I would like to express my appreciation to my mentor team: Maurice Harteveld and Machiel van Dorst who guided me through the process of research and design. I also would like to thank my friends and colleagues who shared their insights about my project. Special thanks to my family and Simas Ragauskas who supported me during the project.
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Master thesis

URBAN SPACES CONVERTED INTO PUBLIC PLACES
REGENERATION OF URBAN AREAS ALONG THE RIVER ROTTE IN THE CITY CENTER OF ROTTERDAM

Keywords: inner city waterfront, urban spaces, out-door public places, walkability

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Delft, June 2014
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CHAPTER ONE: INTRODUCTION

The present chapter of the booklet explains the framework of the project. The following sections introduce case study, motivation and approach. Problems, research questions, aim, relevance and methodology are presented, followed by time planning and short summary of the Introduction chapter.

1.01 Project area
1.02 Motivation
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1.10 Summary
Rotterdam is one of the most interesting cities in the Netherlands. It has the biggest seaport in the country and is culturally very diverse. Geographically the city is rich as well, as River Maas connects two shores of the city. This river mostly influenced urban development of Rotterdam. First settlements were located at the north side of Maas and later, following the developing harbour, the city has grown towards the south on the other side of the river.

Yet still the relation between urban spaces and water in the city centre is missing. That is partly due to the fact that the areas of city centre of Rotterdam were rebuilt after being bombed during World War II prioritizing roads, infrastructure and the development of commercial facilities in the city. This resulted in city centre streets becoming main public places for rotterdammers and the missing link between water and public spaces in the city centre.

An equally important element in the development of Rotterdam city centre is human scale. The environment of high-rise offices and huge shopping buildings in the city centre leaves little space to enjoy urban life on a more human scale.

The chosen area for the project is along the Rotte River in the city centre of Rotterdam. This territory disguises two potentials, which could possibly solve the earlier mentioned problems. First, the possibility to revive an accessible urban waterfront in the city centre of Rotterdam. And second, the potential to convert urban spaces along the river into a system of pedestrian orientated streets and a system of various public places and walking paths along the water.

However, today urban areas along Rotte River in the city center of Rotterdam are not used in all optimal ways. The streets between water and buildings are used as second streets. People are barely using those spaces. Therefore it is a challenge to convert these urban spaces into public places as well as to make water and public places accessible to each other.
Looking from a bird’s eye perspective at public life in the city centre of Rotterdam, most of the city consists of shopping streets as public places. After the shops close there is nothing whatsoever to do in the city spaces in the evenings. Corridors of closed windows of shopping buildings do not provide attractive environment for citizens to walk around. In general, Rotterdam was built around auto-infrastructure development; therefore human scale is a missing link in the city centre of this port city.

Rotte River has a historical meaning for the city as it was named after this river. However Rotte River waterfront is poorly developed as a public space; urban spaces along the river provide few public or recreational activities.

This case is a motivation as the project area suggests urban spaces in a more human scale than surrounded shopping streets, to be converted into a system of walking routes and public places with accessibility toward Rotte River. It this way it would be possible to improve the quality of city centre of Rotterdam in a different perspective. Out-door public spaces would be provided, offering people the chance to enjoy urban life along the water without being obliged to spend money.

Generally, the motivation of the project is to introduce different kind of public places focusing on walk-ability and accessibility towards the water in a non-commercial urban environment.

This master thesis is a research and design-orientated project in the academic field of urbanism, focusing on improvement of out-door public spaces in city centres on the scales of urban design (vision) and human scale (design).

Research is focused on design criteria for quality of public places, improvement of walk-ability and streets as public spaces in city centres. The main interest of this project is a design proposal for a potential conversion of poorly used urban spaces along Rotte River in the city centre of Rotterdam into an attractive, safe and integrated, in the current urban pattern, public place.

Theoretical research, spatial analysis and research by design parts of the project are being managed simultaneously, based on which strategy vision for the whole project area is developed. As a consequence design for the chosen project area is proposed, followed by detailed design on 3 different public places. Thesis is concluded with reflection of the project.
**1.04 PROBLEM STATEMENT**

**Streets are empty and the nearby water is ignored.**  
(During the whole day and evening, in the city center of Rotterdam along the Rotte River).

Five main problems can be identified along the River Rotte in the city center of Rotterdam:

01. Urban areas between buildings and the water are not used as public spaces.  
02. Streets are poorly walk-able.  
03. Facades of buildings on ground floor level that are facing the waterfront are mostly rear facades.  
04. The quality of river water and accessibility towards it are poor.  
05. Analysed urban spaces are poorly integrated in shopping orientated district.

The main problem of the chosen area is that the streets along the River Rotte in the city centre of Rotterdam are empty and the nearby water is ignored. The question ‘Why is that so?’ is the driving force of the project.

First, urban areas along the water in the city centre of Rotterdam are not used, as public spaces in all potential ways. Implicitly that is because most of the buildings are tall and therefore the link between the building and the outdoor space on the ground level is lost. Especially high office buildings have poor relation to the streets, thus creating a boring environment for people on the streets. That is to say human scale is a missing link in parts of the area.

Second, the area is a not pedestrians friendly. Basically that is because of quite a number of cars parked along the water, also acting as a barrier between street space and the water. Furthermore, the area is not fully wheel-chair traffic friendly. One cannot have a continuous walk along the water not facing the barriers of stairs without ramps.

Furthermore, because back facades of the buildings are facing the water, those streets, between buildings and the water, are used to deliver goods for facilities in the buildings via trucks, which at that time are blocking pedestrian ways. Hereby ground floors of the buildings do not offer any public activities for the

Water of the river in this area is another issue. The quality of it is low, as the water is almost not moving. Therefore water is green for most of the time. The accessibility towards the water is poorly developed too. Only one public terrace is designed in the area, however with no accessibility for wheeled-chair persons.

Nevertheless, the area along the River Rotte in the city centre of Rotterdam has potential to be converted into a public place. That is because of its’ location in the city centre context and the value of the water, as a possible attraction. What is more, while human scale is a missing link in the city centre of Rotterdam, analyzed area, after being redesigned, it might possibly suggest this scale. This suggests a possibility to enjoy urban life while walking not between shops buildings, but along historical river of Rotte, after which city was named.
PHOTOS ILLUSTRATING THE PROBLEMS OF THE PROJECT AREA

Source of photos: made by the author.
1.05 RESEARCH QUESTION

What are the spatial strategies and multifunctional qualities that can be used and designed in order to regenerate urban spaces (along the Rotter River in the city center of Rotterdam) into attractive public places for citizens and visitors, with special focus on creating accessibility towards the water (Rotte River), and to be well integrated in the current urban pattern of the city center of Rotterdam?

Mentioned in the main project research question, 'Spatial strategies' and 'Multifunctional qualities' are hidden tools in order to regenerate barely used city spaces into attractive public places.

First, by the term 'Spatial strategies', we mean a designed system of different size and type spaces, which will be developed based on various studies (spatial site analysis) and theories (literature review) with a focus on designing a comfortable, attractive and safe environment for public use.

Secondly, by the term 'Multifunctional qualities', we mean a combination of different, mainly public use, facilities. By which operating a diversity of various functions (recreational, leisure, etc.) and activities (cultural, educational, etc.) in the area can be ensured.

By collocation 'Integration of public place in the current urban pattern of city centre of Rotterdam' the solution to the existing urban problems, which are that nearby public spaces (shopping streets) are mostly crowded and the project area is empty of people most of the time, is proposed. It is essential to improve edges of the area and urban connections of public place, in order that the area could be reached and recognised from nearby urban spaces.

By mentioning 'Accessibility towards the water (Rotte River)', a solution to the problem, of missing links between streets and water, is presented. By creating physical and psychological links to water, it would enrich the quality of the public place, and would make it stand out among other public spaces in the city centre of Rotterdam.

The second part of the main project research question stands for 'Accessibility towards the water' and 'Integration in the current urban pattern of city center of Rotterdam'.

The following research sub questions assist to collect a body of knowledge, based on which earlier stated problems could be solved:

01. Historical and future development of Rotte River in the city centre of Rotterdam.
02. What are the conditions for inner city quality?
03. What are the conditions for street quality as public places in city centre?
04. What are the conditions for pedestrian quality in city centre?
05. What are the conditions for quality public places in city centre?
06. What are the principles of river waterfront design in public space in the city centre, to ensure attractive and safe environment, and good access towards the water?
1.06 PROJECT AIM

Conversion of urban spaces (along the Rotte River in the city center of Rotterdam) into public places.

By term ‘Urban spaces’ a specific location along the Rotter River in the city centre of Rotterdam is implied. As mentioned earlier in the section ‘Problem statement’, the chosen area for the project includes many problems, which causes the area being a set of urban spaces in the city, which are abandoned and not used by citizens. Therefore the main aim is to convert urban spaces into public places.

By term ‘Public place’, a diverse outdoor area, open to public, of different age and cultural backgrounds, to enjoy daily life of the city and to do various activities (recreational, cultural, etc.) is implied.

The whole aim of the project is a combination of the implementation of the following goals:

01. Making urban areas along the water accessible, attractive, and enjoyable for citizens and visitors.
02. Creating connection between buildings and the water through public space on the street level.
03. Making streets more pedestrian friendly.
04. Developing safe, attractive, accessible waterfront and improving the quality of water.
05. Integrating designed public places into existing urban pattern.

In more detail, one of the components of the main aim of the project is to regenerate urban areas along the water into more accessible, attractive and enjoyable public places for citizens and visitors. The issue of the accessibility should be taken into account, because when one is walking on the nearby streets of the chosen area, one could hardly notice that there is a river on the other side of the building block. Returning to attractiveness of the area, the area and buildings does not have much of the architectural value and the materials of the pavements are very poor, basically concrete. And finally talking about the area being enjoyable, the current urban spaces do not suggest any kind of activities; there are only few benches in the analyzed area. Thus a new program of activities should be suggested in the analyzed area.

Another important goal is to create a link, between ground floor, of the buildings along the water, water, and the water of the river itself through public space on the street level. In other words, to improve the profile of the streets, so that the space of streets would be an extension of the buildings, with linking accessibility towards the water.

One more objective to implement is to make streets in the analyzed area safer and more comfortable for pedestrians, as today, for example, too much car parking is located in the area.

Another goal consuming safety issue is the development of attractive and safe waterfront, as well as accessibility towards the water. It is important to design a safe, as well as attractive, waterfront of the river Rotte in the city centre of Rotterdam in order for urban spaces along water to be used as public places.

Last, it is essential to integrate designed public places into the current urban pattern of the city centre as well as to make them accessible, because otherwise these places would remain unknown and empty; which is basically the situation in those spaces today.

By meeting these goals, the main aim of the project, to convert urban spaces into public places, might be implemented.
Besides the main goal of the project, mentioned earlier, to convert urban spaces along the Rotte River in the city center of Rotterdam into public places, the project also aims to contribute in both social and academic relevance. The project intends to contribute to the knowledge and identification of the urban problems in the analyzed area within the context of city centre of Rotterdam. As well as the projects seeks to contribute to social demands for a more attractive urban environment.

**SOCIAL RELEVANCE**

In general it is relevant for the society to have a variety of public places in the city centre of Rotterdam, since the city is growing and developing. However the number of high quality public spaces in the city is not equivalent. Public spaces in the city centre of Rotterdam are crowded most of the time, while potential urban spaces close just block away from the middle of the city centre and are not used in all potential ways. Therefore it is assumed that redesign of those areas would suggest better public life in the city centre of Rotterdam.

Moreover most of the public spaces in city centre of Rotterdam are shopping streets and public places without a commercial facilities surroundings is a missing link. Therefore it is relevant for the city centre to have public places where citizens could walk without shopping and enjoy city life.

Presupposition can be made that not reviving the project area focusing on public places and improvement of walk-ability, the area might become an extension of nearby existing shopping streets filled with commercial facilities leaving little if any space for citizens to enjoy urban life other ways than just going shopping.

**SCIENTIFIC RELEVANCE**

The city is also lacking an attractive public places outside the city centre as well as all urban spaces in the city centre are not fully used. One of the reasons for that is that the quality of urban spaces in the city centre of Rotterdam after the reconstruction after the World War II is still in the discussion. The research and design project can provide more objective guidelines for improving urban quality of public places in the city. Specifically, spatial conditions for successful well-functioning waterfront urban spaces (along River Rotte). Therefore by suggesting the design strategy of converting urban spaces in the city centre into accessible, attractive and enjoyable public places would, simultaneously the more flexible design strategy for public places in other parts of the city are being suggested.

The project is also questioning the missing historical link between past and present in the area. As project area was redeveloped ignoring historical meaning of the area, thesis aims to provide guidelines by design on how to recreate lost meaning and historical value of the urban area. This might be implied in other cases, where urban spaces in historical cities are missing the historical link and meaning of a place.

Another line of scientific relevance concerns improvement of walk-ability in an auto traffic and/or commercial industry orientated cities. Nowadays the definition of sustainable city partly equals walk-able and cycle-able city. Therefore researched guidelines and the designed area of the project are focusing on improvement of pedestrian routes and nearby existing unused urban spaces works as a case study for other poorly walk-able cities.
A method of analysing the project area in different perspectives in order to create valuable design is used. This method could be described as a multi-method covering the two following assessments. First, estimating the project area as a potentially improvable urban gap in the context of mono-functional (shopping streets orientated) city centre environment lacking a quality of public places and walk-ability. Second, assessing the project area in a landscape layer – questioning the possibilities to revive urban river waterfront as a core of accessible and integrated public urban pattern.

Different techniques are used to cover sub research questions. Four main research and design tools are used during the process of the project: literature review, site observation, mapping and drawing/modelling. All of these tools are equally important for the research and design process of the project because each of them gives different kind of knowledge and inspiration. After every design decision or research observation, different methods are used to review the decision/observation.

The present section overviews the time planning of the project. The diagram below illustrates what was delivered and introduced at each presentation during graduation process. The image also shows what parts of the project were worked during five stages of the master thesis.

Roughly summarized the first half of the project was focused on creating theoretical and analytical frameworks parallel to proposing vision of the whole area and concept of design. The second part of the thesis, heading towards P4 (GO/NO GO) presentation was intended for clarifying design proposal for the fragment of the project area and creating detailed design for the three chosen public places.

Final outcomes of the project – master thesis present booklet and public presentation are planned at the end of graduation year.
# 1.10 SUMMARY

<table>
<thead>
<tr>
<th>PROJECT AREA</th>
<th>City centre of Rotterdam, along Rotter River.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOTIVATION</td>
<td>To introduce different kind of public places focusing on walk-ability and accessibility towards the water within a non-commercial urban environment.</td>
</tr>
<tr>
<td>STUDY APPROACH</td>
<td>This master thesis is a research and design-oriented project in the academic field of urbanism, focusing on improvement of out-door public spaces in city centre on the scales of urban design (vision) and human scale (design).</td>
</tr>
<tr>
<td>PROBLEM STATEMENT</td>
<td>Streets are empty and the nearby water is ignored (during the whole day and evening, in the city centre of Rotterdam along the Rotte River).</td>
</tr>
<tr>
<td>RESEARCH QUESTION</td>
<td>What are the spatial strategies and multifunctional qualities that can be used and designed in order to regenerate urban spaces (along the Rotte River in the city centre of Rotterdam) into attractive public places for citizens and visitors, with special focus on creating accessibility towards the water (rotte River), and to be well integrated in the current urban pattern of the city centre (of Rotterdam)?</td>
</tr>
<tr>
<td>PROJECT AIM</td>
<td>Conversion of urban spaces (along the Rotte River in the city centre of Rotterdam) into public places.</td>
</tr>
<tr>
<td>RELEVANCE</td>
<td>Social relevance: New perspective: public places with accessible waterfront in the city centre of Rotterdam offering possibility to walk or sit and enjoy urban out-door life without shopping.</td>
</tr>
<tr>
<td></td>
<td>Scientific relevance: Design case as a package of guidelines on how to convert urban spaces in the city centre into accessible, attractive and enjoyable public places; how to recreate lost meaning and historical value of the urban area;</td>
</tr>
</tbody>
</table>
| METHODOLOGY | Multi-method assessing project area:  
|             | _as an urban gap in the context of mono-functional city centre environment lacking a quality of public places and walk-ability;  
|             | _as part of landscape layer of the city - questioning the possibilities to revive urban river waterfront. |

| TIME PLANNING | The first half of the project - focused on creating theoretical and analytical frameworks parallel to proposing vision of the area and design concept.  
|               | Second one - intended for clarifying design proposal for the fragment of the project area and creating detailed design for chosen three public places. |
CHAPTER TWO: THEOREY

2.01 Introduction

2.02 Literature review paper: “Urban Spaces Converted into Public Places; Spatial strategies and multifunctional qualities for improving the quality of public places in city centers”

2.03 City scale:
- Criteria for inner city quality
- Criteria for street quality as public place

2.04 Human scale:
- Criteria for pedestrian quality
- Public places references

2.05 Landscape:
- Essay: “City as a Landscape; Relation between city and river in historical development of Rotterdam”
- Urban waterfront design references

The present chapter of the booklet explains the theoretical framework of the project. The following sections present conclusions made while searching for answers for main project research questions. Literature review paper focuses on spatial strategies and multifunctional qualities for improving the quality of public places in city centres. Design conditions in city and human scales represent criteria for quality public places. The chapter is finished with historical essay analyzing landscape layer of Rotterdam city - Relation between city and river in historical development of Rotterdam. References of well-designed public places and urban waterfront are presented as case studies.

Outcomes of this theory chapter will be taken into account while evaluating project area in the analysis chapter.
2.01 INTRODUCTION

The main line and the core of theoretical framework focus on the design of outdoor public places in city centres. Literature research includes studies of outdoor activities in urban centres. The present chapter also presents design criteria for various activities for citizens and visitors in outdoor public places in city centres recommended by known researchers within the field of urban public realm (Carmone et al 2010, Feddes et al 2005, Gehl 2011, Jacobs 1961, Sennett 1977). Theory overview provides better recognition and evaluation of current urban spaces in the project area as well as an input to come up with the list of the principles that guarantee the possibilities for a well-working outdoor public place. Literature analysis refers to both exemplary and dormant public spaces in cities. Based on these references and mentioned theory, a body of knowledge of design criteria of public places in city centres and aspects of analysis of the project area are built. Since different users of different public places have various demands, pedestrians in streets in city centres are taken as a focus group.

The second line of theoretical framework is focused on safe and attractive integration of water into existing urban pattern in the city center (Broesi et al 2008, Hooimejer, Meyer, Nienhuis 2005, Hooimejer, Toorn 2008, Kokhuis 2013, Meyer 1999). Part of the research is focused on design criteria for making city waterfront accessible for public use. References and theory review create guidelines, based on which public places with focus of accessibility towards Rotte River in city centre of Rotterdam will be designed.
Urban Spaces Converted Into Public Places
Spatial strategies and multifunctional qualities for improving the quality of public places in city centers

AR3U022, Theory of Urbanism (2013-2014 Q1)

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January, 2014

Abstract – In general, social and spatial urban development problems in cities are being solved by a long-term urban re-development visions and strategy plans made by urban planners. Another way for improving mentioned qualities is to focus on local scale by providing urban design solutions, which would positively influence the pursued qualities of the district.

The essential element of urban design is understanding of the relationship between people and their environment (Carmona et al 2010) since people are the ones that matter. ‘Inevitably, life between buildings is richer, more stimulating, and more rewarding than any combination of architectural ideas’ (Gehl 2011, p.22). Moreover, life between buildings is one of the most important attractions of a city (Gehl 2011). The outdoor urban spaces can be identified as a reflection of quality of public life in the city. Thus improvement and maintenance of public places, especially in city centers, are very important in order to achieve good quality public life in the city. However, only minority of urban spaces in city centers is being used as public places. There are two important and separable issues, the first one is how constantly urban spaces are used; the second issue is how these spaces can be used and the latter certainly seems more important. Therefore the present literature review paper focuses on recommendations of known urban researchers (Appleyard, Gehl, Jacobs, etc.) on what makes urban spaces convertible into public places. Especially, what makes streets work as public places. As a focus group of public places, this paper concentrates on streets, since they are most commonly used public spaces in cities.

In order to find answers to the main research question, what are the spatial strategies and multifunctional qualities that could improve quality of public places of streets in cities, a method of literature analysis, is used. By searching inside the existing literature, confirmation of guidelines of design, that ensure possibilities for various activities to occur in public place is attempted. This research focuses on addressing the following questions. What are the main factors, that make public place of the street in the city center work well? What are the spatial strategies for converting streets in the city center into public places, in relation to making them more pedestrian friendly? Since different users of different public places have various demands, pedestrians in streets in city centers are taken as a focus group.


Key words – public spaces, outdoor activities, city center.
1 Introduction

The quality of public places in cities reflects the quality of the whole urban life of the city. The quality of streets in city centers are very important, as they carry the biggest numbers of people, compared to other types of public spaces.

Everyone uses streets: one can see people rushing to work, groups of children coming home from school, kids playing on the streets, seniors observing other people passing by and many other activities. Therefore, it is essential to design these public places in a way, which would allow people with different demands to be provided with safe, attractive and enjoyable environment. Though nowadays the majority of pedestrians use most of the streets just as roads to their destinations, the improvement of streets’ environment can create opportunities for people to spend more time enjoying street-life, than just pass by.

The main goal of this literature review paper is to design guidelines, on how to convert urban spaces, in streets, into public places, focusing on pedestrians. In order to do that, possible outdoor activities and demands for that on small scale are presented, as well as lists of spatial strategies and multifunctional qualities suggested by various known urban researchers, on a bigger scale, are overviewed.

2 Activities in outdoor public spaces

2.1 Necessary activities

The first group, necessary activities, is being participated through out of the year, no matter what are the conditions of the physical surroundings. These activities are more or less compulsory. For instance, going to work, shopping, waiting for a taxi, distributing mail, etc. ‘Among other activities, this group includes the great majority of those related to walking’ (Gehl 2011, p.9).

2.2 Optional activities

The second group, optional activities, as can be determined from denomination, occurs ‘If there is a wish to do so and if time and place make it possible’ (Gehl 2011, p.9). Therefore physical environment can increase these activities in case surroundings are attractive. That is to say, the quality of urban design contributes to increase or decrease of the potential number of people spending time in a given public place.

2.3 Social activities

The third group, social activities, depends on the present of others in the public space. The tendency of people coming and staying in public places occurs if ones are filled with other people. Though, more that any proposed urban design, people itself are the main factor that engages other people to be in public places in the cities, urban design can strongly contribute in attracting people to enjoy urban life in outdoor public spaces (see illustration 2).
Although the physical framework does not have a direct influence on the quality, content, and intensity of social contacts, architects and planners can affect the possibilities for meeting, seeing, and hearing people – possibilities that both take on a quality of their own and become important as background and starting point for other forms of contact (Gehl 2011, p.13).

2.4 Various outdoor activities

As mentioned earlier, streets in city centers, as being the main public places in everyday’s urban life, are being used for the necessary activities for most of the time. However, if physical surroundings of the streets suggest a comfortable environment, the optional activities may follow. Afterwards the social activities would occur. In that way all kind of activities would occur, making the street an enjoyable place to walk through, as well as to stay in. As Gehl (2011, p.11) states, ‘In a good environment, a completely different, broad spectrum of human activities is possible’.

In general, for streets are the main venous of people flows in the city centers, it is a corner-stone to improve the quality of streets’ surroundings in order to increase various outdoor activities, which would ensure the diversity and vitality of street life.

3 Small scale criteria for vitality in city centers

Urban vitality in city centers is one of the most important aspects for urban spaces to be enjoyable. In his master thesis ‘Revitalizing the Heart of Rotterdam; Towards a Vibrant Inner City’ research Wolters (2013) concludes urban design criteria on local scale for city spaces to become more vital in city centers. After having reviewed re-known researches, Jacobs (1961), Gehl (2010), Montgomery (1998), Detr & Cabe (2000), author suggests that in order to make urban spaces in the city center livelier, it is essential to focus on the following aspects:

a) Invite people to walk, bike and stay in city space.
b) Safe, attractive public space with visual stimulation to create a sense of place, relating to the context.
d) Different optional social and cultural activities during the day in public space to increase public participation.
e) Frequent & easy road crossings and accessible public space.
f) Clearly defined, easily understandable, well enclosed public space with continuity of street frontages and furniture.
g) Green and water for recreation (Wolters 2013).

At the end of the day, by implementing these interventions, the quality of urban life in the streets of city centers can be improved. Once again emphasis is put on human scale, as it is essential to provide opportunities for people to walk, bike and stay in city spaces, in order to create a vital and enjoyable environment for public places in inner cities.

4 What streets should be for

The primary aim of streets in cities was to transport goods, animals and people. Nowadays urban spaces of streets are used far more than just for transportation. In the first place, according to Jacobs (1993), streets are places for people to socialize. With multifunctional activities happening on streets in city centers, improvement of different layers of functions, how streets can be assumed, can ensure better quality of the whole street life. In master thesis ‘Urban Streetscapes; The Role of Street as Urban Open Space for Urban Regeneration in Dutch Neighborhood’ research author Jung (2013) cites Appleyard’s (1980) suggested concepts of what streets should be used for:

a) ‘The street as a sanctuary: Streets on which children grow up should be safe from speeding and careless drivers.’
b) ‘The street as a livable, health environment: The street environment should have places where people can sit, converse, and play.’
c) ‘The street as a community: Streets should be places where communal life is possible and where it can happen...’
d) ‘The street as neighborly territory: the street should become in a symbolic, sense territory that the residents believe belongs to them...’
e) ‘The street as a place for play and learning: Places which are diverse in character, with different kinds of surfaces, and with adequate spaces to play all the street games children like to engage in...’
f) ‘The street as a green and pleasant land: The “greening” of streets is perhaps one of the most common desires of those who live in the central city.’
g) ‘The street as a unique historic place: People take pride in places that have a special identity. … Residential streets should be destinations, not routes.’ (Appleyard 1980, p. 107-109)
5 Safety and multifunctionality in streets

As mentioned in the beginning of this paper, streets are the main and most used public spaces in city centers (Gehl, 2011). Well-known researcher of urban quality of public spaces, Jacobs (1961), states design features to increase safety in streets in cities. The author also gives arguments on why multifunctional qualities along the streets improve the quality of streets as public places.

5.1 Safety in streets

Jacobs (1961) states, that in order to achieve safety in the streets in city, the following design features should be implemented:

First, there should be a clear demarcation between what is public space and what is private space. Public and private spaces cannot ooze into each other as they do typically in suburban settings or projects. Second, there must be eyes upon the streets, eyes belonging to those we might call the natural proprietors of the street. The buildings on a street equipped to handle strangers and to insure the safety of both residents and strangers must be orientated to the street. They cannot turn their backs or blank sides on it and leave it blind. And third, the sidewalk must have users on it fairly continuously, both to add to the number of effective eyes on the street and to induce the people in buildings along the street to watch the sidewalks in sufficient numbers. Nobody enjoys sitting on a stoop or looking out a window at an empty street. Almost nobody does such a thing. Large numbers of people, entertain themselves, off and on, by watching street activity (Jacobs 1961).

5.2 Multifunctionality in streets

Jacobs (1961) gives arguments, why multifunctional qualities along the streets (stores, bars, restaurants, etc.), improves the quality of streets as public places:

First, they give people – both residents and strangers – concentrate reasons for using the sidewalks on which these enterprises face. Second, they draw people along the sidewalks past places which have no attractions to public use in themselves but which become traveled and peopled as routes to somewhere else; this influence does not carry very far geographically, so enterprises must be frequent in a city district if they are to populate with walkers those other stretches of street that lack public place along the sidewalk. Moreover, there should be many different kinds of enterprises, to give people reasons for crisscrossing paths.

Third, storekeepers and other small businessmen are typically strong proponents of peace and order themselves; they hate broken windows and holdups; they hate having customers made nervous about safety. They are great street watchers and sidewalk guardians if present in sufficient numbers. Fourth, the activity generated by people on errands, or people aiming for food or drink, is itself an attraction to still other people.

In conclusion, according to Jacobs (1961), safe environment and multifunctional qualities are the main features that ensure enjoyable environment in streets, as public places.

6 Interaction between people and streets

When analyzing streets as public places for pedestrians, rather as transport roads for vehicles, it is essential to understand the actual interaction between people and streets. Based on such attitude, Jung (2013) concludes six criteria for great streets, made by Jacobs (1993), within analysis of great streets over the world:

a) “Places for People to Walk with Some Leisure: The point of view and interest of this inquiry has mainly to do with the best streets for people, mostly on foot. … It’s on foot that you see people’s faces and statuses and that you meet and experience them. That is how public socializing and community enjoyment in daily life can most easily occur.” (Jacobs 1993, p. 271-272)

b) “Physical comfort: The best streets are comfortable, at least as comfortable as they can be in their settings. … They offer warmth or sunlight when it is cool and shade and coolness when it is hot. They offer reasonable protection from the elements without trying to avoid or negate the natural environment.” (Jacobs 1993, p. 275)

c) “Definition: Great streets have definition. … They have boundaries, usually walls of some sort or another, which communicate clearly where the edges of the street are, that set the street apart, that keep the eyes on and in the street, that make it a place.” (Jacobs 1993, p. 277)

d) “Qualities That Engage the Eyes: Great streets require physical characteristics that help the eyes do what they want to do, must do: move. Every great street has this quality.” (Jacobs 1993, p. 282)

e) “Transparency: The best streets have about them a quality of transparency at their edges, where the public realm of the street and the less public, often private realm of property and buildings meet.” (Jacobs 1993, p. 286)

f) “Maintenance: … Most important to achieving a great street and the answers are very likely to include words like “cleanliness,” “smooth,” and “no potholes.” … Care of trees, materials, buildings, and all the parts that make up a street is essential. … People would prefer to be on well-maintained
7 Design demands for basic activities in public places

To successfully improve the environment of public place it is essential to understand what are the urban design demands for various activities in those public places. Since walking, standing and sitting are the basics of all activities, the present chapter lists what are the main requirements for public space design in order for these activities to occur, creating possibilities for other various activities to follow.

If space make it attractive to walk, stand, sit, see, hear and talk, this is in itself an important quality, but it also means that a broad spectrum of other activities – play, sports, community activities, and so on – will have a good basis for development (Gehl 2011, p.131).

7.1 Walking

One of the most important aspects in refining the quality of the street as a public space is to increase the walkability of it. ‘In a number of examples, improved physical conditions have resulted in impressive increase in the number of pedestrians, a lengthening of the average time spent outdoors, and a considerably broader spectrum of outdoor activities’ (Gehl 2011, p.33). One of such examples is in Bjerggade, Elsinore, Denmark, where streets become more walkable during the years, because of limiting car access. The less traffic in the streets - the more possibilities of various activities for pedestrians.

First demand for walking is space. Without it, no comfortable, enjoyable walk can be assumed. ‘When the pedestrians are consequently required to keep to the right in the street to get through it, freedom of movement is more or less lost’ (Gehl 2011, p.34). Second, pedestrian routes should be designed along the edge, creating opportunity to both observe the space and the boundaries. Third, pedestrian routes should be ‘wheeled’ traffic friendly, so that disabled people in wheeled chairs and parents with baby strollers could move without significant barriers. Basically, variation of levels in the pedestrian routes should be avoided. The distance of walk is important too, therefore, long, straight pedestrian routes should be avoided.

7.2 Standing

The main reason causing someone to be standing, stop walking or to get up from sitting, is to observe something while standing. Generally people stop doing something in order to stand: for a moment, for a (short) conversation with someone or to stand for a while.

The most popular spots to stop are found along the facades and other similar borders in the cities. It is vital to design proper edges, as activities grow from inward toward the middle of public place. Research has shown that people prefer to stay along the borders because ‘One can see, but not be seen too much, and the personal territory is reduced to a semicircle in front of the individual’ (Gehl 2011, p.149) In case of streets, facades of buildings and other forming borders, are influential for pedestrians tendency to stop by and stay for a while or not. ‘If the edge fails, then the space never becomes lively’ (Alexander 1977, cited in Gehl 2011, p.150).

To sum up, ‘details plays an important role in developing staying possibilities in public spaces’ (Gehl 2011, p.153).

7.3 Sitting

High quality outdoor spaces in the cities offer many different possibilities for sitting. ‘The existence of good opportunities for sitting paves the way for the numerous activities that are the prime attractions in public spaces: eating, reading, sleeping, knitting, playing chess, sunbathing, watching people talking, and so on’ (Gehl 2011, p.155).

Like other activities in public places, sitting also has it demands, which generally are the climate and the space. ‘Sitting activities in general take place only where the external conditions are favorable, and the sitting locations are chosen far more carefully than are locations for standing’ (Gehl 2011, p.155). However, similar to standing activities, sitting locations most of the time can be found also at the edges of open spaces, ‘where the sitter’s back is protected, the view unobstructed, and the local climate most favorable (Gehl 2011, p.156).

Basically, two types of seating exist in public places: primary seating and secondary seating. The
first one – benches and chairs should be provided for the more demanding users, such as elderly or disable people. It is recommended that resting bench should be at every 100 meters in the city. Second category of seating is supplementary seating, which plays important role in public place too, as it gives more vitality for the space. Examples of such seating are stairways, pedestals, steps, low walls, boxes, etc. City furnishing, as secondary seating, is also recommended, as it suggests diversity in the use of city spaces.

A spatial design based on an interplay between a relatively limited number of primary seating opportunities and large number of secondary places to sit also has the advantages of appearing to function reasonably well in periods where there is only a modest number of users (Gehl 2011, p.161).

Overall, ‘To improve the quality of the outdoor environment in an area by simple means, it is almost always a good idea to create more and better opportunities for sitting’ (Gehl 2011, p.155)

While designing for opportunities for people to walk, stand and sit in any public space is the basis, the diagram on the top of this page illustrates the importance of street design quality in order for people to be able to stay and recreate in urban space.

8 Conclusions

All in all public places in cities should be designed in
It is important to emphasize the environmental design of the streets, as they are the main venous of people flows in cities. Besides safe and aesthetic surroundings, multi functions in streets and destinations of people, that are walking the streets, are important too. Pedestrian orientated streets should provide safe paths for people, with minimum interaction on auto traffic roads.

Public places in streets should provide opportunities for all kind of activities to occur, with special focus for people to be comfortably walking, standing, and sitting. Streets should be designed in a way which would protect pedestrians from possible negative elements of streets, such as intensive traffic, and provide opportunities for positive activity to happen such as, having safe, healthy, inviting to stay and be there environment. Function in the buildings and other borders that form the street space, should provide ‘eyes on the street’ as it creates safety. Ability to move without barriers and level changes for wheeled traffic should be ensured. Greenery and healthy environment, as well as, possibilities to enjoy sun, and hide from the wind/rain should be provided by urban design.

To conclude, streets should be designed as public places were people would find no interference to socialize, as well as to enjoy a walk, which is what streets were always primarily for.

9 Recommendations

‘...Where a better physical framework is created, outdoor activities tend to grow in number, duration, and scope’ (Gehl 2011, p.37). When it comes to recommendations of the master thesis, pursuance to design and/or improve the current public spaces (in streets) will follow the outcomes of this paper. The findings of this literature review will be taken into consideration for creating theoretical and analytical framework of the graduation project. The guidelines, of improving the quality of public places in streets, will be used for creating final urban design proposal of the project.

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## 2.03 CITY SCALE

### CRITERIA FOR INNER CITY QUALITY

For the project area is located in city centre of Rotterdam, criteria for inner city quality are overviewed in this section. It is essential to analyze the conditions for city centre quality in order to make elevated analysis of the project area, based on these conditions.


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<tr>
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<tbody>
<tr>
<td>01. DIVERSITY</td>
<td>01. ACTIVITY</td>
<td>01. CHARACTER</td>
<td>01. LIVELY CITY</td>
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<tr>
<td>a) Mix of uses per district and street</td>
<td>a) Generating pedestrian flows and vitality</td>
<td>A distinct sense of place responding to local context</td>
<td>a) Invite people to walk, bike and stay in city space</td>
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<td>b) Different activities during the day</td>
<td>b) Seeding people attractors</td>
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<td>b) Cohesive urban structure with short walking distances</td>
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<tr>
<td>c) Existence of residential function</td>
<td>c) Achieving a diversity of primary and secondary uses</td>
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<td>c) Variation of functions</td>
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<td></td>
<td>d) Developing a density of population</td>
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<td>d) Eyes on the street from surrounding buildings</td>
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<td></td>
<td>e) Varying opening hours and stimulating the evening economy</td>
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<td>f) Promoting street life and people watching</td>
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<td></td>
<td>g) Growing a fine-grained economy</td>
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<tr>
<td>02. PERMEABILITY</td>
<td>02. IMAGE</td>
<td>02. CONTINUITY &amp; ENCLOSURE</td>
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<tr>
<td>a) Short building blocks, frequent streets &amp; crossings</td>
<td>a) Legibility</td>
<td>Clearly defined, coherent, well enclosed public space</td>
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<td></td>
<td>b) Imageability</td>
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<td></td>
<td>c) Symbolism and memory</td>
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<td></td>
<td>d) Psychological access</td>
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<td></td>
<td>e) Receptivity</td>
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<td></td>
<td>f) Knowledgeability</td>
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<tr>
<td>03. DIFFERENT BUILDING AGES</td>
<td>03. FORM</td>
<td>03. QUALITY OF THE PUBLIC REALM</td>
<td>03. SUSTAINABLE CITY</td>
</tr>
<tr>
<td>a) Fine grain of buildings with different ages</td>
<td>a) Achieving development intensity (density)</td>
<td>Safe, attractive and functional public space</td>
<td>a) Large part of transport is ‘green mobility’ (by foot, bike or public transport)</td>
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<tr>
<td>b) Concentration of people that use the street</td>
<td>b) Zoning for mixed use</td>
<td></td>
<td>b) Safe and comfortable walking and cycling to and from public transport</td>
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<td></td>
<td>c) Building for a fine grain</td>
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<td>c) Good public transport and public space</td>
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<td></td>
<td>d) Adaptability of the built stock</td>
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<td></td>
<td>e) Human scale</td>
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<td></td>
<td>f) City blocks and permeability</td>
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<td></td>
<td>g) Streets: contact, visibility and horizontal grain</td>
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<td></td>
<td>h) The public realm quality</td>
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<td></td>
<td>i) Ease of movement by different modes</td>
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<td></td>
<td>j) Green space and water space</td>
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<td></td>
<td>k) Landmarks, visual stimulation and attention to detail</td>
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<td></td>
<td>l) Architectural style as image</td>
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<tr>
<td></td>
<td>m) Adaptive environments</td>
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<td></td>
<td>n) A varied environment offering a range of uses and experiences</td>
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<tr>
<td>04. PEOPLE</td>
<td>04. EASE OF MOVEMENT</td>
<td>05. LEGIBILITY</td>
<td>04. HEALTHY CITY</td>
</tr>
<tr>
<td>a) High residential density</td>
<td>An accessible, well connected, pedestrian friendly environment</td>
<td>A place that has a clear image and is easy to understand.</td>
<td>a) Integrated bicycle and pedestrian networks in the city for public health increase</td>
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<tr>
<td>b) Concentration of people that use the street</td>
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Collectively these recommendations can be divided into large and small-scale improvements. Based on this data spatial evaluation of the project area and the guidelines for the design are made.

**CONCLUSIONS: CRITERIA FOR INNER CITY QUALITY**

<table>
<thead>
<tr>
<th>LARGE SCALE</th>
<th>SMALL SCALE</th>
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<tbody>
<tr>
<td>a) Creating diversity of uses in streets</td>
<td>a) Invite people to walk, bike and stay in city space</td>
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<td>b) Different activities during the day</td>
<td>b) Safe, attractive public space with visual stimulation to create a sense of place, relating to the context</td>
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<tr>
<td>c) Generating pedestrian flows across the inner city</td>
<td>d) Different optional social and cultural activities during the day in public space to increase public participation</td>
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<td>d) Developing a density of population</td>
<td>e) Frequent &amp; easy road crossings and accessible public space</td>
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<td>e) Creating good balance of different types of traffic</td>
<td>f) Clearly defined, easily understandable, well enclosed public space with continuity of street frontages and furniture</td>
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<td>f) Easily accessible public transport</td>
<td>g) Transparent building facades and eyes on the street from surrounding buildings for street safety</td>
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<tr>
<td>g) Integrated bicycle and pedestrian networks for public health and life on streets</td>
<td>h) Green and water for recreation</td>
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<tr>
<td>h) Short building blocks and easy crossing of streets</td>
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<tr>
<td>i) Different types of public space for different groups of people</td>
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<tr>
<td>j) Good distribution of people attractors</td>
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<tr>
<td>k) Fine grain of buildings with different functions, ages and architectural styles for a strong sense of place or imageability</td>
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</tbody>
</table>

**Top:** Concluded criteria for inner city quality


**Below:** Sense of place: a diagram illustrates how urban design actions can contribute to, and enhance, the potential of place.

CRITERIA FOR STREET QUALITY AS PUBLIC PLACES

**JANE JACOBS (1961)**

1. **SAFETY**
   - a) Clear demarcation between what is public space and what is private space
   - b) Eyes upon the streets
   - c) The sidewalk must have users on it fairly continuously

2. **MULTIFUNCTIONALITY**
   - a) To give people – both residents and strangers – concentrate reasons for using the sidewalks
   - b) To draw people along the sidewalks past places which have no attractions to public use in themselves but which become traveled and peopled as routes to somewhere else
   - c) Storekeepers and other small businessmen are typically strong proponents of peace and order among them
   - d) The activity generated by people on errands, is itself an attraction to still other people

3. **DEFINITION**
   - Streets have boundaries, which communicate clearly where the edges of the street are, that set the street apart, that keep the eyes on and in the street, that make it a place

4. **QUALITIES THAT ENGAGE THE EYES**
   - Great streets require physical characteristics that help the eyes do what they want to do, must do: move

5. **TRANSPARENCY**
   - Quality of transparency at street edges, where the public realm of the street and the less public, often private realm of property and buildings meet

6. **MAINTENANCE**
   - Care of trees, materials, buildings, and all the parts that make up a street is essential

**ALLAN JACOBS (1993)**

1. **Places for People to Walk with Some LEISURE**
   - It’s on foot that you see people’s faces and stature and that you meet and experience them

2. **Physical COMFORT**
   - Streets offer warmth or sunlight when it is cool and shade and coolness when it is hot.

3. **DEFINITION**
   - Streets have boundaries, which communicate clearly where the edges of the street are, that set the street apart, that keep the eyes on and in the street, that make it a place

4. **Qualities That ENGAGE the Eyes**
   - Great streets require physical characteristics that help the eyes do what they want to do, must do: move

5. **TRANSPARENCY**
   - Quality of transparency at street edges, where the public realm of the street and the less public, often private realm of property and buildings meet

6. **MAINTENANCE**
   - Care of trees, materials, buildings, and all the parts that make up a street is essential

**BURTON & MITCHELL (2006)**

1. A mix of uses, including plenty of services and facilities and open space
2. Wide, smooth, non-slip footways (without cycle lines)
3. Frequent roads crossings with audible and visual cues suitable for older people
4. Clear signs throughout
5. Frequent wooden seating, with arm & back rests
6. Small blocks laid out on an irregular grid (with minimal crossroads)
7. Clearly marked level changes, with handrails
8. Grade-level toilets
9. Enclosed bus shelters, with seating
10. Varied urban form & architecture
11. Buffer zones between busy roads & footways (e.g. trees & grass verge)
12. Landmark, distinctive structures & places of activity meet
13. A hierarchy of streets from main to side
14. Spatial/distinctive features at junctions
15. Buildings with evidents (i.e. prominent entrances)
16. Buildings designed to reflect uses
17. Gently winding streets

**CONCLUSIONS:**

- a) Democracy between private and public spaces
- b) Multifunctional program along sidewalks
- c) Safe (no barriers) and attractive environment
- d) Transparency (of ground floor of building) and eyes upon streets
- e) Frequent wood seating
- f) Possibility to enjoy sun/ shadow and hide from wind/rain.

This section summarises conditions for street quality suggested by known urban quality researches. Conclusions of recommendations of street improvement work as guidelines for evaluation of the project area as well as a starting point of urban design improvement for the project area.

To conclude, streets should be designed as public places where people would find no interference to socialize, as well as to enjoy a walk, which is what streets were always primarily for.
### CONDITIONS FOR PEDESTRIAN QUALITY

**PROTECTION:**

01. Protection against traffic and accidents - feeling safe
02. Protection against crime and violence - feeling secure
   a) Lively public realm
   b) Eyes on the street
   c) Overlapping functions day & night
   d) Good lighting
03. Protection against unpleasant sensory experiences
   a) Wind
   b) Rain/snow
   c) Cold/heat
   d) Pollution
   e) Dust, noise, glare

**COMFORT:**

07. Opportunities to walk
   a) Room for walking
   b) No obstacles
   c) Good surfaces
   d) Accessibility for everyone
   e) Interesting façades
08. Opportunities to stand/stay
   a) Attractive, functional edges/attractive zones for standing/staying
   b) Supports for standing
09. Opportunities to sit
   a) Zones for sitting
   b) Utilizing advantages: view, sun, people
   c) Good places to sit
   d) Benches for resting
10. Opportunities to see
   a) Reasonable viewing distances
   b) Unhindered sightlines
   c) Interesting views
   d) Lighting (when dark)
11. Opportunities to talk and listen
   a) Low noise levels
   b) Street furniture that provides ‘talkscapes’
12. Opportunities for play and exercise
   a) Invitations for creativity, physical activity, exercise and play
   b) By day & night
   c) In summer & winter

**DELIGHT:**

04. Buildings and spaces designed to human scale
05. Opportunities to enjoy the positive aspects of climate
   a) Sun/shade
   b) Heat/coolness
   c) Breeze
06. Positive sensory experiences
   a) Good design and detailing
   b) Good materials
   c) Fine views
   d) Trees, plants, water

In his book “Cities for People” Gehl (2010) explains the importance of proper urban design in human scale. The table above clarifies three main recommended conditions for pedestrian quality: protection, comfort and delight.

Top: List of vital criteria concerning pedestrian quality. Source: (Gehl 2010).
Bottom left: Photo showing undesirable pavement for pedestrian roads. Source of the photo: (Gehl 2011).
The Water Mirror is the heart of the design of the quays on the left bank of the Garonne River in Bordeaux. With a layer of fog, the fountain square can be used as a water playground. Alternatively, it can function as a reflecting pool or a dry square” (Topos 2010, nr.72, p.4)

“Elongated Corten steel planters create a stripe pattern. This produces alternating open and close spaces, suitable for routing and terraces. The stripes of varying length, width and height integrate wooden benches and bicycle stands” (Topos 2010, nr.72, p.37)
City as a Landscape
Relation between city and river in historical development of Rotterdam

AR1U120, History and Theory of Urbanism (2012-2013 Q1)
Justina Ragaišytė
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October, 2013

Abstract – Analysis of relation between city and river in Rotterdam is made by exploring the historical reasons for this relation changing during time. The emphasis is put on different influential periods such as first settlements, buildings of dikes, Golden Ages, Modern times and other.

1 Introduction

Urban development of Rotterdam was mostly influenced by River Maas. That is obvious just taking a look at the historical maps. First settlements were located at the north side of Maas and later, following the developing harbour, city grown towards south on the other side of the river. However, the relation between the inner city and the waterfront is more complicated. This link changed during the centuries, from open to closed and vice versa. Therefore it is important to analyse and understand the reasons causing various urban solutions at different periods of time so that this knowledge could be applied in urban development and renewal of nowadays.

2 The very beginning of Rotterdam city development

Hundreds of years ago at the location of nowadays second biggest city of the Netherlands, which has the fourth greatest sea port in the world, there was a small fishing village. The location itself caused such large future urban development for the city of Rotterdam. The hamlet was set down next to the river Rotte (back then known as Merwe), which later influenced the name of the city. This river runs into the delta of Mass, therefore this location was the foundation of the first seaport of the country. Because of three big floods in the XII century, the agricultural activities increased significally in the area of nowadays Rotterdam. ‘The settlement that was built at the point where the Rotte flows into the Maas, regulated the water through the construction of a dam in the Rotte, which is provided with a chambered lock (around 1270)’ (Hooimejer, Meyer & Nienhuis 2005, p.23).

Unlike other cities of the Netherlands, Rotterdam turned into a city quite late. According to Hazewinkel, Schraver & Pattist, ‘In 1340 the settlement on the Rotte ‘dam’ or dyke, which had been built to protect the land near the Rotte from floods, was granted borough and judicial rights of its own’ (Schraver et al. 1948, p.7) (see figure nr. 01). Soon after this the permission to connect the town with other nearby important towns, Delft and Leiden, by canal was given by the Count of Holland, William IV. These towns were important because of wool industry, as well as Dordrecht, where the English Wool Staple was established. Rotterdam played an important role in this situation because it’s seaport became the entry for English wool. Besides the wool import from England, trades were made with Northwest coast of France as well, which started
early in XIV century and expanded further until the XV century. Herring, pitch and tar were exported and the ships returned loaded with grain (Schraver et al. 1948).

However growth of the city slowed down because of internal disputes between two political parties ‘Hoekschen and Kabeljauwschen’ around 1350 – 1492 (Schraver et al. 1948). Later the reduction of trading was caused by wars of Charles V. But around XVI century the trading situation was improved causing the growth and development of the city that happened in the next hundreds of years.

3 The rise of dikes

‘The spatial structure of Rotterdam can be explained by the geomorphology of the man-made landscape as carrier for the urbanization project (Hooimeijer, Meyer & Nienhuis 2005, p.184). By analysing the decisions to dig different dikes and canals during different centuries, urban pattern of nowadays Rotterdam can be understood more clearly.

Around the year of 1270 damming of areas around Rotte River took place. In order to protect the settlements (in the location of nowadays Rotterdam), where the agricultural activities were taking place, the very first dike was build at the north banks. In his Master thesis report, Kokhuis states that ‘This dike was high and therefore it became a ribbon of development’ (2013) (see figure nr. 02). But there were a lot of peat grounds. Therefore in order to drain them the first small canals were dug (Van Jaarsveld & Van de Laar 2004). Later as a result of that major transport routes would often concur with the location dikes or canals.

In the XIV century fortress rights were granted to the city. Thereafter the Cool Vest (later Coolsingel) Blaak and New port were dug. Accordingly to that the later city boulevards were built based on defences of water. These water defence solutions allowed the city development outside secure borders.

By the XV century city of Rotterdam developed into all possible directions thus creating inner as well as outer parts of the city. As in the beginning of development of the very first settlements, in this century the main source of income came from fishing as well. Herrings influenced the biggest income in the fishing seasons and, as in other periods of the year, boats and ships were used for freight transport. At the same century obvious distinction could be seen between inner city and the harbour area, separated by the dike. However the area between the city and harbour was barely functioning. Here the ship building took place and palisades separated the harbour from the river to protect the city from enemies (Meyer 1999).

Years went by, a lot of people from other Dutch cities as well as immigrants found jobs at the
seaport of Rotterdam and the other parts of the city. As a result the city and the port developed rapidly.

By the end of the XVII century Rotterdam was the second most successful merchant city of the Netherlands with approximately 50,000 inhabitants (Van Jaarsveld & Van de Laar 2004). And yet compared to Rotterdam of today the development of the city in XVII century seems to have just begun.

4 The Golden Age of Rotterdam

The XVII century is called the Golden Age of the whole Netherlands. The reason for that is mainly because of prosperous trades with regions over the seas. The treaty of Munster was signed with Spain in 1648 by which the Republic is recognized as an independent state (Hooimeijer, Meyer & Nienhuis 2005).

Rotterdam continued to develop. The inner city of Rotterdam in the XVII century was very overcrowded and unhygienic. Therefore the harbor area on the other side of the dike was an alternative for that. People learned to face the flooding problems in that area as it became both their living and working environment. The Boompjes (en. Trees – author’s note) functioned both as quay and as boulevard, giving a magnificent view over the Meuse and becoming the rich façade of Rotterdam (Meyer 1999).

The industrial revolution took place in XVIII century causing the city of Rotterdam quite a lot of spatial as well as health issues. In 1850 90 000 people lived within the bulging historic city (Van Jaarsveld & Van de Laar 2004). Because of this fast growth of the city a lot of health problems such as various diseases accrued in the city. ‘What Rotterdam needed more than anything else was sufficient fresh water in its canals’ (Wagenaar 2011, p.115).

This was so because most of the citizens did not have drinking water. As a consequence they used water of city canals, which were heavily polluted because of the discharged sewer into them. Consequently there was a demand for the urban plan of how to develop the city as well as how to deal with the existing overpopulation and health problems.

Accordingly to that in 1854 the decision was made by the council of the city of Rotterdam to construct the Water Plan designed by Rose. This was his second Water Project as the first one Coolpolderplan was considered too costly at that time. The second Water Project by Rose was an answer to the devastating hygienic conditions in a city undergoing rapid growth (Wagenaar 2011). The main and first decision that was suggested by Rose was a strong distribution between the water in Rotterdam inner city and the countryside with agricultural activities. This was implemented by creating the dike, which marked the new border of the city, and a canal. In his master thesis research Wolters stated that ‘The Water Plan by Rose suggested a construction system of new canals in a radius from the center by which the water management of the polders improved and made the city a lot cleaner’ (2013) (see figure nr.03).

In 1858 Rose proposed a design for the second Coolpolder plan. Once again it was a combination of improvement of inner-city and a new urban layout for the area, which was between historic border and the new dike, with its peripheral canals (as Rose had suggested in his so called ‘first’ Coolpolderplan). But again the project was not realized due to the impossibility of expropriating the land.

Since 1880, as the complementarities to these plans, systems of sewers were constructed in the city. Moreover, new wider streets were laid out in the Cool neighbourhood west of downtown and north of the Goudsesingel (Van Jaarsveld & Van de Laar 2004). Because of Rotterdam’s industrial areas developing very fast there was a steep increase in the numbers of immigrants from other Dutch cities as well as from outside the country borders. Therefore, there were a lot of housing shortage in the city.

5 Continued growth of the city

The seaport of Rotterdam continued to grow extremely fast in the XIX century as well as earlier. Before the end of the same century, the Rhine port was dug, followed by the Maashaven on the south
part of Meues River.

The development of the city and the port was an attraction to many people from outside the country. Between 1850 and 1940 the population increased from 90,000 to nearly 600,000 (Van Jaarsveld & Van de Laar 2004). More and more neighbourhoods were built. The housing issues were left to the private sectors as they, for most of the time, would complete construction plans for a part of a polder or district. As a consequence of the fast growing city and the demand for more housing for newcomers outside the city, many small contractors were offering their built houses. However because these houses normally were built in a very short time the quality of these buildings was often very poor.

At the very beginning of XIX century there were approximately 300,000 people living in Rotterdam. Comparing to 50 years ago – 1850’s, the number of inhabitants increased enormously – from 90,000 to 300,000. Some housing issues were left to the private builders, but because the city grew so quickly the municipality sought to have more influence on the urban development decisions of the city. With the Housing Act in 1901 the municipality gained more powers, and with this the first expansion of Rotterdam came in 1903, by G.J. de Jongh (Wolters 2013).

In his Master thesis research Kokhuis (2003) presented four main periods, that were indicated by Meyer in his dissertation, that reflect the principals that govern the nature of the link between city and river during the middle of the XVIII century and the very end of XX century.

6 Modern times

6.1 1860-1920

Before Maashaven was dug on the south part of Meues River in the middle of XVIII century, the land on the south side of Meuse was rural land with some small villages. Infrastructure and the polder structure were an intertwined system (Palmboom 1987).

In 1683 the decisions to develop Feijenoord and to build harbours that could host larger ships were made by the municipality of Rotterdam. The development of the port on the south side of Rotterdam speeded up after the opening of the Nieuwe Waterweg (en. New Waterway – author’s note) and the train connection to Rotterdam South.

Development of the port resulted in a lot of people coming to the south of Rotterdam for working in the port as well as living there. The urban pattern of Southern part of Rotterdam was influenced by the industrial activities in the port (see figure nr. 04). Therefore the residential quarters, following large monumental axes designed by De Jongh, were orientated on the new harbour basins. An in direct link via sightlines was created as the harbour became the territory separating the city and the river. This urban consequence is similar to the situation in the XV century on the other side of the river.

Nevertheless the link between the city and the harbour was still strong because a lot of people worked in this area (Kokhuis 2013).

6.2 1920-1949

In the second decade of XIX century there was a huge spatial demand of the harbour because it has a lot of complex activities. Therefore there was a risk of having only a transit harbour with adding no value to trespassing products. According to that, in 1920 Backx, working at a big harbour company, plead for a more autonomous development of the harbour.

Urban development was focused on designing the city pattern itself, that was let by Witteveen. While the harbour planning and development was in hands of a newly founded port authority. At that time the development of the port moved toward the west.
In the 1970's the focus was put on repairing the city within earlier made urban decisions just after the war. Therefore the left wing political majority started dealing with earlier made modernistic changes. The former modernistic ambitions had to be gone as priorities for the offices and traffic in the city center alone were not sufficient enough. More attention had to be put on housing, mixed with other functions than just residential. At that time all focus was put on the social aspect. Especially in the areas of old harbour and the old neighbourhoods around the city center, where new, mainly social housing, neighbourhoods were built. However integral vision was lacking and the area in Rotterdam South was again associated with socio-economically weaker groups.

The first real attempt to operate the river as a touristic and picturesque element was in 1985-1987. The location for that was triangle at the north shore of the River Maas as the idea was to turn this location into cultural and tourist-attracting area. For the further development of the city center, from two directions only one was about to choose. As the first option was urban renewal towards the West to the Mullerpjer, the choice was made to focus on South side of the city, Kop van Zuid. In that area, while developing, a lot of attention was paid for historical structures and collective memory. In order to strengthen the relation between the river and the harbour history, such elements like old bridges, harbour buildings, warehouses, and train tracks were integrated in to sight lines.

In 1996 the Erasmus Bridge was built. It created a physical and non the less psychological link between two sides of the river Maas. Because of

6.3 1945-1975

During the Second World War the majority of the center of Rotterdam was bombed and completely ruined. Only very few buildings in the center were largely undamaged, including the town hall, congress and the post office.

After the war, the city center was almost completely used as tabula rasa for modernist planning by the urban planners of Rotterdam (Wolters 2013). At that time the architect of the city, Witteveen, suggested to redesign the city center of Rotterdam by relocating the flood defense to the former Boompjes. While Witteveen presented his vision for Rotterdam reconstruction as maintenance of some historical lines in the city, his successor Van Traa had different approach. However in the unrealized urban development plan by Witteveen (see figure nr. 05) some of main infrastructural connections were leading towards the river, that would have ensured better lacking accessibility to the River Maas.

The Bassiplan was all about functions and wide spaces. They had a clear and open downtown in mind, with a clear traffic structure in the form of a grid, wide streets and a shift of the shopping center to the west, which finally made Coolsingel the central axis of the city (Palmboom 1987). As a consequence some parts of the city were arranged as shopping streets, while other parts focused on the business activities. Another dramatic urban change in Rotterdam after the war is that, as well as Coolsingel, several other rivers were slammed with debris and, in the end, converted in to streets, such as Blaak and New Haven. This changed the concept of the city enormously as the river in the center became less presented.

At the same time huge urban plans were made for the downtown parts. However those plans were in a big contrast to the XIX century adjacent neighbourhoods. The traffic system that was created closed the neighbourhoods around it, and meant further demolition of parts of the surrounding districts (Palmboom 1987). This strategy was used in several places along the edge of the reconstruction area showing that with such tabula rasa approach in the middle of historic town, very little relation between two completely different city parts was created.

6.4 1975-2000

In the 1970’s the focus was put on repairing the city within earlier made urban decisions just after the war. Therefore the left wing political majority started dealing with earlier made modernistic changes. The former modernistic ambitions had to be gone as priorities for the offices and traffic in the city center alone were not sufficient enough. More attention had to be put on housing, mixed with other functions than just residential. At that time all focus was put on the social aspect. Especially in the areas of old harbour and the old neighbourhoods around the city center, where new, mainly social housing, neighbourhoods were built. However integral vision was lacking and the area in Rotterdam South was again associated with socio-economically weaker groups.

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In 1996 the Erasmus Bridge was built. It created a physical and non the less psychological link between two sides of the river Maas. Because of
this bridge water become the glue and the identity forming element of the now larger center of Rotterdam. Moreover the city turned back its’ main façade towards the water from both shores of it, strengthening the link between the city and the river.

7 Rotterdam nowadays

At the beginning of the XXI century there was a new high-rise building wave in the city center of Rotterdam.

Despite the considerable amount of residential towers that have been built, there is still a desire from the municipality for the city center to be more vibrant (Wagenaar 2011). Because of the recent economic crisis in 2008, the large-scale projects lost popularity. Therefore the aim of municipality to make the city center of Rotterdam more vibrant are intended to be achieved by compacting high-rise projects with lower scale projects. In 2013 there is quite a lot of projects under construction in order to density the city, however it is expected that the further densification will happen much slower.

One of the most recent developments is along the Maashaven, where a new section of residential buildings is located. The buildings are various, completing the collection of different periods on this peninsula. For example harbour buildings, neighborhoods from digging the harbors in 1908, additions from after the war, social housing from the 1980’s and the currently finished single family dwellings and apartments.

Today the question arises which way should urban development of Rotterdam continue, North or South side of the river. In any case the clear tendency can be seen that urban areas slowly follow the disappearing harbour along the river. Therefore it is obvious that connection between Rotterdam and river Maas is increasing.

8 Conclusions

‘The urban planning history of Rotterdam is characterized by never ending attempts to connect the city with the river and the harbor’ (Meyer 1999, cited in Kokhuis 2013, p.11).

In the beginning, in the early XII century the river was the main source of income for the people, living in the location of the future city of Rotterdam. Therefore there was a very strong direct connection between the town and the river. Later with the help of the dikes, the city learned how to control the water and to use it for its’ own benefit. At that time barriers, such as dikes, waterfront with future harbour areas, between the water and the inner city were created. That caused decreases of link between the city and the water. Industrial revolution and huge increase of population in the XVIII century was also caused by the use of water - prosperous trades with regions over the seas. While at that time activities along the waterfront in the harbour areas caused separating city life from the river, nowadays the urban city areas are following the disappearing (moved to the West) harbour areas along the water.

According to the analysis of urban development and personal attitude to city development decisions, conclusion can be drawn that in the future urban development and renewal should avoid dramatic changes and focus of appreciating the water by making it more accessible to citizens as well as visitors.

Relation between river and city in Rotterdam’s case is a complicated story. However recent development of districts with mixed function buildings along both sides of the River Maas proves that more and more attention is being paid to strengthen the link between the city and the water.

9 References


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Urban Waterfront Design References

The river running through Denmark's second-largest city, Aarhus, had been covered and used as a major thoroughfare before being reopened in 1998. Since reopening, the recreational pedestrian area along Aarhus River has been the most popular space in the city. Real estate prices along the river are also among the highest in the city (Gehl, 2010, p.16).

Every summer, the motorway along the Seine River in Paris is closed and converted to "Paris Plage" which is quickly stormed by thousands of Parisians who have been waiting all winter for this very invitation (Gehl, 2010, p.17).

Source: www.contest-watchers.com (visited 11.06.2014)
CHAPTER THREE: ANALYSIS

3.01 Historical development:
- Rotterdam City
- River Rotte
- Project area

3.02 Current situation:
- Infrastructure
- Pedestrian paths
- Green & Water
- Facilities
- Buildings typology
- Spatial qualities

3.03 Future development:
- Rotterdam City
- Project area

3.04 Conclusions

This chapter presents spatial analysis of the project area. Historical development, existing situation and future plans for the study case is overviewed. Outcomes of the theory chapter are taken into account when evaluating current situation of the project area.

Photo of existing situation in the project area.
Source of photo: made by the author.
One of the research questions stands for historical development of Rotte River, next to which area of the project is located. The answer contributes to evaluate and understand the current urban situation of the area and future plans of its development. This chapter views development of Rotter River in three different scales. First to look at bigger scale of water development in Rotterdam, the relationship between city and river Mass in historical development of Rotterdam is overviewed. Second, the way how Rotter River changed its way during time is illustrated and commented. Then the chapter is completed with analysis of area around St. Laurenskerk Church and its relation to river Rotte.

Maps illustrating history of urban development of Rotterdam city.
Urban development of Rotterdam was mostly influenced by River Maas. First settlements were located at the north side of Maas and later, following the developing harbour, city grown towards south on the other side of the river. However, the relation between the inner city and the waterfront is more complicated. This link changed during the centuries, from open to closed and vice versa. The area of the project changed rapidly during time as well, as it is located in the city centre.

In the beginning, in the early XII century the river Maas was the main source of income for the people, living in the location of the future city of Rotterdam. Therefore there was a very strong direct connection between the town and the river. Later with the help of the dikes, the city learned how to control the water and to use it for its’ own benefit. At that time barriers, such as dikes, waterfront with future harbour areas, between the water and the inner city were created. That caused decrease of link between the city and the water. Industrial revolution and huge increase of population in the XVIII century was also caused by the use of water - prosperous trades with regions over the seas.

While at that time activities along the waterfront in the harbour areas caused separating city life from the river, nowadays the urban city areas are following the disappearing (moved to the West) harbour areas along the water. The same should be done in a smaller scale in case of river Rotte. Its’ waterfront should be open, accessible and attractive to citizens and visitors of Rotterdam, converting urban spaces along it into usable public places.
ROTTER RIVER

Major change of Rotter River route can be illustrated overlapping the water map of Rotterdam today on the map of same city in 1865. Emphasizing on reviving historical meaning of the area of the project would increase the value and use of chosen area to be design as public place.

Illustration nr. 01 shows urban map of Rotterdam in 1865. Illustration nr. 02 presents comparison of how water system changed in almost 150 years. In illustration nr. 03 dotted line shows the route of Rotte River at that time and plain line in illustration nr. 04 shows the route of the river today. In illustration nr. 05 new water connection separating old harbor and the city centre is suggested to recreate lost meaning of the area. However today it is impossible to implement this vision because of new wide infrastructure (wide red line) and market square (red square).

Nonetheless the old illustration of the former water structure of the area is one of the tools how to make the area more recognizable, integrated and meaningful in the context of the city centre.

PROJECT AREA

Three images shows different surroundings of St. Laurenskerk Church: water, dense urbanisation and open space. This illustrates what was the relationship between water and public space.

In the first picture, Rotter River was the main traffic and trade line. The second picture shows how dense the area was built, which with other historical maps leads to conclusion that waterfront was fully build, not leaving much space for open accessible urban space. The third image shows the consequences of city being bombed during WWII. A lot of open space along the water gives a lot of opportunities to make places along the water for people. However, the link between water and city life in the area of the project changed from open to abandoned. The existing situation of spaces along the Rotte River in the city centre of Rotterdam being used as ‘second place’ can be partly explained by post war redevelopment.

During the Second World War the majority of the centre of Rotterdam was bombed and completely ruined. Only very few buildings in the centre were largely undamaged, including the town hall, congress and the post office. The Laurenskerk Church
also survived without being completely destroyed, which nowadays is an important historical monument in the city centre of Rotterdam. After the war, the city centre was almost completely used as tabula rasa for modernist planning by the urban planners of Rotterdam (Wolters 2013). This resulted in Rotterdam city being developed prioritising city space for wide shopping streets and car traffic routes expecting to create space for city’s urban development. However today it has resulted in the fact that only 5% of people living in Rotterdam lives in city centre (inner city). Which results in streets in the city centre being empty after shops are closed and the area of the project at that time looks even more abandoned as there is very little of public facilities. Analysed area of the project overlaps few shopping streets, which works as public spaces; however the spaces between water and buildings were not developed as public places, but as service/back streets.

Urban spaces along the Rotter River in the city centre of Rotterdam should be converted into public places, recreating a lost link between water and city. The meaning of the area should be revived especially along this water, as the city was named after River Rotte.
In this section spatial analysis of the project area is made of the following layers: infrastructure of the area; pedestrian paths; green and water elements in the area; facilities and typologies of buildings in the area and spatial qualities of the territory. Layers are evaluated from spatial aspect and due to recommendations and outcomes of theoretical framework.

Rotterdam city has a very well developed public transport infrastructure. City suggest various ways how to move from one part of the city to the other. It is possible to do so by train, metro, tram, bus or taxi. Most importantly, the whole Rotterdam city is easily bicycleable.

Shown in maps district of the project area is in inner city in very city centre. It is easily accessible for all citizens, which allows for the designed public places to be used by wide audience of people. That makes project relevant from social aspect. As it is relevant for citizens to have new public places in the city centre of Rotterdam.
Analitical diagram of the project area of analysis in the context of Rotterdam city: Infrastructure system
Sources of the diagram: made by the author based on http://kaart.edugis.nl/nederland.html

Analysis area of the project
Inner city of Rotterdam
Train tracks

Train tracks underground
Trains stations

Metro lines
Metro stations

Tram tracks

Tram stops
Roads

Greenery areas

Water
However though project area is well connected from infrastructure view it does not ensure that people will go there. As shown in the diagrams, pedestrian ways are not very common in the project area. The biggest pedestrian flows are in the nearby shopping streets. In the project area there is a lack of attractive objects and environment that would invite people to come. Also barriers just as stairs without ramps next to it works as obstacles for disable people or parents with baby strollers.

For people to come and use public space, first the area should have attractive environment and be easily accessible (Gehl 2010). By improving this situation, people from nearby shopping streets might consider areas along the water as new public places.
Diagram showing existing and suggested potential pedestrian paths.

Source of the diagram: made by the author.
ELEMENTS OF NATURE IN THE CITY CENTER OF ROTTERDAM

Source of the drawing: made by the author.
Green and water elements are important as they improve the quality of the space (Geh 2010, Carmona et al. 2010). These elements also create diversity of the space, which is essential in order to have vital environment (Jacobs 1961, Gehl 2010).

In the project territory green areas could help to improve the quality of the water. As presented earlier, water body in the project area – Rotte river. However the quality of water there is in bad condition as the water is almost not moving at all. Water is being pumped through pumps and piles to River Mass.

By introducing more greenery to the territory, the quality of water could be improved. That would result in the improvement of the environment. As it would become more attractive to citizens.

As can be seen from the diagrams there is a lot of trees in the city centre of Rotterdam. However, plain green areas are not a common element in the map of city centre of Rotterdam. Therefore design of new green (small) parks will be taken into account while presenting the final urban regeneration vision of the area.
Main commercial axes in Rotterdam

Analytical diagram of the project area of analysis in the context of Rotterdam city: System of different functions in the city (residential and industrial areas unshown).
Sources of the scheme: made by the author based on http://kaart.edugis.nl/nederland.html and https://maps.google.com/
After Rotterdam was bombed during WWII, the city centre was redesigned rapidly. During the modernistic period the city was redeveloped prioritizing wide infrastructure routes. Along those wide streets business and commercial facilities were planned.

As can be seen from the diagrams in the city scale, today city of Rotterdam is also functioning based on main business and commercial facilities. City centre of Rotterdam can be seen as mono-functional environment. Most of the facilities provided in the city centre are commercial or business orientated. The same situation is in the project area. Diversity of facilities is a missing element in the area. There are mainly only shopping streets in the area.
MAP OF GROUND FLOOR FACILITIES

Source of map: made by the author.
Historical water layer was completely ignored while developing Rotterdam city as a one big shopping mall. This resulted in project area along the water working today as a second street. As can be seen from the diagram of ground floor facilities in the project area, most of the facades facing the water are the rear facade of the buildings. This project area was designed as service streets along the water. Water was not seen as a valuable element.

Because urban spaces along the water are used as second-hand spaces, there is a lack of activity in the area. Therefore the spaces there are empty of people for most of the time. Presumption can be made that if the quality of the environment would be improved in the area, the owners of facilities in the nearby buildings would consider extending those facilities towards the water. For example owners of cafes along the water would bring tables outside along the water, suggesting guests to enjoy view of historical Rotte river and old St. Laurenskierk Church.
BUILDINGS TYPOLOGY

COMPARISON OF BUILDINGS HEIGHTS

Analitical diagram of the project area of analysis in the context of city center of Rotterdam: Building heights

Sources of the diagram: edited by the author based on (Wolters 2013)

- Analysis area of the project
- Large grain of buildings
- Small grain of buildings
- Groups of highests buildings
- Water
Compared to other cities of Netherlands, there are a lot of skyscrapers in the city of Rotterdam. As can be seen from the photo of model of the project area, tall buildings are also located in the project area. Because of that urban spaces between those buildings and water have no sense of human scale. In general in the city centre of Rotterdam most buildings are huge and human scale of street level is a missing element.

Project area covers variety of building typologies. For example, there are tall office buildings, huge monumental church and some smaller buildings in front of the church on the other side of the water. Different kind of buildings in the area provides different outdoor spaces, which can be converted in to public places. Along smaller buildings next to the water missing link of human scale can be revived. It is possible to do so by improving walk-ability, accessibility of the place and the quality of the environment.
SPATIAL QUALITIES

Project area can be seen as a group of various urban spaces along the water. Square in front of St. Laurenskerk church is used as a public place most often, compared to other urban spaces. The other areas along the water for most of the time are abandoned and empty of people. Facilities in the buildings long the water do not provide many activities. And waterfront of Rotte River does not invite to stay next to it. There is one terrace along the water in front of St. Laurenskerk church. But it is also not very popular and empty for most of the time.

Presumption can be made that improving the accessibility towards the water would improve the sense of a place. The historical meaning of the place a long Rote river would be revived. Citizens of Rotterdam would be suggested to enjoy urban life in public places along the water. That would be a new perspective of urban public life in Rotterdam. As for today shopping streets in Rotterdam are one of the most used public spaces.
MODEL OF PROJECT AREA

Model of the project area in the context.
Source: model and photos are made by the author.
2.03 FUTURE DEVELOPMENT

PROJECT AREA IN FUTURE VISION OF ROTTERDAM INNER CITY

Project area, along the Rotter river and nearby buildings, in the context of overview of potential new dwellings and urban green in the inner city, 2040 by Tille et. al (2012)

Source of the image: edited by the author, made by Tille et. al (2012)
Map below illustrates conclusion scheme how inner city of Rotterdam should look in 2040 made for the Fifth International Architecture Biennale Rotterdam in 2012. The highlighted territory - project area in the district scale.

According to this plan, new smaller scale dwellings will rise along the Rotter River and new two big multifunctional buildings will be built next to dead end of the river. This will increase the use of public place along the water as a more people will live and work in the area.

Another important aspect of the plan: greenification of the area - more green spaces are suggested to be designed in the area.
Developers of Market Hall suggest to design accessible waterfront as a public place at the dead end of Rotte River by creating stairs leading towards the water. However, cars parked along the water are still left in the picture though the parking garage of the building suggests 1200 parking places. Therefore, car parking could be moved away from the waterfront to the underground parking of the Market Hall.

Another important aspect which should be taken into account while designing a system of public places is the extension of Grotemarkt street as open space connecting Blaak market square and new public space at the end of Rotte River.
Map comparing historical water layer and present urban structure of Rotterdam city center. Sources of the map: made by the author.
Analitical map of the project area.
Sources of the map: made by the author.
CHAPTER FOUR: VISION

4.01 Approach

4.02 Vision of the project area

4.03 Strategy

4.04 Sketches

4.05 Evaluation of public places

This chapter explains vision and strategy for the whole area and present sketches of how area could be redesigned. Evaluation of public places is presented, based on which detailed design is made, shown in the next chapter of this booklet.
Main idea of the urban regeneration of the project area is to recreate missing link in Rotterdam city centre – possibility to walk without commercial distraction. Walking without shopping – new concept of the area.

Streets are empty in city centre after working hours after all shops are closed. At the time shops and other commercial facilities are closed, the area do not provide reasons to stay at the area. Closed facades of shops creates atmosphere of an empty city. Walking in a street of closed shops is not an option to have an enjoyable walk in a city centre.

A solution to this problem – design of a system of walking routes and public places along it. Public places in a city should not be limited to shopping streets, but on the contrary should suggest to people places to be without spending money. Area of the project has potential to be converted into such system for the following reasons.

First, the area owns lost historical meaning. For example, the sculpture of Erasmus is the oldest sculpture in Holland. St. Laurenskerk Church and Electric Power House are the only buildings that survived during war in the project area. What is more the river that runs the area is the reason why the city was called Rotterdam. These things should be emphasized, while creating senses of places in the area.

Second, the waterfront of Rotte River suggests spaces that could be designed as walking routes. For today it does not work as comfortable working routes mainly because of cars parked along the water and different levels without ramps.

Last, there are few public places in the area, which yet do not work as such because of not being integrated in the existing system of public places in city centre, which pitifully are yet basically shopping streets.

Life between buildings is one of the most important attractions of city (Gehl 2011). Public activities can occur only in well-designed and used public places. Therefore combining recreation of historical meaning of the area, a system of walking routes and various public places along them can ensure the area of the project being used by citizens and visitors regardless of the nearby stores opening hours.
ST. LAURENSKIERK CHURCH - IDENTITY OF THE AREA

Top: St. Laurenskerk Church front facade. Source: http://en.rotterdam.info/data/organisation/10993/large/Grote--of-St--Laurenskerk-131944819404.jpg

INSIDE OF THE CHURCH - PUBLIC SPACE FOR VARIOUS EVENTS
VISION OF THE PROJECT AREA

Vision of the project area.
Source: Made by the author.

- Area of the project
- Public places to be (re)designed
- New connections
- Green areas
- Water
- Wet square
The strategy how to implement design of vision of the area works in three main layers, starting with historical one.

Main idea how to recreate historical meaning of the area is to emphasize on the river Rotte and its former extension. In this way, it is possible to make area recognizable from the nearby location. As today Blaak Street is a barrier separating city centre from old harbor area, people driving this street would notice connection between project area and harbor like it was in the past. Because of existing situation of wide traffic street and level difference it is impossible to extend water of Rotte River through Square 1940 towards the harbor, therefore another solution to that is provided: pedestrian bridge. It would work as psychological and physical connection between two water bodies and two public places – Memorial Square 1940 and newly designed public place and the end of Rotte River (near Rabo bank building). What is more bridge would work as a connection between Maritime Museum and the History Museum of Rotterdam.

Another water extension of Rotte River is designed between newly build Market Hall and market square near Blaak train station. Extended water would fulfill empty space between buildings suggesting waterfront on both sides set public facilities on the ground floor on newly build buildings. As it is also impossible to extend the water through the market square and Blaak street, proposed alternative to this is wet square. During market closed days the fountains in the former water area would remind citizens of how Rotterdam water system was developed. And during market days, the fountains would be turned off making sure there are no obstacles for the market to take place as usual.

Second strategy design layer – integrating public places into existing urban pattern creating new links (pedestrian bridges across water) and improving old ones (designing ramps to improve walk-ability, etc.)

Third strategy design layer – improvement of existing public places (explanation in Design chapter.)
Above presented sketch shows concept idea of new pedestrian bridge. It would connect church square with the other side of Rotte river. In this way project area would become more accessible from nearby locations. Improving accessibility of a public place might ensure that more people will use it. Which would ensure that public place is more alive.

Images on the right hand side shows current situation and sketch idea how area could be changed. While at the present moment ground floor of the nearby building is closed. It is recommended to this floor to be open in order for the urban space between building and water to become more usable. Creating new open for public connection between ground floor facilities and outdoor space would improve the quality of this area.
Concept impressions of how project area could be redesigned.
Source: made by the author.
Impressions of Rotte river extension and wet square design idea.
Source: made by the author based on photo (www.skyscraperity.com, visited 18 06 2014)
Images of the left hand side illustrates the idea of Rotte rive extension – recreation of historical meaning of the area. The main idea is to design a wet square in the present market square in front of Blaak train/metro/tram station. Because this is the old original Rotte river way. On those days when market is open, fountains would be turned off.

Image below represent first sketch idea of st. Laurenskierk church redesign. Main idea is to create accessible waterfront and new link via pedestrian bridge to the other side of the river.
Impressions of Rotte river extension and wet square design idea.
Source: made by the author based on photo (www.skyscraper.city, visited 18 06 2014)
Images on both pages illustrate the idea of Rotte river extension (recreation of historical meaning of the area) in the other part of the project area.

On left hand side below image shows new design of open waterfront. The tall wall at the end of the river is transformed into wide open stairs with seats. In this way water can be seen from nearby wide Blaak street. Also at the same time new public space along water is designed.

On both pages presented variation of possible pedestrian bridge design connecting old harbor and Rotte river.
Proposed vision for the whole project area consist of a group of public places and a system of walking paths along the water in between those places. In order to show more precisely how these public places will look and work, a fragment of vision map is detailed. All public places in the project area were evaluated under criteria’s of accessibility, sense of place, current usability and other (see next pages).

A group of public places in red dotted line is chosen to be detailed (see chapter Design). The decision was made based on evaluation. Also because biggest pedestrian flows are going through this area. Which could ensure that more people from that street would be invited (attracted by urban redesign) to walk through newly redesigned public places.

Top: Diagram of system of public places and pedestrian baths as connections between them. Source of the diagram: made by the author.
Photos showing current situation of various urban spaces in the project area.
Plan of the area

Title of the area

Design references of public place in the area

Comparative analysis of designed public places.

Source of analysis: made by the author.

Source: Gehl (2010)

Source: Topos 2010

Source: www.contestwatchers.com (visited 11.06.2014)

Source: www.archdaily.com (visited 11.06.2014)
<table>
<thead>
<tr>
<th>01.Area (excl. water)</th>
<th>02.Direct waterfront line</th>
<th>03.Sunny surface (21st 03/09)</th>
<th>04.(Existing) Type of urban space</th>
<th>05.(Suggested) Type of public place</th>
<th>06.Accessibility links in the area</th>
<th>07.Crossings of accessibility links from nearby existing public places</th>
<th>08.Accessibility links from nearby existing pedestrian flows</th>
<th>09.Existing sense of place (00,01,02)</th>
<th>10.Existing historical value of the area (00,01,02)</th>
<th>11.Existing architectural value of the area (00,01,02)</th>
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<td>89%</td>
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<td>Open public waterfront, Multifunctional public place, Green areas</td>
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<td>04</td>
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<td>New link, Pocket public place</td>
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CHAPTER FIVE: DESIGN

This chapter explains the design of public places in more details. First the approach and main design of the area is presented. In the second part of this chapter, the final three different designs of various public places are shown and described.
Design proposal approach is based on conversion of urban spaces along the Rotte river into public places prioritizing pedestrian routes in a non commercial environment. Current situation of the project area lacks of diversity and vitality. Surroundings of the area suggest a lot of commercial facilities, but do not offer for citizens to do other activities than shopping or eating/drinking in restaurants.

The main idea of the design is a system of various pedestrian routes and different public places that are connected by the water. Design proposal is focused on interventions on human scale. Such as improved walk-ability and sense of place.

First steps taken in redesigning the area is the improvement of walk-ability. For example new ramps are designed next to stairs in order for disable people or parents with baby strollers to easily move in the area.

Second attempt to improve the area was making the area more integrated and accessible from nearby locations. Five new pedestrian bridges were designed in order to connect different shores of river. Shorter distances between different public places ensure that different people can choose different routes, depending on their wishes to spend more or less time in those public places.

Third effort in redesigning the area was to make waterfront accessible for the public. Different public waterfronts in the project area are designed in a way that people could enjoy urban life and do different activities. For example square in from of st. Laurenskerk church provides a lot of space to do sports or to play for kids. In other cases, waterfront design suggests more quiet and intimate environment.

Other ideas implemented in design proposals are the creation of greener environment. On one hand, that is for citizens to enjoy green environment next to water in the city centre. On the other hand, greener helps to improve the quality of water of Rotte River, which would result in improved quality of the environment in general.

Another important strategy for this designed area is introduction of more than present various seating.

Design of different public places in more details is shown in the following sections.
Drawing of redesigned area.
Source of drawing: made by the author.
Diagram above explains concept of links between designed public places. Roughly summarized three kind of walking routes and atmospheres are designed in this project area.

Firsts, marked in red color are walking routes along commercial facilities. These are the current streets that care the biggest numbers of people in the area. Along this street ‘Dam of Rotterdam’ is redesigned new public place. One could stop by this place just for a few minutes to take a rest along the water or, for example, to have a lunch break.

Second, marked in a blue color, is a walking route along food and drinks facilities. Presumption is made that if the quality of outdoor space along the water would be improved, it would be used by facilities on the ground floor of the building. Extension of current restaurants and cafes to outside space would be suggested new perspective towards newly designed waterfront square in front of church. As former blocking view urban podium is removed. Citizens and visitor willing to spend more time and in a different way than just shopping in a city might consider walking this route, between food facilities and newly designed accessible waterfront.

Third line, marked in purple color, is historical/cultural walking route. This walking route suggests different public places along it. For ones willing to spend time in a city without any commercial interference, one could spend more time along the water and green areas.

More detailed design explanation of these public places is presented in the following sections.
Diagram above illustrates the concept of project area to be designed as a system of walking routes thought different public places. Illustration shows areas of designed public places, expected boundaries of senses of public places and expected pedestrian routes.
5.04 DESIGN OF PUBLIC PLACE #01

LOCATION OF PUBLIC PLACE

EXISTING SITUATION

Top: Location of redesigned public place. Source of diagram: made by the author. 
Below: Photo of the current situation of redesigned public place. Source of the photo: made by the author.
Current situation and analysis of spatial possibilities of redesigning Dam of Rotterdam.
Source of diagrams: made by the author.
The name for this redesigned public place was given after its original purpose. Before Rotterdam was redeveloped after being bombed during WWII, in this location there was the dam of Rotte River. However today when people are passing this bridge, it is hard to notice that it is actually a bridge, because it is so wide it feels like it is a square.

The main idea of the regeneration of this urban space was to introduce Rotte River to passengers, and simultaneously to remind that this is important historical place in a city. Based on orientation towards the sun, the main amphitheatre was designed facing the south. And from the north side, bridge was narrowed, leaving the same pedestrian route as before.

Wooden benches are designed on stairs creating many seating places. Those benches are integrated into the stairs so that when there are not many people in this place, it would not feel empty. Bright color for wooden seats was chosen due to national symbolic color of the Netherlands – orange.

Falling water through the stairs is introduced to remind that it is a bridge through the Rotte River. Moving water also helps to improve the quality of the
DAM OF ROTTERDAM

For those who find it difficult to go down the stair closer to water, benches are located along both sides of walking route to enjoy the view of water and buildings on other sides of the river. Looking to south – st. Dominicus church with ‘Pocket Park’ and ‘Mountain Waterfront’ public place. Looking north – Rotte River with new public places along both sides of river.
Profile view of Dam of Rotterdam.
Source of the drawing: made by the author.
5.05 DESIGN OF PUBLIC PLACE #02

LOCATION OF PUBLIC PLACE

Top: Location of redesigned public place. Source of diagram: made by the author.
Below: Photo of the current situation of redesigned public place. Source of the photo: made by the author.

EXISTING SITUATION
EXISTING SITUATION

01. CURRENT SITUATION

02. CAR PARKING MOVED TO MARKET HALL

MOVE PARKING TO MARKET HALL

03. CARS’ STREET CONVERTED INTO PEDESTRIAN ROUTE

CARS’ STREET CONVERTED INTO PEDESTRIAN ROUTE

04. AVAILABLE SPACE FOR WATERFRONT REDESIGN

AVAILABLE SPACE FOR WATERFRONT REDESIGN

05. SAVING OLD TREES

06. NEW TREES

07. OPEN GREEN CHURCH INNER YARD + GREEN WATERFRONT

08. NEW PEDESTRIAN BRIDGE

NEW PEDESTRIAN BRIDGE

Diagrams explaining how area was redesigned.
Source of diagrams: made by the author.
The idea of this public place was to design more quite atmosphere as it is outdoor space of St. Dominicus church. As can be seen from the photo showing the current situation of the area, cars parked along the water makes water inaccessible. And do not provide inviting to stay environment.

First, it was decided to move car parking to the nearby ‘Market Hall’ building, which contains 1200 car parking lots. Second as a part of the whole vision for the entire project area, the street in front of the church is being converted into pedestrian orientated street. Existing old trees along the water are being saved leaving them at the same level. While 4 meters level change from water to street level is converted into stepped green terrace towards the water.

St. Dominicus church owns green inner yard, which is now open for the public, after demolishing one wall. New pedestrian bridge connecting ‘Dam of Rotterdam’ and this new ‘Pocket Park’ is built. The environment in this public place provides much quieter atmosphere that nearby shopping streets. Therefore those who are looking for a quite moment in a city centre and enjoys nature environment might chose to spend some time in this public place.
Top: Impression of redesigned public place.
Source: made by the author.
PROFILE A-A
Profile view of Mountain Waterfront + Pocket Park.
Source of the drawing: made by the author.
LOCATION OF PUBLIC PLACE

EXISTING SITUATION

Top: Location of redesigned public place. Source of diagram: made by the author.
Below: Photo of the current situation of redesigned public place. Source of the photo: made by the author.
Diagrams explaining how area was redesigned.
Source of diagrams: made by the author.
This area was chosen to be redesigned as it already works as a public place, but it is not used very often. Main idea was to combine open space in front of the church and accessibility towards the water.

Urban podium along the water in front of a church works as a barrier towards the water. Because it is mostly not used for public events and remains closed. Terrace in front of it is also not working very well as a connection between Church Square and the water, because it is not accessible by ramps. Only by stairs could one reach the terrace. However for some people the stairs are an obstacle.

Therefore first design steps are to remove urban podium and terrace on the water. Second it was decided to improve greenery of the area. Existing trees are provided with grass beds around them. This would work as a ‘One Man Park’, as people can have separate peace of grass in the city centre as shown in illustration above.

Space between church and water is designed as stepped transition towards the water. Open space can be used to various event and activities to occur. For example sports activities, social dancing, children playground and other.

All different levels of stepped square in front of the church can be reached via ramps.
New pedestrian bridge is designed connecting this public place with the other side of the river.
Profile view of One Man Park + Church Square + Social Avenue.
Source of the drawing: made by the author.
CHAPTER SIX:
CONCLUSIONS

6.01 Summary
6.02 Reflection
6.03 Bibliography
6.04 Appendix A:
Graduation Orientation
6.05 Appendix B:
Graduation Plan
6.06 Appendix C:
Pre-master thesis pilot design project: “City Surfing”

Present chapter contains short summary and reflection of the project. List of literature sources that were used in this thesis are presented. Graduation Orientation and Graduation Plan documents are added. The chapter is finished with pre-master thesis pilot design project ‘City Surfing’.

Photo of existing situation in the project area.
Source of photo: made by the author.
6.01 SUMMARY

Sketch diagram of project summary. Source of diagram: made by the author.
At the beginning of the graduation year I had a clear goal of the project – to convert urban spaces along Rotte River in the city centre of Rotterdam into public places. I saw the potential in partly abandoned city waterfront that could be used more differently than just as back streets. I wanted to do a research on aspects that make public place work well as such. While choosing an approach, I focused on improving spatial qualities of the area for pedestrians. That is because after doing spatial analysis of the area it resulted in most of used public places in city centre of Rotterdam are shopping streets. Therefore new narrowed approach became to design possibility to walk without shopping in the city centre. After doing a literature research I found out what are the design criteria for designing a public place where people would like to stay (independently from open hours of shops). Based on research outcomes I proposed a vision for the whole area of the project and more detailed design for few main public places and a system of walking paths that connects and integrates these places in the current urban pattern of city centre of Rotterdam. Outcomes from the analysis of historical development of the city were also included in the final design vision of the area.

The social context in which the project can be placed is that the city centre of Rotterdam is missing public places without commercial facilities nearby. Therefore it is relevant to design a system of walking routes and various public places along the historical river of Rotte, to recreate historical meaning of the area creating new spaces for people to stay outdoors, as after shops are closed, most of the streets in city centre of Rotterdam are empty.

Looking back at the process of the project and design results it can be added that design is never finished until it is realized. Therefore the actual proposed design of public places could be improved as for example the materialization of the design is not reasoned strong enough due to the lack of time. However I am content with the outcomes of the thesis and relationship of research and design as from the start to final outcome it was focused on design of outdoor public places, which is my main interested in the field of urbanism.


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6.04 APPENDIX A: GRADUATION ORIENTATION

01. Abstract of your research in 300 words

Urban Spaces Converted into Public Places
Spatial strategies and multifunctional qualities for improving the quality of public places in city centers

Research of the project is based on the design criteria for the public places in city centers and safe, attractive design of waterfront and the accessibility between these two elements: public places and the water.

It is relevant for the society to have more various public spaces, since the city is developing. However, high quality, well-functioning public places along the water is very rear in the city center of Rotterdam.

By suggesting the design strategy of converting urban spaces along the water in the city center into accessible, attractive and enjoyable public places would, simultaneously the more flexible design strategy for public places in other parts of the city will be suggested.

Goal - to collect a body of knowledge, what are the spatial strategies and multifunctional qualities that can be applied in order to regenerate urban spaces into attractive public places for citizens and visitors, focusing on creating accessibility towards the water as well as to be well integrated in the current urban pattern of the city center, based on which, the guidelines for master thesis design would be created.

When it comes to innovativeness of the project, untraditional ways of improving public space and design of waterfront, connection between two shores of the river are preferable to be proposed.

Graduation project can be described as revitalisation of riverfront in the city center of Rotterdam. Approach of the project is case study and design based.

For the final design, a master plan - a system of various public places along the River Rotte and design of its’ waterfront in the city center of Rotterdam will be proposed; detailed design of those public places, focusing on materialization, human scale.

The findings of research will be taken into consideration for creating theoretical and analytical framework of the graduation project. The guidelines, of improving the quality of public places, will be used for creating final urban design proposal of the project.

02. Link to research of the department

The link between this Master Thesis research and the research framework of the Graduation Studio ‘Urban Regeneration in the European Context’ is more relevant, than of Urbanism Research Themes, as these do not emphasize on urban design scale.

The approach of the graduation project fits in the framework of the Graduation Studio ‘Urban Regeneration in the European Context’. The chosen area of the project is in the city center of Rotterdam, along the River Rotte. The area was bombed during WWII, therefore the challenge of this graduation project is to solve the post-war urban development consequences. The main problem of the area is that the buildings along the water are built in a way that the back facades of the buildings are facing the waterfront. The street space between buildings and the river are not used, as ground floors of the buildings do not provide any public facilities.

Main research question of the thesis is what are the spatial strategies and multifunctional qualities that can be applied in order to regenerate urban spaces into attractive public places for citizens and visitors, focusing on creating accessibility towards the water as well as to be well integrated in the current urban pattern of the city center? The findings of research will be taken into consideration for creating theoretical and analytical framework of the graduation project. Untraditional ways of improving public space and design of waterfront, connection between two shores of the river are preferable to be proposed.
Illustration showing analysis of pedestrian flows (red color) in the project area (black color), possible new pedestrian routes (yellow color) along the waterfront – a system of various small public places.
6.05 APPENDIX B: GRADUATION PLAN

Studio
Theme: Revitalisation riverfront city center Rotterdam
Teachers: Main mentor: Ir. Maurice Hartevelt (Section: Urban design; Chair: Urban design)
2nd mentor: Dr. Machiel van Dorst (Section: Urban landscape; Chair: Environmental Technology & Design)
Argumentation of choice of the studio: Personal preference to designing public places and working on urban design and human scale, academic challenge to deal with post-war urban development consequences.

Title
Title of the graduation project: Urban Spaces Converted into Public Places; Regeneration of Urban Areas along the River Rotte in the City Center of Rotterdam

PRODUCT
Problem Statement
Posed problem: Streets are empty and the nearby water is ignored during the whole day and evening, in the city center of Rotterdam along the River Rotte.

Five main problems can be identified along the Rotte River in the city center of Rotterdam:

01. **Urban areas between buildings and the water are not used as public spaces.**
02. **Streets are not walk-able mainly because of car parking.**
03. **For the most part, rear facades of the buildings are facing the waterfront.**
04. **Quality of water in the river and accessibility towards it are poor.**
05. **Analysed urban spaces are poorly integrated in shopping orientated district.**

The main problem of the chosen area, is that the streets along the River Rotte in the city center of Rotterdam are empty and the nearby water is ignored. The question ‘Why is that so?’ is the driving force of the project.

First, urban areas along the water in the city center of Rotterdam are not used, as public spaces in all potential ways. Implicitly that is because most of the buildings are tall and therefore the link between the building and the outdoor space on the ground level is lost. Especially high office buildings have poor relation to the streets, thus creating boring environment for people on the streets. That is to say human scale is a missing link in parts of the area.

Second, the area is a not pedestrians friendly. Basically that is because of quite a number of cars parked along the water, also acting as a barrier between street space and the water.

Furthermore, because back facades of the buildings are facing the water, those streets, between buildings and the water, are used to deliver goods for facilities in the buildings via trucks, which at that time are blocking pedestrian ways. Hereby ground floors of the buildings do not offer any public activities for the citizens and visitors and, as a result, they are almost not seen in that area.

Water of the river in this area is another issue. The quality of it is low and the accessibility towards it is poorly developed.

Nevertheless, the area along the River Rotte in the city center of Rotterdam is potential to be converted into public place. That is because of its’ location in the city context and the value of the water, as a possible attraction. What is more, while human scale is a missing link in the city center of Rotterdam, analysed area, after being redesigned, might possibly suggest this scale.

Research question: What are the spatial strategies and multifunctional qualities that can be applied in order to regenerate urban spaces (along the River Rotte in the city center of Rotterdam) into attractive...
public places for citizens and visitors, focusing on creating accessibility towards the water (Rotte River) as well as to be well integrated in the current urban pattern of the city center (of Rotterdam)?

Five sub questions of the project research can be emphasized:

01. What are the development/management history/future plans of Rotte River in city center of Rotterdam?
02. What kind of design solutions could be used in order to increase relation between ground floor facilities and outdoor space on street level?
03. What are the spatial strategies in order to make streets more pedestrian friendly?
04. What are the principles of river waterfront design in public space in the city center, to ensure attractive and safe environment as well as good access towards the water?
05. What are the key aspects that make public place work well as such in the city center?

As mentioned above, in the main project research question, ‘Spatial strategies’ and ‘Multifunctional qualities’ are tools in order to regenerate barely used city spaces into attractive public places. First, by term ‘Spatial strategies’, designed system of different size and type spaces, is meant. Which will be developed based on various studies (spatial site analysis) and theories (literature review) with a focus on designing comfortable, attractive and safe environment for public use. Secondly, by term ‘Multifunctional qualities’ a combination of different, mainly public-use, facilities is meant. By which operating, a diversity of various functions (recreational, leisure, etc.) and activities (cultural, educational, etc.) in the area can be ensured.

The second part of the main project research question stands for ‘Accessibility towards the water in the context of public space’ and ‘Integration of public place in the current urban pattern of city center of Rotterdam’. By mentioning ‘Accessibility towards the water in the current area of the project’, a solution to the problem, of missing links between streets and water, is being presented. By creating connections (physical and psychological) towards the water, it would enrich the quality of the public place, and would make this place outstanding among other spaces in the city center of Rotterdam. As there are little of public spaces with access to water in the city center of Rotterdam. By collocation ‘Integration of public place in the current urban pattern of city center of Rotterdam’, the solution to the existing urban problems, which are that nearby public spaces (shopping streets) are mostly crowded and the project area is empty of people most of the time, is proposed. It is important to design edges and urban connections of public place, so that the area could be reachable from nearby locations.

The sub questions of the project research assist to collect a body of knowledge, based on which earlier stated problems could be solved. To start with, in case of Rotterdam, it is important to analyze and understand the historical urban development reasons for the project area to be designed the way it is today. Since the city center of Rotterdam was rebuilt differently after the bombing during the World War II, analysis of historical layouts of the buildings and river Rotter bed in the current project area may influence the approach of the whole design for the area. Secondly, another important aspect is relation between ground floor facilities in the buildings and the outdoors space on the street level. Since this link in the analyzed area is very poor, it is important to do a research on design solutions that could improve this situation. Third, since the idea of the whole project is to make the area more attractive for public use, it is important to do the research on what are the spatial strategies in order to make streets more pedestrian friendly. Since car parking is also working as an obstacle for pedestrians, this question’s research results might help to solve the problem. Moreover, in order to develop accessibility towards the water it is necessary to do research on the principles of river (or water canal) waterfront design in public space in the city center to ensure attractive and safe environment, as body of water is always a source of danger to fall in it. Finally, since the project is public place orientated, in general, it is very useful to understand what are the factors that make the public places work well as such. A combination of answers to all research questions, can facilitate the process towards the actual design of public place.

Design assignment: For the final design, a master plan - a system of various public places along the River Rotte and design of its’ waterfront in the city center of Rotterdam will be proposed; detailed design of those public places, focusing on materialization, human scale.

Goal
To convert urban spaces (along the Rotte River in the city center of Rotterdam) into public places.

The whole aim of the project is a combination based on the implementation of the following goals:

01. Making urban areas along the water accessible, attractive, and enjoyable for citizens and visitors.
02. Creating connection between buildings and the water through public space on the street level.
03. Making streets more pedestrian friendly.
04. Development of attractive and safe waterfront and accessibility towards the water.
05. Integrating designed public places into existing urban pattern.

The main aim of this master graduation project is to convert urban spaces into public places. By term ‘Urban spaces’ a specific location along the Rotter River in the city center of Rotterdam is implied. As mentioned earlier, the chosen area for the project has a lot of problems, that causes this area being just another ordinary set of urban spaces in the city. Therefore the main aim is to convert urban spaces into public places. By term ‘Public place’, a diverse outdoor area, open to public, of different age and cultural backgrounds, to enjoy daily life of the city and to do various activities (recreational, cultural, etc.) is implied.

In more detail, one of the components of the main aim of the project is to regenerate urban areas along the water into more accessible, attractive and enjoyable public places for citizens and visitors. The issue of the accessibility should be taken into account, because when one is walking on the nearby streets of the chosen area, one could hardly notice that there is a river on the other side of the building block. Returning to attractiveness of the territory, the area and buildings does not have much of the architectural value and the materials of the pavements are very poor, basically concrete. And finally talking about the area being enjoyable, the current urban spaces do not suggest any kind of activities; there are only few benches in analyzed area. Thus new program of activities should be suggested in the analyzed area. Another important goal, is to create a link, between ground floor, of the buildings along the water, and the water of the river through public space on the street level. In other words, to improve the profile of the streets, so that the space of streets would be an extension of the buildings, with linking accessibility towards the water. One more objective to reach is to make streets in the analyzed area safer and more comfortable for pedestrians, as today too much car parking is located in the area. Another goal consuming safety issue is the development of attractive and safe waterfront, as well as accessibility towards the water. Since there is always a danger to fall into water, if there is no proper fence around it, on the shore, it is necessary to design safe, as well as attractive, waterfront of the River Rotte in the city center of Rotterdam. Last, it is very important to integrate designed public places into current urban pattern of the city center as well as to make them accessible. Because otherwise these places would remain unknown and empty, which is basically the situation of nowadays spaces in that area. By meeting these goals, the main aim of the project, to convert urban spaces into public places, could be reached.

PROCESS
Method description
The main method of the project is design orientated, but other different techniques and methods will be used to cover sub research questions. Four main research and design tools will be used during the process of the project: literature review, site observation, mapping and drawing/modeling. All of these tools are equality important for the research and design process of the project because each of them gives different kind of knowledge and inspiration. After every design decision or research observation, different methods will be used to review the decision/observation. Methods: a) literature review: development/ management history/future plans of Rotte River in Rotterdam; improvement of relation between ground floor and outdoor space on street level; design criteria for pedestrian friendly streets; design criteria of river waterfront in public space in the city; design criteria of well-used small public places in city center, b) observation: registration of human behaviour; static snapshots; architectural value of buildings; unused/vacant spaces, c) mapping: spatial qualities; historical of urban development of the area; architectural value of buildings; unused/vacant spaces, d) modelling, drawing: analysis of spatial qualities.

Literature and general practice preference
Besides earlier mentioned main goal of the project to convert urban spaces along the Rotte River in the city center of Rotterdam into public places, this graduation project no less aims to contribute in both social and academic relevance. The project intends to contribute to the knowledge and identification of urban problems in the analyzed area within the context of city center of Rotterdam. As well as the projects seeks to contribute to social demands for a more attractive urban environment.

In general it is relevant for the society to have more various public places in the city center of Rotterdam, since the city is growing and developing, however the number of high quality public spaces is not equivalent. Public spaces in the city center of Rotterdam are crowded most of the time, while potential urban spaces close just block away from the middle of the city center are not used in all potential ways. Therefore it is assumed that redesign of those areas would suggest better public life in the city center of Rotterdam.

The city is also lacking an attractive public places outside the city center as well as all urban spaces in the city center are not fully used. One of the reasons for that is that the quality of urban spaces in the city center of Rotterdam after the reconstruction after the World War II is still in the discussion. The research and design project can provide more objective guidelines for improving urban quality of public places in the city. Specifically, spatial conditions for successful well-functioning water front urban spaces (along River Rotte). Therefore by suggesting the design strategy of converting urban spaces in the city center into accessible, attractive and enjoyable public places would, simultaneously the more flexible design strategy for public places in other parts of the city will be suggested.
CITY SURFING

Location: Rotterdam
Date: August, 2013
Author: Justina Ragaišytė
In collaboration with: "Morfis" Architecture & Urbanism (www.morfis.nl)

Source of the photo collages in both pages: made by the author.
Source of the photo collages in both pages: made by the author.
Space around the water (including streets) 10,676 sq m
Paving as a barrier along the water
Constructions
Commercial functions
Nice surprising view
Water canals 8,329 sq m
"Backs" of buildings towards the water
"Open" buildings towards the water
"Entrance" to the water (little bridge/ladders/stairs)
Floating hand-made platform

Source of the map and images: made by the author.
Source of the map: made by the author.
<table>
<thead>
<tr>
<th>Source of the photo collage: made by the author.</th>
<th>Wave making machine</th>
<th>Flow velocity</th>
<th>Depth of water</th>
<th>Narrowed width of water</th>
<th>Greatest length of the water before first barrier</th>
<th>The hypothetical safe distance from the wave machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elbbach</td>
<td>Artifical river for experienced surfers, no swimmers allowed</td>
<td>~ 5 m/s</td>
<td>~ 1 m</td>
<td>~ 40 m</td>
<td>~ 25 m</td>
<td>~ 100 m</td>
</tr>
<tr>
<td>Freiland</td>
<td>River canal / More suitable for beginners</td>
<td>~ 0.5 m</td>
<td>~ 10 m</td>
<td>~ 35 m to waterfall</td>
<td>~ 30 m to pedestrian bridge</td>
<td>~ 50 m</td>
</tr>
<tr>
<td>Wittelsbachbrücke</td>
<td>River / More suitable for experienced surfers</td>
<td>~ 1.3 m (no data, so it seems from the video)</td>
<td>~ 0.5 m</td>
<td>~ 130 m to car bridge</td>
<td>~ 150 m</td>
<td>~ 50 m</td>
</tr>
</tbody>
</table>

Planks of wood are hung in the flow, Suspended via rigid wood connected to the bridge arches, Wave powered by power station and planks of wood on the bottom of canal, Usually surfable between May and September depending on flow conditions and hydro power plant behavior, Not surfable wave that appears only after lots of rain. Only surfable for a few days a year. Plants were made but will not be implemented to make the technically correct wave, so as to always achieve the perfect wave despite the river’s changing water levels.
Source of design proposals: made by the author in collaboration with ‘Morfis’ Architecture and Urbanism (www.morfis.nl)
Source of the photo collages: made by the author.