design. These are degrees of control on different scales, taking into account the complex relation between these parts in an integral design method, developed during this graduation project.

This graduation project is build up out of two parts; the theory and the design part which are interconnected. The theory part is including a literature review which builds the fundaments for the integral design method with the notions Control and Complexity. This themes touches both upon the aspect of the fragmented position of the area as well as the topic of the control by the actors in the area. With the outcomes of the literature and contextual research a proposal is designed for the area, which is an attempt to show degrees of freedom in urban planning and landscape architecture.

I would like to thank my mentors Egbert Stolk and Denise Piccinini for sharing their knowledge and enthusiasm during this project. In addition, I would like to thank Robbert Jan van der Veen (plein06) and mr. R. Volman (Kanton Basel-Stadt) for reflecting on the design.

Sarah Oudenaarden
Delft, 27th of June 2014

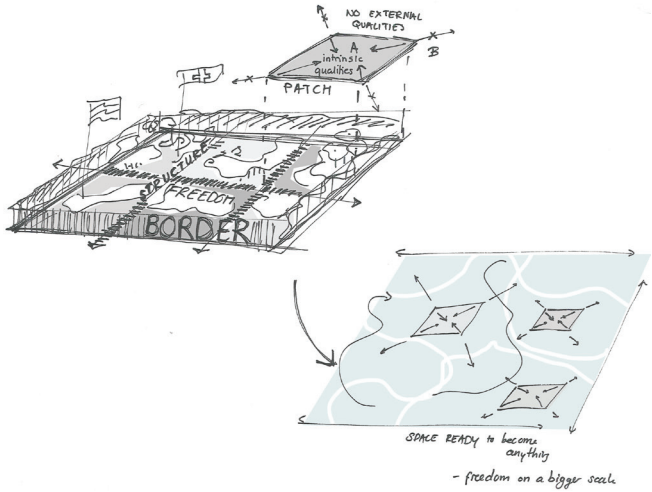

Fig. 1. The fascination of the freedom of planning in the allotment gardens as a startingpoint for the research and the design study.

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1 INTRODUCTION

Abstract

Keywords:
control, complexity, urban regeneration, integral design, scale, urban fragment, Basel.

The graduation project 'Free space vs. Framed space' is about the differences between space free to plan by the user and controlled space by authorities in urban and landscape design. These are degrees of control on different scales. Scales in urbanism are assigned to get a grip on the complexity of the city, to understand the processes and interactions between different scales of the urban fabric. Seldom however, these scales are translated back to the whole they originate from: the unified city. Furthermore, in this thesis the influencers or control agents of the hierarchy of scales are combined with the transition between scales, leading towards insights on the development of an integral design method with the notions Control and Complexity.

A final design study for the urban fragment of Hirzbrunnen South is done using the developed design method. The aim of the literature research and design study is to answer the main research question: How can the coherence between the scale of the local urban fabric and the scale of the city be improved, using an integral design method based on the notions of control and complexity, for the case of Hirzbrunnen South, Basel?

Hirzbrunnen South is an urban fragment, isolated by train tracks along the Rhine, close to the city edge of Basel. In addition to residential clusters, the area includes left over functions such as sports fields and allotment gardens. The different functions create bordered islands within the area. Despite its borders, the recreational function of the gardens allows the tenants to plan their own space. The allotment gardens possess a quality of freedom in planning, which is rare in urban environments.

As the result of the design study a proposal for two different degrees of freedom in the urban fragment of Hirzbrunnen South is developed. A top down planned neighbourhood on the city edge and bottom up planned housing clusters in between allotment gardens with a bottom up freedom of planning. These parts are connected by the green structure along the Rhine, forming them to a whole.

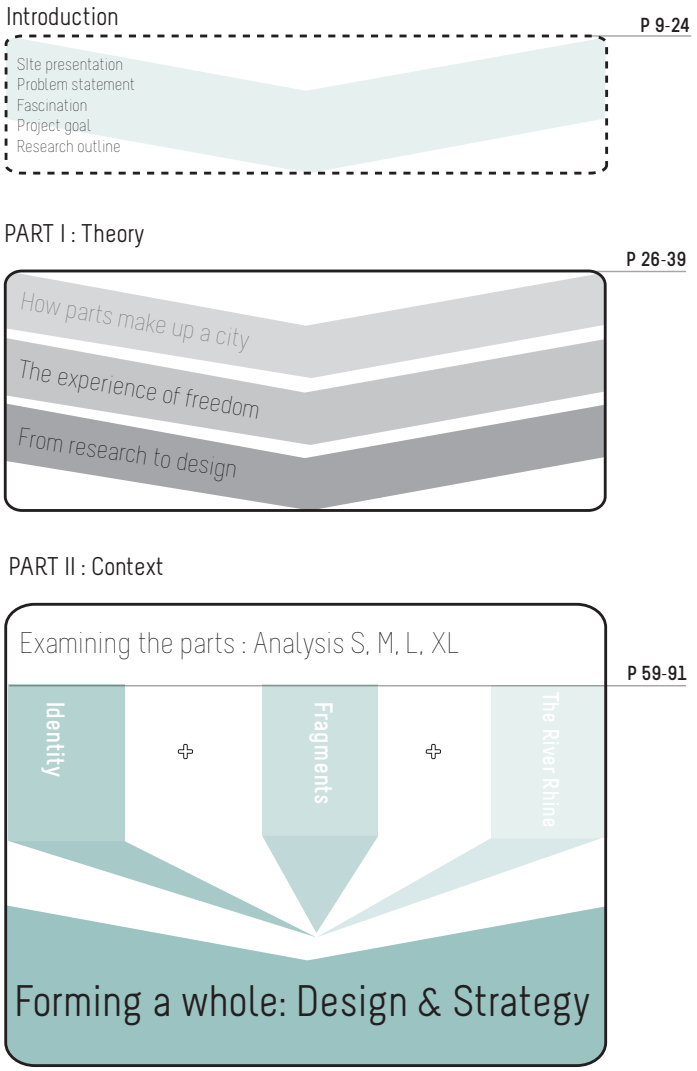
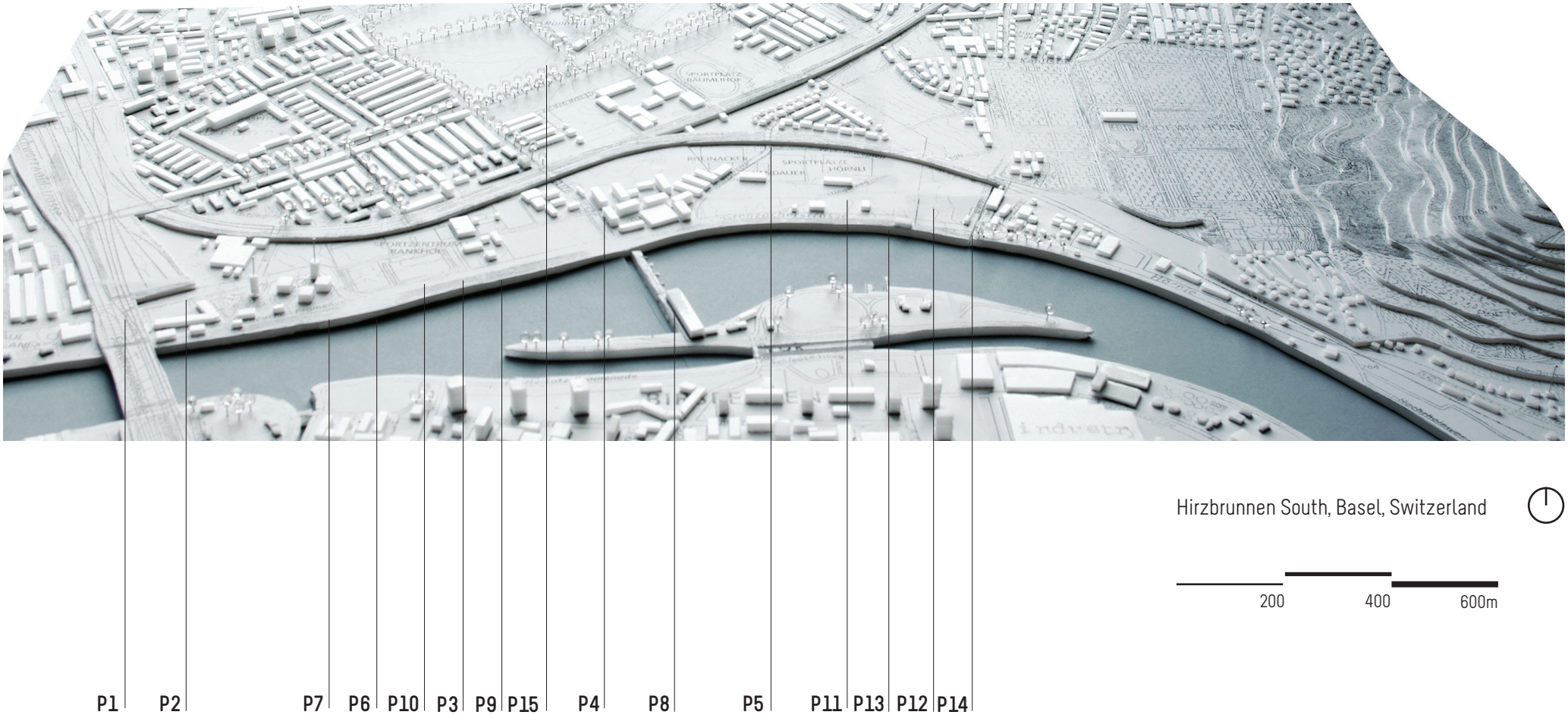


Fig. 2. The structure of the thesis.

1 Hirzbrunnen South: An urban fragment along the Rhine

An introduction to the projectarea of Hirzbrunnen South, Basel in images



P1 The entrance to the Hirzbrunnen area..

P2 A concrete wall along the Grenzacher-strasse, the residential area Rankhof is situated on the right.

P3 The Rankhof Stadion along the Grenzacherstrasse.

P4 The residential area 'Im Landauer'

P5 The viaduct with the highway and train-tracks is crossing the residential area of the Eisenbahnweg.

P6 Benches along the Grenzacherpromenade are not facing the Rhine but turning their back to the water.

P7 The Grenzacherpromenade (l) and the small paths leading towards the Rhine in the protected green area along the water (r).

P8 The view from the protected green area towards the power plant Birsfelden.

P9 The fishermens houses on the Rhine bank.

P10 Concrete walls of the Novartis Sports fields 'Rankhof', bordering the Grenzacherstrasse.

P11 A view of the Bettingerweg, alligned with hedges.

P12 Inside the allotment garden enclaves

P13 Bordered of allotment gardens with hedges and flags to show who is occupuying the space.

P14 Crossing the border to Germany

P15 The green open fields surrounding the estate of Baumlihof.

1.1 Site presentation

The first part of this introduction of Hirzbrunnen South consists of the history of the development of Basel's spatial, cultural and economical aspects in relation to the historical developments, which formed the fragment to what is nowadays. A further introduction is made on the identity of the area and its spatial features in the next paragraph. Closely related to the identity is the planning culture in Switzerland and the role of the actors in the area. To conclude an overview of the qualities and disadvantages of the area is given.

1.1.1 How the fragment was formed: Historical developments of Basel and Hirzbrunnen

Basel as a whole

Started as a Roman settlement, further upstream from where Basel is currently located, Basel grew after AD as an important place for trading and center of religion in Switzerland. Its position along the river and its close relation to France and Germany contributed to this status. The first settlements concerned only the southern bank of the Rhine, were Grossbasel now is situated. The building of the first bridge was a catalyst for the development of the Northern Riverbank as well in 1226. In Middle Ages the first city walls were build and the city suffered from several disasters as the plague, big city fires and an earthquake.

Till the end of the Middle Ages Basel became the center of the Christian church at that time and found its way into the Swiss Federation: an early start of what the government in Switzerland looks like nowadays. During this time the development outside of the city walls of Basel was growing because of the densely build inner-city inside of the walls. The inhabitants needed recreation and leisure on the countryside. Along the Rhine different gardens and parks were established including public parks and more private estates. One of them was the estate Hirzbrunnen with the manor of Baumlihof where later on the neighborhood built on the same site was named after.

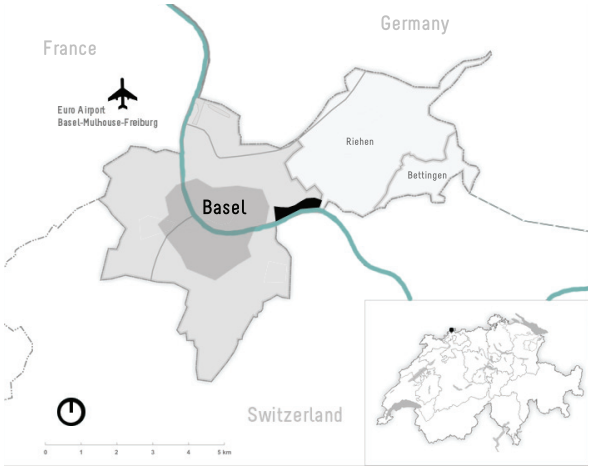


Fig. 3. The location of Basel and Hirzbrunnen (black area).

In the 19th century the developments of the city speeded up by the creation of the railway connection with other Swiss cities. The industry at the outskirts of the city was now connected by train tracks, the city expanded by the growth of the population and the workforce needed for the industries. This was the first start of urban sprawl into the countryside. In 1833 the city of Basel separated into two different half-Kantons, Basel-Stadt and Basel Landschaft, each with their own governance. The urban sprawl is continuous growing till today, the so-called Metrobasel was formed a, polycentric metropolitan agglomeration. This agglomeration is still sprawling, also caused by the tax difference between Basel Stadt and Basel Landschaft.

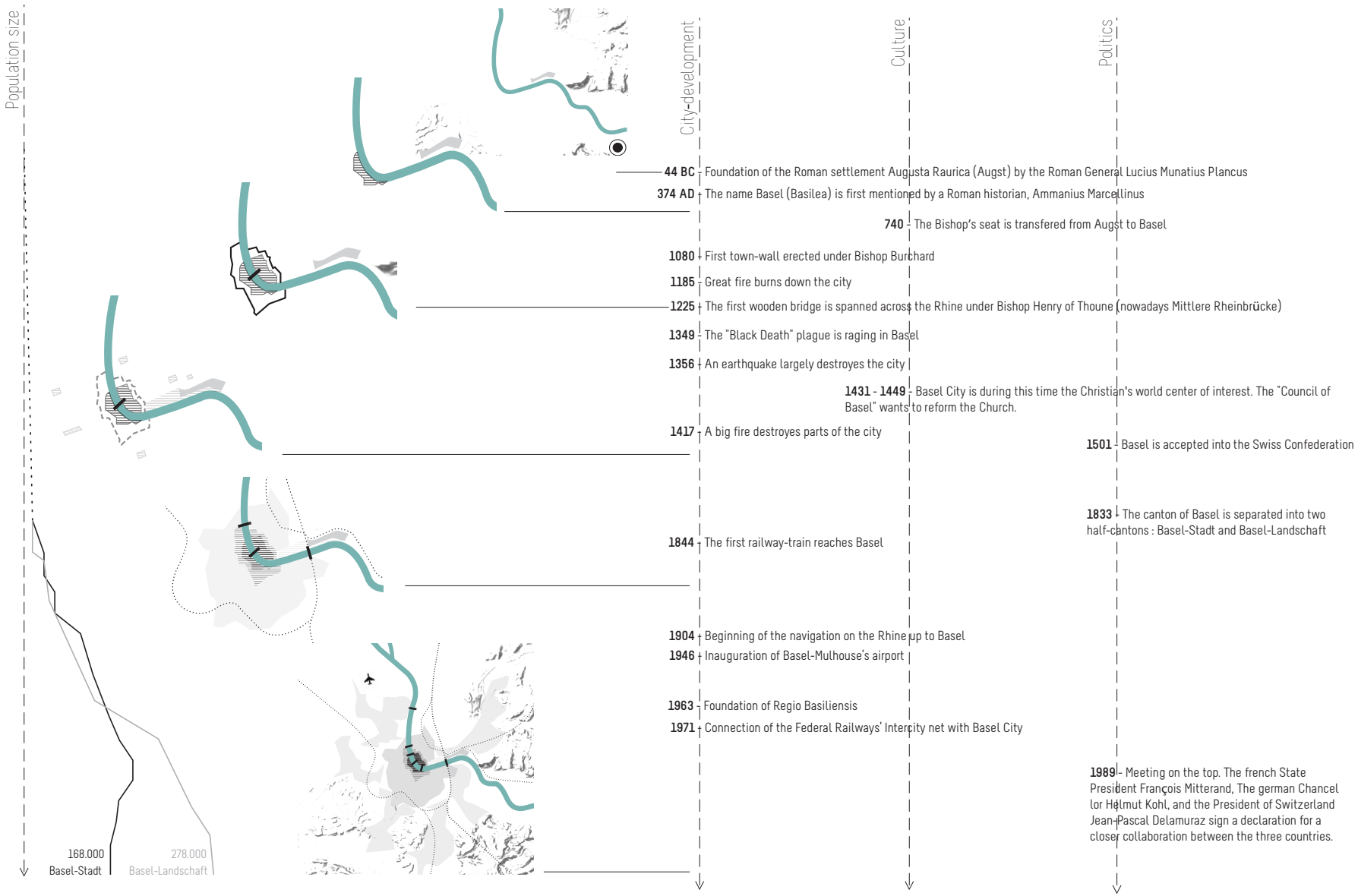


Fig. 4. The developments of Basel as aglomeration throughout history on the themes: City developments, Culture and Politics.

Hirzbrunnen South as a part

The Hirzbrunnen area has been an area outside of the city walls till the mid 20th century. The nature reserve including this area is the oldest in Switzerland and stems from the occupation of this strip by fishermen who let out their nets at this riverbank. Nowadays the fishermen houses are still in tact on this location (Fig.6).

In the 19th century the first train tracks were established and they formed the main structuring elements, which later on caused the closed off character of Hirzbrunnen South and its shape. With the developing of Basel's industry and growth of the city the train tracks expanded and shaped the area of Hirzbrunnen South to its current curved form. Since 1900, the area is also used for the gradually expanding allotment gardens.

During WO II the economy of Switzerland is still strong and a few new residential areas are build around the area, also the Clara Hospital and the Hörnli Cemetery on the hills near Riehen are build closely to the area. The allotment gardens occupy more space since recreation is needed for the inhabitants of the densely build inner city of Basel. The recreation for the workers of the pharmaceutical industry of Novartis takes place at the Rankhof sports fields build in the area. The Landauer clustered neighborhood was built in the 40's.

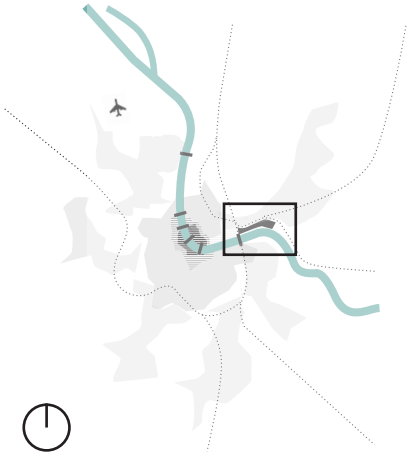


Fig. 5. The location of Hirzbrunnen South in Basel, Switzerland.

During the 50's the Swiss government decided to use the force of the water as a source of energy by building a power plant island in the river Rhine near Basel. By the establishment of the bridge on top of the power plant a new connection with the other side of the river, the neighborhood of Birsfelden was made. In the 50's and 60's the residential area around the St.Clara Hospital was further expanded. The Rankhof towers at the city side entrance of Hirzbrunnen South were being built in the 60's. Increasingly the area has been used for allotment gardens. Currently the popularity of the allotment gardens is decreasing and Hirzbrunnen South is not full filling its role as recreation area close to the city center any more. In the next chapter a further in depth inquiry is made on the identity of Hirzbrunnen South.

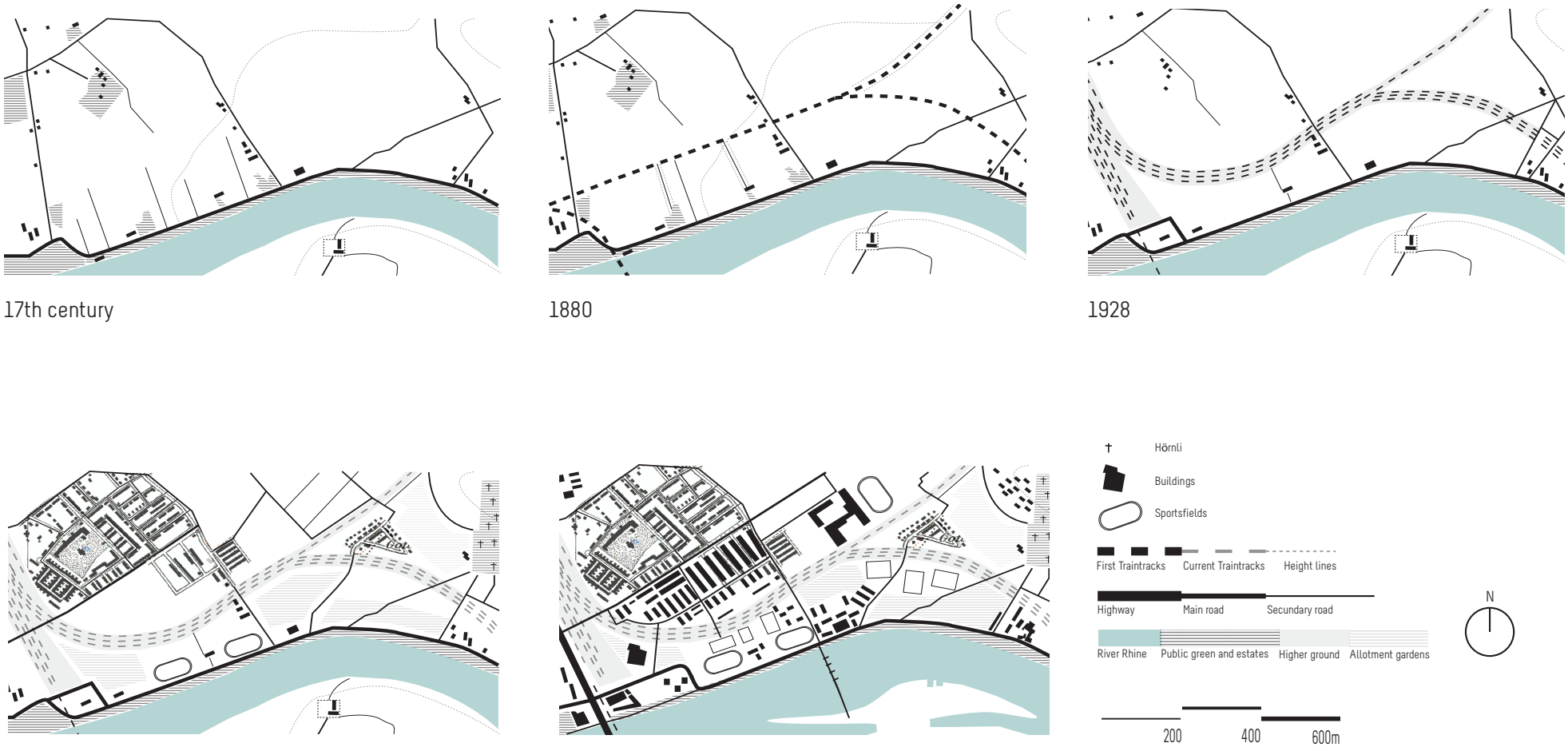


Fig. 6. The spatial developments of Hirzbrunnen South throughout history 1600 till 2013.

1.1.2 Identity

Identifying border conditions

Hirzbrunnen South is the southern part of the neighborhood Hirzbrunnen, a residential area build around the Clara Hospital during the Second World War. Because of the bordering train tracks, the Southern part of Hirzbrunnen was never a spatial whole with the Northern part. In the green area between Basel and Riehen the border between Basel-Stadt and Basel Landschaft is located and at the most Eastern part of the area the Border control station is located to secure the border between Germany and Switzerland.

The borders of this city fragment of Hirzbrunnen South are part of the infrastructure network: the river Rhine, train tracks and the border between Germany and Switzerland. By the morphological conditions of the site, the structure of the city of Basel was formed. The height differences left only certain spaces suitable for the infrastructure. The train tracks formed the temporary city walls for the city of Basel. The infrastructure also formed the urban fringe of Hirzbrunnen South in Basel by its bordering structure. The area developed as an isolated area close to the city edge including all leftover functions such as: sports fields and allotment gardens.

Because of the many different actors and users in the area borders on even a smaller scale were formed, which resulted with an urban fragment with internal fragments. The borders between functions and users are marked by high hedges and fences, which result in an area not accessible for the public. Also the highway at the location of the Schwarzwaldbrücke is which is part of the ring road of Basel is disconnecting the area of Hirzbrunnen and the city center. Even though its close relation to the city center, eight minutes by public transport, the area seems not be connected well with the city center.

The blue spine: the river Rhine

One of the main identity forming elements of the area Hirzbrunnen and is the river Rhine. Its shape was formed by the landthe whole length of the area of Hirzbrunnen is a nature reserve along the river. Steep small paths towards the water give some of the exceptional views on the Rhine. Overall in the area, the river is not visible from the Grenzacherstrasse, a potential in the area is to open up the view on the River to enhance the beauty of the river.

A new vision for escaping the hectic of the city

The quality of Hirzbrunnen is the rural character despite its close relation to the city centre is the ability to escape the busy city. Since Basel build its city walls, Hirzbrunnen was the place where the fortunate people build their estate to stay during the summer. Later on, when the area was also accessible for the public in the form of private gardens. Other functions related to this character are the sports fields, school and small residential communities. The main function in this area taking up almost half of the area is the allotment associations, which have a function of private recreation. The high quality space of the area along the river Rhine is not used by the bigger public, but in fenced island for private use, which makes the area not attractive neither accessible for public leisure. The allotment gardens, which were once a popular form of recreation, are losing their value for the inhabitants of Basel. Because of the time investment needed for maintaining the gardens, the number of tenants is shrinking every year. The area of Hirzbrunnen South is losing its meaning in relation to the city of Basel. The current identity focuses on recreation on a private scale in the allotment gardens, it once fulfilled the need fort hat type of leisure when the city was not as liveable as it is right now. The current tendency of people having less time to invest requires a different kind of recreation and a more public space for recreation. Therefore, in my opinion, a new vision for the area can help to strengthen the coherence with the city and the identity of the fragment.

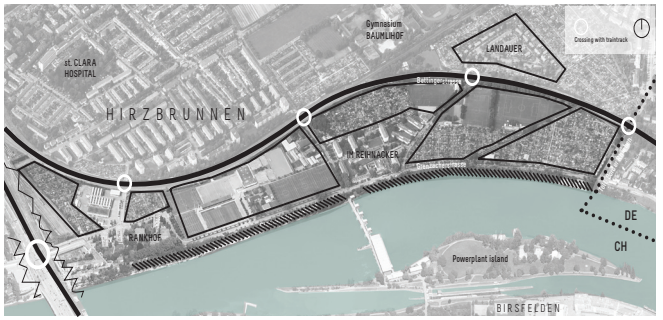


Fig. 7. The borders formed in the area of Hirzbrunnen South

Fig. 8. The functions in the area of Hirzbrunnen and its surroundings.

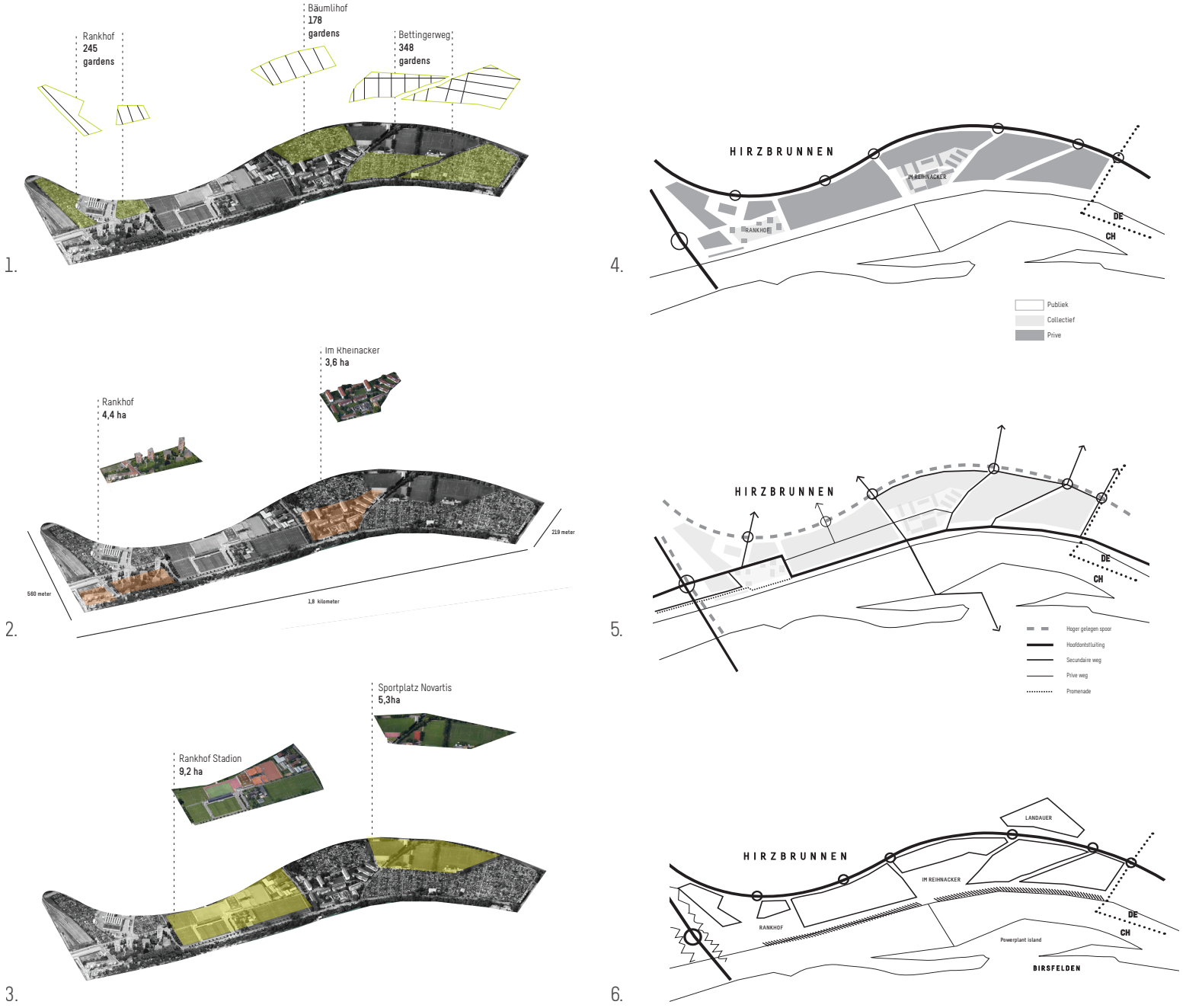


Fig. 9. 1,2,3: The amount of m² per function. 4. The ratio of private and public space. 5. The infrastructure in the area. 6. The formed islands.

1.1.3 Involved actors

As mentioned in the paragraph of the identity of Hirzbrunnen, the fragments and borders within the project-area are also caused by the presence of al the different actors in the area, defending their borders. Occupying actors of the area are the nature reservation association, which is preventing the nature reserve strip along the Rhine, the allotment associations and the sports clubs. The other actors with a more top down planning role are the city council of Basel Stadt and the Department of Urban Planning of Basel Stadt.In the current plans of the Kanton Basel Stadt the different actors play a decisive role in the planning process.

The assignment of Kanton Basel Stadt

Basel-Stadts economy is still growing the coming decade and attracting employees. The main industry in Basel is the pharmaceutical with the companies Novartis and La Roche as the main market leaders. For the coming years the amount of houses and apartments is not suitable for the prospects of a high demand of housing. Therefore the Kanton Basel Stadt has pointed out possible places within the city where densification is still possible, mainly these are areas on the edge of the city, of which Hirzbrunnen South is one. The intention for this area is to fill it with new housing, however the actors occupying the area made the process a complex one.

Planning processes in Switzerland

The direct democracy of Switzerland as a federation of Kantons, allows citizens to organize a referendum, on which the inhabitants of a Kanton can vote. This part of the decision making process in Basel caused a delay in the development of Hirzbrunnen South. The first referendum organized was a referendum initiated by the Allotment associations with the statement: 'an allotment garden cannot be changed to another function in the area of Hirzbrunnen'. The citizens voted for the statement and the municipality was not allowed to change the amount of gardens in the area. Nevertheless the municipality stressed the point that the associations had to give in to be in able to realize new housing. The allotment associations finally allowed 7% of the allotment gardens to be changed of function in the area. With this fact in mind, the competition was started in 2004 to find out what was possible within these limitations. A winning plan was chosen, a plan for eleven residential high-rise towers with a minimal footprint.

Future developments of Hirzbrunnen

The impact of the plan to build the towers had a big impact. The image of the towers on the edge of the city was not one that fitted into the image of the city of the citizens of Basel. A new referendum was initiated by the Nature reservation Association to vote against the towers to be built. This leaves the project in a stand still, because when the votes are agreeing on the statement that the towers are not fitting in the image of Basel, the Kanton is not allowed to build high-rise in this area for 20 years.

1.1.4 Qualities and disadvantages

Reading the previous text, it becomes clear that the area has points of improvement in the aspects of the control of the actors on the area, which caused the borders on many scales, which relate to each other in the topic Control and Complexity. The area lost its identity and meaning for the city as a place for leisure close to the city center because of the small amount of public space. The private plots for recreation of the allotment gardens are not suiting the current tendency spending free time effortless. Besides the high quality area along the Rhine is not fulfilling the current fitting type of recreation, the allotment gardens are less popular and the amount of tenants is shrinking. The potential of the beauty of the area and the quality of the control of their own space in the allotment gardens can be used to form a new vision for the area.

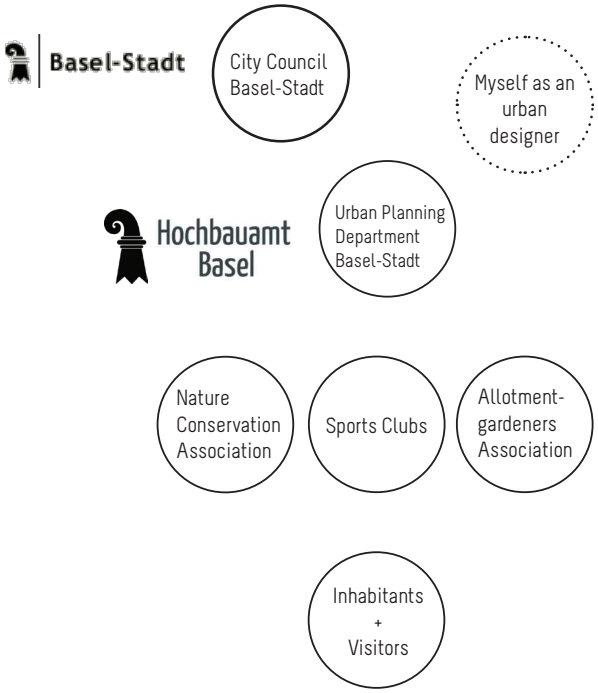


Fig. 10. An overview of the actors playing a role in the re-development of Hirzbrunnen South

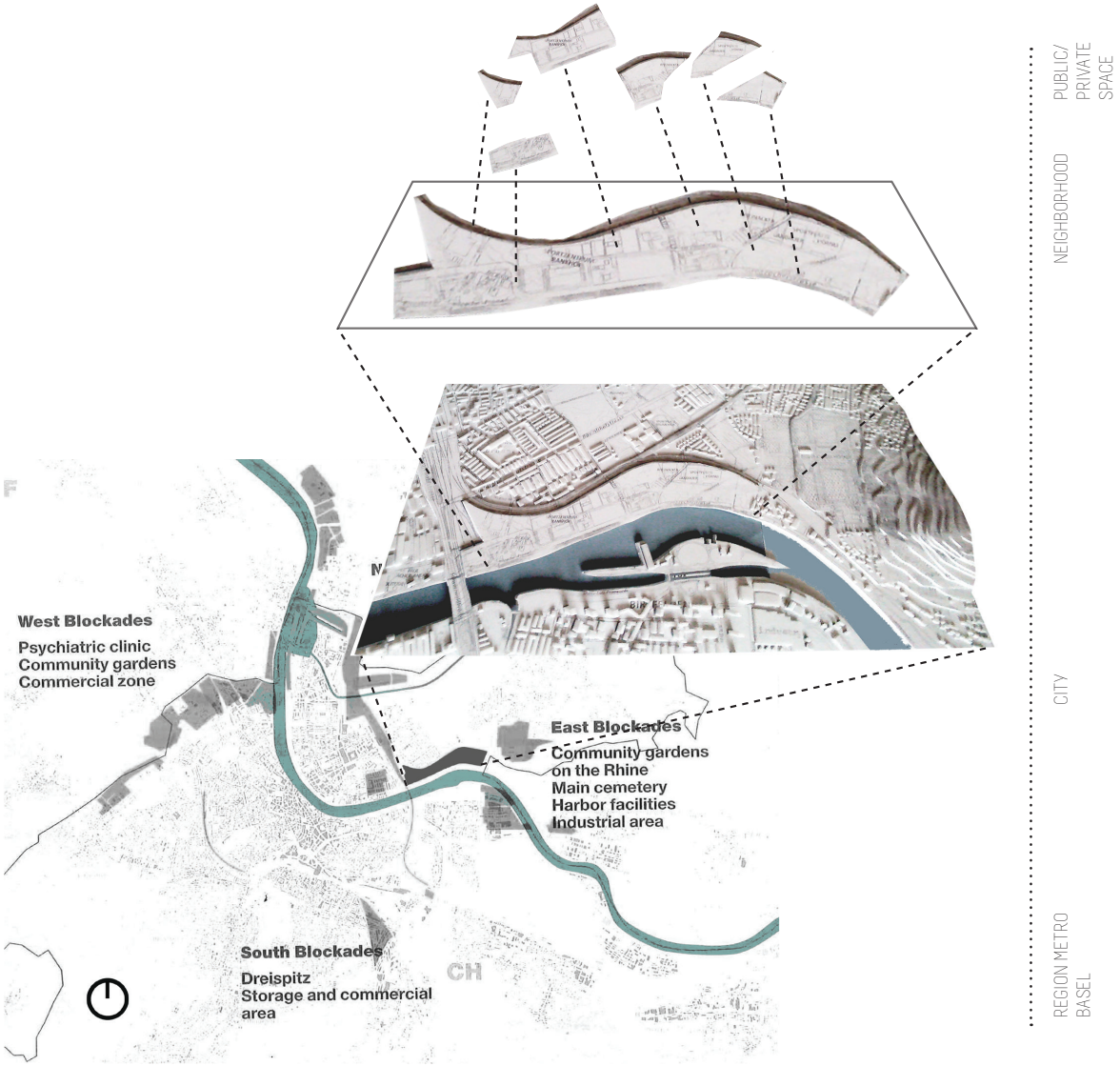
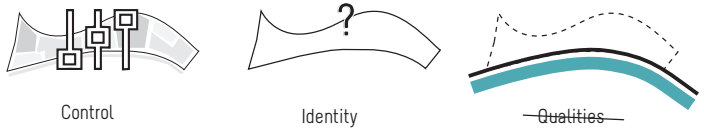


Fig. 11. The area of Hirzbrunnen South as a part of the complex city.



The topics of attention in the area of Hirzbrunnen for the design study

1.2 Project framing

To frame the area of focus of this project the statement about the situation of the area of Hirzbrunnen South is the following;

The **fragmented** situation of **control** and spatial arrangements in Hirzbrunnen South is **blocking** the **coherence** between the **local urban fabric** of Hirzbrunnen South and the **scale of the city** and the **expression of the qualities of the area**.

The topics of attention in the area can be summarized in the following themes:

[Fragments] Lack of coherence between fragments on different scales.

[The river Rhine] Poor access to the river Rhine.

[Identity] Underdeveloped identity in relation to the city of Basel

The fragment of Hirzbrunnen is formed by infrastructure and therefore got its position as an isolated wasteland for left over functions within the city. The connection with the Rhine, which is the identity forming structure in Basel, is not visible on the location despite its close relation. However the quality of the space must be recognized as an area with freedom for people in their own gardens in the allotment-areas. The recreational program however is heavily fenced and not accessible by the public and therefore loosing it's meaning for the public and diminishing its relation to the city. This can lead to the development of the area into an abandoned place within the city with an unsafe atmosphere.

1.3 Project goal

1.3.1 Forming an integral design method

The goal of this graduation project is to form an integral design method based on the literature research on Control and Complexity.
The schema of Thagard and Findlay (2012) in 'How parts make up wholes' is translated to the domain of urbanism, forming a framework integrating scales from the private space to the city and regional scale. Alternating the designer's own insights obtained from the spatial analysis and the theory about control and complexity, the integral design method is a tool used to design the urban regeneration project of Hirzbrunnen in Basel. This with the aim to find a new angle of view on city fragments to improve their relation between different scales. The integral design method (The Control Hierarchy method based on the literature on Habraken) can be a tool to bring the attention to the bigger scale in relation to the smaller perimeter of the project. In this way the program is not fixed from top down but follows from the analysis of the role of the fragment in relation to the scale of the city in a combination of the needs on from bottom-up.

1.3.2 Implementing the integral design method

According to the integral design method a vision for the area is formed, based on the relations of the fragment with the large scale structuring elements such as infrastructure and landscape elements on the scale of the city and the surrounding landscape. This vision is combined with scenarios of program on a smaller scale as an outcome of the analysis of the bottom-up needs of the current or future residents and visitors of the area. The scenarios are made with two variables opposing each other: the freedom of planning and the experience of freedom. On the base of those two notions scenarios are made for the area on a smaller scale. In the next step the designer's vision on the area plays a role in the choice of scenario for each smaller district and the landscape implementation of the concept. In balance with the concepts of the other parts of the area a coherent design is formed.

Combined, a balance between the top--down vision and the bottom-up needs for a certain program form a concept for the future identity of the city-fragment. On the small scale of the neighborhood the attention of the design is the coherence between the private and public space and the freedom of (future) residents to control the private space and public space. The final proposal for the design is not based on the existing assignment instructed by the Kanton Basel-Stadt as one of the last opportunities to build new housing on the edge of the city. The area in itself is investigated in relation to the city and a vision for the fragment is formed according to that.

The design goal is a flexible master plan, which gives the outlines of the design and options for possible scenarios at the different focus areas. On the smaller scale the degree of freedom varies and a balance between only regulations versus a total planned space an outline of the master plan. From the bottom up a program is formed, which suites the needs of the area itself. This program is combined with a vision on a large scale for the city with the fragment as a coherent part of it.

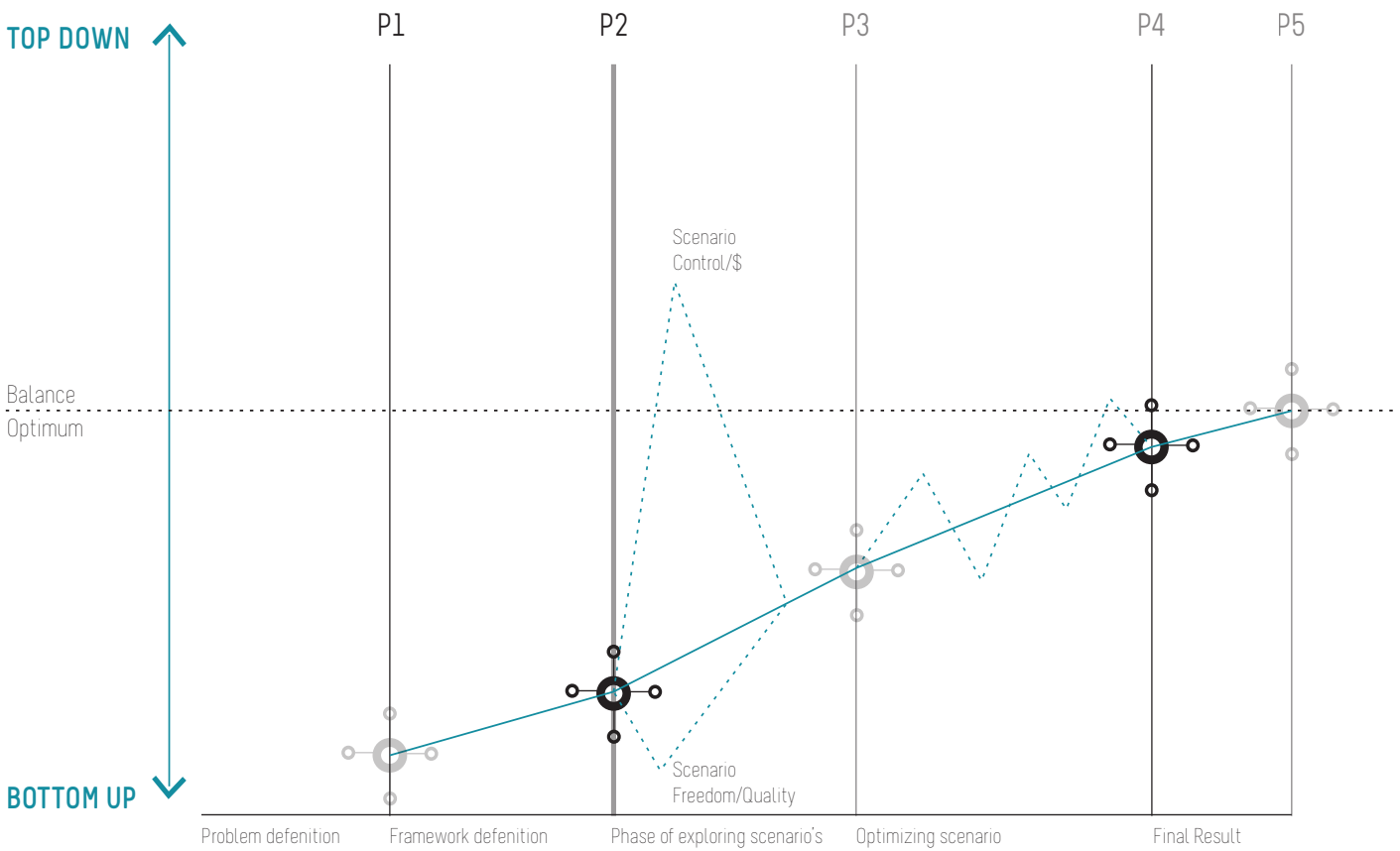
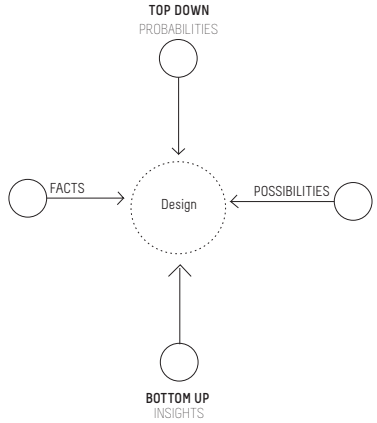
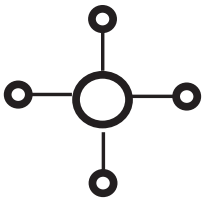


Fig. 12. The aim of the project and the path leading towards this goal.



A. A diagram of the forces working on the design proposal.



B. A simple representation of the diagram in Fig. 12 A., used in the schedule on the left.

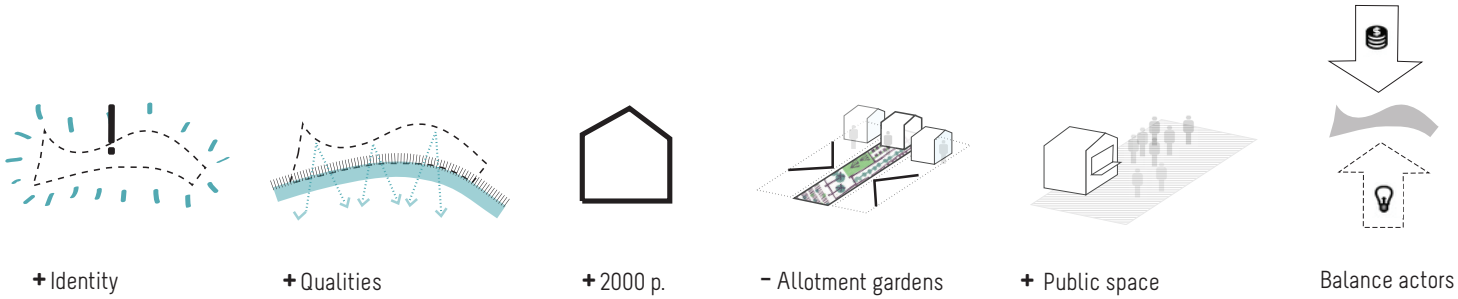


Fig. 13. A summary of the main goals for the design study for Hirzbrunnen South.

1.4 Relevance

Societal relevance

The current proposed plan as a result of the competition initiated by the municipality of Basel does not result in an integral design taking into account the existing qualities of the fragment. The current infrastructure and public space do not fit the new plan and the restricted program of new housing in the area is not an answer to the local problems. The integral design method derived from the literature research can be a relevant way to form a vision, which fits the big scale of the city and the small scale needs. Only in that way the society benefits when the complexity of the city is taken into account and there are no new created problems cause by the limited perimeter of the project.

Academic relevance

This project aims to contribute to the understanding of the transition between scales and the role of the control agents on urban scales with the development of an integral design method of alternating theoretical input and the personal insights of the designer. The scope of the method of the control of different scales within the city can help to improve the effectiveness of the design of urban interventions since the control by the agent is brought to the attention. The integral method can be relevant to achieve the transition between scales and form a starting point for a different view on fragments within the city. The method is an attempt to include the needs of the users with the top down wishes throughout the scales of urban complexity.

1.5 Research outline and methods

1.5.1 Research Outline

The area of research focuses on the relation of parts in the city and the control on these elements on different scales. The aim of the research is to form a framework for an integral design method to improve the local urban fabric of a city fragment and its connection to the city. The problem statement leads towards the following main research question and sub-questions:

Main research question:

How can the **coherence** between the **scale of the local urban fabric** and **the scale of the city** be **improved**, using an **integral design method** based on the notions of **control and complexity**, for the case of Hirzbrunnen South, Basel?

Sub-questions:

Theoretical

-What are the control-units within the urban fabric on different scales?

-How do the control-units interrelate between these different scales?

-What are the variables to work with, when developing a design method to improve the coherence between scales?

Site-specific

-What is the value of the river Rhine for Basel and Hirzbrunnen South?

-How do the city-fragment of Hirzbrunnen South and the city of Basel cohere? What are the spatial characteristics?

-What is the identity of Hirzbrunnen and how does it relate to

1.5.2 Research Methods

Literature review

Control & Complexity

The literature research has the aim to answer the theoretical research questions and form a framework as a starting point for the integral design methodology. The literature review is based on the main literature of the complexity-theory considering the city as a complex system (Alexander, 2003; Portugali et al, 2012) and combined with the theory of the implicate order which states that the whole is more than a sum of the parts (Bohm, 1990). Complementary, rules for the coherence between these parts (Salingaros, 2005) are addressed and form together the theoretical framework of the field of urbanism on this topic. Complementary to this theory the organization in biology described in the article 'How parts make up wholes' (Findlay & Thagard, 2012) is translated to a schema for urbanism: urban scales are decomposed to the wholes, parts, organizers, attachers and communicators. Together these theories provide the insights to answer the questions: 'What are the control-units within the urban fabric on different scales?' and 'How do the control-units interrelate between these different scales?'

The experience of freedom and control

Combined with a review of the literature about places and spaces within the landscape architecture theory, a better understanding can be formed on the topic of the experience of freedom in the urban environment. In the book Space and Place, the perspective of experience (1977) Tuan writes about the differences between place and space. An enclosed place where you feel secure and safe and the space where the horizon is visible and the space is undefined, where you experience freedom, show different degrees of the experience of freedom. This part of the literature review has as aim to understand the link between the practical control of planning and the experience of the space. In addition Norberg Schulz writes in Genius Loci (1980) what elements define certain places and

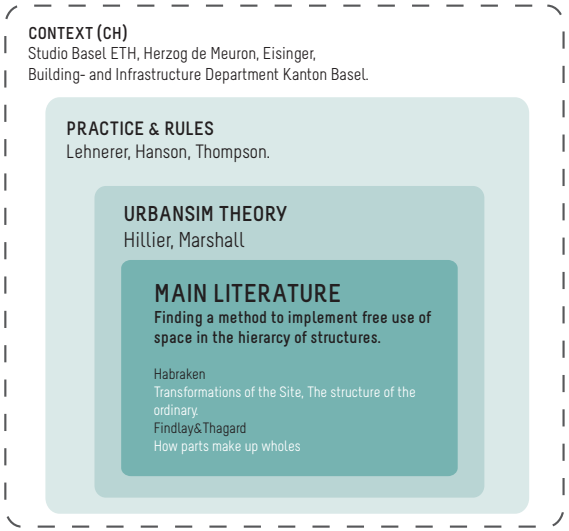


Fig. 14. The literature used for the literature review

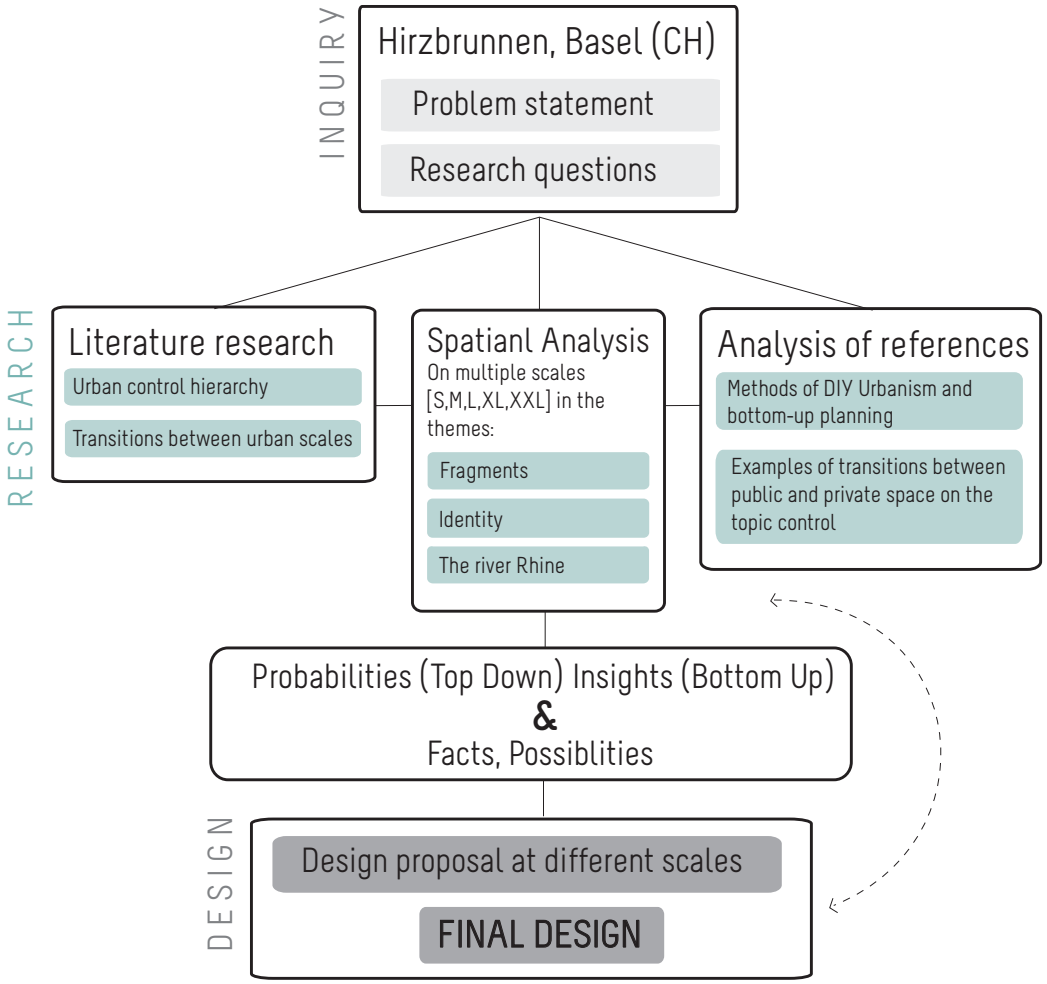


Fig. 15. The relation between the research, the design and the inquiry phase of the graduation project.

spaces and Simon Bell (1999) writes about the perception of landscapes in its different forms. Together the theory of the control and complexity supplement each other to understand the perception of control of planning to use it in the integral design method. Concluding the theoretical chapter of this thesis the question:'What are the variables to work with, when developing a design method to improve the coherence between scales?' can be answered.

Spatial analysis

An analysis on the themes: Fragments, The River Rhine and Identity. The scales defined in the literature review are addressed in each theme of the analysis: private/public space [S], neighborhood [M], City [L], Region [XL] and country [XXL]. In this way the relation of the
fragment with different scales is investigated and mapped to have an overview of the impact of certain scales on the area. The insights provided by the spatial analysis can answer the questions: 'How do the city-fragment of Hirzbrunnen South and the city of Basel cohere? And What are its spatial characteristics?' 'What is the value of the river Rhine for Basel and Hirzbrunnen South?'

Interviews and questionnaires

Interactive elements of the research are the interviews with mr. Volman of the department of Urban Planning of Kanton Basel Stadt and the questionnaires in the project area. The interviews with mr. Volman had the aim to learn more about the planning process of Hirzbrunnen and the Top Down wishes for the area. To find out what the problems in the area are in the perception of the visitors and the inhabitants of the area questionnaires and interviews on the street where used as a method to get to know more about the favorite and less favorite places and routes through the area. The questionnaires were a starting point for a more in depth interview about the needs of the users of the area. By the interactive method of interviews and questionnaires the question about the perception of the area can be answered: What is the identity of Hirzbrunnen and how does it relate to the city of Basel?

Analysis of current methods and references

Current references and methodologies of planning software and projects with a pure bottom-up approach will be analyzed such as: Almere Oosterwold (De Klerk, 2013) and the planning-software Kaisersrot (Lehnerer, 2007). On the topic 'transitions between public and private space' the projects Usionia of Frank Lloyd Wright (Van Gameren, 2013) and the allotment gardens designed by Sorensen (Lund, 2004) are analyzed. An overlapping topic between these two themes is the question how to deal with boundaries and borders. Analyzing references of current methodologies and planning software with a pure bottom-up approach. An overview of pitfalls and qualities is given to form a starting point for the flexible design-strategy with freedom of planning for the (future) residents on the scale of the public and private space. The answer of the sub question: 'What are the variables to work with, when developing a design method to improve the coherence between scales?' given in the theoretical chapter with the literature review, can be supported by the method of analyzing current methods and references.

2 THEORY

Control and Complexity in the urban environment

In this part of the thesis the theoretical background will be addressed which formed a background for the first step to develop an integral design-method focussed on the notions control and complexity'. The literature discussed is focussing on the control in urban planning throughout the complexity of the urban scales. A schema that characterizes how parts constitute wholes at diverse levels of organization, ranging from the atomic to the biological to the social by Findlay and Thagard (2012) is further translated in this thesis to the urban scales.

First, the review of the literature research is described with conclusions for the design-study location: Hirzbrunnen South in Basel Switzerland. Next to that the main conclusions from the literature review are described, which formed the basic framework for the method. The next part of the literature review is about the experience of freedom and control in the urban landscape. This part contributes to the method in a way that it is taking into account the experience of the user. The literature on the experience of an environment is defined in the experience of places and spaces. These two environments differ in the way they are perceived in the sense of freedom. To conclude, the framework for the method is explained reflecting to the literature review and its notions: control, complexity and the experience of spaces

2.1 How parts make up a city

Scales in urbanism are assigned to get a grip on the complexity of the city, to understand the processes and interactions between different scales of the urban fabric. Seldom however, these scales are translated back to the whole they originate from: the unified city. Furthermore, the influencers of this hierarchy are combined with the transitions between scales, leading towards insights on the development of an inclusive design methodology. This literature review provides an overview of the discourse in urbanism on the topics control (Habraken, 1987), hierarchy in planning (Alexander, 1965) and coherence between fragments in the city (Salingaros, 2005). Complementary to this theory the organisation in biology described in the article How parts make up wholes (Findlay & Thagard, 2012) is translated to a schema for urbanism: urban scales are decomposed to the wholes, parts, organizers, attachers and communicators. With the outcomes of this schema combined with the review of the urbanism theory, an answer is formulated to the research question: How do control-units in the urban fabric interrelate on different scales?

This literature review concludes that the dominant forces such as infrastructure and landscape elements form the base for the urban control hierarchy. The smaller scales are stronger connected, but depend heavily on the coupling elements between fragments on different scales. The individual acts as a communicator between the different scales as a solid yet dynamic factor. A multiscalar dynamic system that sustains itself (Sassen, 2012) is achieved when combining a bottom-up strategy on a smaller scale with a top-down strategy from a larger scale.

2.1.1 The complex city

In urbanism the urban fabric, from private space to city network, is divided into scales. This paper aims to contribute to the understanding of the transition between scales and the role of the control agents on these urban scales with the goal to improve the effectiveness of urban interventions. More often parts within the city are treated as isolated elements when being analysed and redesigned in urban regeneration. This method however is only useful when these parts are brought back into the bigger context of the urban complexity (Alexander, 1965). Also the human factor of control is more often not taken into account when decomposing the city into scales. This paper is an attempt to form an overview in methods on how to deal with scales in a more integral way the according to the following research-question: How do control-units in the urban fabric interrelate on different scales?

To answer this question, in the paper the city is considered as a complex system (Alexander, 2003; Portugali et al., 2012). The first section of this paper describes the existing terminology of control in urban planning to form a basic understanding of the topic. Alexander (2003), Habraken (1987; 1998) and others wrote about the definition of control and hierarchy as a way to control structure.

In the next section a further exploration is made on structure as a way of controlling with the theoretical framework of Salingaros (2005) on how to deal with fragments in the city. Complementary, a short overview is given on the current practice of new methods in urban planning using the principles of control by users in emergent urban planning.

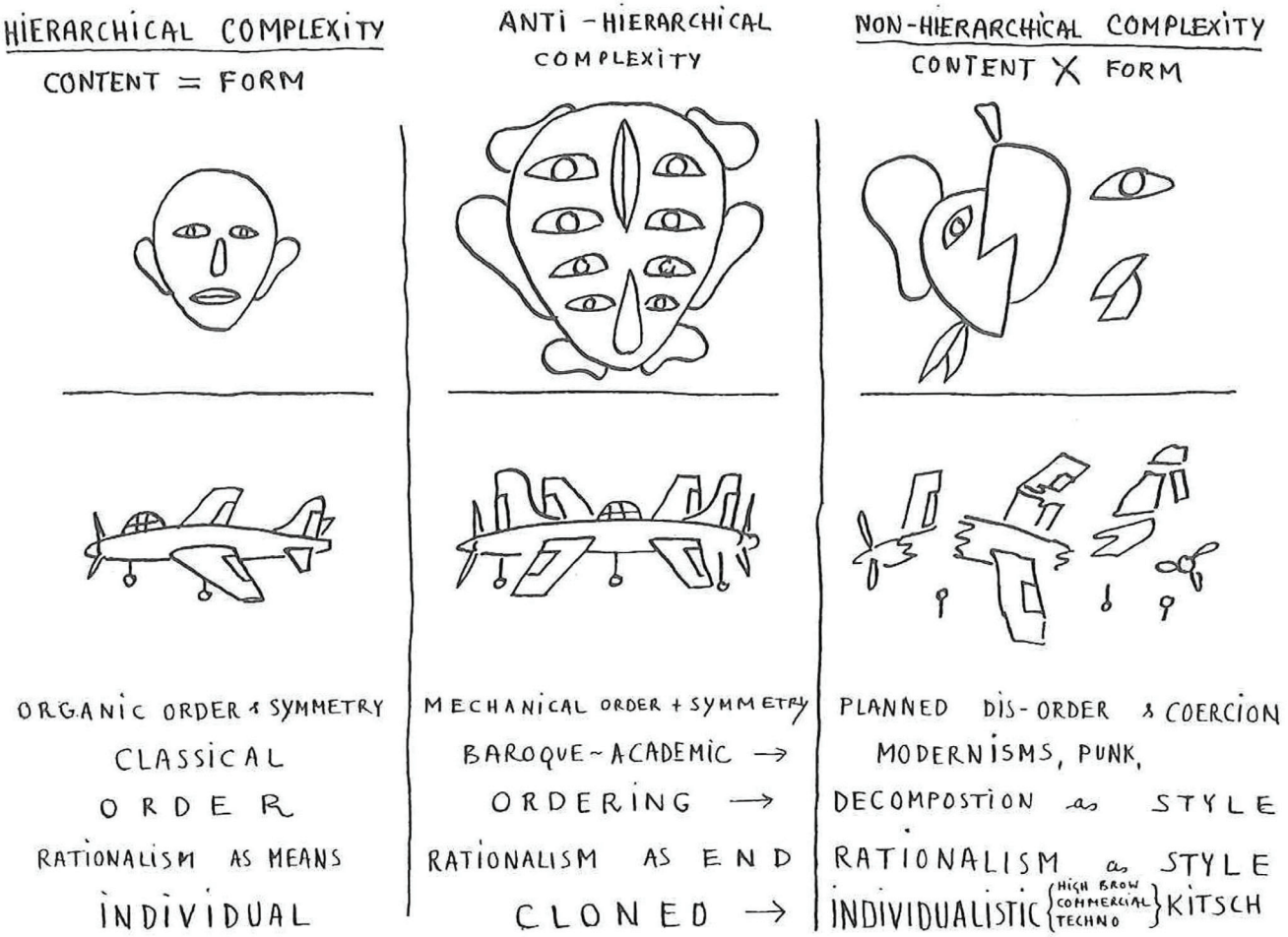


Fig. 16. Composition: Organic vs. Mechanic. (Krier, 2009: 75)

In the third section, the urbanism theory will be combined with the arrangement of organization in biology explained in the article How parts make up wholes by Findlay and Thagard (2012). The structure, dynamics and functions of elements of hierarchy in physics, biology and the cognitive and social sciences described in this paper are translated to the urban organisation in scales. In the conclusion an overview of the hierarchy of urban scales, their relation and the influence of the agents in control is given in a diagram. Finally, recommendations as result of this paper are given as a base for a design method for the graduation project Framed space vs. Free space.

2.1.2 Control in urban planning

Rules vs. freedom

Controls are widely accepted if they are limitations on use, density and the layout of circulation, even if they should not be. They are viewed with greater suspicion when applied to visual form. Controls are negative and passive measures, as opposed to the positive technique of design. They stifle innovation and restrict individual freedom. (Lynch, 1966 cited in Lehnerer, 2009: 61-62)

Urbanism is about regulations, or as Lynch describes: rules. The agents in control make rules. Control does not imply ownership, so when in control, the transformations that can be made are limited, and thus not entirely free. So total freedom in planning does not exist when crossing the border of the private parcel. To control the activities in public space, a certain kind of regulation is needed to have a fair game in urbanism. Like a board game we frequently control parts and manipulate their configurations, following certain stated principles and the rules of the game. (Habraken, 1998)

The public interest

Habraken (1987) describes control as the ability to decide on moves. Urban planners are deciding on the moves of the elements in public space by regulating urban activities. Rules are necessary for managing the basic elements of urban planning. But if they are too strict, it will create an inflexible situation, in which necessary changes are prevented from happening. However, when translated to the practice of urbanism the core problem of every design action is the definition of the public interest delimited from the private interests (Lehnerer, 2009).

Control hierarchies

The parts of a city to be controlled in urban planning follow a certain hierarchy. The entities we find on a lower level do not assemble to form a higher-level unit, like in an assembly hierarchy. The relation between the levels is not one of assembly but of one of dominance where the transformations on the lower level are constrained by the higher level. This hierarchy has to do with the control of physical elements and is called a dependency hierarchy (Habraken, 1987). For a way of organizing control this hierarchy is needed. Habraken describes control hierarchies as: '...Wholes composed of parts that lend themselves for control by separate agents in charge of the design or maintenance of it.' (Habraken, 1987: 3). The agent in control of the actions is depending on whether the control structure is top-down or bottom-up.

Christopher Alexander (1965) states however that a city is not a tree, but an intricate network. In his opinion a city cannot be simplified as a system with hierarchical dependencies. Parts can only be simplified on a lower scale and when assembled together again their interactions need to be taken into account. However, the current urban design when assembled together again their interactions need to be taken into account. However, the current urban design strategies depend heavily on modular thinking in building-units and interactions via paths (Salingaros, 2005). If you can neatly segregate functions or regions on a city's plan then it represents a tree and it is consequently not alive. A city can be alive when emergent connections are possible and these are only possible in a system that is highly connected and offers a mechanism for additional connections (Salingaros, 2005).

2.1.3 Structure as a way of controlling

Léon Krier (2009) shows in his sketch Composition: Organic vs. Mechanical (Fig.16) that hierarchy can be misplaced when mechanical and superimposed on an urban or architectural design. In this sketch he implies that organic order and an individual approach to this order is necessary for a coherent hierarchical complexity. When superimposing structure, a less organic city is formed then a city, which has opportunities for an emergent sort of urban planning.

¬

When discussing the difference in planning: imposed and emergent, order plays a considerable role. Guerreiro (2011) defines different kinds of order; the visual, mental, simple order, imposed by top-down and the much more general order, which is complex and subtle, which in essence is not related to predictability, the implicate order. Whereas the simple order is an order where parts are organized according to a model and positioned within the same intervals – the whole is then the sum of the parts and the spaces between them.

The implicate order, first mentioned by Bohm (1990), describes the whole as more than the sum of its parts be-

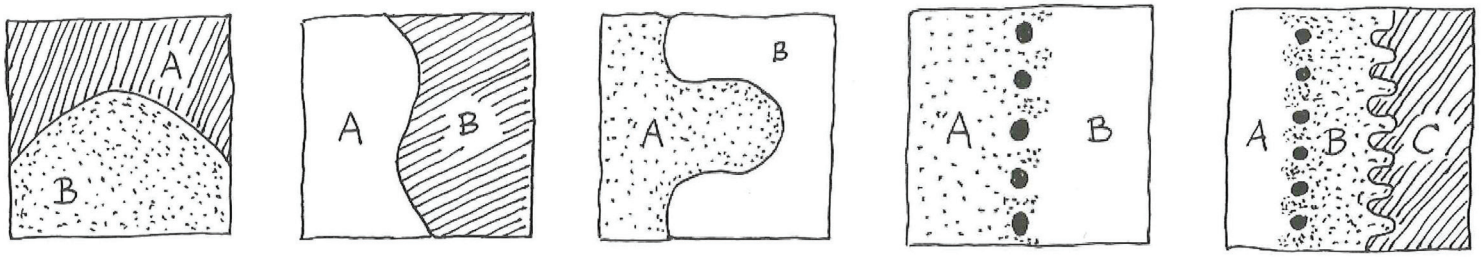


Fig. 17. Geometric coupling through: contrast in texture (A), contrast in colour (B), through penetration (C), through permeability (D) and via a common third element (E) (Salingaros, 2005: 90-91).

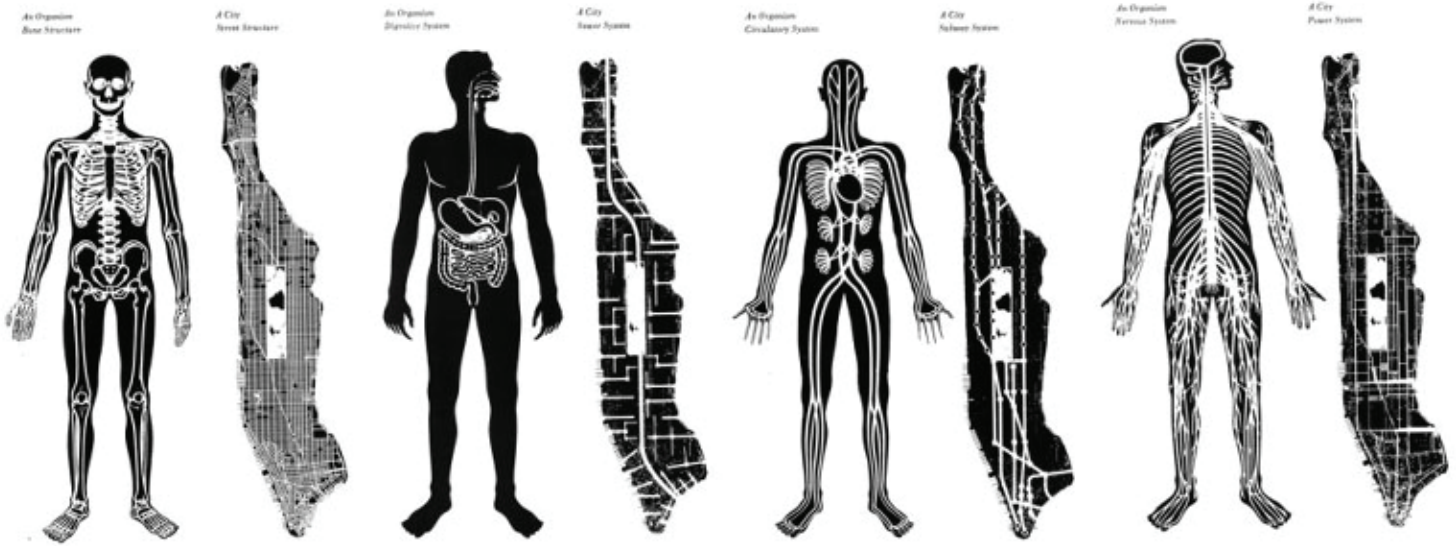


Fig. 18. Analogy of the human body and systems in cities, in this case in Manhattan, New York. The bone structure is compared with the street pattern of Manhattan, the human metabolism with the sewer system, the circularly blood system with the subway system and the nerve-system with the power system. Oswald Mathias Ungers is well known for his analogies of city maps compared with examples of nature and other artefacts (Ungers, 1976: 15)

cause of its relationships with the surroundings. This is a hidden and complex order, emerging from the bottom up. This order is not to be understood in series. Rather, a total order is contained, in some terms of a regular arrangement of objects (e.g. in rows) or as a regular arrangement of events (e.g. in implicit sense, in each region of space and time. The word 'implicit' is based on the verb 'to implicate'. This means 'folding many times'. This leads to explore the notion that in some sense each region contains a total structure 'enfolded' within it (Bohm, 1990).
In urbanism, the concept of order has been restricted for cities of pure and rational geometry. However, this is only a very limited kind of order, which is associated with predictability (Alexander, 2002). The top-down planned structures in urbanism do not open up the city for new developments but create borders on different scales.

Coupling fragments within the city

To let the whole be more than separate parts, fragments in the city have to be reconnected. In the book Principles of urban structure Salingaros (2005) describes several rules for geometrical coherence applicable on multiple urban scales. These rules address terms used earlier in this text: hierarchy, organisation, control and decomposition. Salingaros describes a successful environment as an outcome of a well-connected environment. The connection of fragments is thus the key ingredient to create a liveable and vibrant city. The higher-level forces connecting the parts are however not as strong as the coupling forces on the smaller scale, but they are necessary to form a stable framework. The smaller scales need to be defined before the larger scales: their elements must couple in a stable manner before the higher order modules can even begin to form and interact (Salingaros, 2005).

Specific methods of coupling are shown in Figure 17. Notable similarities are the contrast between areas which couple (A/B) and coupling by shape (C) and by permeability of boundaries (D/E). The boundaries cannot be an obstacle but also form a way of transition. As a rule, it is stated that different modules couple via their boundary elements. Connections form between modules and not between their internal elements. Salingaros also states that the higher-level couplings provide the essential coherence of a hierarchical system

Scale matters

One of the most important rules in the scope of this paper is the statement that a system's components assemble progressively form small to large. This process generates linked units on many distinct scales. The statement that elements and modules do not depend on each other in a symmetric manner: a high scale requires all lower scales but not vice versa, shows the natural bottom-up ordering principle (Salingaros, 2005).

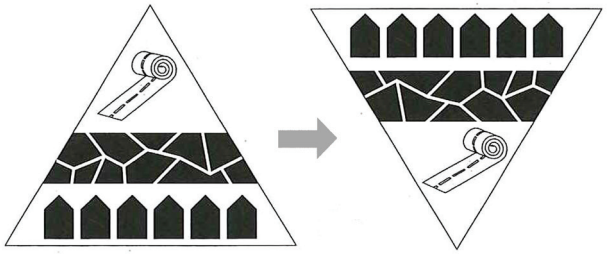


Fig. 19. What comes first: the parcel or the infrastructure? (Lehnerer, 2009: 29, edited by the author)

A city cannot be completely be decomposed into constituent parts however, there exist many divergent decompositions based on different types of units. In contemporary cities the structure or coherence is super orderly but does not exceed the two or three scales of interaction. In major revision of contemporary urban practice is shown that grid alignment does not connect a city, giving it only the misleading impression of doing so.

This also underwrites the fact that reducing chaos does not generate local connections but simplifies the interactions, which will not lead to a liveable whole (Salingaros, 2005). The strength of the connecting forces makes the parts as a whole as Alexander (2003: 8) states in the following quotation:

The wholeness is that global structure which pays attention to, and captures, the relative strength of different parts of the system, paying attention both to the way they are nested in one another, and how the pattern of strength varies with the nesting.

Theory in practice

Kaisersrot (Lehnerer, 2009), a software tool to plan emergent neighbourhoods, and the new build Do It Yourself neighbourhood Almere Oosterwold (De Klerk, 2013) by MVRDV in are current attempts to work with the bottom up method. Both methods start with the parcel as a base-unit on which the further strategy is based. The solid street network is third topic of attention after planning the building and the parcel (Lehnerer, 2009). The idea of the robustness of the streets is combined with the idea of the completion of the stronger forces first: the parcel is defined first and the street network follows. However, this method stumbles upon the problem of the responsibility and the public interest. It seems difficult to manage to

Parts	Whole	Tags	Organizers (spatial planning by:*)	Attachers	Communicators
Individual organisms	Social group	• Physical features • Behavioral characheristics • Mental representation	•Social events (e.g., parties, meetings, rituals) •Institutions and organisations •Cognitive processes (e.g., planning)	•Shared environments •Emotional mental states • Social practices	• Sounds • Gestures • Speech • Media
Garden, home, parking space	Private space	• Texture of parts • Dimensions of parts • Spatial arragement of parts	•Residents (individual organisms)	•Coupling elements (Bricks, paving, stones, footpaths, trees, individual parking spaces, walls, doorways, windows, sidewalks, benches etc.)	• People (individuals/group) • Social events • (Social) media
Streets, shops, offices, houses, pedestrian zones, green spaces, plazas, parking lots, squares	Public space	• Texture of parts • Dimensions of parts • Spatial arragement of parts	• Residents • Visitors • Social groups	•Coupling elements (Bricks, paving, stones, footpaths, trees, public parking spaces, walls, doorways, windows, ledges, columns, sidewalks, benches etc.)	• People (individuals/group) • Social events • (Social) media
Public spaces	Neighbourhood	• Atmosphere • Functions • Accessibility • Possible activities • Size of public spaces • Proximity to other public spaces	• Users (local or visiting) • Neighborhood Association • Allotment Association • Retailers Association • District department municipality	• Infrastructure network (public transport, car, bike, foot) • Ecological structure (parks, green zones, water) • Surrounding functions	• People (individuals/group) • Social events • (Social) media
Neighbourhoods	City	• Population • Building typology • Street pattern • Functions/Services • Density • Neighbourhood identity	• City management • Building department	• Infrastructure network (public transport, car, bike, foot) • Building pattern • Landmarks (visual recognition) • Ecology network • Energy network • Water network	• Social events • Residents • Visitors • Commuters • (Social) media
Cities, villages	Municipality	• Work/Education • Cultural activities • Economic activities • Recreation • Proximity to other cities • City identity	• Board of the municipality/kanton	• Infrastructure network (public transport, car, bike) • Strategy of prevention of sprawl • Ecology network • Water network	• Social events • Vistors • Commuters • (Social) media
Municipalities	Region	• Work/Education • Cultural activities • Economic activities • Recreation • Proximity to other municipalities • Representation	• Board of Provinces/Region • Water board	• Infrastructure network (public transport, car) • Energy network • Ecology network • Water network	• Social events • Vistors • Commuters • (Social) media
Regions	Country	• Work/Education • Cultural activities • Economic activities • Recreation • Representation	• National government	• Infrastructure network (public transport, car) • Energy network • Abiotic system • Biotic system	• Social events • Trade of goods • Tourists • Commuters • (Social) media

Fig. 20. A first attempt to translate the schema of Finlay and Thagard (2012) into examples of major tags, organizers, attachers, and communicators for various levels of organisation in urban planning and the involved controlling agents.

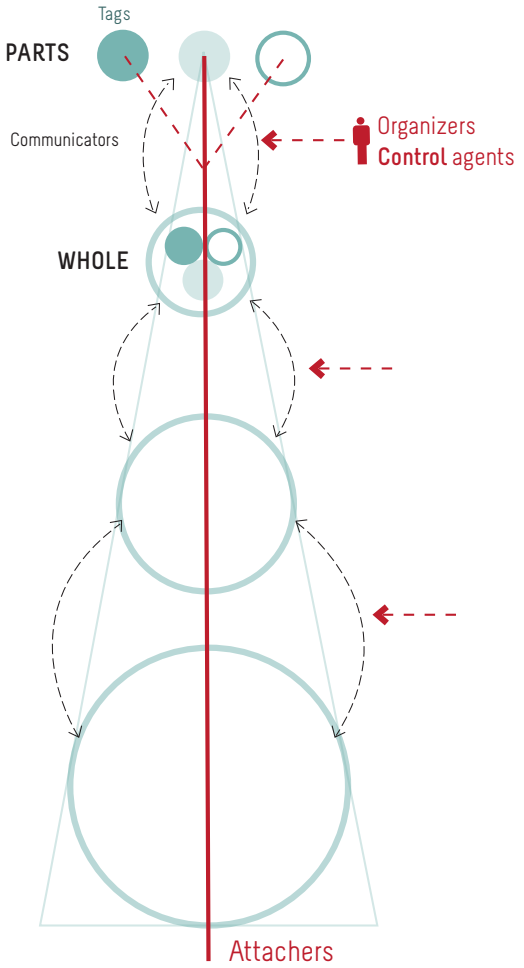


Fig. 21. The notions used by Thagard & Finlay (2012) showing the relations between the whole and its parts in an hierarchical structure.

build housing and let the road develop organic because paths are necessary for transportation of the building materials (Lehnerer, 2009). Also in the case of Almere Oosterwold the method shows its complication when the construction of a public road by private stakeholders, on the basis of percentage ownership of private land is organized. This method has many pitfalls observed by the method of playing scenario's with Play the City to analyze the future project (Ibáñez López, 2013). The problem that rises is what comes first: the parcel or the infrastructure (Fig. 19)?

2.1.4 Transitions in the control hierarchy

To further clarify the topic of control hierarchies in urbanism a comparison is made with the theory of levels in organisation in biology. In the text. The analogical mind, Thagard and Holyoak (1997) describe that analogical thinking is trying to reason and learn about a new situation (the target analog) by relating it to a more familiar situation (the source analog). In this case the familiar situation is the organization of the human body build up out of cells and the target analog is the control hierarchy. Analogical thinking can be traced from childhood to an extraordinarily diverse range of uses by human adults, including generation of metaphors for the self; decision making in politics, business, and law; and scientific discovery. An example of the analogy between systems in the human body and networks in urbanism is shown in Figure 18 a comparison between systems in the human body and systems in Manhattan, New York. In this review paper analogical thinking is used to combine the knowledge of urbanism scales and control hierarchy into a schema and show the transitions between these scales and the influence of control, to form an overview.

Urban scales in the control hierarchy

The schema of Findlay and Thagard (2012) used in the paper How parts make up wholes is translated into the schedule of Figure 20. Findlay and Thagard describe certain actors in biological levels; parts, wholes, tags, organizers, attachers and communicators. When translating this schedule to urbanism scales, it becomes clear that urbanism differs from an organism in two ways. Firstly, a biological whole is rarely assembled or made functional; it develops together with other biological wholes, it is not an artefact like the urban systems. Secondly, the biggest difference with the urban system: actors or agents are involved who have control over the different parts and wholes by regulating transformations by rules. Agents govern the dynamic control system themselves. Because of these differences the definitions used in the paper by Findlay and Thagard are converted so they match the urbanism scope.

Factors of the urban hierarchy (based on the definitions by Findlay & Thagard, 2012, see figure 21):

- Parts: The units that assemble together to form a whole.
- Wholes: Structures made of parts that together operate as a system: wholes can also function as parts in higher-level wholes.
- Tags: Properties of parts that give structural and/or functional identities.
- Organizers: Controlling Forces or processes that bring parts together into structural and/or func tional relationships implemented by agents in control.
- Communicators: Specialized components that move to allow interactions among physically separated parts.

Noted the difference between the notions level and scale in this section, Findlay and Thagard (2012) use the term level, whereas in this paper the word scale is used. The description of levels is the placement in the organisation or a certain ranking. Scale implies the size of an entity originating from the scaled drawings in urbanism and architecture. The scales can be arranged in a hierarchy of size as used in this comparison. A change of scale results in new interactions and relationships, and often, different control agents or organizing system. A change in level however entails a change in size or quantity rather then forming a different entity (Sassen, 2012).

Dynamic factors on a small scale

The new schema applied to urbanism starts with the smallest whole: the social group, where the original schedule hierarchy finished as the biggest level (Fig.20). The individual owns the private space and the public space is used by the social groups. Together the private and public spaces are forming the neighbourhood. The human activities in the shared environments act as a coupling element when designed well. However, the control over the public space is not always in the hands of the users. In a top-down hierarchy less freedom is given to plan the public space to the wishes of the user. We learned in the previous theory of urbanism that the implementation of emergent urbanism is about finding the balance between public and private interests.

We can learn from this theory in combination with the schema that a common ground between the public and private interest is a requirement to make a coherent public space with attention for the users input. The social media as a communicator between public and private interest can be a way to find this common ground (Fig.20).

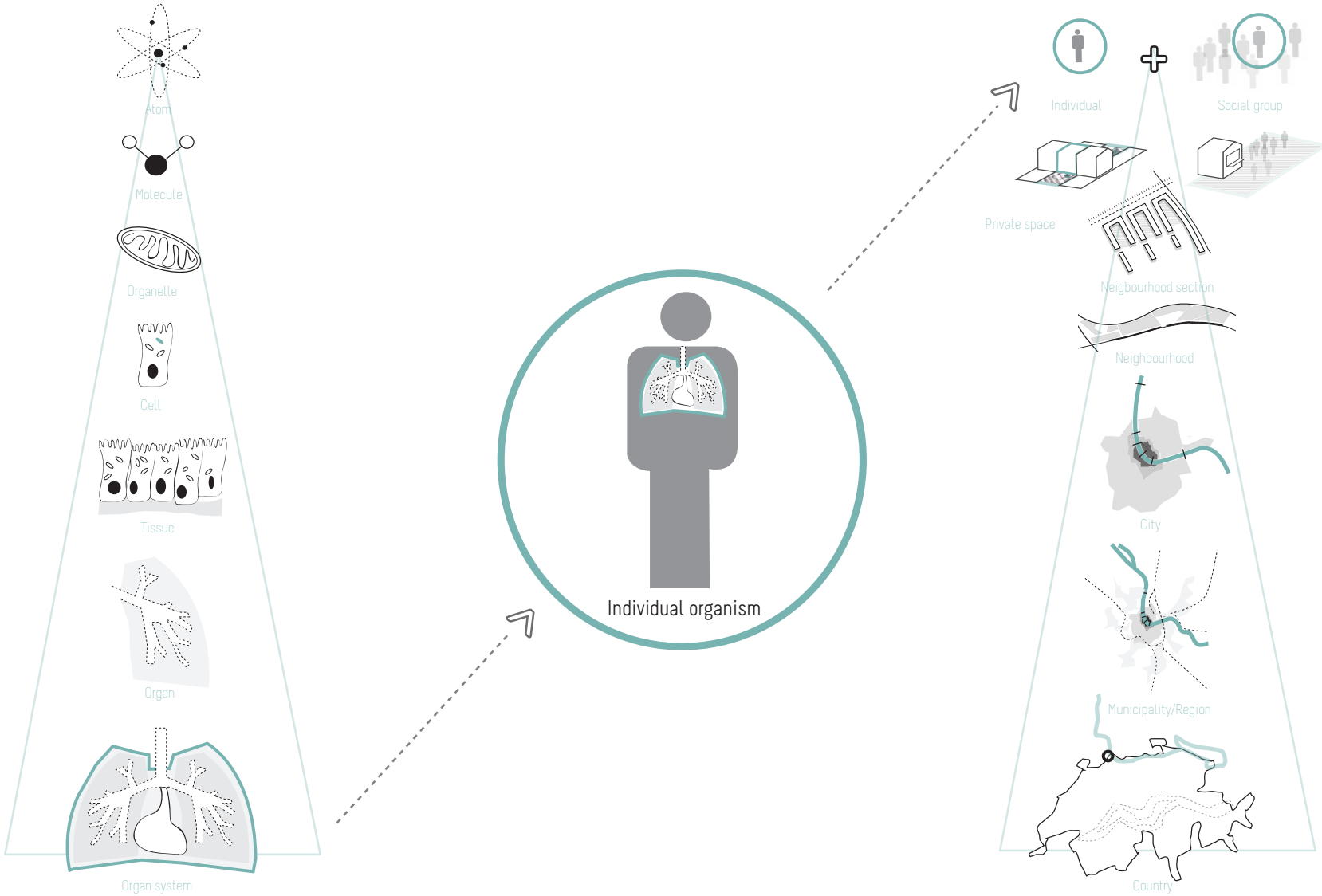


Fig. 22. Diagram showing the hierarchy described in the text 'How parts make up wholes' by Findlay and Thagard (2012) and the relation to the attempt to translate this hierarchy further into the urban scales with the individual as the link between these hierarchies.

Constant factors on a large scale

When looking at the schedule in Figure 19 we can observe the recurrent attachers in every scale: the infrastructure network, the ecological structure, the energy network and the water network. These terms can be addressed as the higher-level connecting forces, necessary to form a stable framework (Salingaros, 2005). For example the transportation networks interact heavily with the urban structure, which implies that the urban form to some extent will have to follow the transportation network, most importantly the pedestrian paths (Salingaros, 2005). In that way these structures are robust and less changing than the smaller stronger forces. This implies that the method of Lehnerer (2007) in a way is not applicable, because the urban planning is depending on the base element of the main infrastructure as a framework.

A changing system

Sassen (2012) divides the notion scale further into: temporal scales (frames of various urban conditions and dynamic) and spatial scales (as used in the scheme: private, public etc.). We see now that the temporal scales play a role in the transition of scales. In this diagram the temporal scale is the human activity or the communicators. Through the communicating activities of humans, a multiscalar dynamic is allowed. This allows the scenario that at an unstable system at a given scale can be a condition for the stability at a lower or higher scale. The bottom-up control can turn into top-down: competition becomes less important. This further implies that a strong bottom-up or top-down method is not the way to go. A combination of the two seems to be a relevant solution if we take control into account.

2.1.5 Conclusions

This paper concludes with an answer to the formulated research question: How do control-units in the urban fabric interrelate on different scales? The answer lies in the need to establish a balance between weaker long-range forces and stronger small-scale forces is in order to let scales interrelate and form a city.

The first condition is defined in the weaker long range connecting forces, such as infrastructure, landscape elements and ecology networks, as the backbone of the urban hierarchy. The first proposed attempt to show the dynamic interactions in the schema of Findley and Thagard (2012) in Figure 23 shows recurring long rage forces as attachers throughout scales. These continuous forces guarantee a stable system of urban fabric throughout the hierarchy of scales. The way to control these systems is a top-down strategy to assure a counterweight to the ever-changing dynamics on a smaller scale or in other temporal scales.

The second condition lies in the establishing that stronger forces on a small scale are the basic element for a strong urban coherence. This means that the attention in reconnecting scales should be prioritised on the smaller scale coherence of the public and private space and how these form the whole of the neighbourhood. A purely bottom-up strategy would be a mismatch since public and private interests are usually antagonistic. So when designing a structure for a smaller scale, critical attention should be brought towards superimposing structure.

Current Do It Yourself urbanism projects, as Oosterwold (De Klerk, 2013) and Kaisersrot (Lehnerer, 2007) seem to struggle with the same problem: the freedom of governing the public space. In Figure 23 on the right side the control agents are shown which are in control of the scales. The diagram emphasises the idea that, ideally, individuals and social groups are in control of the public spaces together with a regulating factor of the administrative agents, such as a municipality or a planning department. The diagram is most diverged on the lower scales, symbolising the stronger network on the smallest scales.

2.1.6 Casus

Scope

This literature review is a starting point for developing the design method of the urban regeneration of the neighbourhood Hirzbrunnen-South in Basel, Switzerland. This project is dealing with the connections throughout scales, fragments and control and freedom in public space. The project-area forms an urban enclave, an isolated fragment on the borders of the city of Basel. The framing of the area by the bordering train tracks and the river Rhine cause the fragmentation. However, this area has the attributes of a less regulated space since its rural character combined with the functions of sports fields and allotment-gardens. The attribute of the freedom of planning retained by the owners of the allotments is nevertheless limited to the plots they own. The aim of the project is to find a method to use this quality of freedom to regenerate the area combined with the planning of new housing and reconnect it again to the city-centre and the river Rhine. The aspects control and scale combined in this paper form therefore a solid base for the developing of a strategy for this region.

Developing a method

The main recommendation for the casus would be to develop the method with a framework of the infrastructure and the ecology network: the weaker connection forces. Complementary attention for the experience of the freedom or control on a smaller scale in the stronger connections of the public space is valuable to add to the theory of complexity and control.

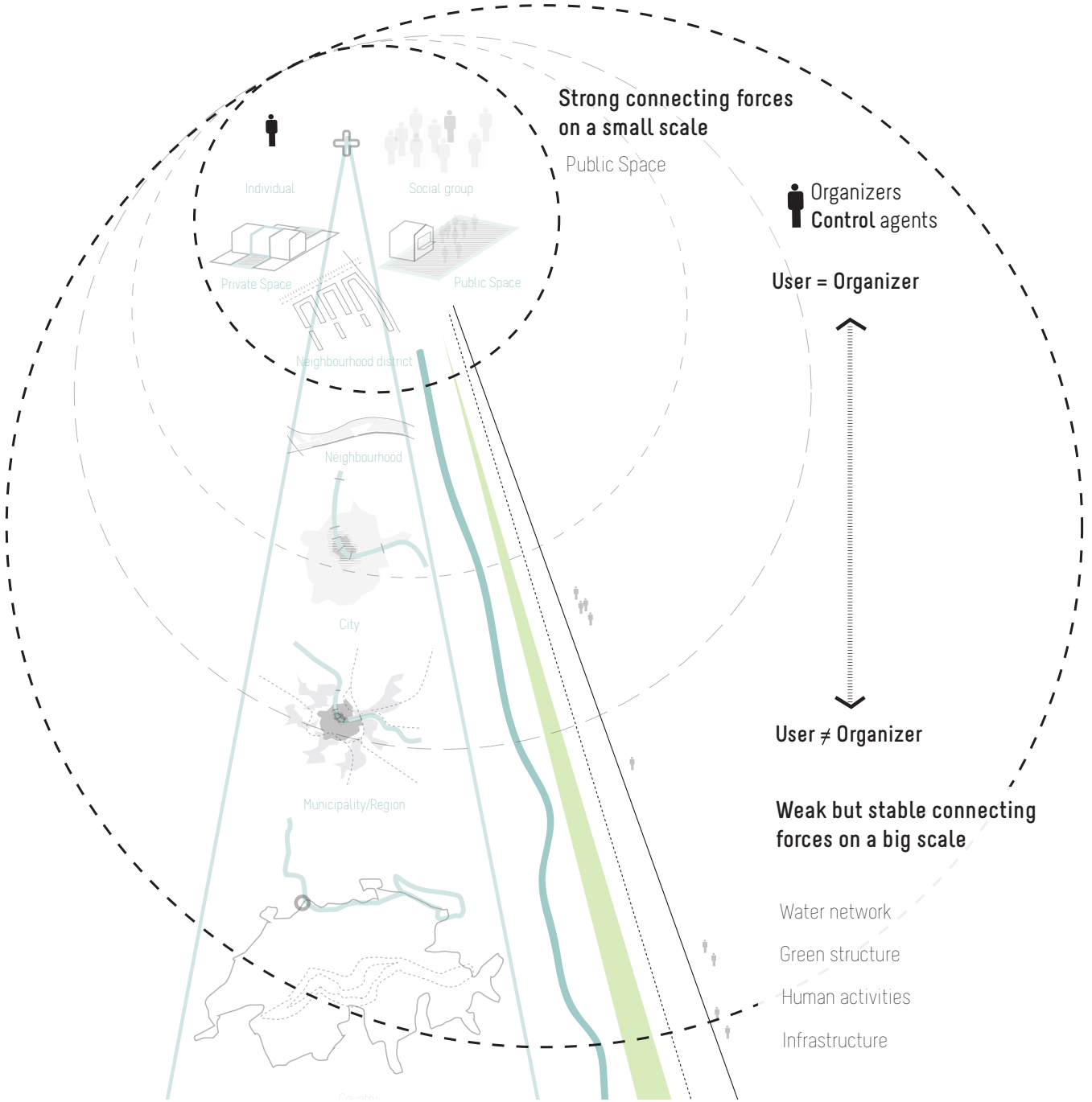


Fig. 23. The conclusions of the literature review on Control & Complexity.

In this way the big scale forces are combined with the small scale and the user's perception.The new method should be suited for the control versus freedom aspect. The goal is to define a balance between bottom-up and top-down and a focus on public space as an attacher between private and public life in the city. On the smaller scale of the project the tabula rasa method of Oosterwold appears un-adapted, in respect to the many existing valuable elements in the area of Hirzbrunnen. The urban regeneration requires interventions on a smaller scale dealing with an existing urban context. This method of urban regeneration can also be relevant for the general use in the practice of urbanism since tabula rasa examples are a rare phenomenon.

2.2 The experience of freedom & control

To relate the theory of complexity and control to the actual design in the design study it is important and valuable to look at the experience of the user of the environment when using an integral design method. The elements, or as named before parts, of an area form a spatial arrangement which can be perceived in different ways. The parts forming an environment make it a place or a space: an enclosed place or a free space. The perception of a space can be free and in an enclosed space more controlled. This part of the literature review addresses the differences in the perception of an environment and its importance to ensure a fitting identity of for the place: the genius loci, in connection with the more functional requirements. The literature review builds the basis for the way in which parts are forming wholes in the design study to form a coherent connection between the city and the local fabric.

Place and Space

Environments can be defined in different kinds of arrangements of physical elements, which form an atmosphere, or an experience of a certain entourage. Tuan (1977) acknowledges two different kinds of environments: Places and Spaces. A place is defined as an enclosed and secure site. Norberg-Schulz (1979) describes place also as a concrete term for environment and a perception of a location. Whereas space is defined by Tuan as freedom of movement and the experience of free choice, the undefined area, a broader understanding of a location. (Fig.24)

The experience of freedom consists of different aspects, which ensure the experience of freedom: the varying degree of extension and enclosure. This differentiation in experience is a goal of design, to make attractive environments. The proximity as an element of recognition is part of the experience of freedom. In enclosed places the elements forming the environment are closely located. In spaces the experience of distance and a larger distance to objects is perceived as freedom. The experience however to be lost is not part of this experience. The horizon will mostly lead as a guiding factor. As stated in the following quotation (Piccinini & De Wit, 2014: 4) the horizon or inverted horizon is ensuring the difference of perception.

'The spatial qualities of the landscape can have multiple expressions, but are in essence determined by the horizon. Central is the inversion of the horizon in the urbanized field, in which the landscape horizon is inverted into an internal horizon or void. The intimacy of a place can be in contrast to the openness of landscape space, but also to the boundlessness of the generic city.'

With this stated, the perception of freedom is most of the times also associated with a negative opposite of control. In the case of the perception of control in a place, the experience does not need to be negative at all. Control can provide a feeling of safety. The perception of control and freedom will differ per person and in this brief exploration of the users experience the focus will be on the common ground and knowledge on the topic of experiencing freedom and control.

The final factor playing in the experience of an environment, as a place is the uncovering of the characteristic of a place, in this case potential meanings present in the given environment are revealed. The place now has a meaning for its user. This does however not mean that spaces do not have a meaning; they have a different function for its user. Spaces where the freedom can be experienced are more for moving through and the places to stay in. So a balanced amount of freedom and control, a designed variety is suitable to fit the users needs. The genius loci of a space can be crystalized and defined and enhanced in a place.

The whole and the sum of the parts

A place is defined as a totality made up of concrete things having material substance, shape, texture and colour. Together these things, or as Thagard and Findlay call it tags, determine an environmental character, the genius loci. As the whole cannot be seen as the sum of the parts (Bohm, 1990), a place is also a qualitative "total" phenomenon, which we cannot reduce to any of its properties, such as spatial relationships, with out losing its concrete nature out of sight (Norberg-Schulz, 1979). Through the interaction of surface relief, vegetation and water charac-

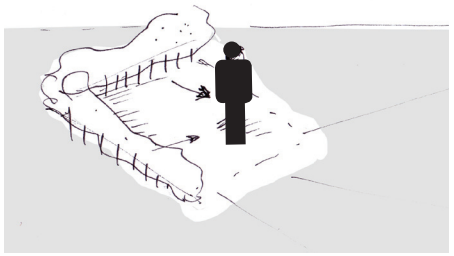
teristics totalities or places are formed which constitute the basic elements of landscapes. This is related to the conclusions formed in the previous part of this chapter about complexity and control. The attachers addressed as the bigger structuring forces, like the water network and green structure crystalized and enhanced and given an identity are forming places.

Recommendations for the integral design method

Connecting to the theory of the control and complexity of the previous part, the experience of the user will play a part in the small scale of the public and private space. When working from the bigger whole towards the small scale, the experience of the user will be playing a part in the final phase of the design, when the bigger attaching structure is ensured. On this smaller scale, scenarios are made with the notions: the experience of freedom and the actual freedom in planning. In this scenario's the variations of the spatial arrangements of the buildings and the arrangement of open and enclosed spaces is tested. When having a variety of scenarios the relation between the parts is taken into account. A balanced choice has to be made to combine the different scenarios into a bigger whole. In this way the design decisions made are taking into account the perception of the final user.

PLACE Security, protected, enclosed

SPACE Open, freedom, horizon



Inbetween PLACE and SPACE

Fig. 24 Degrees in the experience of freedom and examples, based on the literature of Tuan (1977)

2.3 From research to design
The Control Hierarchy method

The aim of this graduation project is to form an integral design method. This method is a tool to design on multiple scales taking into account the different controlling actors. The often-used term scale in urbanism is combined with the aspect of control. The method taking into account the notions Complexity and Control will be called the Control Hierarchy method. From the recommendations of the literature review on Control and Complexity and the literature of the experience of freedom and control a framework for the method is formed as a tool to start the design study of Hirzbrunnen South (Fig.25)

The role of the stable forces in the method

The main recommendation for the design study from the literature review on Control and Complexity is to develop the method with a framework of the infrastructure and the ecology network: the weaker but stable connecting forces. The new method should be suited for the control versus freedom aspect. The goal is to define a balance between bottom-up and top-down and a focus on public space as an attacher between private and public life in the city.

The forces on the smaller scale

On the smaller scale of the project tabula rasa methods, like Oosterwold in Almere, Holland, appear un-adapted, in respect to the many existing valuable elements in the area. The urban regeneration of already build up areas requires interventions on a smaller scale which are dealing with an existing urban context. Developing a method for emergent urbanism on a small scale with more freedom for the private stakeholder and taking into account the genius loci is a part of this tool. Next to the conclusions of the Control and Complexity literature review the theory of Place & Space adds to this method the perception of freedom and control by the users of the public space.

The Control hierarchy method

The method consist of five steps which form a vision for the whole area and for its parts. In the end of the process a zooming out phase is build in to combine the parts to a consistent whole. In the forming of the main concept and the concepts for the parts, the characteristics of the location extracted from the analysis and personal interpretation of the designer make the design concepts adjusted to the specific location. The concepts for the parts are formed by the design of scenarios on the characteristics (tags) and the organizers of the to be designed part (Fig. 25). The experience of freedom is opposed to the actual freedom of planning to form a variety of options for the parts. These scenarios can be made on different scales from the neighbourhood scale to more detailed options for the public and private space (Fig. 26). To make a choice of the combination of the different scenario's of the different parts on different scales the main concept is the leading factor. In this way the design is taking account the control factor and forming an integral whole.

Fig. 25. The framework for the scenario's in the detailed phase of the design study.

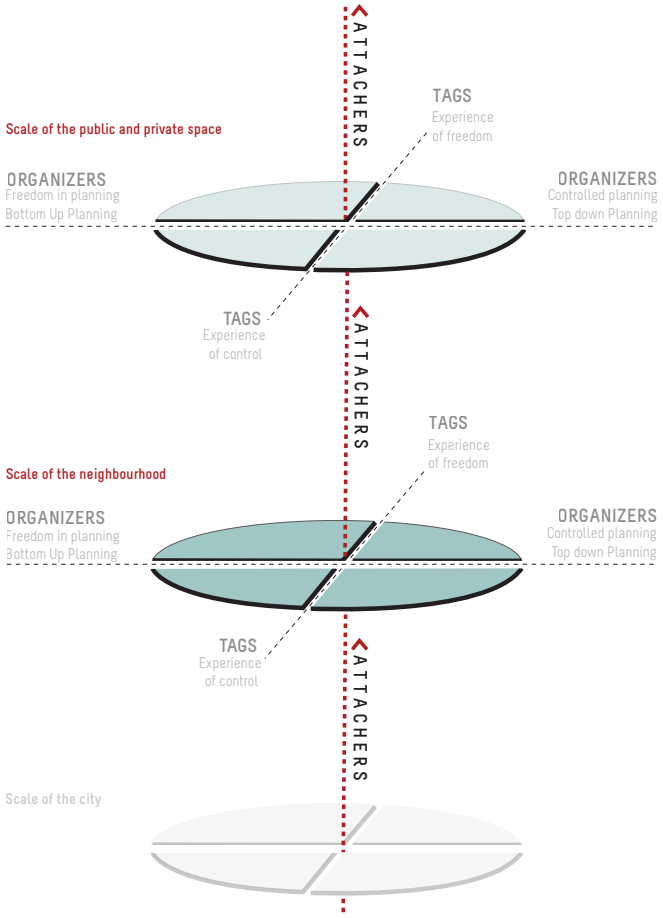


Fig. 26. The coherence between the scenario's on the multiple scales and their relation by the attachters.

The Control Hierarchy method

The integral design method developed works as a design process with reflective moments. The method consists out of five steps. These steps do not form a total linear path but also look back and reflect on earlier steps taken (Fig.27)

1. Preparation phase

The first step is the preparation phase. In this step a spatial analysis is made of the location on the five scales XXL Country, XL Region, L City, M Neighbourhood and S Private/Public spaces. Combined with a consultation of the literature applicable for the topics valuable for that certain location and the personal input of the designer a main concept for the area is made.

2. Main concept

The main concept for the area is forming the basic outline of the bigger scale attachers: the ecology network, the infrastructure and the degree of control in each part of the area.

3. Profound Analysis

The second step of preparation and analysis for the parts of the area after the main concept has as an aim to understand the parts better and form a personal insight for the designer.

4. Concepts of the parts

The concepts formed based on the profound analysis form an outline for the small-scale attachers, the coherence between the private and public space. Scenarios are made on the smaller scales of the neighbourhood and the public/private space with two variables. The actual freedom of planning: the actor in control and the experience of freedom.

5. Integral design

From the scenario's made during conceptualisation of the parts a choice is made for a coherent combination of parts to form the integral design.

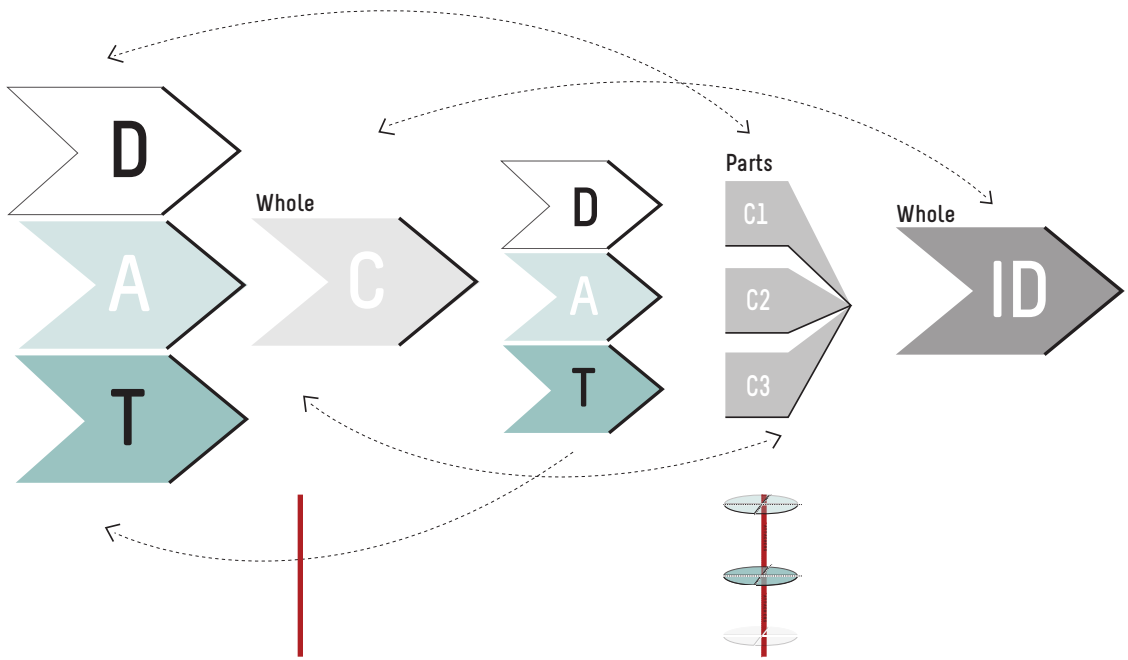
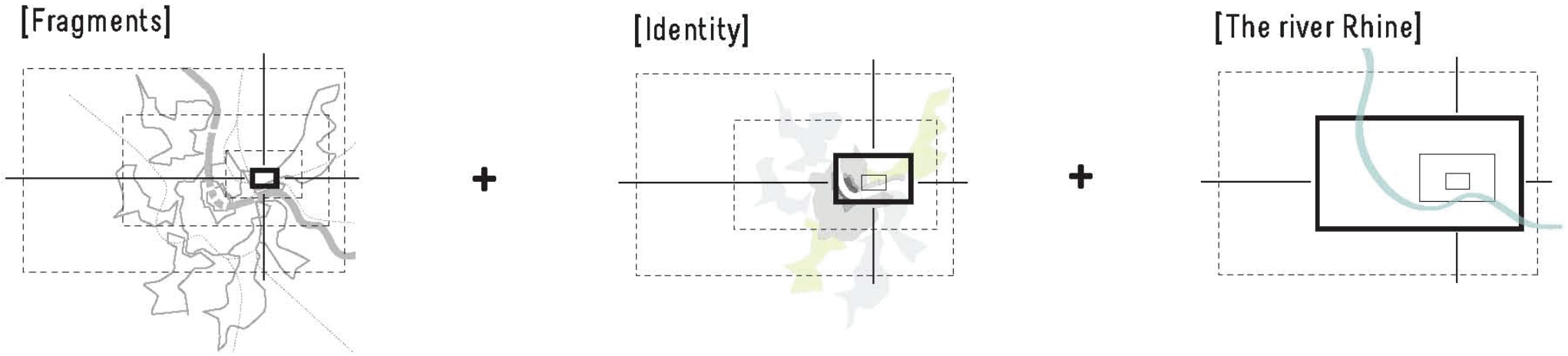


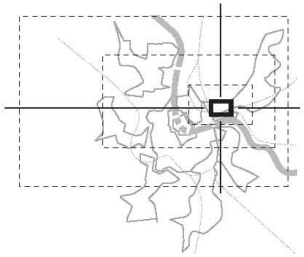
Fig. 27. The design method in steps.

3 CONTEXT Examining the parts



The spatial analysis of the case Hirzbrunnen is build up according to the theory of the literature review: in a hierarchy of urban scales:

XXL Switzerland
XL MetroBasel
L Basel
M Hirzbrunnen South
S Private/Public spaces



3.1 Fragments of the urban fabric

As discussed in the problem framing (p.20), Hirzbrunnen South is a city fragment. It is a fragment in Basel, but also contains smaller fragments on the scale of the neighbourhood. As discussed in chapter 1.1, the fragment originated when the train tracks were built and split the narrow strip along the Rhine of from the city.

Borders

On the scale of the city the area is located on the outskirts of Basel, close to the border with Germany and the Kanton Basel-Landschaft. These borders are one of the elements locking Hirzbrunnen in its fragmented position. The other borders are the river Rhine, the train tracks and the ring road of Basel. Internal borders on a smaller scale are the roads perpendicular on the river Rhine. The original connecting routes towards the water, had to change their appearance when the train tracks were build. To cross the train tracks and to access the neighbourhood around the Clara Hospital, the roads had to be dug in as small tunnels. The height difference to overtake caused sloping roads towards the tunnels in the area of Hirzbrunnen. Therefore internal islands emerged by the change of these roads. These height differences were one of the main assets to change the area in to small fragments.

Actors & Accessibility

Another factor was the occupation of the areas by different institutions. The sports fields of Novartis, Rheinacker, Landauer and Hornli and the allotment associations own several islands in the area. As well the residential areas of Rankhof and Landauer form residential enclaves within this fragment. Other then the residential area's the sports fields association and the allotment associations fence their properties with hedges and fences. This results in a very fragment image of the space. It also limits the amount of public accessible space in the area. Only the Grenzacherpromenade along the Grenzacherstrasse form a public accessible space. Nevertheless, the area is very good connected to the public transportation network of Basel.

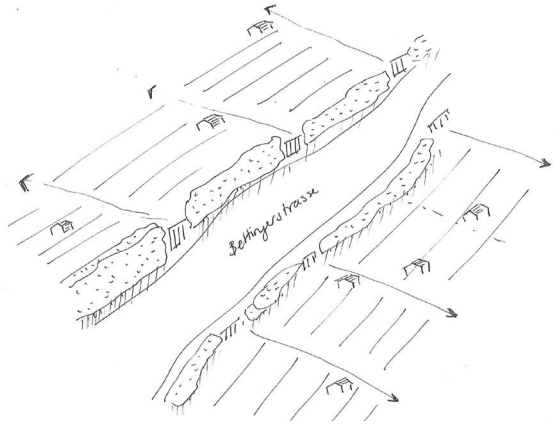


Fig. 28. The borders along the Bettingerstrasse.

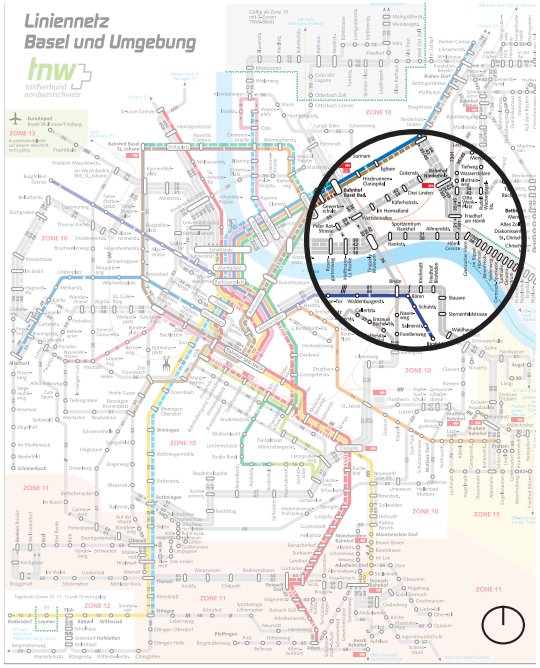


Fig. 29.. Positioning Hirzbrunnen South in the public transportation network in Basel.

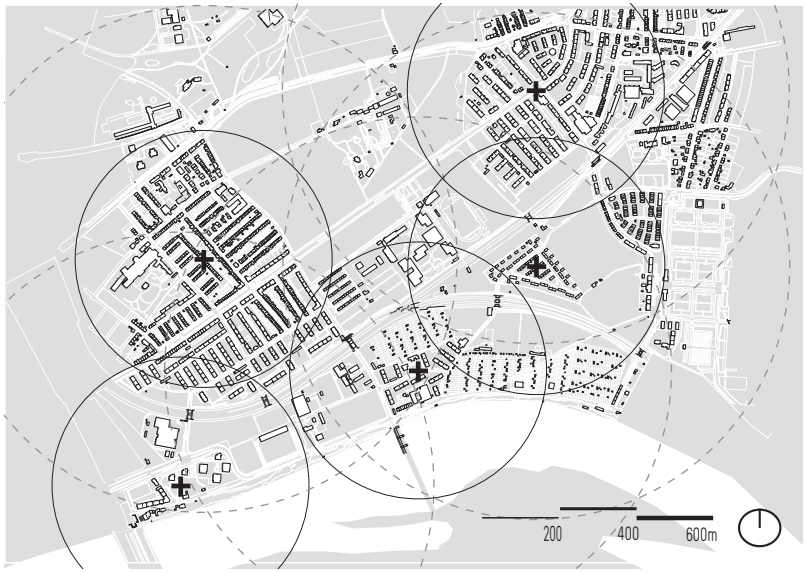


Fig. 30. Circkels representing the five minute walking radius from the core of the housing areas.

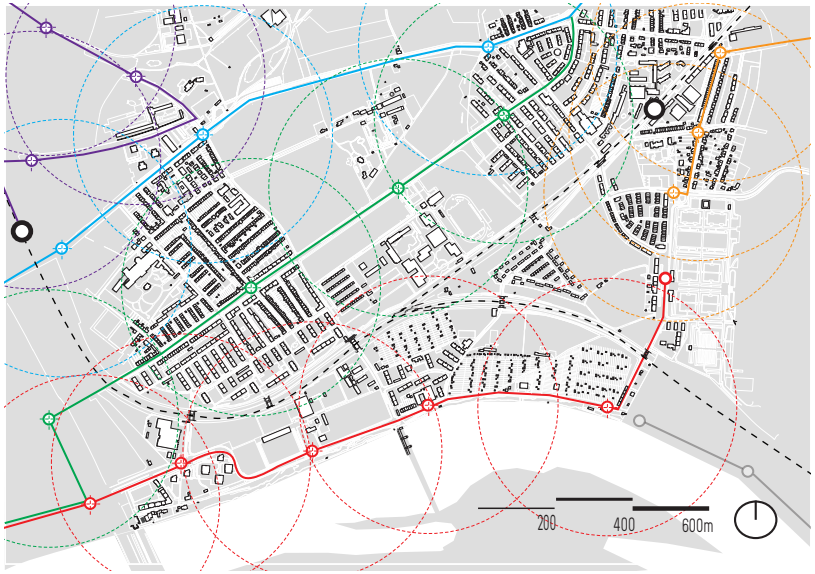


Fig. 31. Circkels representing the five minute walking radius from the bus and tram stops.

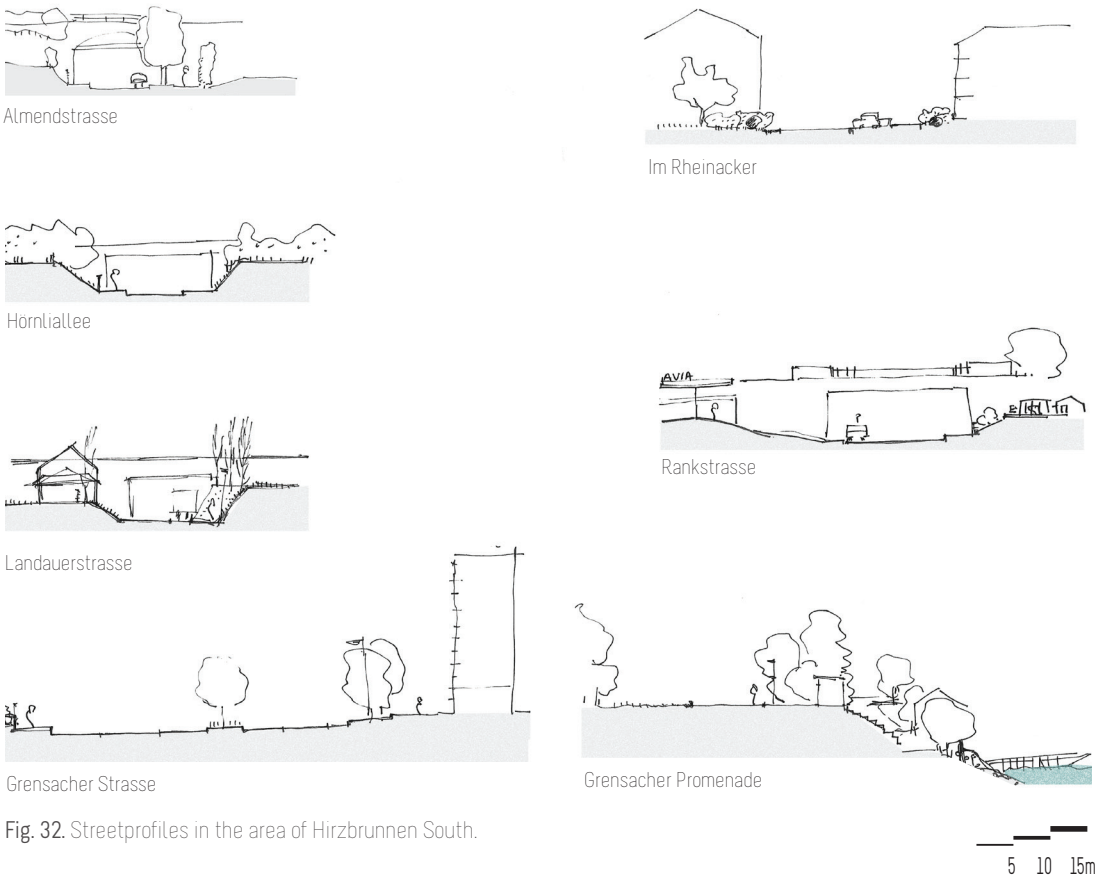
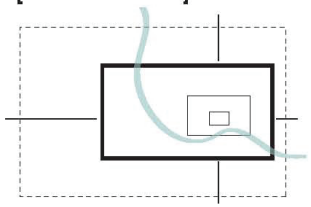


Fig. 32. Streetprofiles in the area of Hirzbrunnen South.

[The river Rhine]



3.2 The river Rhine

Switzerland and the Rhine

The Rhine is a connecting factor for Switzerland; trade, leisure and living are attached to this river. The Rhine originated in the Alps at lai da thuma and flows to the Netherlands changing its character. In Switzerland the upstream river is still powerful and the current is strong. To use the force of the water, the Swiss government decided to build dams on strategic spots in the river to generate electricity. One of these dams is the power plant Birsfelden located at the project location in Hirzbrunnen South in Basel.

Metrobasel and the Rhine

The Rhine plays a considerable threat down stream, for instance in the Netherlands and Germany. The climate change and the increase of heavy rainfall make a flood more likely to happen. To reduce the problems caused downstream, concepts are formed to retain the water upstream, close to its origin (Studio Basel, 2007). Meadows and rural area's with less housing are the target areas for such retention programs. Studio Basel (2007) made a conceptual design for the transformation of the rural area in the region metrobasel north of the city Basel. Water retention on a smaller scale can take place within the borders of the city. That the unpaved and less occupied riverbanks in Basel are the ones north from the industrial Novartis Campus, the park in Birsfelden and the area of Hirzbrunnen, and they form potential retention places. Small scale retention area's can be combined with recreation, sports and nature reserves.

Basel and the Rhine

'Basel would not be Basel without the Rhine .' (Holzer, 2010)

Identity

For the city Basel, the Rhine is a backbone, an essential element of the city. The first settlements located along the Rhine profited already from the good water connection for trading. The origin of Basel lies in the Rhine and the activities along the river still reflect the identity and history of this city. The pharmaceutical industry however blocks the riverbanks but in the inner city boulevards and promenades give access to the river and give the opportunity to watch the river from an elevated position. In the summer recreating residents occupy the stepped banks the whole day and evening. Swimming, also one of the attracting activities in the Rhine is very famous. Because of the strong currant of the Rhine, since it is still close to its source in the mountains, you are able to step in the river outside the city (southern) and let yourself float into the city center and go on land at the stepped banks.

Use

In the 19th century the role of the river as a place for recreation and leisure flourished, bathing houses were build as a transitions between the water and the land. During the industrialization in the 19th century the water became polluted by the

Fig.33. The river Rhine connecting Switzerland with the North Sea.

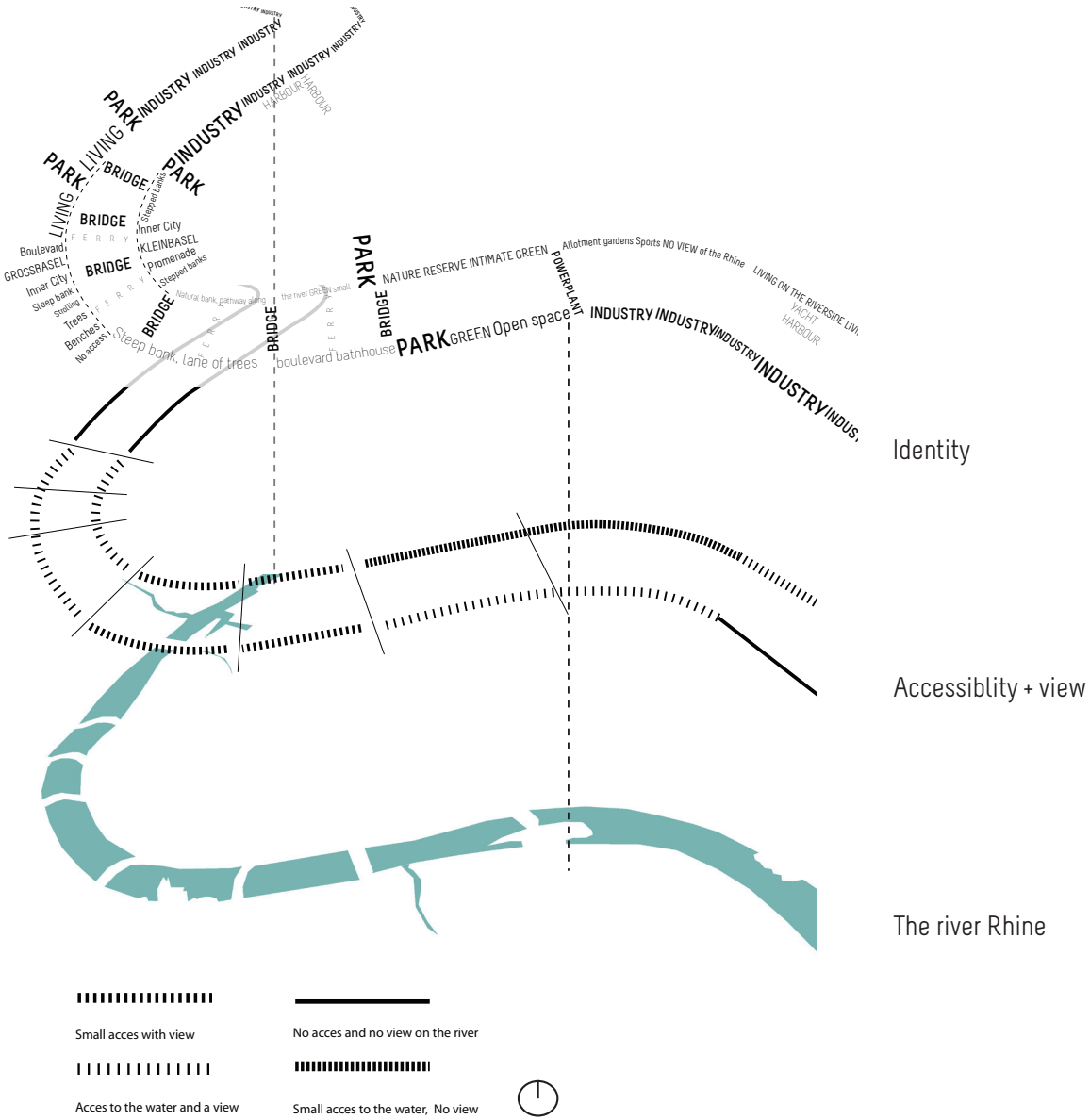


Fig.34. The identity of the riverbanks in the city of Basel

emissions of the factories along the water. When swimming became more popular in the 70's again, the bathhouses were renovated and the closed off industry-sites along the water were transformed into public parks; Solitude park, the Novartis campus, St. Johan and the Dreirosen bridgehead.

The density in the city grew and became compact, longing for a space for escaping the crowed city, the river became popular as a recreational space. Over the recent years infrastructure projects and industrial transformation resulted in open spaces alongside the Rhine. The higher placed cathedral, the Munster, became an obstacle for development of infrastructure along the river, which is the case now in most cities grown around a river. The city of Basel developed a ring road and the identity of the city was saved. However the Identity of the Rhine banks could be more consistent also outside of the city.

New opportunities on a city scale

Figure 36 and 37 show the different identities along the river Rhine in Basel. The difference between the medieval inner city and the outskirts are still visible in the occupying functions. The industry parts of the city, so close related to the center, are nowadays more in favor to be accessible to the public and to be transformed into a park. The riverbanks vary in the degree of access to the water and view on the water. Still parts of the riverbanks in the inner city are not developed to bring out the best of their qualities. A good example is the river bank of the Rhine in the area of Hirzbrunnen South.

Hirzbrunnen South and the Rhine

The area Hirzbrunnen South is shaped by the Rhine. The river is one of its bordering structures, and it currently also acts like that. The Rhine is not visible from the area itself caused by the densely grown nature reserve at the riverbank. The beautiful lush Grenzacherpromenade is however not designed with attention to the river. Benches are placed in the direction of the promenade itself and only at some spots you can have a glimpse of the blinking water (Fig. 35). The Grenzacherpromenade however has some side-paths sloping down towards the water, where little fishermen's houses are located. At the edge of the area near the Tinguely Museum the riverbanks are occupied by housing, the only spot in the area. The power plant Birsfelden is forming a connection between the areas of Hirzbrunnen South and Birsfelden and forms the welcome route across the water with a open view. The Grenzacherstrasse, the main road crossing the area, however does not give a glimpse of the water.

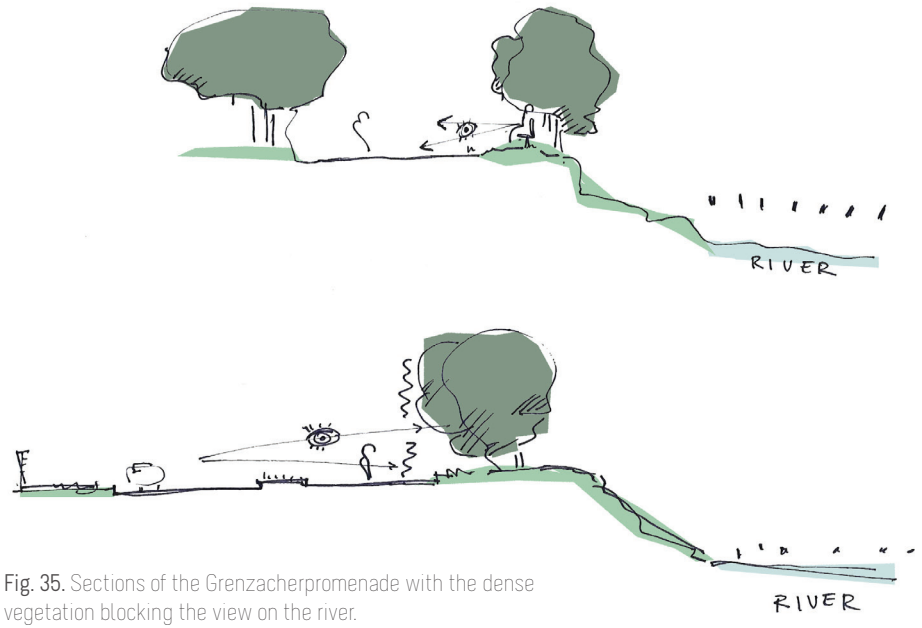


Fig. 35. Sections of the Grenzacherpromenade with the dense vegetation blocking the view on the river.

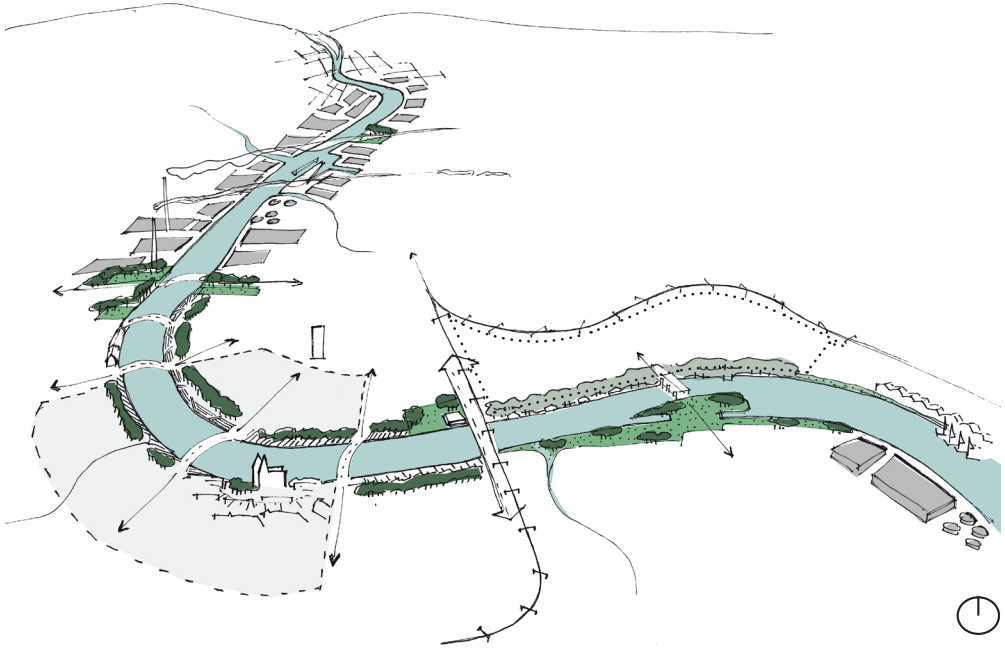


Fig. 36. The accesiblity and typlogy of the riverbanks in the city of Basel

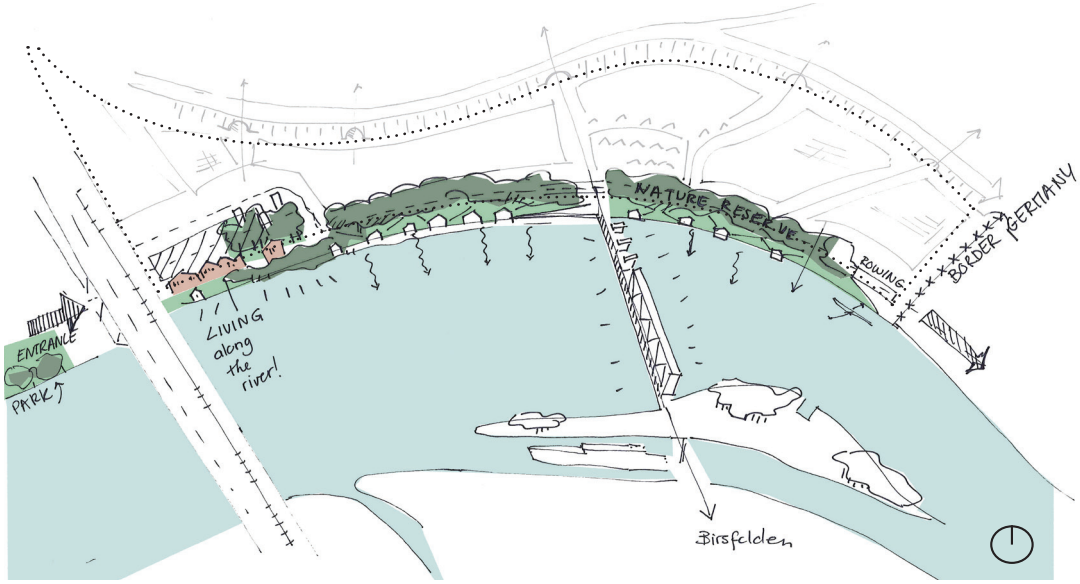


Fig. 37. The identity of the riverbanks in the neighbourhood of Hirzbrunnen South.

Landscape characteristics

Basel is situated in a valley between two clusters of hills: the Jura in the South and the Schwarzwald in the North. The course of the Rhine, influenced by these close hills, changed its direction in an angle ninety degrees. The riverbanks of the Rhine vary in vegetation from open meadows with wetlands to overgrown quays. The area of Hirzbrunnen South is part of the green belt in between Basel Stadt and Riehen, a smaller uphill village. The green belt is part of a North-South oriented green structure crossing the River Rhine. The Northern part of this area is formed by Lange Erlen, a forest along a branch of the Rhine up North. The forest changes into a wetland area with higher artificial mounds, where the estate of Baumlihof is located. The main roads crossing this grassland are also artificially raised. The artificial heights of the clusters of the estate, school and small neighbourhood in this area emphasize the island effect of these clusters.

More South, towards the Rhine, the landscape changes towards a dense grown riverbank. The island of the locks in the river as part of the power plant Birsfelden is playing a role in the green structure as a green patch and a connector of the ecological structure. The river banks on the Southern side of the river have a total different atmosphere than the nature reserve in Hirzbrunnen. The quay is lower at that side and functioning as a public park with a open green field of grass (Fig. 41). The green structure continues as a wide green strip through Birsfelden and connects to the Birsfelden forest.

The height differences in the area are caused by the position of the area at the foot of the hills near Riehen. The eastern part of the area is therefore already slightly sloping up towards the foot of the hill along the river.

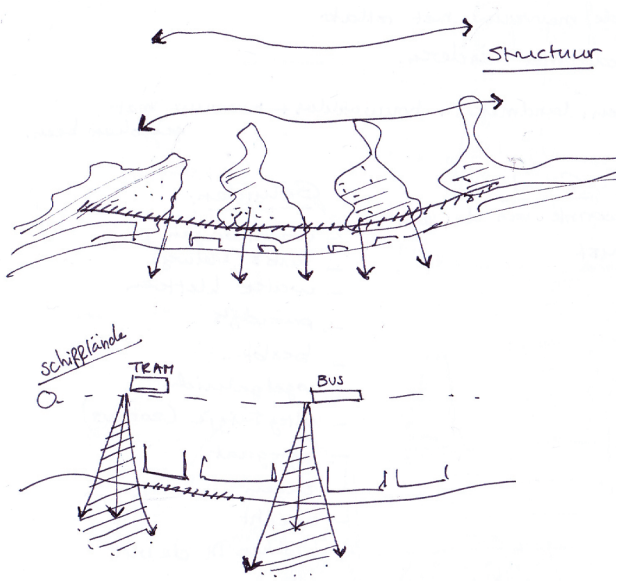


Fig. 38. The buidling structure along the Rhine as an inspiration for the design study.

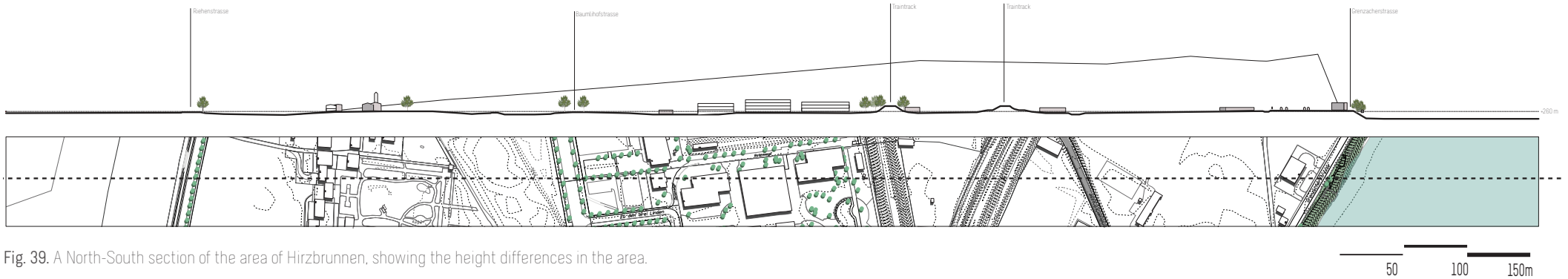


Fig. 39. A North-South section of the area of Hirzbrunnen, showing the height differences in the area.

Fig. 40. The height differences in the area.

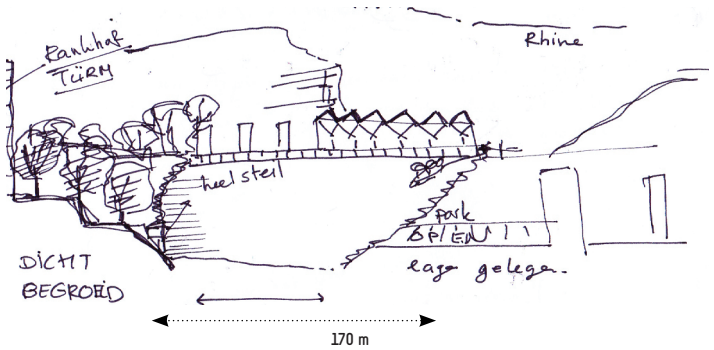


Fig. 41. The differences between the river bank of Hirzbrunnen and Birsfelden.

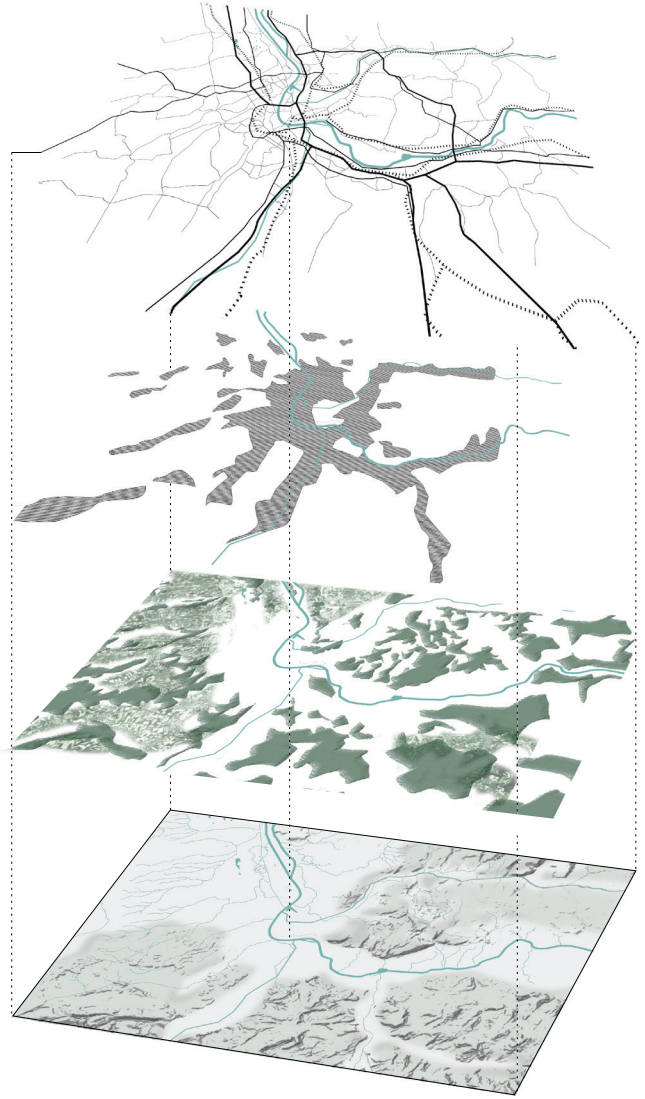
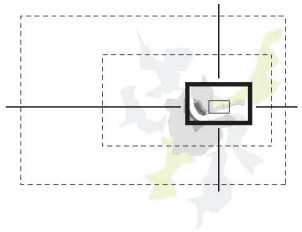


Fig. 42. The landscape layers of Basel



3.3 The identity of Hirzbrunnen

The identity of the fragment Hirzbrunnen South is part of the suburban neighbourhoods on the city edge of Basel. The rural character of the green area in between the city of Basel Stadt and Riehen provides the area with an atmosphere with attention for nature and free space. The developments of the area of Hirzbrunnen took place around the beginning of last century and formed a neighbourhood on the city edge centred by the Klara Hospital. The bordering train tracks prevented the area of Hirzbrunnen South to be part of this development. In this area the recreational functions, which take up a lot of space, were located such as the sports fields and the allotment gardens. The current tendency however is that the functions in the area are not used as much as they were during their first placement in the area.

Before and during the Second World War the gardens in the Hirzbrunnen area were used for the production of food, which was the incentive to locate the gardens. When the agricultural function was no longer needed during the 50's to the 70's the gardens served as an extension to the house, since the lack of outside space in the inner city of Basel. The agglomeration of Basel has been growing still since that day and the population sprawled on to the Kanton Basel Landschaft because of the lower taxes and the less dense build living environments. Because of this sprawl and the change of lifestyle of people nowadays, the time investment for maintenance of the gardens takes lots of time, the gardens are losing popularity. The atmosphere of the allotment gardens with their anonymous character are focused on private space and do not fit in the current needs for recreation. The integration of the allotment gardens with housing can be an option to reduce travel time and improve the use of the gardens.

Fig. 43. The identity of Hirzbrunnen, in the past, nowadays and a vision for the future. Estates during the middle ages turned into allotment gardens and sports fields for leisure. The new vision for Hirzbrunnen: living on the green city edge of Basel.

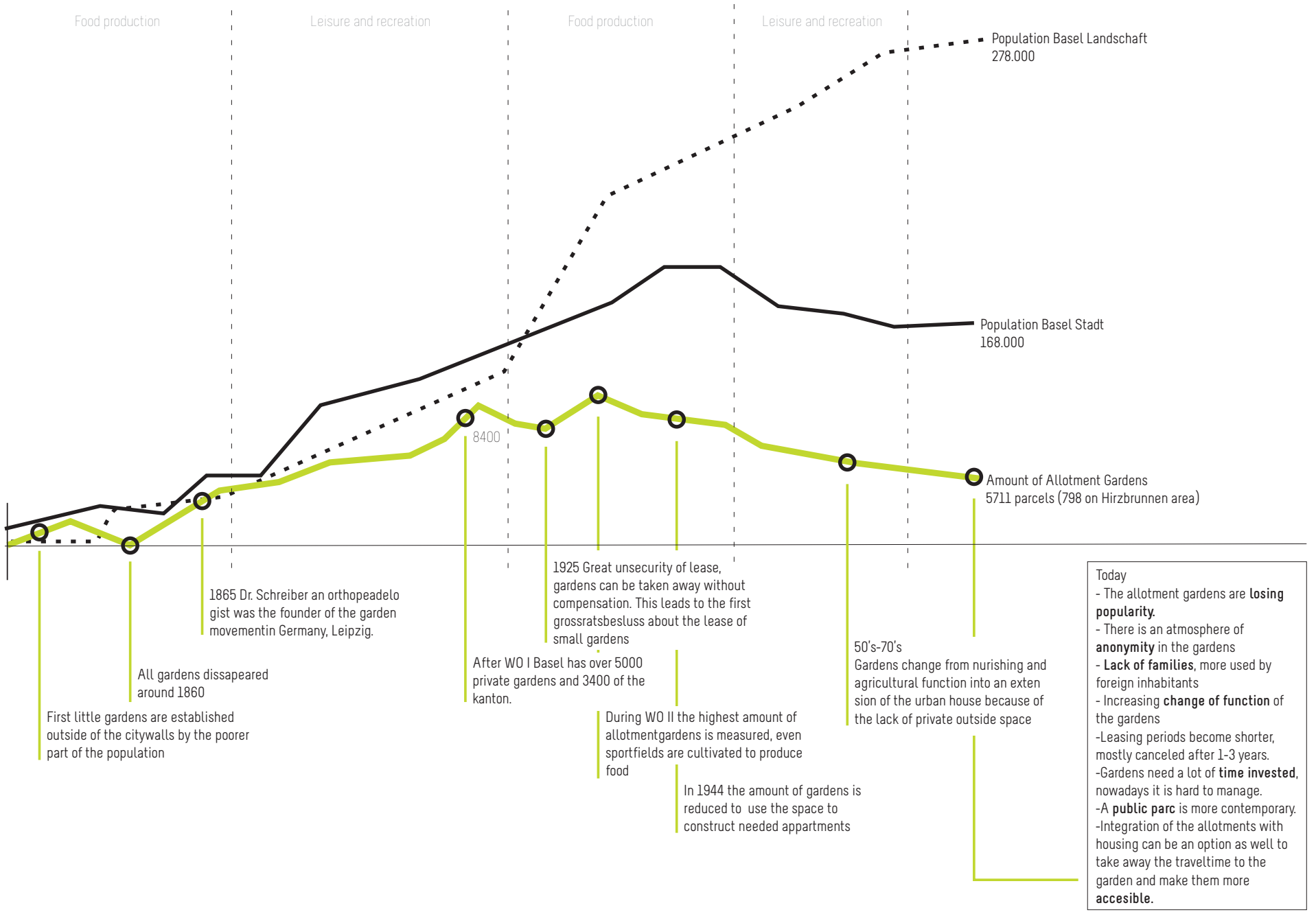


Fig. 44. The development of the allotmentgardens in Basel.

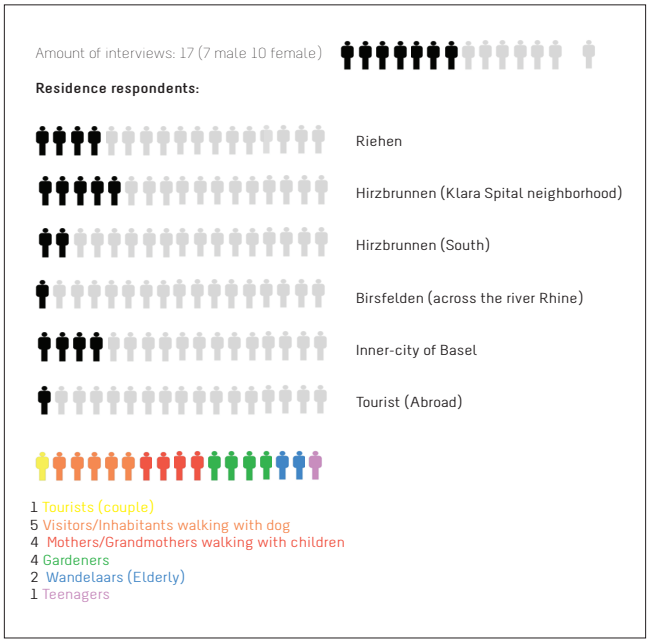
Interviews in the area of Hirzbrunnen with inhabitants and visitors

With the aim to understand the area of Hirzbrunnen South and its surroundings better from a bottom up perspective I spoke to inhabitants and visitors of the area. By means of a questionnaire (Appendix I) I asked people about their place of residence, their favorite and their least favorite place in the area. The questions were a starting point for a more detailed conversation about the area. In the following overview the conclusions are summarized.

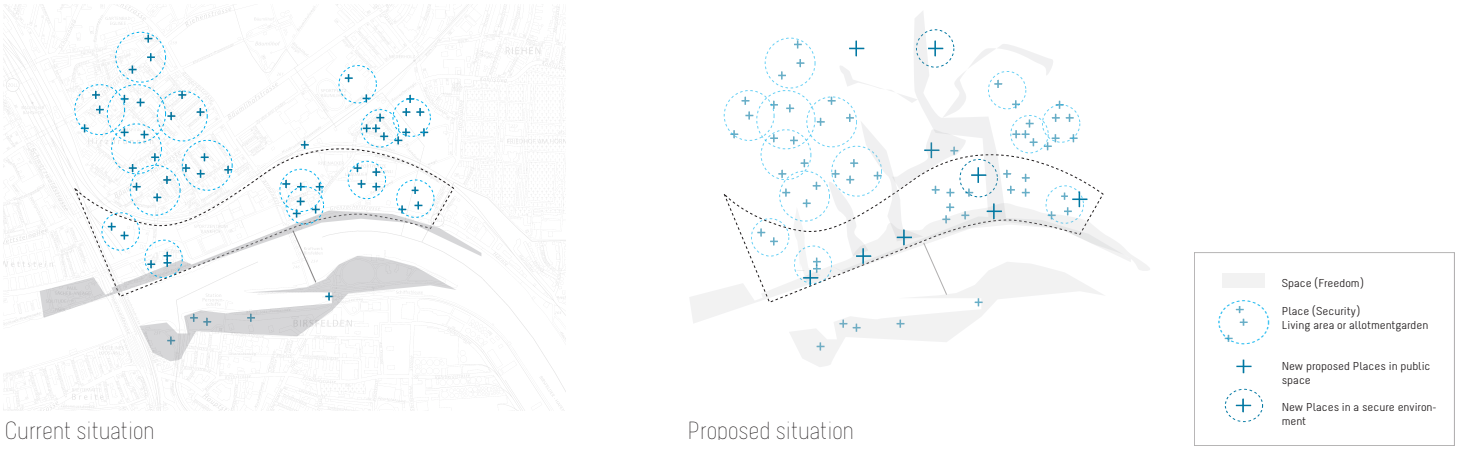
Qualities of the area:
- The pedestrian path with separated cyclepath along the traintracks along the school area is adressed as a safe space for walking with kids and playing.
- For the teenagers this area is also very attractive for hanging around because of the abbandoned traintracks over there. They use the space also for making graffiti paintings.
- Elderly use the Baumlihof area to walk and walk along the Almendstrasse to the grensacherstrasse to play cards in a clubhouse along the sportsfields.
- The route over the Birsfelden Powerplant is used as a part of a circular route around the Rhine.

Disatvantages:
- Busy and dangerous roads for the childeren are the Baumlihofstrasse and the Riehenstrasse.
- Elderly tend to not like the Grenzacherstrasse because of the noise and families tend to avoid the area as well because it is dangerous for the children to be so close to the traffic.
- The Riehenstrasse is very dangerous because of the position of the tram, there is no protection between the tram and the other traffic, two serious accidents happened from which one was deadly.

General comments:
- A lot of eldery live in the area and use the public space.
- It was very difficult to persuade people to tell about their less favorite characters and spaces in the area of Hirzbrunnen.
- Overall people were not very interested in talking about the area.
- Very neutral reactions.
- Good characteristics in the area could almost never be specified to one spot, more general a bigger area is named.



SPACE & PLACE



Current situation

Proposed situation

Fig. 45. The current situation of the places and spaces in Hirzbrunnen and the vision for new proposed places and spaces.

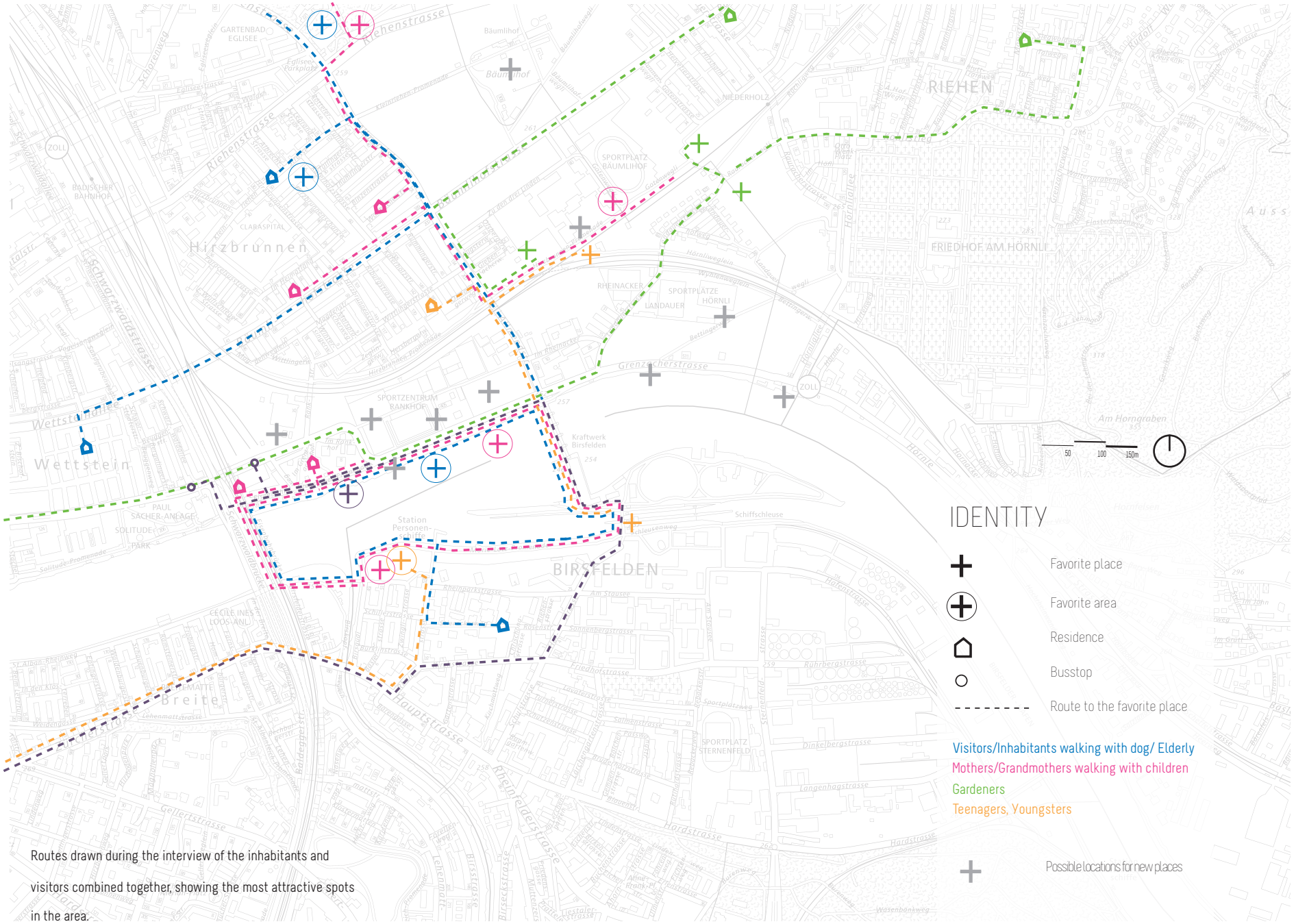


Fig. 46. The outcome of the interviews with the inhabitants and visitors of Hirzbrunnen and its surroundings.

3.4 Conclusions

An overview of the conclusions derived fromt the analysis of Hirzbrunnen South.

River Rhine

The river plays an important role on the scale of the city and the neighbourhood. The quality of the river should be more enhanced. The identity of the area as a rural place can be enforced with small interventions. The connection to the river should be made more explicit. This does not mean that the riverbanks of the Rhine in Hirzbrunnen should be turned into a wide boulevard, but it should fit to the local atmosphere and the landscape of the place. The Grenzacherstrasse along the Rhine isolating the nature reserve should be considered to change to allow the place to be more quiet and wild. Because of this busy road further inland connections to the river are blocked.

Fragment

Even though its good accessibility by public transport the fragment of Hirzbrunnen does not function well as a part of the city. The fragments on a small scale cause island with different functions, which are not accessible by the public. To improve the urban fabric of this area the borders and the internal structure of the islands have to be changed. The change of the Grenzacherstrasse as mentioned in the paragraph before is providing opportunities to allow changes in the borders of the islands, having as an aim that the urban fabric will have softer borders and a better transition between public and private space is made possible.

Identity

The identity of the fragment Hirzbrunnen South is part of the suburban neighbourhoods on the city edge of Basel. The rural character of the green area in between the city of Basel Stadt and Riehen provides the area with an atmosphere with attention for nature and free space. The developments of the area of Hirzbrunnen took place around the beginning of last century and formed a neighbourhood on the city edge centred by the Klara Hospital. The bordering train tracks prevented the area of Hirzbrunnen South to be part of this development. In this area however the recreational functions, which take up a lot of space, were located such as the sports fields and the allotment gardens. The current tendency however is that the area is not uses as much as they were during their first placement in the area. A new vision for Hirzbrunnen South is needed to revitalize its meaning for Basel.

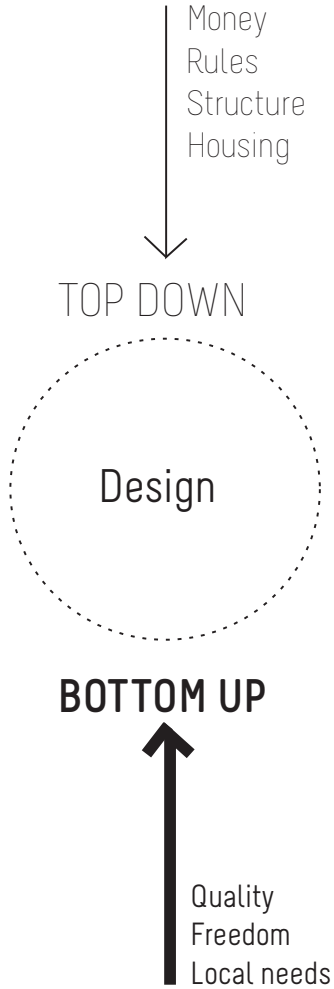


Fig. 47. The positioning of the Bottom Up and Top Down factors for this project

Fig. 48. The current and proposed program for the area of Hirzbrunnen South.

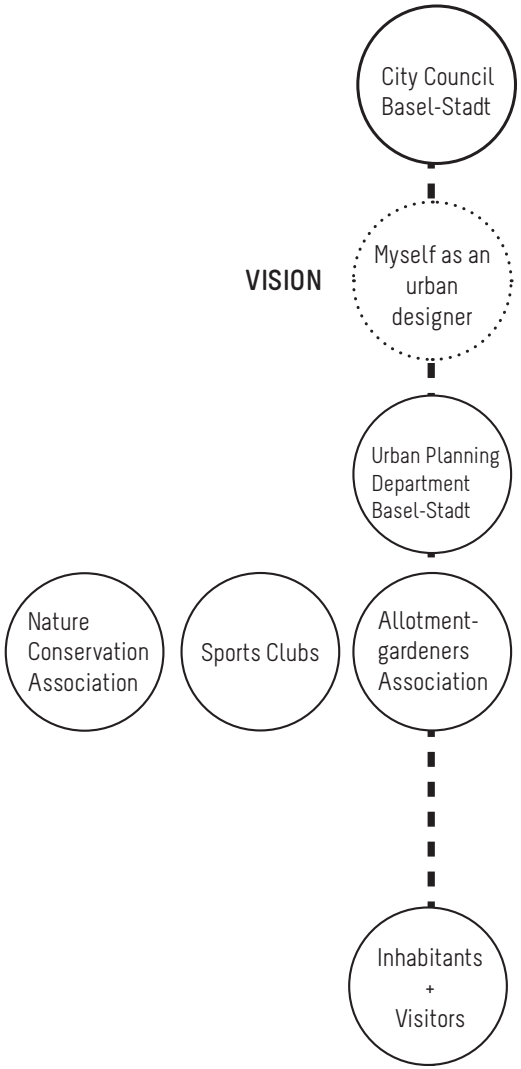
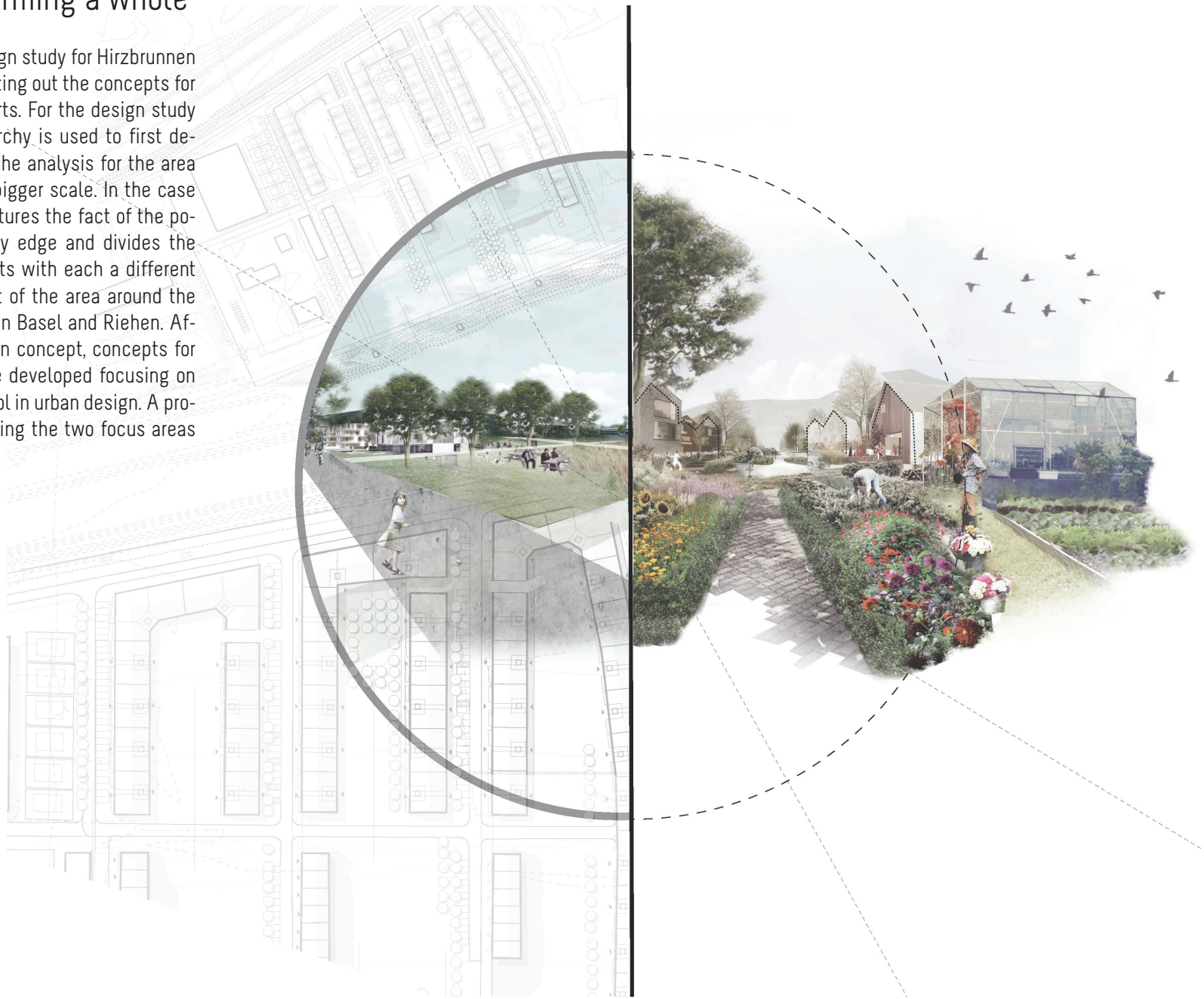


Fig. 49. The personal position amongs the actors.

4 DESIGN STUDY Forming a whole

In this part of the thesis, the design study for Hirzbrunnen South in Basel is addressed, pointing out the concepts for the whole of the area and its parts. For the design study the method of the Control Hierarchy is used to first develop a main concept based on the analysis for the area including its surroundings on a bigger scale. In the case of Hirzbrunnen, this concept captures the fact of the position of Hirzbrunnen on the city edge and divides the area of Hirzbrunnen into two parts with each a different atmosphere. These parts consist of the area around the city edge and the land in between Basel and Riehen. After the establishment of the main concept, concepts for the smaller parts of the area are developed focusing on the notions complexity and control in urban design. A proposed greenstructure is connecting the two focus areas to form a whole.



The design study for Hirzbrunnen South, Basel

4.1 The main concept: the land in between

With the landscape characteristics and the identity of the area in mind, the main concept for the area of Hirzbrunnen in a bigger context than the original focus of the project area is formed. The ecological green structure separating the cities of Basel and Riehen will now be defined and will be enforcing the city edge of Basel in Hirzbrunnen South. In this way a land in between is formed with the clusters of residence, a school and the estate of Hirzbrunnen as islands in the green open space. The projectarea of Hirzbrunnen is in this way defined into the two atmospheres: the city and the landscape in between the cities. The difference in grain size of the functions in the different parts has been an incentive to define these different atmospheres. The western part, now mainly occupied by the sports fields of Rankhof with a big plot size, will be forming a completion of the city of Basel. This part of Hirzbrunnen South is proposed to have a regulated structure, with less control of the space by the inhabitants. The eastern part of the project area is proposed to belong to the land in between, currently occupied by the allotment gardens; it consists of a structure of a smaller grain size, based on the size of the allotment plots. The freedom of planning is in this part for the users of the space: the future inhabitants.

4.2 Control vs. freedom: the two focus areas

The assignment for this design study is mainly based on the current project of the Kanton Basel Stadt which is aiming for new housing in the area of Hirzbrunnen South. In this design study this facts are forming the starting point for the developments including the notions of control and complexity for which the integral design method of the Control Hierarchy is used. Looking at the different atmospheres in the area , a framed space and a free space are formed.

The Free space: The allotment clusters

The Free space is a development of new housing with a rural character in a bottom up structure, changing the current isolated allotment area into an area mixed with housing. The allotment area, losing its popularity is one of the incentives to change the mono-function to a mixed function. The current structure of the land in between is a green space with clusters of buildings with different functions. The concept for the re-design of the allotment gardens is also based on this existing structure, planning new housing clusters in the allotment gardens. This has the aim to open up the bordered island of the gardens and make them more accessible for the public and boost the use of the existing gardens surrounding the clusters. In the developments of these clusters the size of the allotment plots, as a basic measurement are used to plan with. The atmosphere of the land in between is more experimental than the city edge and leaves freedom for the future inhabitants to plan the location and appearance of their private space. The basic rules and possibilities for these clusters are developed in this design study.

The Framed space: The city edge

The city edge is as an almost opposite of the free space a more planned area. The typology of the housing is a mix between apartment buildings and row houses. The structure of the Klara Hospital neighbourhood south of the train tracks is connected to the new housing by opening up the abandoned viaduct behind the Rankhof Stadium. The size of the current functions of the sports fields and the building blocks in the Hirzbrunnen neighbourhood is an inspiration for these developments.

Connecting lines

Currently, the Grenzacherstrasse is blocking the access to the river Rhine. The location of this busy road does give opportunities to enhance the qualities of the river and enlarge the area for public use and slow traffic. With the design step to cluster the main infrastructural route with the train tracks the area is opened up for developments on the water edge. With the perpendicular connecting routes to the river, the attention towards the water is re-established and enforced by the vegetation structure. The wild nature reserve is slowly getting more cultivated towards the inland in the public park along the Rhine. In the main concept a route connecting the build clusters in the land in between is also improving the connectivity and access to that area. In this way not only the movement along the River is enforced but also the relation with the inland.

Fig 50. Concepts

1. The main concept: The land in between including build up enclaves.
2. The current situation
3. Combining the train tracks and the main road
4. The infrastructure as a backbone for the housing developments
5. The green fingers, connecting the river with the inland neighborhoods and the urban fabric.
6. The green fingers and the new housing interlaced
7. New places are introduced to let the area have a meaning for hte inhabitants and visitors.
8. The final proposed result: The added clusters and the route through the land in between.

4.3 Framed space vs. Free space

Coherent with the main concept, the two areas with a different atmosphere and degree of freedom of planning are defined for this design study. The two areas consist of the framed space: the city edge on the western part of the project area and the free space: the allotment enclaves at the eastern part of the project area. In this chapter the different principles of planning are positioned and further studied in a design according to these principles. Both areas are described with reference to the topics of control and the elements playing a part in the design, the tags. Besides the attachers in the design, the infrastructure and the ecology network as a stable forces to connect the parts are described. A phased plan is developed for each area to show its flexibility for the future. Finally, the design of the green structure on a bigger scale along the Rhine and its green fingers connecting the different parts of the area are explained.

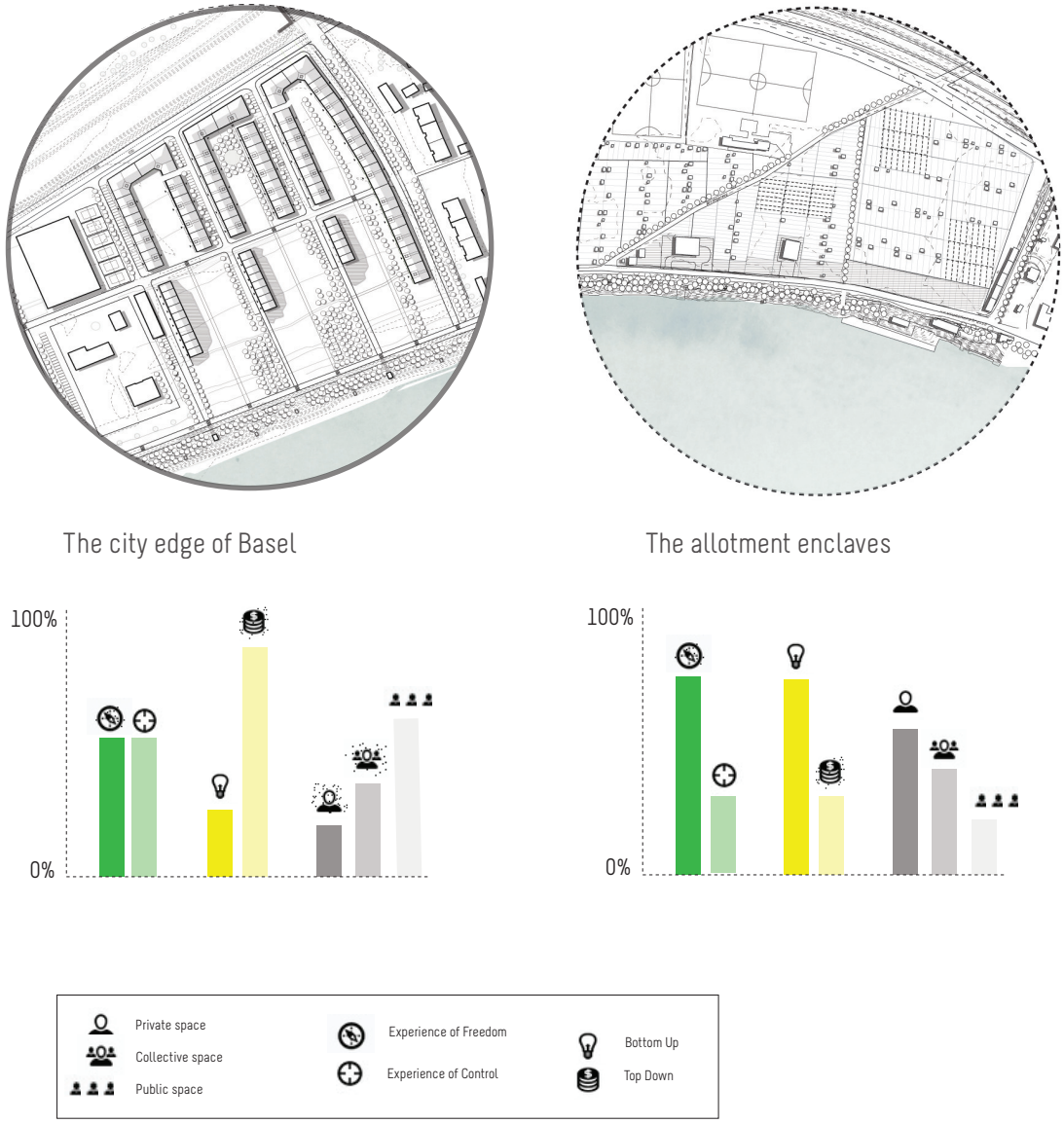


Fig. 51. The variables between the two focus areas.

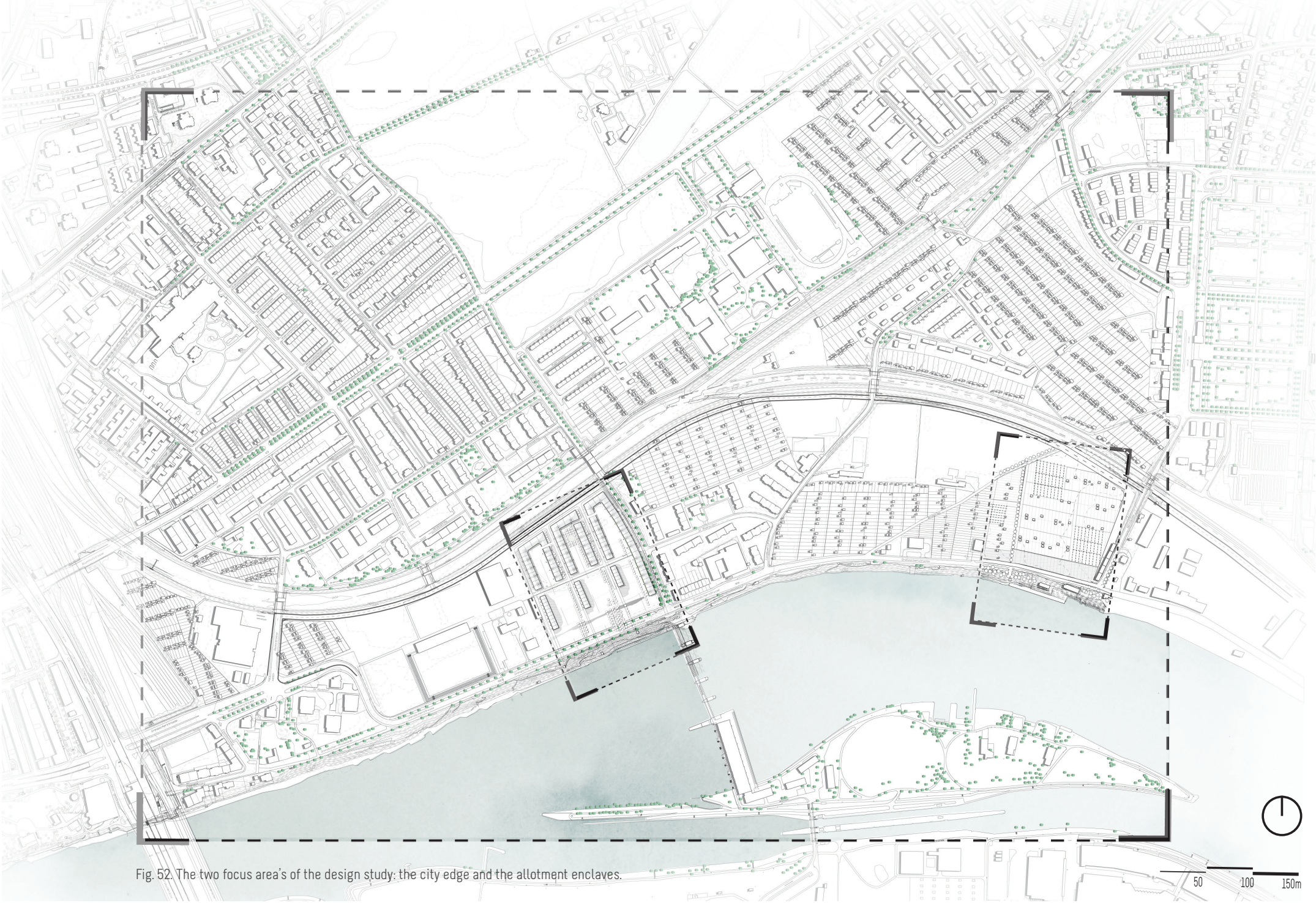
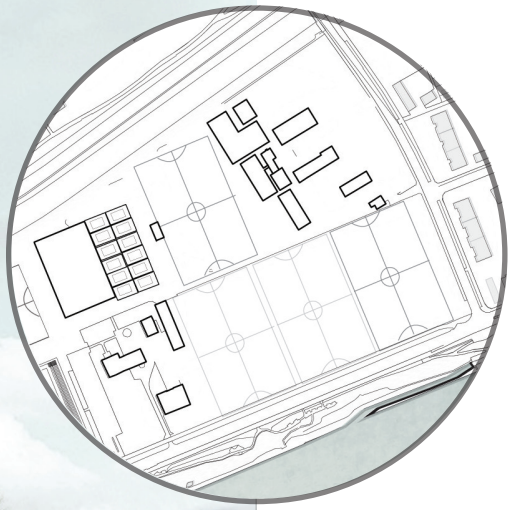
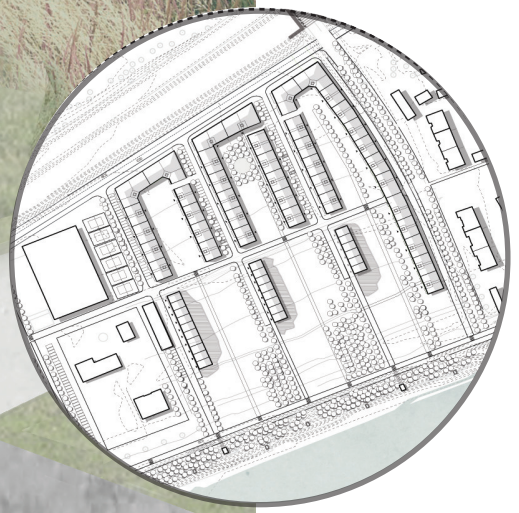


Fig. 52. The two focus area's of the design study: the city edge and the allotment enclaves.



The current situation of the city edge of Basel



The proposed situation of the city edge of Basel

4.4 Framed space

The city edge of Basel

The city edge of Basel is defined as a framed space. The building blocks for this area are designed to fit the surrounding city-structure and to form the edge of Basel. The freedom of planning will be limited to the infill of the courtyards of the building blocks and the detailed infill of the open space in the public park along the Rhine. In the following text the main design principles and the possible phasing for this top down planned area will be addressed.

Framed space
The city edge

The degree of freedom

The concept for the area coherent with the main concept of the land in between is to complete the structure of the city in this part of Hirzbrunnen South. The freedom for own interventions is small; it is limited to the backyards and the balconies of the housing in the area and the collective courtyards. The current function of the area is characterized by the open space of the sports fields. The experience of this open space with the ability to see the city from a distance fits the identity of the area of escaping the city into nature. This experience of freedom is enhanced by the proposed open block structure of the design study for this part. As expressed in the diagram below (fig.53), the area is planned with a top-down wish in mind of the housing demand and the desire to densify the area with this function. A top-down structure is designed with a focus on public and collective space.

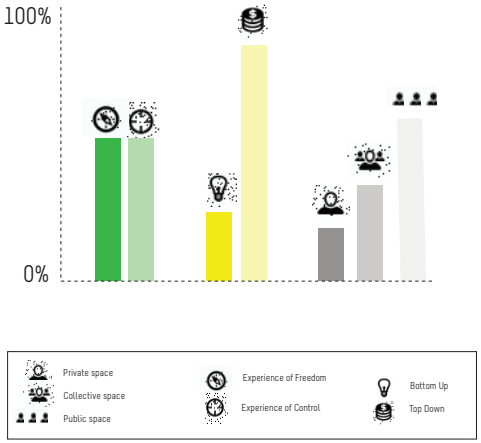
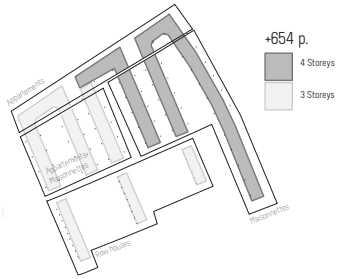
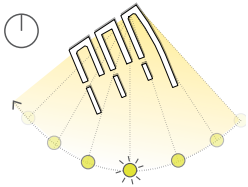


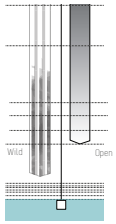
Fig. 53. The variables on the degree of freedom indicated for the city edge.



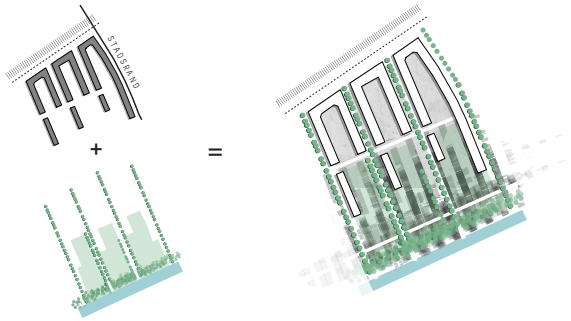
HIGHLIGHTING THE CITYEDGE
Increasing height of the building blocks towards the city edge.



OPTIMAL DAYLIGHT
The shape of the building blocks allows optimal incoming daylight for the appartments.

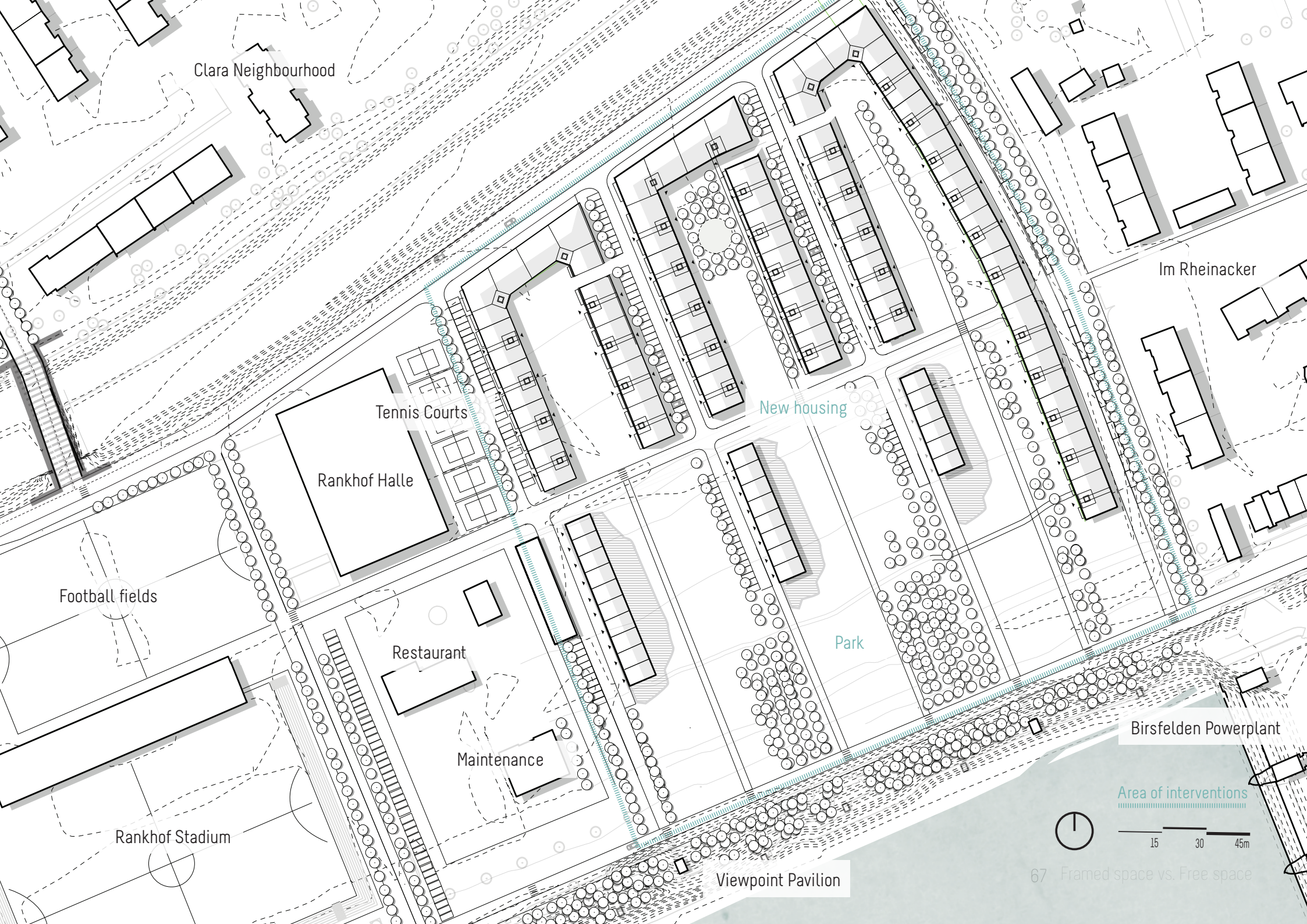


A CHANGE OF ATMOSPHERE
From North to South the atmosphere is changing from enclosed to open.The landscape graduadly changes from wild on the riverside to more cultivated into the inner courtyards.



INTERLACED LAYERS
The green structure and the building-structure are blending in by the form of the building blocks and the arrangement of the public space.

Fig. 54. The concepts for the city edge of Basel


Clara Neighbourhood
Im Rheinacker
Tennis Courts
New housing
Rankhof Halle
Football fields
Restaurant
Park
Maintenance
Birsfelden Powerplant
Area of interventions
15
30
45m
Rankhof Stadium
Viewpoint Pavilion

Spatial arrangement

The floor plans of the apartment blocks and maisonnettes are designed around a portico. On each floor two or three apartments are connected to the common staircase and hallway. On the ground floor the common hallway can be both entered at the courtyard side and the street side of the building block. With this design principle and the fact that the building block is not closed the inner courtyard is lively and easily accessible from the public park. From the streets in between the blocks the courtyards can be entered via passageways.

The building blocks on the city edge of Basel are gradually increasing their height, from three to four floors towards the city edge to mark the transition to the land in between. Appartments are situated at the closed side of the building blocks along the new main street, allowing more flexibility and options for services in the plinth of the buildings along the main street. The free standing row houses in the park are a transition from the urban building blocks into the green open park. The back yards of these houses have a connection to the park.

The atmosphere gradually changes in the north south direction from the enclosed courtyards into the open public space of the park. The design thereby relates to the outcome of the interviews with the inhabitants and visitors of the area. In the current situation there is a lack of public space. The proposal is providing these spaces on multiple scales and highlights the river Rhine and its connection to the park and the new build area. Shown in the section and visible in the plan of the area, the enclosed backyards have a more intimate collective atmosphere, which changes towards the Rhine to the open public park. The green connecting routes in the park lead towards more enclosed viewpoints over the river Rhine after crossing the wild nature reserve.

Typology

The more rural atmosphere of this area, which is still a part of the city, is expressed in the choice of typology for the new housing. With a target group of starters, a mix of building blocks with maisonnetes and apartments and rows of houses are planned in this area. These typologies are chosen with the aim to be flexible for the future users and changes in user groups. The building heights of the building blocks and houses do not exceed four storeys to match the surrounding existing buildings. With the train tracks and main road clustered at the northern edge of the area, the building blocks form a barrier for the noise of the traffic. The city edge on the eastern part of the area is defined by a continuous building structure. The building blocks open towards the south to allow optimal incoming daylight for the apartments and the public space. The form of the building blocks is enhancing the green structure along the Rhine in the way that the building structure is forming fingers which interlace with the green fingers, the green axes leading towards the river Rhine.

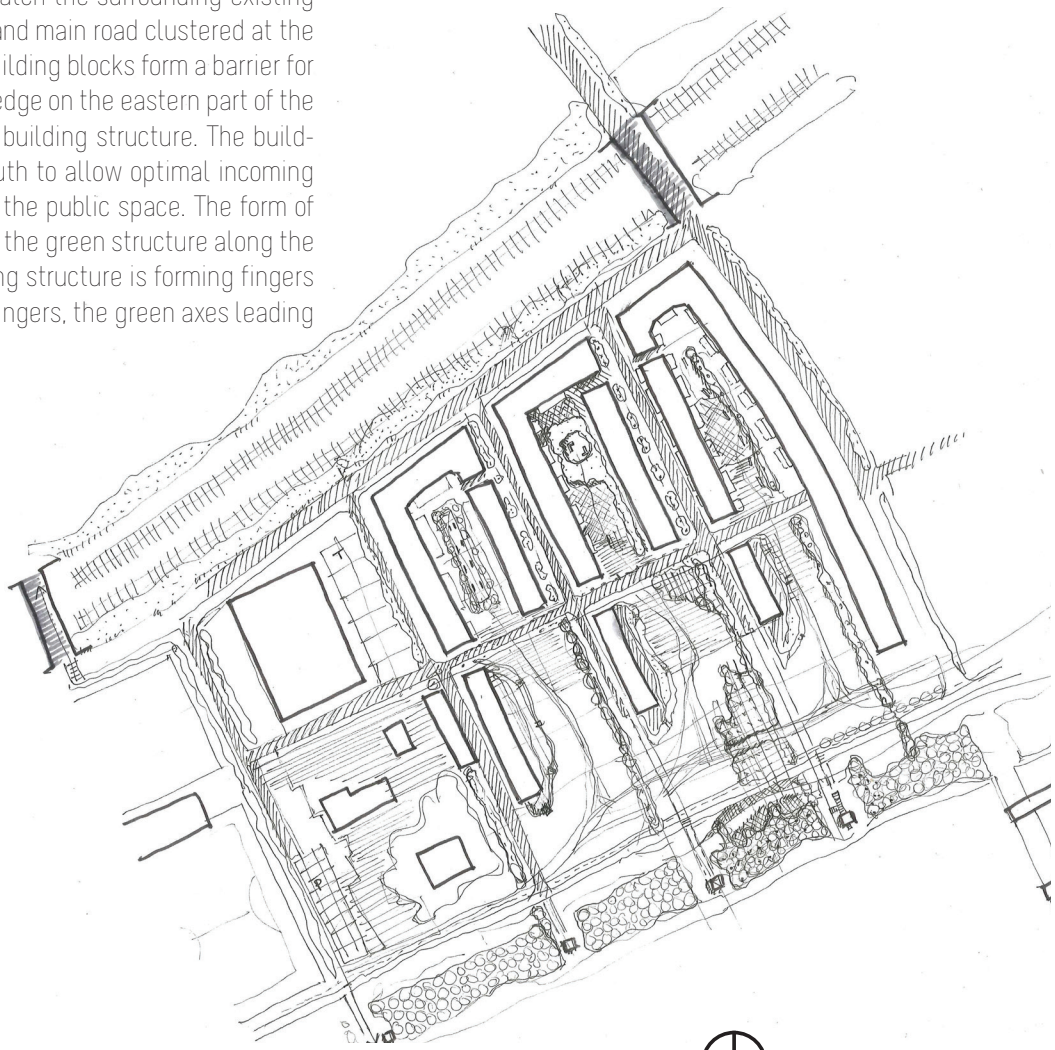


Fig. 55. A sketch for the design of the public space of the neighborhood.

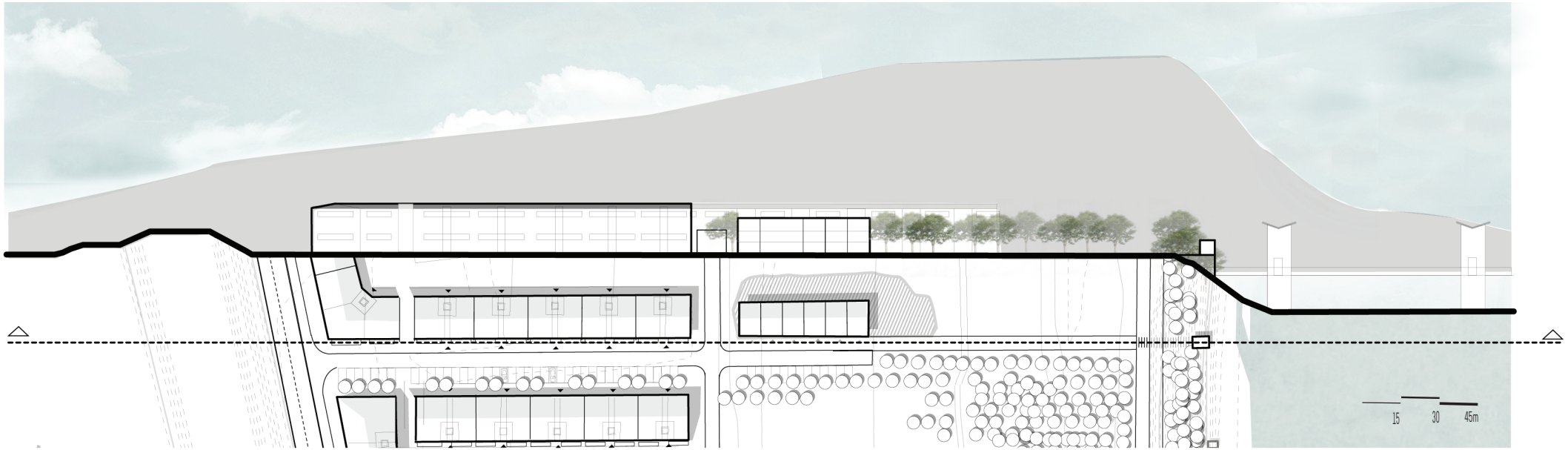


Fig. 56. A section of the proposed building blocks and public park.

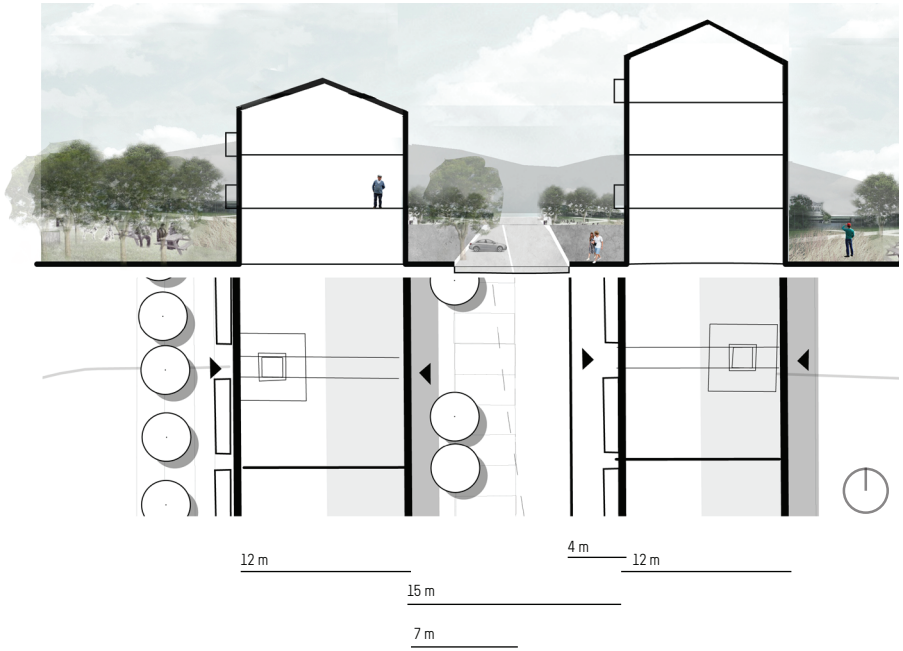


Fig. 57. A section of the proposed building blocks and street profile.

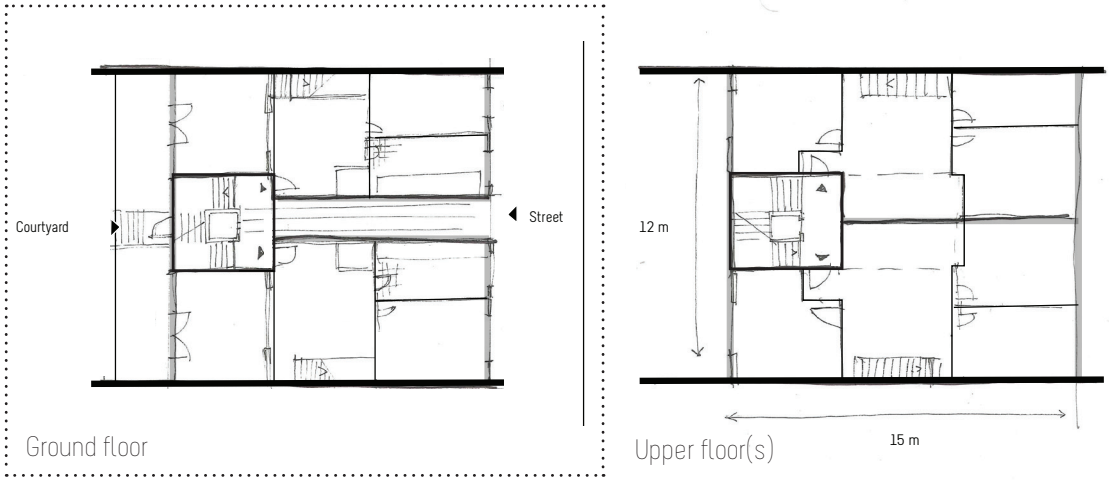


Fig. 58. Sketches of the propossed maisonnettes as a part of the typologies in the buildingblocks

Attachers

The connecting elements in the area are the new infrastructural connections perpendicular to the Rhine, which also form the structure for the green fingers pointing inland starting at the river. The green routes towards the river end in panorama decks allowing a view on the river Rhine. The viewpoints form an addition in the rhythm of the already existing fishermen's houses along the water. Parallel to the river, a public park with pedestrian and cycling paths is opening the area for public use by the inhabitants of the area and for recreation of the inhabitants of Basel. With this proposal the current potential of the area is enhanced and enforced without losing the position of the actors in the area out of sight.

Scenarios

The elements to plan with in this area, the tags, are at the scale of the building blocks and the football fields which are already existing in the area. They are used to define the scale of the new interventions. In the scenarios, made with the notions; the experience of freedom and the preservation of the existing, the scale of the interventions is visible. In the variety of scenarios on the preservation of the existing the choice has been made to preserve the stadium Rankhof part of the Novartis sports fields. Currently, the sport fields are taking up a big part of Hirzbrunnen South, but the sports fields fulfill a role as leisure for the inhabitants of Basel mostly in the weekends. The amount of sports fields on this location can be reduced, relocating them to the area around the school up North. The scenarios on a smaller scale dealt with the spatial arrangement of the building blocks providing the experience of freedom when having a open structure and when enclosed providing a controlled experience. A scenario is chosen where the experience of control in the courtyards merges with more freedom in the open public park.

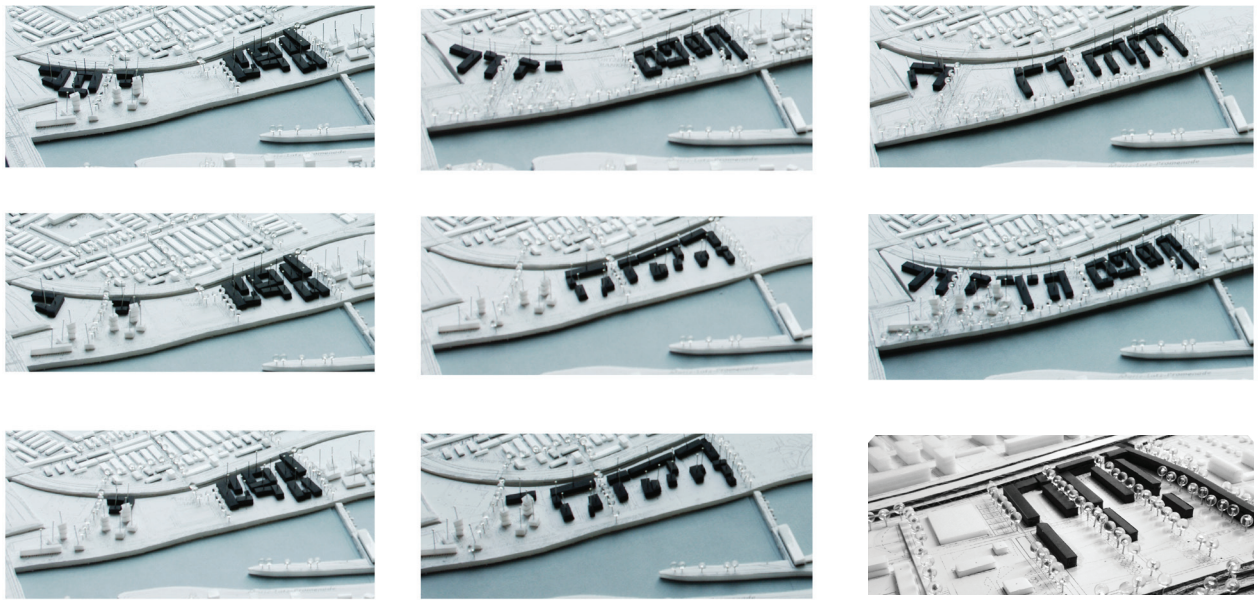


Fig. 59. Test models for the design proposal of the city edge.

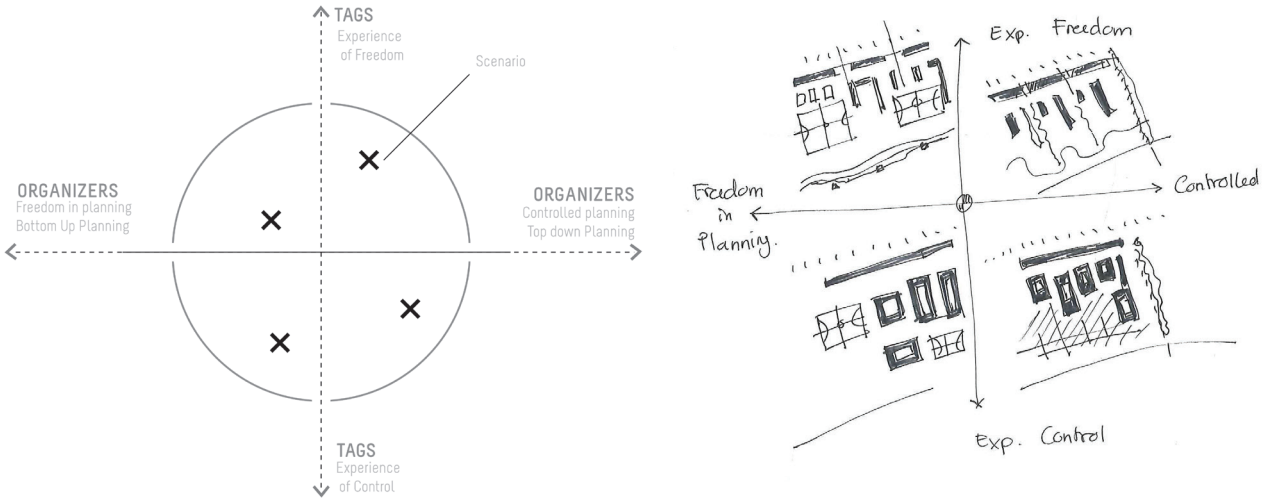


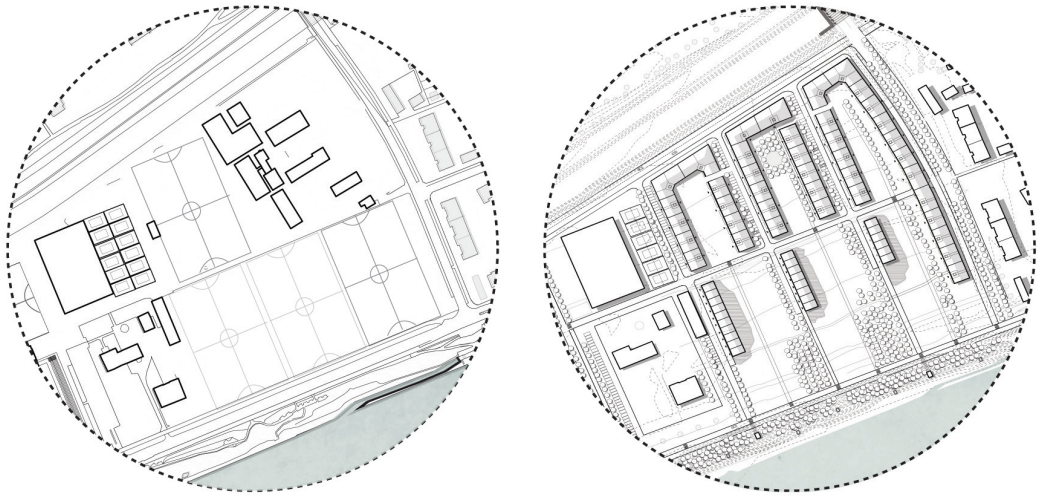
Fig. 60. The scenario's for the city edge of Basel following the control hierarchy method derived from the literature research.

Fig. 61. An impression of the public park leading towards the river and its surrounding building blocks.

Phasing

The proposed plan for the city edge of Basel consists of general design principles and notions which are flexible. The general principles, which are the building form, typology and the ratio open and enclosed space, are fixed principles, needed to achieve the aimed end result and image of the neighborhood. However, the building blocks can be built in a phased order and quantity. Also for whole western part of the Hirzbrunnen South area a phased plan is possible. A proposed phasing schedule is shown in Figure 62 and 63. Yet, the actual phasing cannot be planned beforehand, since it is depending on external factors such as changes in economical situation with the coherent housing demand and the participation of the local actors which timeframe is suitable for each development.

For the proposed phasing, the new build housing on the city edge is a generator for the urban regeneration of the area and takes place in the first phase. With the new housing as an incentive the main infrastructure is bundled with the train tracks to allow the public park to be connected with the river Rhine. When the area is attracting more visitors and gaining popularity, the last phase of transforming a part of the sports fields into housing is entered. The parts of this area depend in this way on each others development and can reinforce each other.



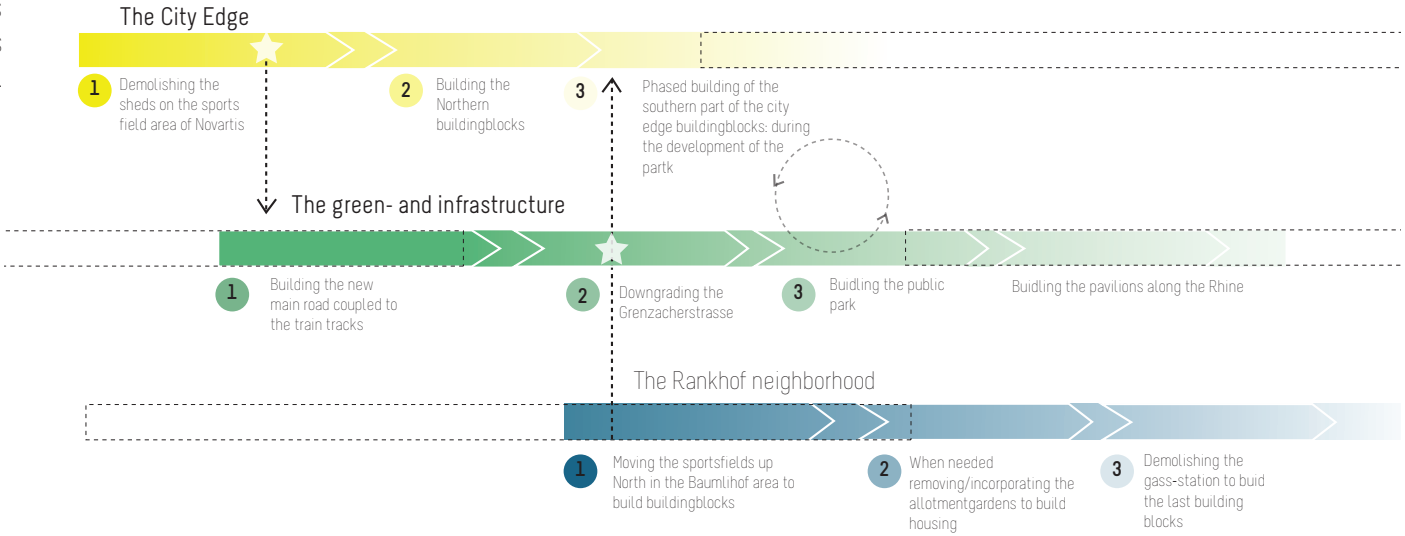


Fig. 62. A possible scenario of the planning of the neighborhood on the city edge.

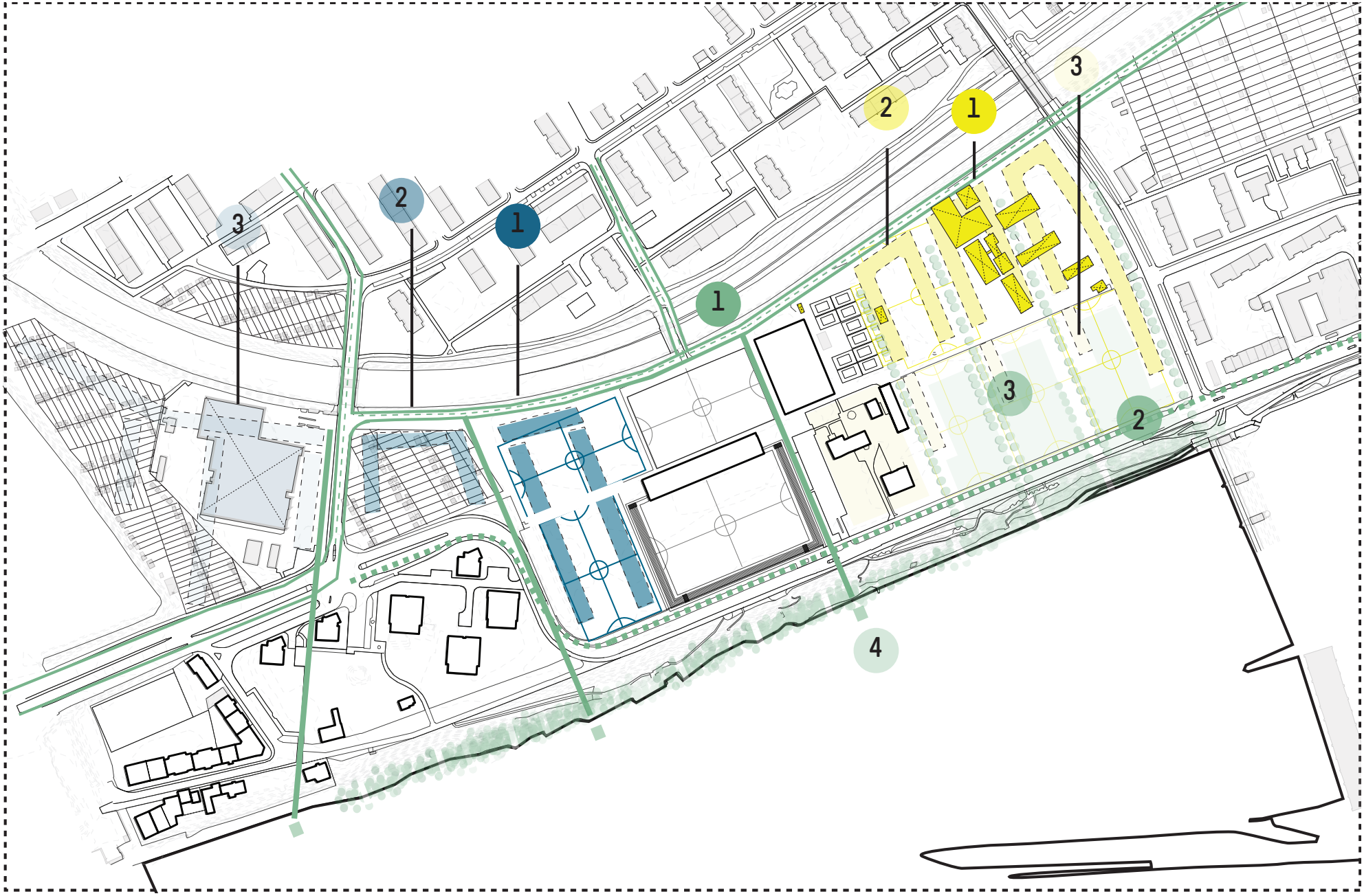


Fig. 63. The possilble phasing of the neighborhood on the city edge.

4.5 Free space

The allotment clusters

The quality of the area of Hirzbrunnen is the freedom of planning in the allotment gardens, where tenants can express their own ideas in the spatial arrangement of their private space. However the popularity of the allotment gardens is decreasing, since the gardens need a lot of time invested, which is not fitting in the current lifestyle of people. Besides, the demand for housing in Basel is increasing and the Kanton Basel-Stadt planned the area of Hirzbrunnen to be densified with new housing. However the new plans for high-rise in the area do not fit with the image of the area in the opinion of the inhabitants and visitors of the area derived from interviews.

The proposal in the design study of this thesis is focusing on a well-fitted solution for the regeneration of the allotment garden area, introducing a phased plan for new building clusters in between the allotment gardens. In this way the isolated structure of the gardens is opened up, the quality of bottom up planning is used for new developments in the area and the new housing is fitting in the identity and grain size of the current situation. In this part of the design study chapter the concepts for the regeneration of the allotment area are addressed and the rules for the bottom up planning of the clusters are explained. Finally the phasing principles are presented and some possible outcomes of the planning are shown.

The current situation

The proposed situation

Free space
The allotment clusters

The degree of freedom

The atmosphere of the land in between, where the allotment gardens are situated, requests a different type of planning compared to the city edge. The creative and more rural atmosphere of the clusters in between the gardens allows an experimental way of planning, with more freedom for the users to plan their own space. This bottom up approach uses the quality of the freedom of planning in the allotment gardens on a bigger scale, to transform the current allotments into housing clusters. The already existing clusters in the land in between are different from the clusters in the allotment gardens since the difference in scale and the size of their structure. Compared to the city edge the allotment clusters are more private than the bigger building blocks. On the next page the rules are provided which are developed within this design study to ensure the quality of the public space and the image of the allotment clusters.

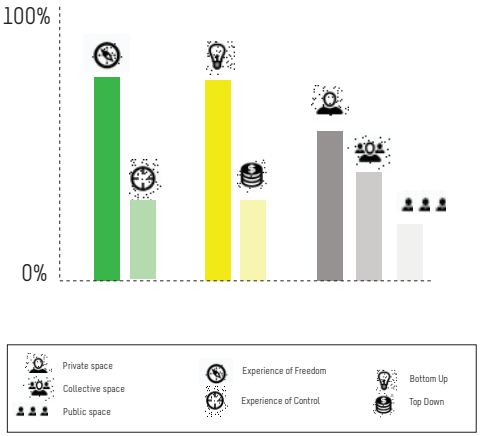


Fig. 64. The variables on the degree of freedom indicated for the city edge.

The main concept

Looking into the current situation of the allotment gardens (Fig. 65) the fine structure of the allotment gardens is visible, The borders of the allotmentgarden area are closing it of from the public space. The concept for the housing developments includes making the area accessible for the public by opening up these borders and adding collective and public spaces. The green strip along the Rhine will in this proposal also be extended into the allotment area in the land in between. This green structure will connect to the public space of the allotment gardens.

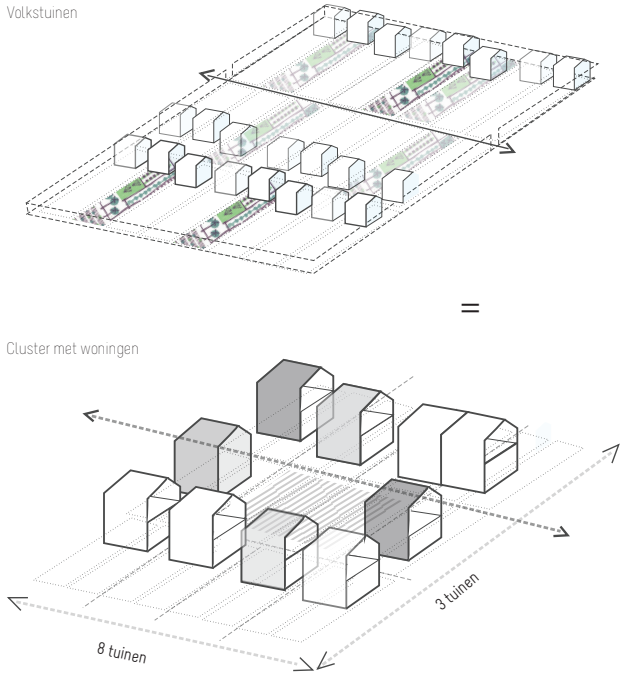


Fig. 65. The proposed change from allotment gardens to housing clusters.

Fig. 66. The current layers of the allotment area and proposed intervention

Fig. 67. A possible outcome of the proposed housing clusters in the allotment garden.

Build your own allotment-enclave step by step: The rules

To regulate the final image of the new housing clusters, basic rules are set out to guarantee the quality of the new-formed clusters and its connection to the existing surroundings.

1

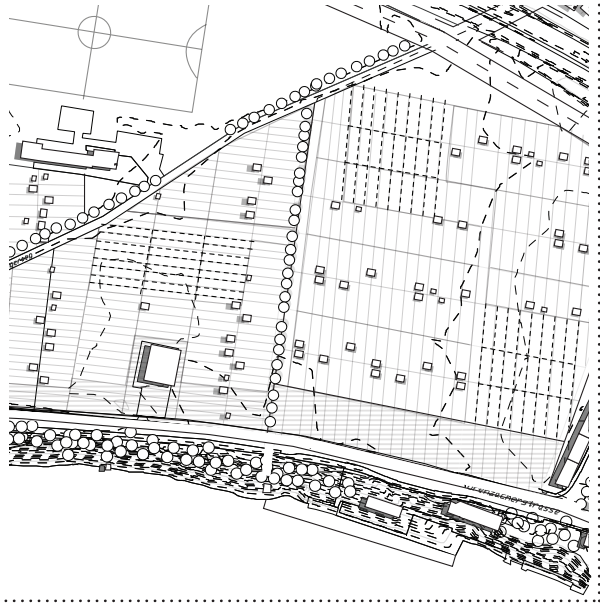
Search for a group of people and a developer and/or contractor to plan a cluster with.

To start with the development of the cluster, the user is important to start with. Together the future inhabitants of the cluster form an idea of their ultimate way of living in a community in between the allotment gardens. With an investor and contractor, which can also be provided by the Kanton Basel-Stadt, the planning process can start.

2

Choose a spot to build the cluster together (one of the three indicated spots)

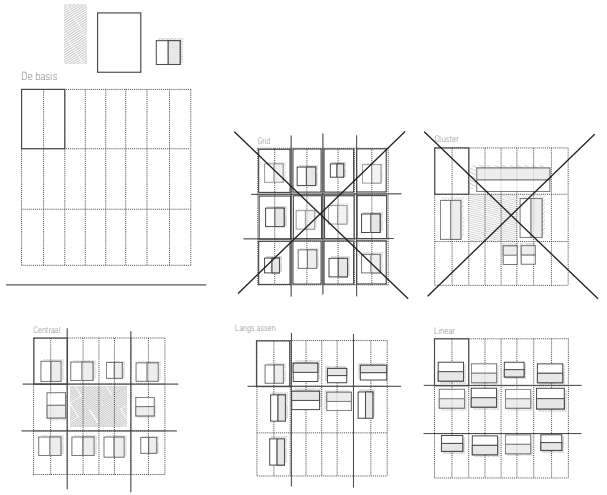
The plots to be changed into housing are located close to the infrastructure to maintain a car free zone around the houses. The parking spots are clustered outside the housing-clusters but closely related to them. The housing clusters located on the edges of the allotment area, opening up its borders.



3

Choose your way of clustering

The assigned building spots have measurements of 3 by 8 allotment gardens, providing the opportunities for different typologies to form clusters. To improve the new clusters to be used collectively and fit in the grain size of the current gardens, the typologies of a grid and the cluster of bigger buildings are excluded from the options. For each cluster-typology different building rules guarantee their qualities and the improvement of the public and collective use of the space. The basic elements to form the cluster are the housing plots (two clustered allotment gardens), the houses, paths and public/ collective space.

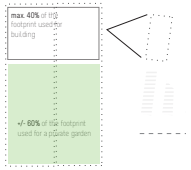


4

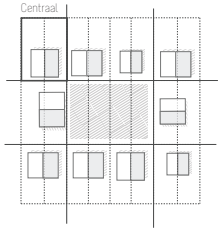
5

Choose your own plot

To define your housing plot, two coupled allotment plots form one plot to build on. The choice in this step is to find a position for the housing plot together in the chosen arrangement of clustering, in this example, the central clustering.

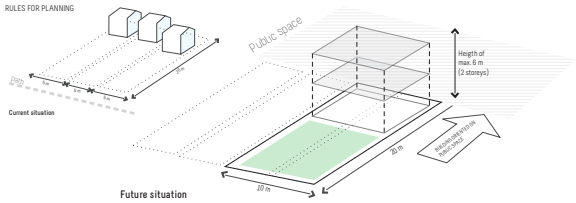


2 former allotment plots
are forming one building plot of 200m2



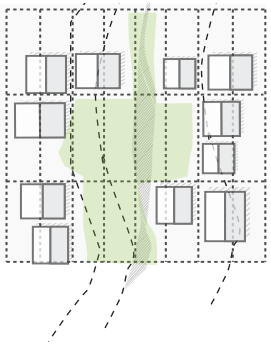
Place your house according to the rules and connect your plot to the public space

Different rules per cluster are formed to guarantee the quality of the cluster and its identity. In this example with the central square, the rules are adjusted to this form of clustering. In general the houses are detached and not exceeding three floors. Maximum forty percent of the housing plot is used as a footprint, which leaves minimal sixty percent for a private garden. The average size of the housing-plots is 200 m2. The housingplots have a width of 10 meters and a length of 20 meters.A rule for the central cluster is that the houses should be attached to the collective square.



The final cluster

The formal rules find a location-specific infill adjusted to the landscape and surroundings of the chosen location of the cluster. Here the influence of the genius loci is important and the composition of the cluster is formed according to that.



The new housing clusters

In a phased plan the clusters are build according to the wishes of the inhabitants and external factors. The clusters are now forming a whole with the surrounding gardens and in this way opening up the current isolated situation of the allotment area.

Typology

The interventions in this area include detached houses not exceeding the amount of three floors, fitting the fragmental development of the gardens in the size of the allotment plots. The private and collective space can be planned by private investors in a group or led by and investor. Different typologies are possible for the area to build the clusters in; a study is made on a variety of typologies and the needed rules to result in these configurations. For the scale and the spatial arrangement different scenarios are made to choose from following the method of the Control Hierarchy (Fig.68)

Scenarios

The scenarios on the scale of the allotment area are a variety of different kinds of clusters. In figure 70 the different ways of clustering are shown; from housing with gardens on the edge to housing enclosing allotment gardens. However clusters, which enclose allotment gardens, are more difficult to achieve since the principle of this intervention is emergent kind of planning, since a lot of gardens have to change in function so this spatial arrangement is possible. Therefore in this design study the choice has been made to allow clusters on a small scale amongst the already existing gardens, a more flexible way of regeneration.

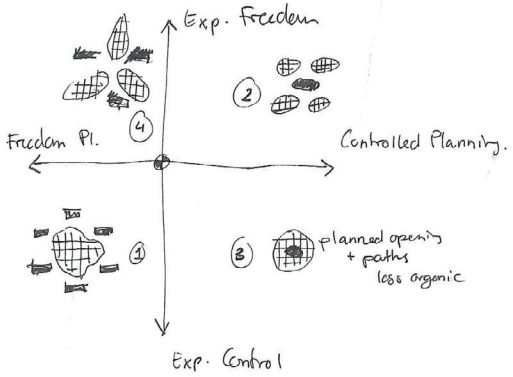


Fig. 68. The variables on the degree of freedom indicated for the city edge.

Attachers

The basic attacher, which will connect the clusters with their surroundings, is a new internal infrastructure of the allotment area and the green structure along the Rhine on a bigger scale. The new paths and public spaces in the area form the basic structure on which the phased interventions of the clusters are attached to.

Phasing

Other then the linear phasing of the city edge, the allotment clusters have more freedom in planning and therefore have more possible outcomes and combinations of clustering. The main structure of the new infrastructure in the allotment garden forms the basis for this phased plan. In figure 69 scenario tree-diagram is shown, which shows the diversity of outcomes possible for the final build area. Like the phasing of the city edge neighborhood, the external factors and the demand of housing can not be forecasted for the final result.

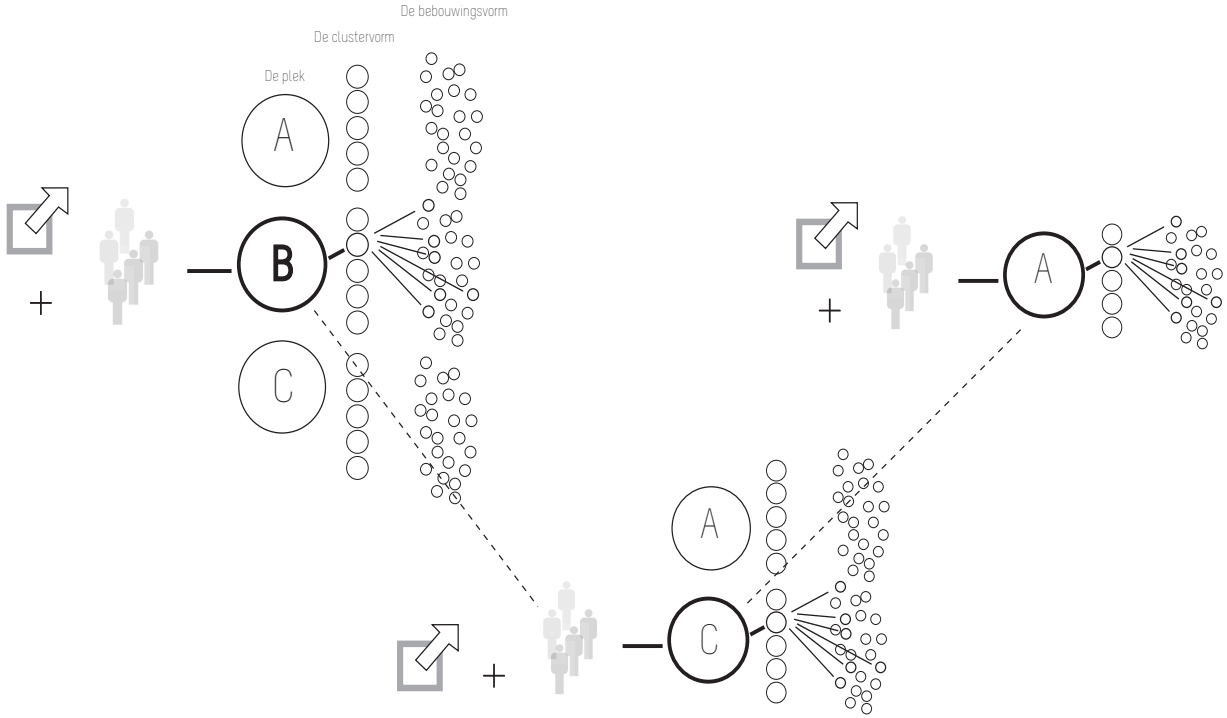


Fig. 69. The tree-diagram for the phasing of the allotment clusters, showing the multiple possible outcomes of the planning by the user.

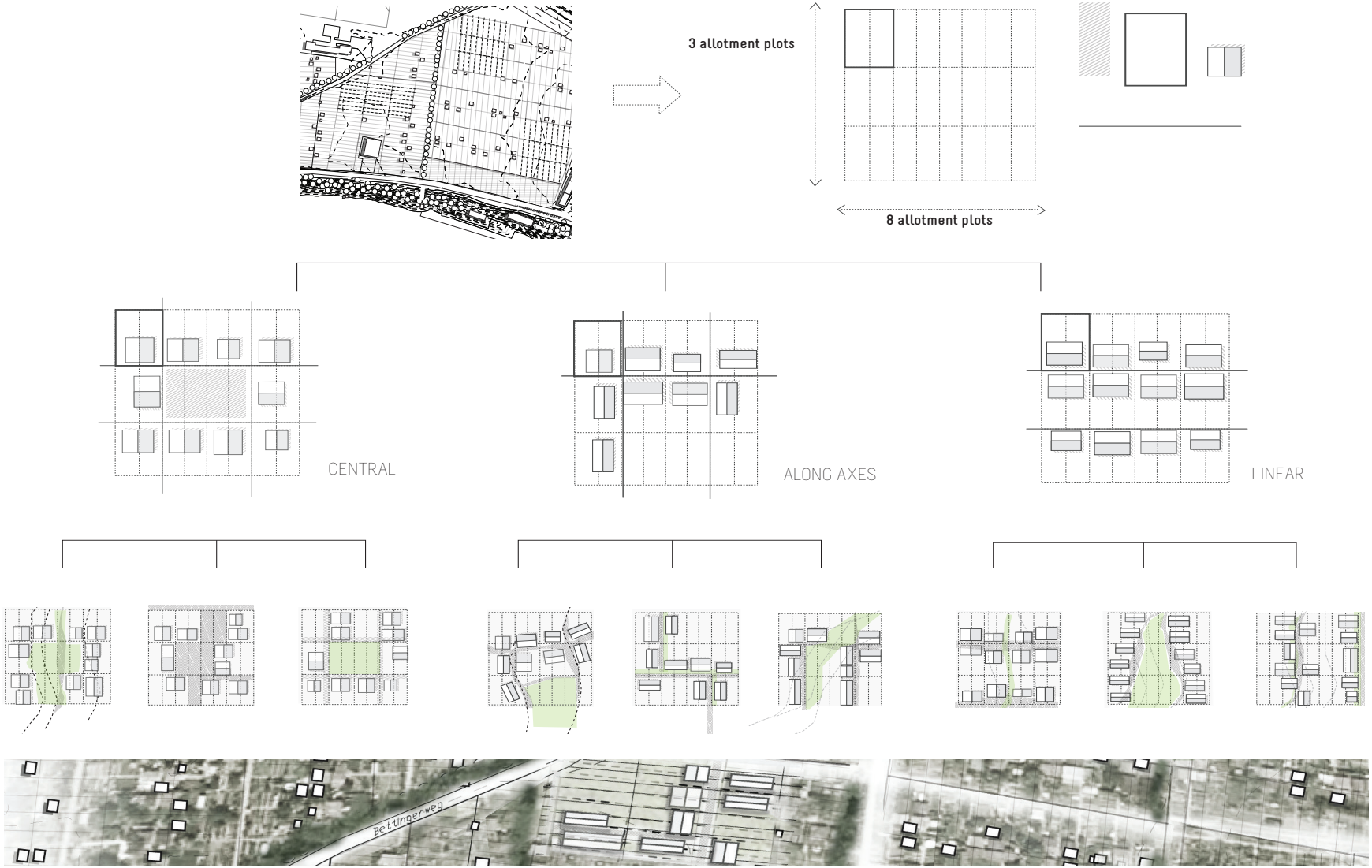


Fig. 70. A diagram showing the different stages in the planning and design process of the allotment clusters.

Variations of the clusters

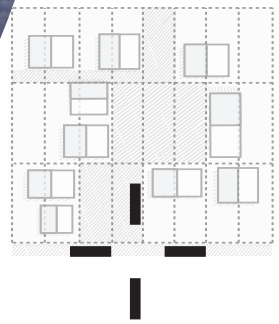


Fig. 71. An impression of a cluster with a central square.

Fig. 72. An impression of a cluster with housing build along axes with a decentralized public space.

Fig. 73. An impression of a housing cluster with a linear structure.

4.6 The green connection

On the big scale of the city, the connection with the river Rhine is weakened in the area of Hirzbrunnen South. The main road, the Grenzacherstrasse, connecting Basel with the German border is located close to the river. This busy road is separating the river and the inland. Along the water a nature reserve is located, with densely grown vegetation, giving less opportunity to enjoy the view on the river. The proposal for this design study is to enforce the connection with the river on multiple scales: from the city scale to the scale of the new building proposal from the city edge and the allotment clusters. The Grenzacherstrasse is downgraded and another main road is build coupled to the train tracks. This allows a development of the riverbank for public functions.

A green structure of trees is enforcing the perpendicular streets towards the water and guides the sightlines from and towards the river. At the end of each green "finger" a viewpoint is positioned with a free view on the river Rhine. Since the nature reserve is protected from being changed into a public park, the structure of the elevated pavilions as viewpoints is an independent system. The structure of the pavilions is enhancing the qualities of the site, forming places and is not disturbing the nature reserve. The green structure is in this way connecting the different atmospheres along the Rhine on a big and small scale.

Fig. 74. Interventions coherent throughout scales connected by the green structure along the Rhine.

The lines: The connecting elements

The Rhine as an important connecting element is enforced within the concept of the green fingers. Perpendicular and parallel to the river, the green structure improves the connection and refers to the river. In the perpendicular direction, the trees along the roads align the sightlines towards the water. In the parallel direction, the emphasis on the direction of the paths along the river is referring to the river, which is flowing behind the dense grown nature reserve. The nature reserve is not allowed to change to an open riverbank; it is the oldest nature reserve in Switzerland. Even though, the viewpoints on the river as the destination of the perpendicular routes are a subtle intervention to both open up the view on the river and let the nature reserve be a protected area.

The Grenzacherstrasse, the busy main road towards the border with Germany, will be coupled to the train tracks to open up the possibilities to develop the area along the river for public functions. The current road will be downgraded to a slow traffic road and will be easy to cross to enter the nature reserve or the viewpoints. In this way, the road is no longer forming a border towards the water.

Important references for the concept of the green fingers are the riverbank developments by Michel Desvigne in Bordeaux, Confluence and Rive Droite and Lyon. In both projects, Desvigne uses the axes towards the river as an important design principle to connect the river with the inland. Different types of trees in a big scale planting plan for the riverbank of the Garonne in Bordeaux, show a slowly dense grown riverfront (Fig. 76).

Another inspiration for the division of the area of Hirzbrunnen South into the city edge and the land in between was the text Vague parks: the politics of late twentieth-century urban landscapes where Kamvasinou (2006) describes the terrain vague as a 'as found', spontaneous urban landscapes raising questions about relations between politics and design. The link can be made with the position of the vague zone in between Basel and Riehen where many political borders can be found.

Through this area the border between the Kantons Basel Stadt and Basel Landschaft is passing, as well as the border between Germany and Switzerland on the eastern edge of Hirzbrunnen South. Kamvasinou describes the characteristics of a terrain vague, a land in between or a zwischenstadt as; a place in the city that is empty and unoccupied, vague or uncertain, imprecise or unbounded. Not all the characteristics Kamvasinou describes are to relate to the land in between as a part of Hirzbrunnen but the uncertain unbounded and undefined aspects certainly fit. As Kamvasinou describes; the terrains vague

Fig. 75. Lyon Confluence, Michel Desvigne, 2003. (http://www.lyon-confluence.fr)

Fig. 76. Plantingplan for the Boreaux Right Riverbanks, Michel Desvigne, 2004. (http://www.urbanews.fr)

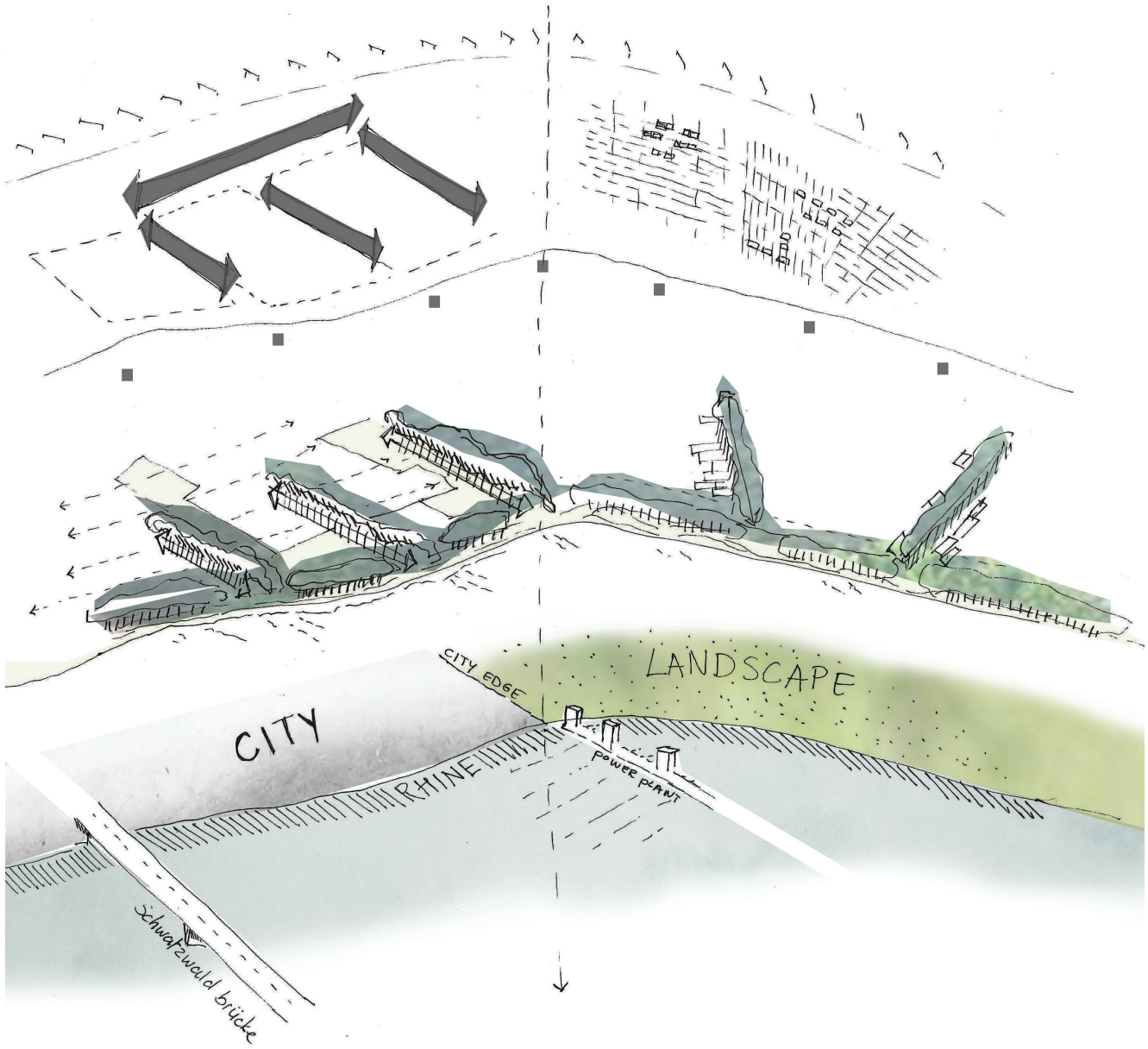


Fig. 77. The different layers of proposed interventions and concepts part of the design study.

Building structure

The original grain size in plots between the eastern and the western part of Hirzbrunnen is enforced in the proposal of the design study. The building structure of the viewpoint pavilions is a free-standing system which is relating to the rythm of the old fishermens houses along the Rhine.

Landscape

The green structure of the dense lines of trees is connecting the two atmospheres of the city and the landscape. The pavilions along the water are a returning element along the line of the river.

Identity

The controlled atmosphere with a small degree of freedom in the wester part of Hirzbrunnen South: the city edge of Basel. A high degree of freedom is given for the planning in the land in between: the eastern part.

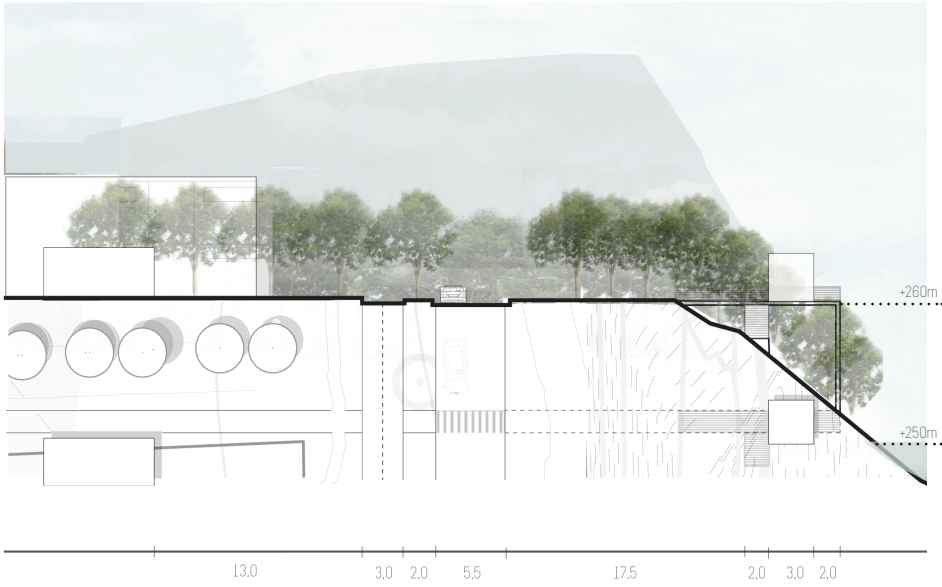
are perceived as empty, they are often the focus of architecture's and urban design's desire for productivity, control and order. This instrumental view disregards the richness and special atmosphere of the terrain vague as a place colonized by nature and people in a more uncontrolled manner. In the case of Hirzbrunnen this suits the atmosphere of the land in between Basel and Riehen in the way that it is occupied by clustered leisure functions and the allotment gardens and sports fields. Coherent with this theory the main concept was formed to define the city edge and the land in between with clustered new enclaves. The topic of control and complexity is reflected in the assignment of two different degrees of control for the city edge and the land in between. A controlled completion of the city and a experimental creative forming of housing clusters in the allotment garden area.

The new promenade along the Rhine

With the downgrading of the Grenzacherstrasse the profile of the road is proposed to change from eight meters to five and a half meters to slow the traffic down and have many opportunities to cross the street towards the river Rhine and the pavilions. The space vacant by the road bypass is now used for wide walking and cycling paths. From the Grenzacherstrasse the green lines of the green connecting structure merge with the wild park of the nature reserve along the Rhine. Small pavilions standing on poles form the new structure of the pavilions with viewpoints on the river. Paths leading towards the pavilions on the same level of the promenade cross the Grenzacherstrasse. With staircases leading from the pavilions the nature reserve can be entered.

Fig. 78. The current situation of the Grenzacherstrasse.

Current situation



Downgraded Grenzacherstrasse + park

Fig. 79. Sections of the current (left) and proposed (right) situation for the profile of the Grenzacherstrasse.

Fig. 80. An impression of the proposed re-design of the Grenzacherstrasse.

The Pavilions along the Rhine

The current structure of the old fishermens houses along the Rhine in Hirzbrunnen South is in this design study enforced with a new layer of pavilions. These pavilions allow a view on the river when crossing the nature reserve on the riverbanks. The viewpoints are the endpoint or beginning of the green axes connecting the river with the inland. The paths towards the pavilions are raised above the nature reserve. In this way the new intervention is related to the structure of the old houses but not interfering with the protected nature.

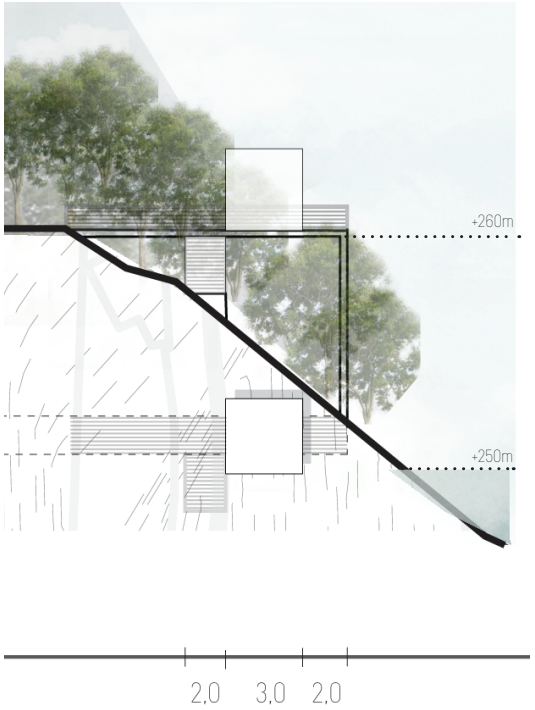


Fig. 81. Asection of the proposed pavilions along the Rhine.

Fig. 82. An impression of the proposed pavilions along the Rhine.

5 Reflection

This chapter reflects on how and why the approach of the research and the design did work and to what extent. The reflection is organized in three parts which each addresses a part of the graduation process: the project, the research and the process.

Project & The Urban Regeneration Studio

The project area is the urban fragment of Hirzbrunnen South in Basel. An area with a high potential for new developments of housing along the Rhine. The Kanton Basel Stadt assigned the area for new housing because of the current demand for the expansion of the housing market in Basel. Nevertheless, the current actors in the area such as the sports and allotment associations play an important role in the project and the execution of new housing. The question 'How to deal with the existing urban fabric?' is an important part of this theme. The Urban Regeneration Studio deals with this question in general. As in many Urban Regeneration projects, the aim of the project was to balance the existing with the new to improve the urban fabric. With the study on the degrees of freedom, testing the integral design method developed during the research, a design is made for two specific parts of the area in an overall master plan. An important topic of Urban Regeneration: 'How can small interventions improve the whole of a neighbourhood?' is important in this project.The coherence between the parts of a neighbourhood by phased interventions is proposed to improve the urban fabric and reconnect the urban fragment with its surroundings.

Project & the wider social context

The project relates to the wider social context in the theme of the identity and the meaning of the location on the city edge of Basel. By the regeneration of the area, the qualities of the area are emphasized to improve and enforce its identity. Areas like Hirzbrunnen South are a common phenomenon. The wastelands and the land in between in cities and on the city edges, where left over functions are located are known in every city. The potential of these areas in the sense of control is often not highlighted. This project is using the aspect of the creativity, freedom of planning and the atmosphere that allows experiments, to improve the urban fabric. The method of Control and Complexity is a tool to improve the coherence between the fragments and brings the topic of control to the attention during the design process.

Research & methods of the Urban Regeneration Studio

The aim of this graduation project is to form an integral design method. This method is a tool to design with on multiple scales taking into account the different controlling actors. The methodical line of approach of the Urban Regeneration Studio tends to focus on the social aspect of urban regeneration. The literature on urban interventions to improve social cohesion is part of this methodology. The research of this project is focusing on the aspect of control and complexity in urbanism, a not commonly used topic in urban regeneration methods. Nevertheless, this research and the developed method are very accurate for the assignments in urban regeneration. The relation between scales and the influence of the control at multiple scales in a coherent integral master plan are a tool, which could be very helpfull to design with in urban regeneration projects.

Design & the research

The method helped to form a well-substantiated design proposal for the area of Hirzbrunnen. Nevertheless the method could be more specific and detailed. The method is developed in a close relation to the topics accurate in the area of Hirzbrunnen South. To test the method, another design study could help to improve the method and make it generally usable. Because of the literature research in combination with the analysis the design study, I was well provided with theory and context before starting designing. The acknowledgement of the personal input in the design methodology also helped to see a clear difference between theoretical choices in the design process and my personal insights translated into a design. The place and space theory as a theoretical background from the landscape architecture suits the theory of the Control and Complexity because it adds the user experience to the more theoretical part of the complexity.

The first attempt to translate the schema of Findlay & Thagard can be looked further into, to define the scales and the relations between these scales more specific. Recommended is a further literature research on the transistions between scales to list the attaching forces and characteristics more in detail. Besides, in the developed method of the Control and Complexity the external input from theory on other topics dealing with the site specific issues needs to be pointed out. during the design study the inspiration and literature has been essential to come to the final design proposal.

The Design study

In relation to the current plans of Kanton Basel Stadt, the proposed design seems to be suitable to the needs and opinions of the inhabitants and visitors of Hirzbrunnen South following from the interviews on the site. The typology and amounts of new housing are less excessive than the proposed high-rise buildings. However the proposed bottom up planning of the allotment gardens is not fitting into the planning culture of Switzerland, which is mostly top down planned, controlled by a direct democracy. The element of collective development of the clusters in the allotment areas is a way which may appeal the Swiss to have more direct influence on their living environment, since the collective housing projects are a well known feature in Swiss architecture.

Process & planning

The theoretical part of the graduation project, which includes the literature review and the developing of the method exceeded the timeframe beforehand fixed in the planning. This happened because of the increasing importance for the project. The design study started therefore later in the process and did stay at a more abstract level which fits the approach of the project; to define ground rules for different degrees of freedom in planning.

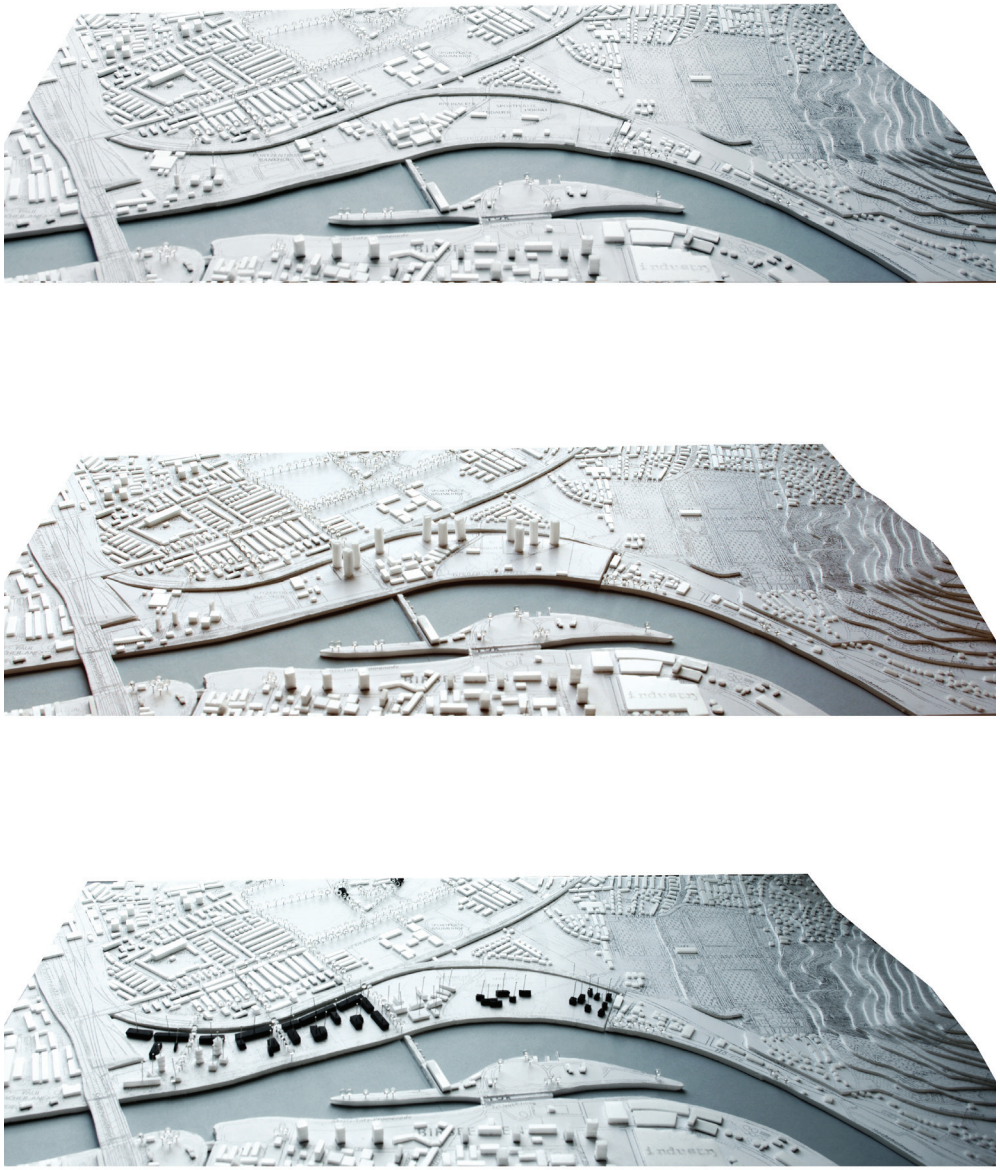


Fig. 83. From top to bottom; the current situation, the proposed towers and the design study of this graduation project.

6 Appendices

I Questionairre site visit
II Test for the rules of the design of the allotment gardens
III Calculations housing quantity
IV Review paper "How parts make up wholes"

TU Delft Delft University of Technology

Graduation Project
Urban Regeneration Studio,
TU Delft, The Netherlands

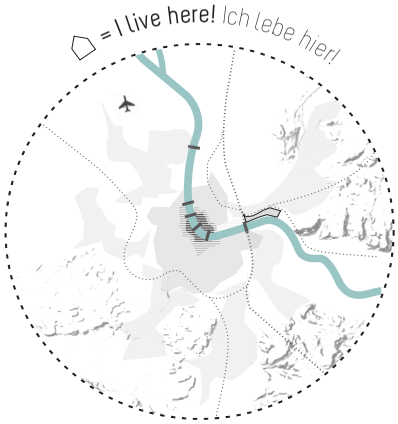
Free space vs Framed Space
Hirzbrunnen South, Basel, Switzerland

Age/Alter ☐ M F

_Residence/Wohnort:

. . . . . .

(Please draw on the map on the right / Bitte zeichnen Sie auf die Karte auf der rechten Seite)



_What is your favorite place in this neighbourhood?
Was ist Ihr Lieblingsort in dieser Gegend?

. . . . . .

(Please draw on the map underneath / Zeichnen Sie auf die Karte unten, bitte.)

_What is the route you take to this place?
Was ist die Route, die Sie zu diesem Ort nehmen?
(Please draw on the map underneath / Zeichnen Sie auf die Karte unten, bitte.)

_What is a place you don't like in this neighbourhood?
Welcher Ort gefällt Ihnen nicht in diesem Viertel?

. . . . . .

(Please draw on the map underneath / Zeichnen Sie auf die Karte unten, bitte.)

_Describe your favorite place in one word:
Beschreiben Sie Ihren Lieblingsort in einem Wort:

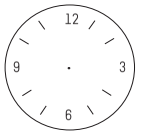
. . . . . .

_Describe the place where you don't like to be in one word:
Beschreiben Sie den Ort, den Sie nicht mögen, in einem Wort:

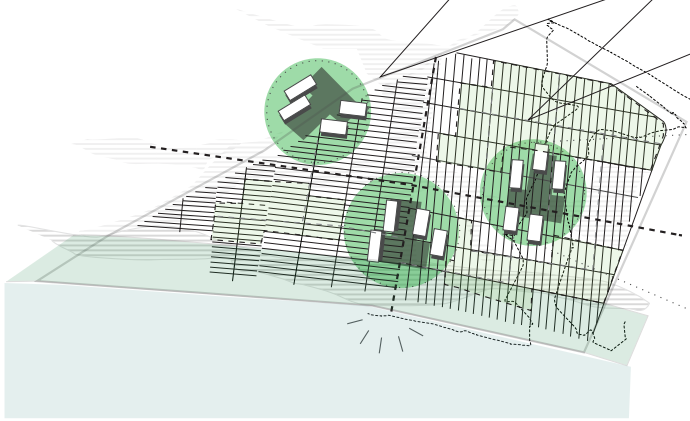
. . . . . .

Notes:

☐ ☐ ☐



Allotment Community
Designed by: .....

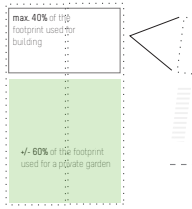


THE CONCEPT

Your design should follow the basic principles of the concept:

-Single detached houses in a arrangement around public square
-Paths through the allotment gardens should be connected into the public space of the inner square
-Two building plots maximum should be coupled to ensure a good connection with the allotmentgardens
-Further rules are explained in the images below

ELEMENTS TO PLAN WITH



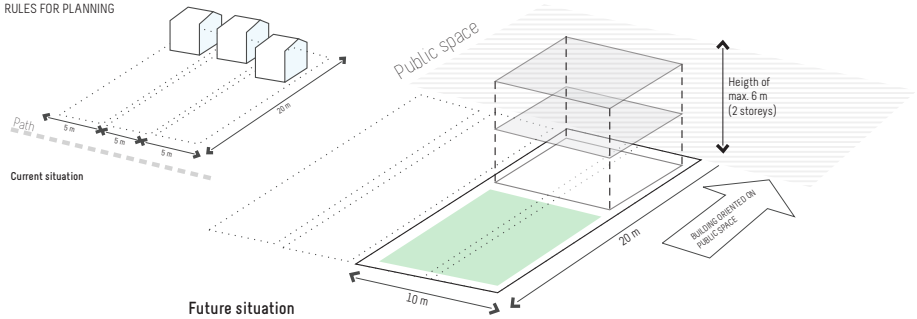
2 former allotment plots
are forming one building plot of 200m2

max. 10x building plots
Max coupling of 2 plots to allow entrances to the allotment gardnes

Min. 26 x plots of public space
Allowed to change shape

Public paths in allotment gardens, connected to the public inner square

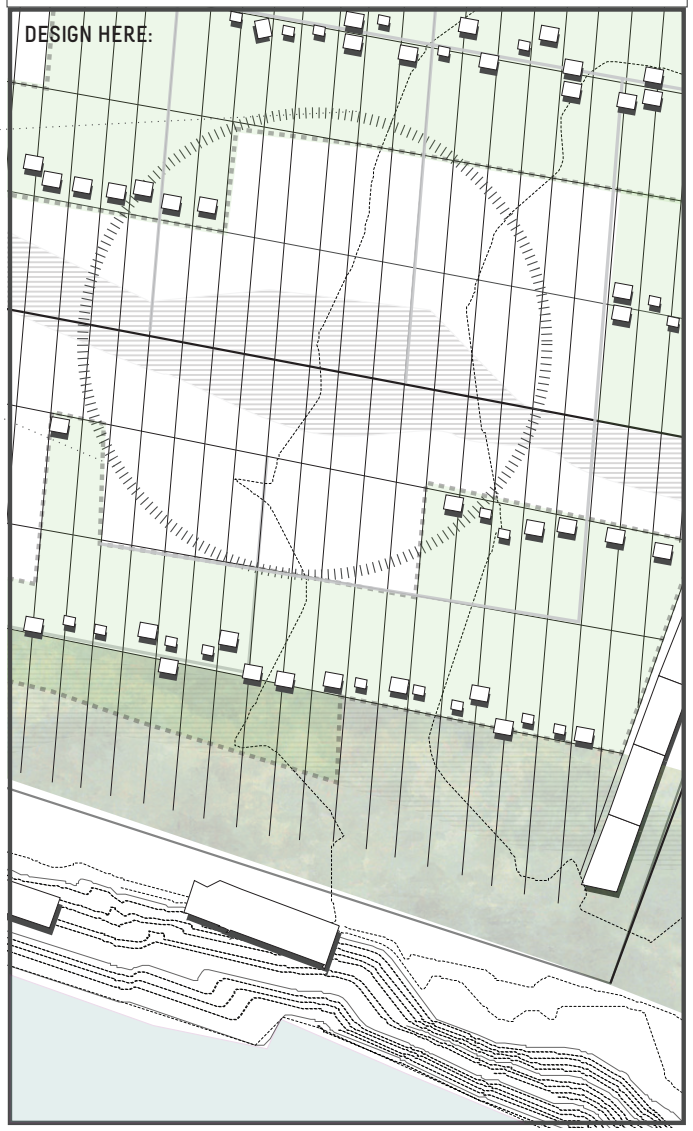
RULES FOR PLANNING



Future situation

DRAW YOUR SECTION HERE:

DESIGN HERE:



LEGEND

Public space

Allotment gardens

Private gardens

Public park along the Rhine

AREA TO DESIGN

Heigth lines

Public paths in allotment gardens

View on the Rhine

Main route

GLOBALE BEREKENING AANTAL WONINGEN **555** (3 lagen) tot **925** (5 lagen) woningen uitgaande van starters woningen van 100 m²

30 appartementen per bouwlaag
3 lagen: 90 app.
4 lagen: 120 app.
5 lagen: 150 app.

20 appartementen per bouwlaag
3 lagen: 60 app.
4 lagen: 80 app.
5 lagen: 100 app.

20 appartementen per bouwlaag
3 lagen: 60 app.
4 lagen: 80 app.
5 lagen: 100 app.

20 appartementen per bouwlaag
3 lagen: 60 app.
4 lagen: 80 app.
5 lagen: 100 app.

20 appartementen per bouwlaag
3 lagen: 60 app.
4 lagen: 80 app.
5 lagen: 100 app.

25 appartementen per bouwlaag
3 lagen: 75 app.
4 lagen: 100 app.
5 lagen: 125 app.

20 appartementen per bouwlaag
3 lagen: 60 app.
4 lagen: 80 app.
5 lagen: 100 app.

30 appartementen per bouwlaag
3 lagen: 90 app.
4 lagen: 120 app.
5 lagen: 150 app.

Total aantal mogelijke woningen

3 lagen: 270 appartementen
4 lagen: 360 appartementen
5 lagen: 450 appartementen

Total aantal mogelijke woningen

3 lagen: 285 appartementen
4 lagen: 380 appartementen
5 lagen: 475 appartementen

How parts make up a city

A brief overview of transitions between urban scales in the control hierarchy

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Abstract – Scales in urbanism are assigned to get a grip on the complexity of the city, to understand the processes and interactions between different scales of the urban fabric. Seldom however, these scales are translated back to the whole they originate from: the unified city. Furthermore, the influencers of this hierarchy are combined with the transitions between scales, leading towards insights on the development of an inclusive design methodology. This review paper provides an overview of the discourse in urbanism on the topics control (Habraken, 1987), hierarchy in planning (Alexander, 1965) and coherence between fragments in the city (Salingaros, 2005). Complementary to this theory the organisation in biology described in the article *How parts make up wholes* (Findlay & Thagard, 2012) is translated to a schema for urbanism: urban scales are decomposed to the wholes, parts, organizers, attachers and communicators. With the outcomes of this schedule combined with the review of the urbanism theory, an answer is formulated to the research question: *How do control-units in the urban fabric interrelate on different scales?*

The paper concludes that the dominant forces such as infrastructure and landscape elements form the base for the urban control hierarchy. The smaller scales are stronger connected, but depend heavily on the coupling elements between fragments on different scales. The individual acts as a communicator between the different scales as a solid yet dynamic factor. A multiscalar dynamic system that sustains itself (Sassen, 2012) is achieved when combining a bottom-up strategy on a smaller scale with a top-down strategy from a larger scale.

Key words – hierarchy; control; city-fragments; scale; structure; transitions.

1 Introduction

In urbanism the urban fabric, from private space to city network, is divided into scales. This paper aims to contribute to the understanding of the transition between scales and the role of the control agents on these urban scales with the goal to improve the effectiveness of urban interventions.
More often parts within the city are treated as isolated elements when being analysed and redesigned in urban regeneration. This method however is only useful when these parts are brought back into the bigger context of the urban complexity (Alexander, 1965). Also the human factor of control is more often not taken into account when decomposing the city into scales. This paper is an attempt to form an overview in methods on how to deal with scales in a more integral way the according to the following research-question: *How do control-units in the urban fabric interrelate on different scales?*

To answer this question, in the paper the city is considered as a complex system (Alexander, 2003; Portugali *et al*., 2012). The first section of this paper describes the existing terminology of control in urban planning to form a basic understanding of the topic. Alexander (2003), Habraken (1987; 1998) and others wrote about the definition of control and hierarchy as a way to control structure.

In the next section a further exploration is made on structure as a way of controlling with the theoretical framework of Salingaros (2005) on how to deal with fragments in the city. Complementary, a short overview is given on the current practice of new methods in urban planning using the principles of control by users in emergent urban planning.

In the third section, the urbanism theory will be combined with the arrangement of organization in biology explained in the article *How parts make up wholes* by Findlay and Thagard (2012). The structure, dynamics and functions of elements of hierarchy in physics, biology and the cognitive and social sciences described in this paper are translated to the urban organisation in scales.

In the conclusion an overview of the hierarchy of urban scales, their relation and the influence of the agents in control is given in a diagram. Finally, recommendations as result of this paper are given as a base for a design method for the graduation project *Framed space vs. free space*.

2 Control in urban planning

2.1 Rules vs. freedom

> *Controls are widely accepted if they are limitations on use, density and the layout of circulation, even if they should not be. They are viewed with greater suspicion when applied to visual form. Controls are negative and passive measures, as opposed to the positive technique of design. They stifle innovation and restrict individual freedom.* (Lynch, 1966 cited in Lehnerer, 2009: 61-62)

Urbanism is about regulations, or as Lynch describes: rules. The agents in control make rules. Control does not imply ownership, so when in control, the transformations that can be made are limited, and thus not entirely free. So total freedom in planning does not exist when crossing the border of the private parcel. To control the activities in public space, a certain kind of regulation is needed to have a fair game in urbanism. Like a board game we frequently control parts and manipulate their configurations, following certain stated principles and the rules of the game. (Habraken, 1998)

2.2 The public interest

Habraken (1987) describes control as the ability to decide on moves. Urban planners are deciding on the moves of the elements in public space by regulating urban activities. Rules are necessary for managing the basic elements of urban planning. But if they are too strict, it will create an inflexible situation, in which necessary changes are prevented from happening. However, when translated to the practice of urbanism the core problem of every design action is the definition of the public interest delimited from the private interests (Lehnerer, 2009).

2.3 Control hierarchies

The parts of a city to be controlled in urban planning follow a certain hierarchy. The entities we find on a lower level do not assemble to form a higher-level unit, like in an assembly hierarchy. The relation between the levels is not one of assembly but of one of dominance where the transformations on the lower level are constrained by the higher level. This hierarchy has to do with the control of physical elements and is called a dependency hierarchy (Habraken, 1987). For a way of organizing control this hierarchy is needed. Habraken describes control hierarchies as: '*…Wholes composed of parts that lend themselves for control by separate agents in charge of the design or maintenance of it.*' (Habraken, 1987: 3). The agent in control of the actions is depending on whether the control structure is top-down or bottom-up.

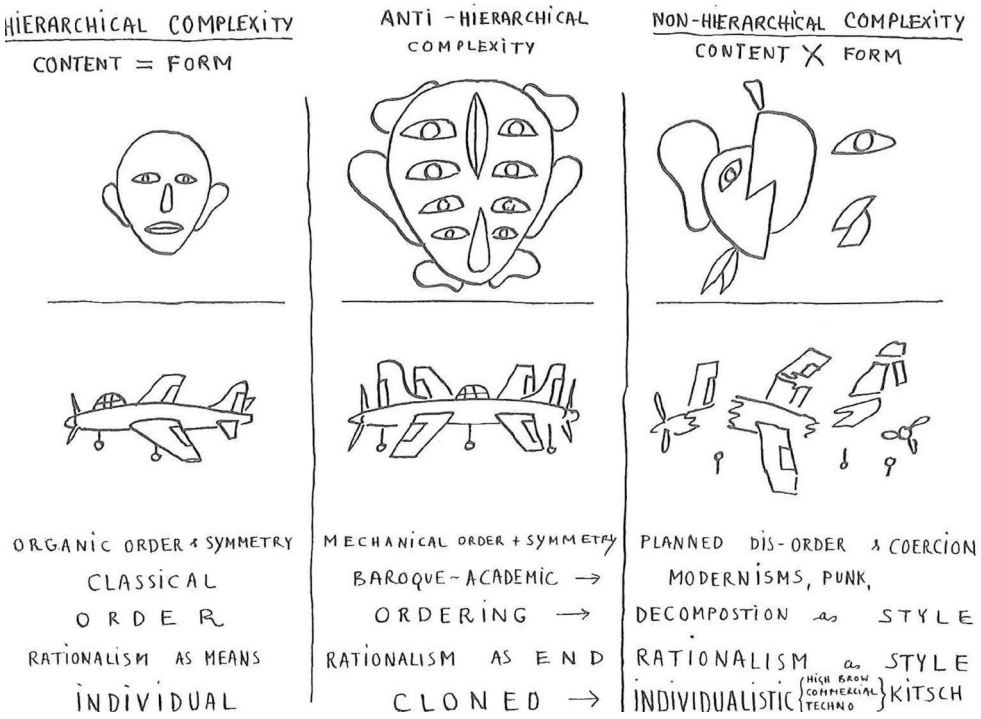

Fig. 1. Composition: Organic vs. Mechanic. (Krier, 2009: 75)

Christopher Alexander (1965) states however that a city is not a tree, but an intricate network. In his opinion a city cannot be simplified as a system with hierarchical dependencies. Parts can only be simplified on a lower scale and when assembled together again their interactions need to be taken into account. However, the current urban design strategies depend heavily on modular thinking in building-units and interactions via paths (Salingaros, 2005). If you can neatly segregate functions or regions on a city's plan then it represents a tree and it is consequently not alive. A city can be alive when emergent connections are possible and these are only possible in a system that is highly connected and offers a mechanism for additional connections (Salingaros, 2005).

3 Structure as a way of controlling

Léon Krier (2009) shows in his sketch *Composition: Organic vs. Mechanical* (Fig.1) that hierarchy can be misplaced when mechanical and superimposed on an urban or architectural design. In this sketch he implies that organic order and an individual approach to this order is necessary for a coherent hierarchical complexity. When superimposing structure, a less organic city is formed then a city, which has opportunities for an emergent sort of urban planning.

When discussing the difference in planning: imposed and emergent, order plays a considerable role. Guerreiro (2011) defines different kinds of order; the visual, mental, simple order, imposed by top-down and the much more general order, which is complex and subtle, which in essence is not related to predictability, the implicate order. Whereas the simple order is an order where parts are organized according to a model and positioned within the same intervals – the whole is then the sum of the parts and the spaces between them.

The implicate order, first mentioned by Bohm (1990), describes the whole as more than the sum of its parts because of its relationships with the surroundings. This is a hidden and complex order, emerging from the bottom up. This order is not to be understood in series. Rather, a total order is contained, in some terms of a regular arrangement of objects (e.g. in rows) or as a regular arrangement of events (e.g. in implicit sense, in each region of space and time. The word 'implicit' is based on the verb 'to implicate'. This means 'folding many times'. This leads to explore the notion that in some sense each region contains a total structure 'enfolded' within it (Bohm, 1990).
In urbanism, the concept of order has been restricted for cities of pure and rational geometry. However, this is only a very limited kind of order, which is associated with predictability (Alexander, 2002). The top-down planned structures in urbanism do not open up the city for new developments but create borders on different scales.

3.1 Coupling fragments within the city

To let the whole be more than separate parts, fragments in the city have to be reconnected. In the book *Principles of urban structure* Salingaros (2005) describes several rules for geometrical coherence applicable on multiple urban scales. These rules address terms used earlier in this text: hierarchy, organisation, control and decomposition.
Salingaros describes a successful environment as an outcome of a well-connected environment. The connection of fragments is thus the key ingredient to create a liveable and vibrant city. The higher-level forces connecting the parts are however not as strong as the coupling forces on the smaller scale, but they are necessary to form a stable framework. The smaller scales need to be defined before the larger scales: their elements must couple in a stable manner before the higher order modules can even begin to form and interact (Salingaros, 2005).

Specific methods of coupling are shown in Figure 2. Notable similarities are the contrast between areas which couple (A/B) and coupling by shape (C) and by permeability of boundaries (D/E). The boundaries cannot be an obstacle but also form a way of transition. As a rule, it is stated that different modules couple via their boundary elements. Connections form between modules and not between their internal elements. Salingaros also states that the higher-level couplings provide the essential coherence of a hierarchical system.

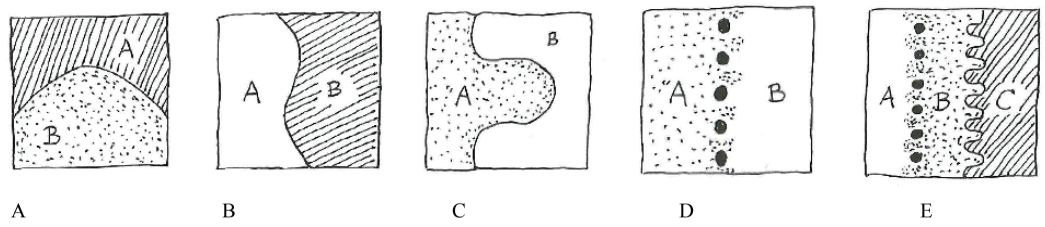

Fig. 2. Geometric coupling through: contrast in texture (A), contrast in colour (B), through penetration (C), through permeability (D) and via a common third element (E) (Salingaros, 2005: 90-91).

3.2 Scale matters

One of the most important rules in the scope of this paper is the statement that a system's components assemble progressively form small to large. This process generates linked units on many distinct scales. The statement that elements and modules do not depend on each other in a symmetric manner: a high scale requires all lower scales but not vice versa, shows the natural bottom-up ordering principle (Salingaros, 2005).

A city cannot be completely be decomposed into constituent parts however, there exist many divergent decompositions based on different types of units. In contemporary cities the structure or coherence is super orderly but does not exceed the two or three scales of interaction. In major revision of contemporary urban practice is shown that grid alignment does not connect a city, giving it only the misleading impression of doing so.

This also underwrites the fact that reducing chaos does not generate local connections but simplifies the interactions, which will not lead to a liveable whole (Salingaros, 2005). The strength of the connecting forces makes the parts as a whole as Alexander (2003: 8) states in the following quotation:

> *The wholeness is that global structure which pays attention to, and captures, the relative strength of different parts of the system, paying attention both to the way they are nested in one another, and how the pattern of strength varies with the nesting.*

3.3 Theory in practice

Kaisersrot (Lehnerer, 2009), a software tool to plan emergent neighbourhoods, and the new build Do It Yourself neighbourhood Almere Oosterwold (De Klerk, 2013) by MVRDV in are current attempts to work with the bottom up method. Both methods start with the parcel as a base-unit on which the further strategy is based.

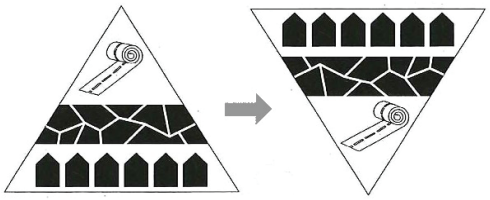

Fig. 3. What comes first: the parcel or the infrastructure? (Lehnerer, 2009: 29, edited by the author)

The solid street network is third topic of attention after planning the building and the parcel (Lehnerer, 2009). The idea of the robustness of the streets is combined with the idea of the completion of the stronger forces first: the parcel is defined first and the street network follows. However, this method stumbles upon the problem of the responsibility and the public interest. It seems difficult to manage to build housing and let the road develop organic because paths are necessary for transportation of the building materials (Lehnerer, 2009). Also in the case of Almere Oosterwold the method shows its complication when the construction of a public road by private stakeholders, on the basis of percentage ownership of private land is organized. This method has many pitfalls observed by the method of playing scenario's with *Play the City* to analyze the future project (Ibáñez López, 2013). The problem that rises is what comes first: the parcel or the infrastructure (Fig. 3)?

4 Transitions in the control hierarchy

To further clarify the topic of control hierarchies in urbanism a comparison is made with the theory of levels in organisation in biology. In the text *The analogical mind*, Thagard and Holyoak (1997) describe that analogical thinking is trying to reason and learn about a new situation (the *target* analog) by relating it to a more familiar situation (the *source* analog).

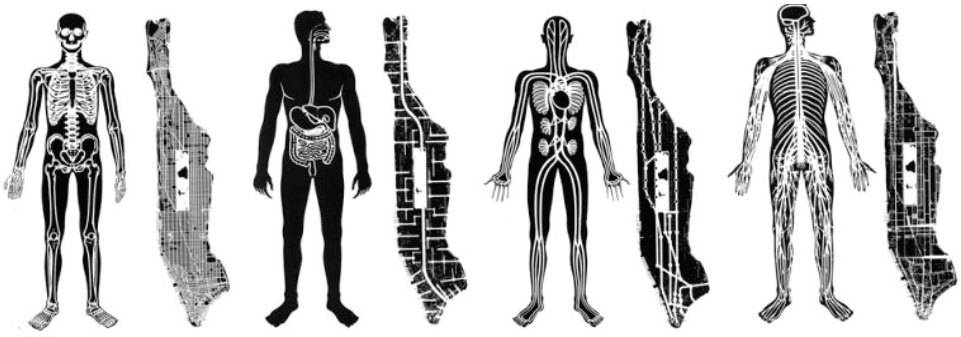

Fig.4. Analogy of the human body and systems in cities, in this case in Manhattan, New York. The bone structure is compared with the street pattern of Manhattan, the human metabolism with the sewer system, the circularly blood system with the subway system and the nerve-system with the power system. Oswald Mathias Ungers is well known for his analogies of city maps compared with examples of nature and other artefacts (Ungers, 1976: 15)

In this case the familiar situation is the organization of the human body build up out of cells and the target analog is the control hierarchy. Analogical thinking can be traced from childhood to an extraordinarily diverse range of uses by human adults, including generation of metaphors for the self; decision making in politics, business, and law; and scientific discovery. An example of the analogy between systems in the human body and networks in urbanism is shown in Figure 4 a comparison between systems in the human body and systems in Manhattan, New York.

In this review paper analogical thinking is used to combine the knowledge of urbanism scales and control hierarchy into a schema and show the transitions between these scales and the influence of control, to form an overview.

4.1 Urban scales in the control hierarchy

The schema of Findlay and Thagard (2012) used in the paper *How parts make up wholes* is translated into the schedule of Figure 3. Findlay and Thagard describe certain actors in biological levels; parts, wholes, tags, organizers, attachers and communicators. When translating this schedule to urbanism scales, it becomes clear that urbanism differs from an organism in two ways. Firstly, a biological whole is rarely assembled or made functional; it develops together with other biological wholes, it is not an artefact like the urban systems. Secondly, the biggest difference with the urban system: actors or agents are involved who have control over the different parts and wholes by regulating transformations by rules. Agents govern the dynamic control system themselves. Because of these differences the definitions used in the paper by Findlay and Thagard are converted so they match the urbanism scope.

Parts	Whole	Tags	Organizers (spatial planning by:*)	Attachers	Communicators
Individual organisms	Social group	• Physical features • Behavioral characheristics • Mental representation	•Social events (e.g., parties, meetings, rituals) •Institutions and organisations •Cognitive processes (e.g., planning)	•Shared environments •Emotional mental states • Social practices	• Sounds • Gestures • Speech • Media
Garden, home, parking space	Private space	• Texture of parts • Dimensions of parts • Spatial arragement of parts	•Residents (individual organisms)	•Coupling elements (Bricks, paving, stones, footpaths, trees, individual parking spaces, walls, doorways, windows, sidewalks, benches etc.)	• People (individuals/group) • Social events • (Social) media
Streets, shops, offices, houses, pedestrian zones, green spaces, plazas, parking lots, squares	Public space	• Texture of parts • Dimensions of parts • Spatial arragement of parts	• Residents • Visitors • Social groups	•Coupling elements (Bricks, paving, stones, footpaths, trees, public parking spaces, walls, doorways, windows, ledges, columns, sidewalks, benches etc.)	• People (individuals/group) • Social events • (Social) media
Public spaces	Neighbourhood	• Atmosphere • Functions • Accessibility • Possible activities • Size of public spaces • Proximity to other public spaces	• Users (local or visiting) • Neighborhood Association • Allotment Association • Retailers Association • District department municipality	• Infrastructure network (public transport, car, bike, foot) • Ecological structure (parks, green zones, water) • Surrounding functions	• People (individuals/group) • Social events • (Social) media
Neighbourhoods	City	• Population • Building typology • Street pattern • Functions/Services • Density • Neighbourhood identity	• City management • Building department	• Infrastructure network (public transport, car, bike, foot) • Building pattern • Landmarks (visual recognition) • Ecology network • Energy network • Water network	• Social events • Residents • Visitors • Commuters • (Social) media
Cities, villages	Municipality	• Work/Education • Cultural activities • Economic activities • Recreation • Proximity to other cities • City identity	• Board of the municipality/kanton	• Infrastructure network (public transport, car, bike) • Strategy of prevention of sprawl • Ecology network • Water network	• Social events • Vistors • Commuters • (Social) media
Municipalities	Region	• Work/Education • Cultural activities • Economic activities • Recreation • Proximity to other municipalities • Representation	• Board of Provinces/Region • Water board	• Infrastructure network (public transport, car) • Energy network • Ecology network • Water network	• Social events • Vistors • Commuters • (Social) media
Regions	Country	• Work/Education • Cultural activities • Economic activities • Recreation • Representation	• National government	• Infrastructure network (public transport, car) • Energy network • Abiotic system • Biotic system	• Social events • Trade of goods • Tourists • Commuters • (Social) media

Fig.5 A first attempt to translate the schema of Finlay and Thagard (2012) into examples of major tags, organizers, attachers, and communicators for various levels of organisation in urban planning and the involved controlling agents (image by author).

Factors of the urban hierarchy (based on the definitions by Findlay & Thagard, 2012):

- *Parts*: The units that assemble together to form a whole.
- *Wholes*: Structures made of parts that together operate as a system: wholes can also function as parts in higher-level wholes.
- *Tags*: Properties of parts that give structural and/or functional identities.
- *Organizers*: Controlling Forces or processes that bring parts together into structural and/or functional relationships implemented by agents in control.
- *Communicators*: Specialized components that move to allow interactions among physically separated parts.

Noted the difference between the notions level and scale in this section, Findlay and Thagard (2012) use the term *level*, whereas in this paper the word *scale* is used. The description of levels is the placement in the organisation or a certain ranking. Scale implies the size of an entity originating from the scaled drawings in urbanism and architecture. The scales can be arranged in a hierarchy of size as used in this comparison. A change of scale results in new interactions and relationships, and often, different control agents or organizing system. A change in level however entails a change in size or quantity rather then forming a different entity (Sassen, 2012).

4.2 Dynamic factors on a small scale

The new schema applied to urbanism starts with the smallest whole: the social group, where the original schedule hierarchy finished as the biggest level (Fig.5). The individual owns the private space and the public space is used by the social groups. Together the private and public spaces are forming the neighbourhood. The human activities in the shared environments act as a coupling element when designed well. However, the control over the public space is not always in the hands of the users. In a top-down hierarchy less freedom is given to plan the public space to the wishes of the user. We learned in the previous theory of urbanism that the implementation of emergent urbanism is about finding the balance between public and private interests.

We can learn from this theory in combination with the schema that a common ground between the public and private interest is a requirement to make a coherent public space with attention for the users input. The social media as a communicator between public and private interest can be a way to find this common ground (Fig.5).

4.3 Constant factors on a large scale

When looking at the schedule in Figure 5 we can observe the recurrent attachers in every scale: the infrastructure network, the ecological structure, the energy network and the water network. These terms can be addressed as the higher-level connecting forces, necessary to form a stable framework (Salingaros, 2005). For example the transportation networks interact heavily with the urban structure, which implies that the urban form to some extent will have to follow the transportation network, most importantly the pedestrian paths (Salingaros, 2005). In that way these structures are robust and less changing than the smaller stronger forces. This implies that the method of Lehnerer (2007) in a way is not applicable, because the urban planning is depending on the base element of the main infrastructure as a framework.

4.4. A changing system

Sassen (2013) divides the notion scale further into: temporal scales (frames of various urban conditions and dynamic) and spatial scales (as used in the scheme: private, public etc.). We see now that the temporal scales play a role in the transition of scales. In this diagram the temporal scale is the human activity or the communicators. Through the communicating activities of humans, a multiscalar dynamic is allowed. This allows the scenario that at an unstable system at a given scale can be a condition for the stability at a lower or higher scale. The bottom-up control can turn into top-down: competition becomes less important. This further implies that a strong bottom-up or top-down method is not the way to go. A combination of the two seems to be a relevant solution if we take control into account.

5 Conclusions

This paper concludes with an answer to the formulated research question: *How do control-units in the urban fabric interrelate on different scales?* The answer lies in the need to establish a balance between weaker long-range forces and stronger small-scale forces is in order to let scales interrelate and form a city.

The first condition is defined in the weaker long range connecting forces, such as infrastructure, landscape elements and ecology networks, as the backbone of the urban hierarchy. The first proposed attempt to show the dynamic interactions in the schema of Findley and Thagard (2012) in Figure 5 shows recurring long rage forces as attachers throughout scales. These continuous forces guarantee a stable system of urban fabric throughout the hierarchy of scales. The way to control these systems is a top-down strategy to assure a

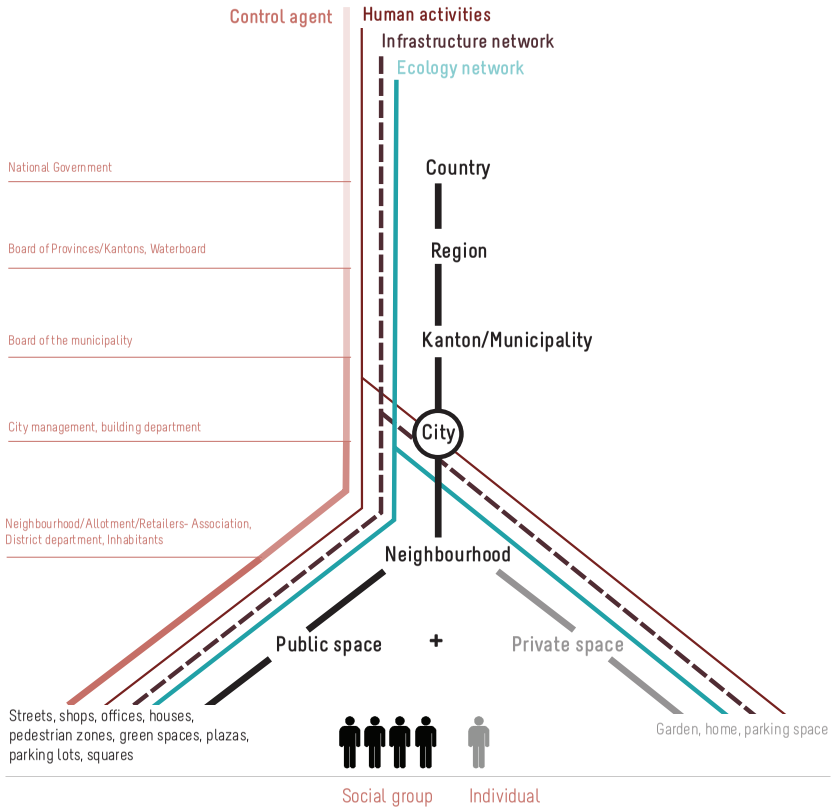

Fig. 6. Diagram showing the hierarchy of urban scales and the constant factors: the attachers between the scales. (Image by author).

counterweight to the ever-changing dynamics on a smaller scale or in other temporal scales.

The second condition lies in the establishing that stronger forces on a small scale are the basic element for a strong urban coherence. This means that the attention in reconnecting scales should be prioritised on the smaller scale coherence of the public and private space and how these form the whole of the neighbourhood. A purely bottom-up strategy would be a mismatch since public and private interests are usually antagonistic. So when designing a structure for a smaller scale, critical attention should be brought towards superimposing structure.

Current Do It Yourself urbanism projects, as Oosterwold (De Klerk, 2013) and Kaisersrot (Lehnerer, 2007) seem to struggle with the same problem: the freedom of governing the public space. In Figure 6 on the left side the control agents are shown which are in control of the scales. The diagram emphasises the idea that, ideally, individuals and social groups are in control of the public spaces together with a regulating factor of the administrative agents, such as a municipality or a planning department. The diagram is most diverged on the lower scales, symbolising the stronger network on the smallest scales.

6 Casus

6.1 Scope

This review paper is a starting point for developing the design method of the urban regeneration of the neighbourhood Hirzbrunnen-South in Basel, Switzerland in the graduation project *Framed space vs. free space*. This project is dealing with the connections throughout scales, fragments and control and freedom in public space. The project-area forms an urban enclave, an isolated fragment on the borders of the city of Basel. The framing of the area by the bordering train tracks and the river Rhine cause the fragmentation.

However, this area has the attributes of a less regulated space since its rural character combined with the functions of sports fields and allotment-gardens. The attribute of the freedom of planning retained by the owners of the allotments is nevertheless limited to the

plots they own. The aim of the project is to find a method to use this quality of freedom to regenerate the area combined with the planning of new housing and reconnect it again to the city-centre and the river Rhine. The aspects control and scale combined in this paper form therefore a solid base for the developing of a strategy for this region.

6.2 Developing a method

The main recommendation for the casus would be to develop the method with a framework of the infrastructure and the ecology network: the weaker connection forces. Complementary with research on participation processes, a way to provide sufficient freedom for residents to plan the public space can be developed. The new method should be suited for the *control versus freedom* aspect. The goal is to define a balance between bottom-up and top-down and a focus on public space as an attacher between private and public life in the city.

On the smaller scale of the project the *tabula rasa* method of Oosterwold appears un-adapted, in respect to the many existing valuable elements in the area of Hirzbrunnen. The urban regeneration requires interventions on a smaller scale dealing with an existing urban context. Developing a method for emergent urbanism on a small scale with more freedom for the private stakeholder is the next step in this project. This method of urban regeneration can also be relevant for the general use in the practice of urbanism since *tabula rasa* examples are a rare phenomenon.

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