A revitalized Kop van Zuid

Bridging the gaps between the development of
the Kop van Zuid and its transforming surrounding
neighbourhoods through public space

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The transformations in the societies all around the world that have been taking place in the last decades, as a result of the emergence of service economy and communications revolution, brought with it a great metamorphosis on the city.

It is a fact that diversity represents a clear characteristic of our city reality. Many cities in Europe like Frankfurt, Munich, Birmingham, Manchester, Amsterdam, Rotterdam, Marseilles, Stuttgart, Brussels, etc., count more than 40% of its population as immigrants or children of immigrants (Häußermann et al 2008). Moreover, it is also the case that diversity is not anymore characterized by one mono-lingual, mono-ethnic group, like Turks, former Yugoslavians, etc. Today the city is faced with a "super-diversity" (Vertovec, 2006) of people from more than one hundred and fifty countries, in innumerable combinations.

These economic transformations brought another important change upon the city: the need for a continuous reposition into the world economy. In this way, a strong competition in between cities all around the world has emerged in, and cities have engaged into the process of adapting itself, in order to attract the creative economies. Theorist Charles Laundry sustains, that the creative firms settle themselves into the cities in which the creative class, which is the focus group of the new service economy, wants to live. This theory has a great impact on the way the urban development ideologies are established today, where in most of the cases, the attraction of the creative worker into the city represents the main goal.

The attraction of the creative class into the city is a part of the phenomenon that needs to take place. However, the creative class represents a small percentage of the city's population, and without an approach that targets the several categories of a society a misbalanced situation unavoidably arises, especially in a society characterized by "super-diversity".

This thesis explores such a case in the city of Rotterdam, a world port city which in the last four decades has been faced with a changing economic context. Therefore, as working city by definition, Rotterdam had to adapt, in order to strengthen and diversify its economy. The development of the Kop van Zuid project – the project in focus for this thesis – has been developed in such a context, and as the research developed in this thesis will prove, it created series of undesirable effects on the surrounding areas. At present the Kop van Zuid supports further development, and due to an improvement of the public transportation system, which is to come in the next years, the development conditions will change.

This thesis investigates and proposes a different approach, than the municipal one that is focused on the area development, towards an integral one that considers people and their demands, and is activated by a public space network.
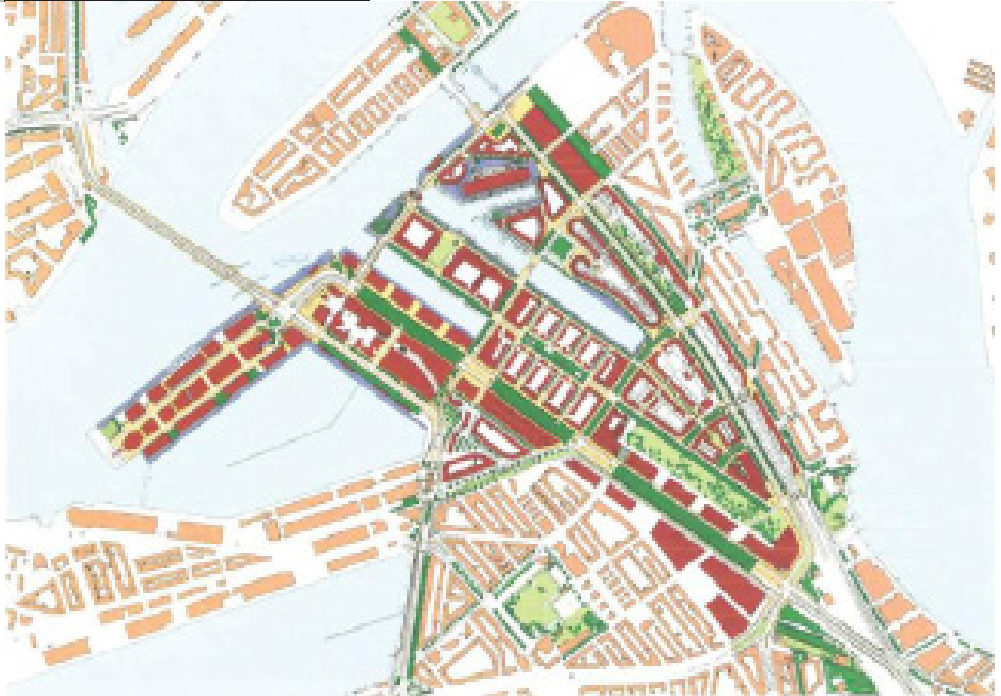
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II Introduction

Kop van Zuid project

Kop van Zuid master plan

Source: Meyer (1999)

With 600.000 inhabitants, Rotterdam is the second largest city in the Netherlands after Amsterdam. It is located in the centre of the southern part of the Randstad with an agglomeration of around 7 million people, or nearly half the country's population. Rotterdam is in the centre of a travel-to-work area of about 1.3 million inhabitants, called Greater Rijnmond. Its port, situated in the delta of the Rhine and the Maas, is the largest port in Europe and for more than forty years was the largest port in the world. Although its docks and terminals have been moved a few miles away to land reclaimed from the sea, it still retains its immense national and international importance, generating 10% of the GDP (Gross Domestic Product) of the Netherlands. Traditionally Rotterdam has been a predominant working class city, while the other three big cities of the Randstad (Den Haag, Utrech and Amsterdam) have been seen as more attractive. Although the port and city

centre were rebuilt after the massive bomb damage during World War II, the subsequent relocation of the docks left large areas of derelict land in the city and high unemployment especially among unskilled workers. At the same time there was an exodus of people to the growing suburbs and a large inflow of immigrants from former Dutch colonies and elsewhere. By 1996, 22% of Rotterdam's working population and 40% of its residents were of non-Dutch origin. In 2005 unemployment in the city was 11%, with much higher rates among ethnic minorities.

In recent years the main strategy of the Municipal Council of Rotterdam has been focusing on both building on the strength of its port and logistics sector and on diversifying the city's economy and expanding its facilities to make it an attractive location for 'knowledge industries' and for 'knowledge workers'. This means repositioning Rotterdam away, in part, from its traditional roots and attracting in new people.

A revitalized Kop van Zuid
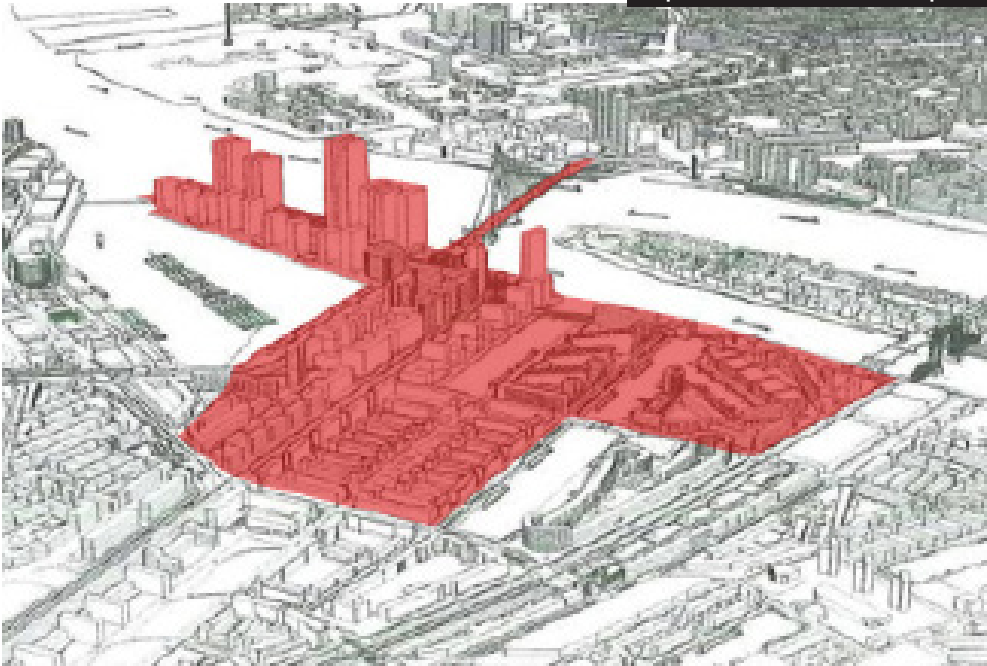
Source: Meyer (1999)

Kop van Zuid ("Southern Headland") is a peninsula on the south bank of the River Maas directly opposite to Rotterdam's city centre. It covers some 125 ha and used to be an important port area with docks, a shipyard and a terminal for ocean-going liners, but all these activities closed down when the port moved downstream to the mouth of the river during the 1960s and 1970s, and Kop van Zuid became abandoned. It was an isolated and largely hidden area, cut off from the river by warehouses and from surrounding areas by railway lines, and was poorly connected with the city centre. The wider area in which it lies, the 'borough' of Feijenoord (one of Rotterdam's 13 sub-municipalities), consists mainly of poor residential neighbourhoods where the people who worked in the port and other riverside industries, used to live. It now has a high level of immigrants among its population. It has traditionally been an area of low educational achievement and high unemployment, and it used to

have a very poor image, which made it difficult to attract private investment or people to choose to live there.

Originally intended issues to be address by the Kop van Zuid project

The scheme to regenerate Kop van Zuid was set out in the 1986 through a complex master plan that was aiming to change Rotterdam as a whole. It had strong social as well as economic and physical goals, and above all it aimed not only to change the image of the city to outsiders (particularly business investors and e nterprising people) but also to change the image of a large part of the city to existing residents of Rotterdam. Before the Kop van Zuid scheme the River Maas had been seen as a barrier, and the South Bank beyond it 'one of the most repelling parts of the city'. But if it was to continue to grow, Rotterdam would need a larger city with quality to attract

A revitalized Kop van Zuid

Source: Meyer (1999)

the types of people who drive the 'knowledge economy'.

The Kop van Zuid scheme was intended to address all these issues, by:

- Linking Kop van Zuid, and the suburbs to the south of it, directly to the city centre (Erasmus Bridge, new Metro station and the extension of Trampus)

- Creating a lively and attractive mixed-use district (offices, residential, leisure, education) in Kop van Zuid

- Insisting on high quality of design in all buildings and throughout the public realm

- Re-using existing landmark buildings where possible.

Problem definition

Kop van Zuid development occupies an important function in the city of Rotterdam. The neighbourhood located on the south bank of the river Maas represents an extension of the city centre in the south part of the city and is a connector of the two sides of the river. With a mixed-use development scheme of residential, commercial, educational and leisure uses and a number of new buildings designed by famous architects, the new neighbourhood managed to attract a whole new range of inhabitants in the area. Kop van Zuid is not just a successful regeneration scheme, but it has helped to change the industrial image of the city by giving it a tremendous aesthetic advantage. Moreover, the Erasmus Bridge, and a new Metro station and a new tram line, join the area – and areas further to the south – to the city centre. Furthermore, the new infrastructural plans put again the area of Kop van Zuid in the spot light. With a new proposed bridge, new tram lines improving the connection between north and south, but also between east and west, and a possible new metro line development close by, the area of Kop van Zuid will support further development in the next 20 to 30 years.

However, the outcomes of the initial development of the Kop van Zuid on the poor surrounding neighborhoods are less than planned, because it failed to meet a large degree of its social objectives. Moreover, it produced physical-spatial fragmentation in between the different neighborhoods due to connectivity and missing functional links; and social-spatial fragmentation though a division of social groups, a division of the functions and their target groups, and a division in the housing market. The fragmentation has a great influence in the use of public space, and it can

be observed, on one hand that the public space in Kop van Zuid, even if it had been highly designed is unused, while in the other neighborhoods, the public spaces, which are many times dysfunctional, dirty and in some cases unsafe, they are very important for the local communities. As a result, there are no public spaces created for the encountering of the different groups. The existing plans for the further development of the area (the development of the Kop van Feijenoord, threat to repeat the story. The plan has as a main goal to create an attractive living environment by diversifying the existing housing stock and creating new facilities. However, the target groups for the expansion of the Entrepot retail and catering area, is represented by the same high-income group, and as result there are no public space created for the encountering of the several groups.

Field of research and research questions

Main research question

How to create a strategy and a design to integrate the Kop van Zuid and the surrounding neighborhoods through a network of public spaces and functions, and through urban form, under the conditions of improved connectivity?

Sub-research questions:

1. What is the position of the Kop van Zuid in the structure of the Rotterdam city?

2. What are the future plans for the city, and what are their effects on the Kop van Zuid area?

3. What are the characteristics of the urban structure of Kop van Zuid and its surrounding neighborhoods?

4. What are the integrative potentials for the existing urban form?

5. Which is the current social structure in the Kop van Zuid and its surrounding neighborhoods?

6. What are the demands for the public space of the different groups?

Methodology and research techniques

Literature

In order to create a strong basis for the project a theoretical framework will be established. Firstly, books, journals, and official documents will be explored in order to get a deep understanding of the master plan and the design of the Kop van Zuid. This is an essential step to create a comprehensive image of the plans and to be able to bring new potentialities to such an extensive development, which can have an integrative outcome in the area. Secondly, documents regarding future plans of the Feijenoord, Afrikaanderwijk and Katendrecht neighbourhoods will be also explored.

Moreover, the literature review for the theoretical paper will give an insight of the contemporary knowledge about the role of the public space as an integrative element in gentrification strategies.

Mapping

Mapping is a very strong tool used to establish the context of the project. Done at different scales - Randstad scale, city scale, neighbourhood and even the block scale - the mapping will offer an insight view of the current situation of the area of concern. Firstly, the typical analyses of networks, production/consumption and households will be mapped. But, a special attention will be put on the relationship between the use of public space and housing typology. This information will be gathered through a lot of site analyses and observations.

Statistics

Statistical data regarding the social and economical conditions are being analysed and transposed into maps, graphics and charts. This type of data it is used as a proof of the problem statement and to establish trends of development or demands of the area. The data will be gathered from institutions like "Centraal Bureau voor de Statisiek" (CBS- Central Bureau of Statistics) and "Centrum voor Onderzoek and statistiek" (COS- Center for Research and Statistics).

Site analyses

In a project focused on the design level, site analyses are a must. These are important for getting a feeling of the scale of the area and for observing the use patterns of that area. This will be done by a lot of site visits during which observations will be collected and mapped.

III Research

Kop van Zuid in the context of the Rotterdam city

Kop van Zuid in the Randstad context
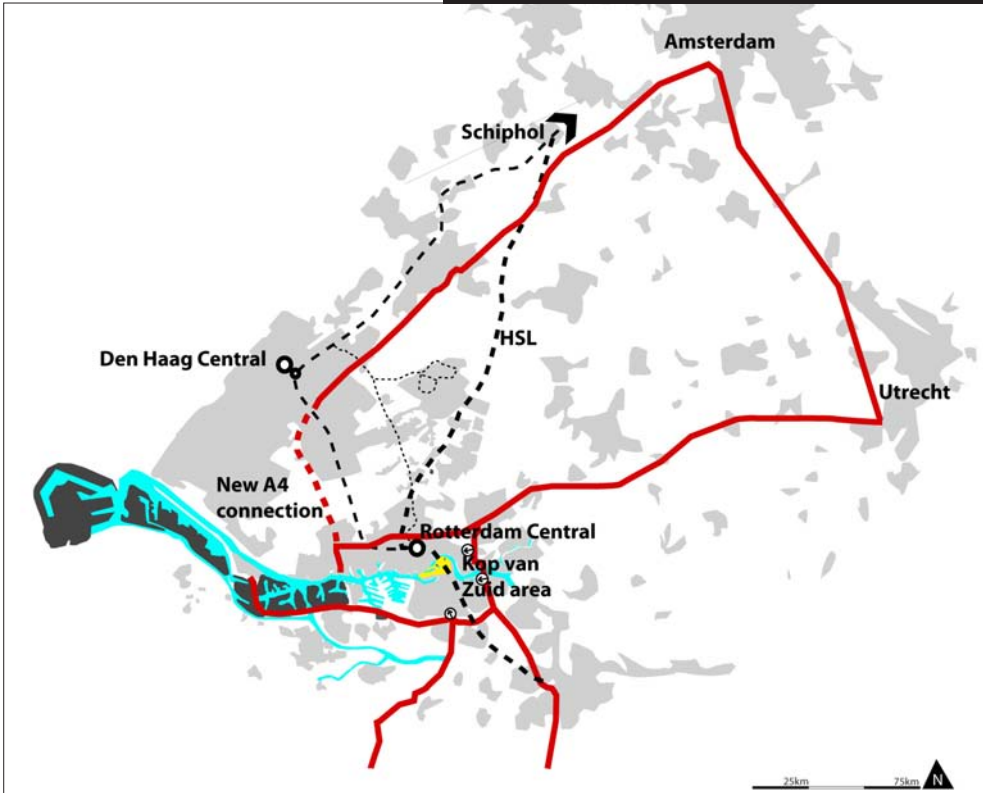
Source: made by author based on official plans

The city of Rotterdam is the second largest city in the Netherlands, after the capital Amsterdam, and it makes a part of the Southern Ring of the Randstad, together with the city of The Hague. Rotterdam occupies a key location in the public transport system at the regional scale, with a high speed train connection with the cities of Brussels, Paris and London. Furthermore, Rotterdam is also very good connected with the highway system, with very good links with Belgium, and the Randstad Ring, which is going to be further improved by an extension of the A4 highway in between Rotterdam and The Hague.

The location of the Kop van Zuid area is at a key position in both the city and the regional context, with direct connection to the train system, and with connections to highway entrance at a distance of under 2km. This high accessibility at the regional level makes the area suitable for housing regional orientated functions.

Rotterdam's main corridors

Delft/Den Haag
Amsterdam

Delft/Den Haag
Amsterdam

Gauda/Utrecht

Hoek van Holland

Europort

Roosendaal

Breda/Antwerpen

Study area   Source: made by author based on official plans
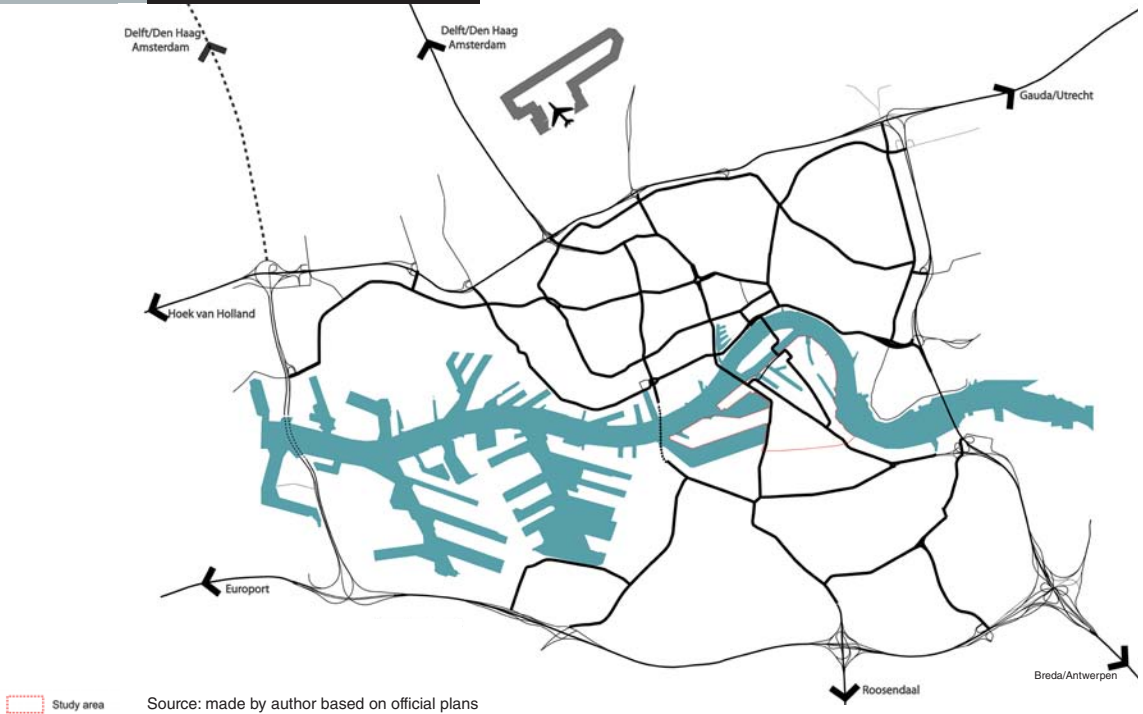
In the official policies the expansion of the A4 highway has been decided that would connect cities of Rotterdam and The Hague. This expansion is planed to be ready in 2015. Such a development would considerably increase the connectivity of the south part of Rotterdam from the west part of the city's ring. These conditions

would provide the base for further developments in the existing centrality structure in the south part of Rotterdam

Midden Delfland missing link view from the A4 in Delft-Zuid, look towards the route to Schiedam

Source: Wikipedia

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Rotterdam's main centralities
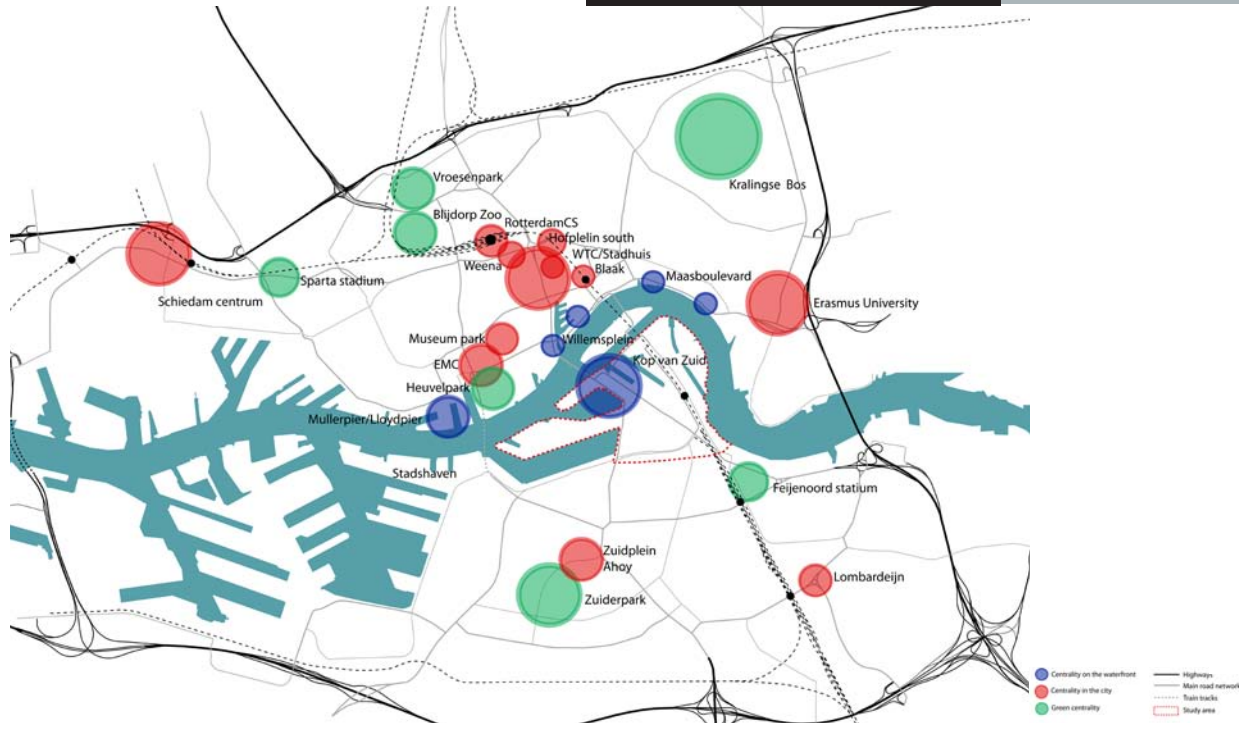
Source: made by author based on a concentration of functions analyze

Rotterdam´s structure before the
renewal of the Kop van Zuid

Rotterdam´s structure after the
renewal of the Kop van Zuid

Kop van Zuid as connection bridge
in between the north and the south
of Rotterdam

The existing concentration of
centralities in between the north and
south parts of the city of Rotterdam
is clearly misbalanced, with clearly
less concentration of functions in the
south. In this context the Kop van Zuid
centrality, occupies a very important
position, by the fact that it represent the
main contact in between the 'rich north'
and the 'poor south'.

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Future and new conditions brought by infrastructural developments

Metro network

Existing metro network
Proposed metro line (to be ready in 2028)
Metro stop
Study area
500m. Metro cover area
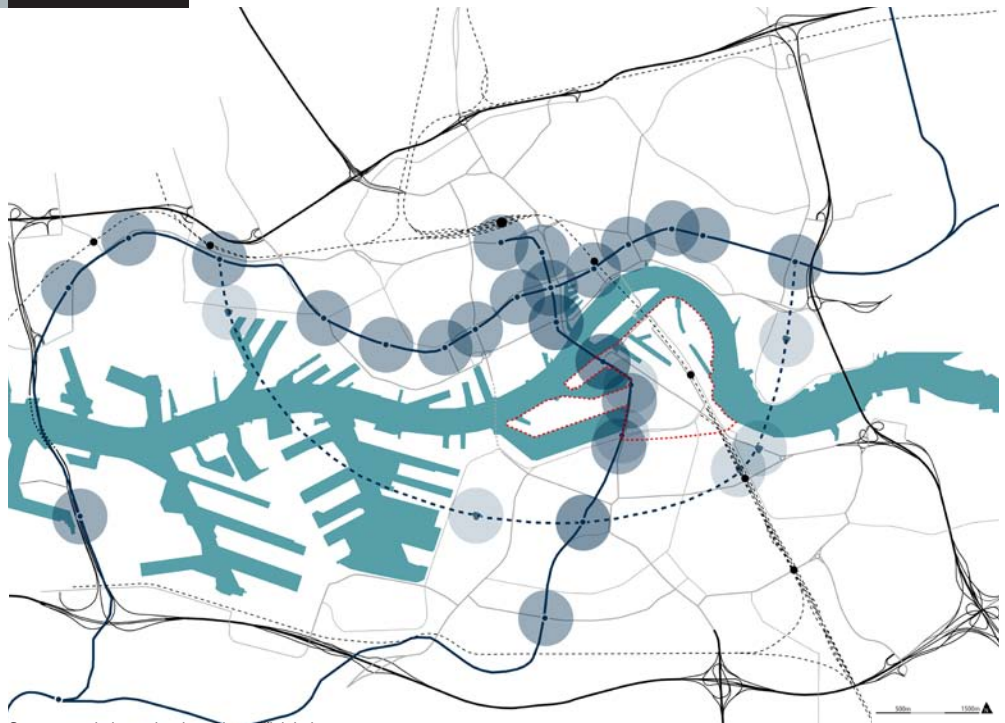
Source: made by author based on official plans

Existing centralities linkage
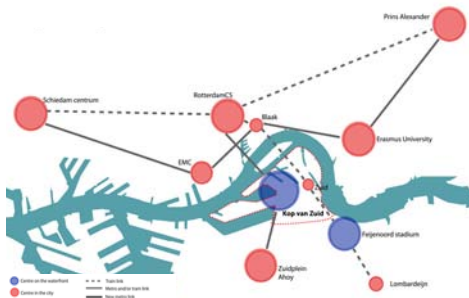
New centralities linkage in case of a new metro line
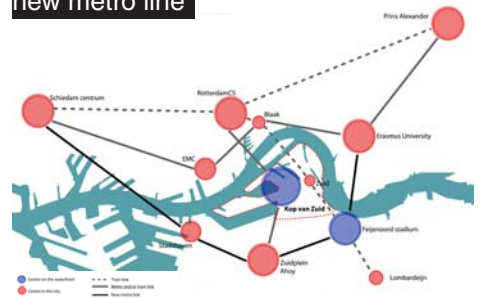
The plans for improvement of the connectivity at the city level post several proposals. One of these plans introduce the idea of the development of a new metro line that would make the connection of west – south – east in Rotterdam. This new line would bring a lot of advantages again in the south part of the city, by increasing its public transport accessibility and creating an integrated public transport network that connects all part of the city. The highest advance of this development would be brought in the location of the future

stops of the new metro line: Stadshave, Zuidplein and Feijenoord stadium. The aim is that this metro line will be ready in 2028 together with the emergence of the Stadionpark area (Stadionpark Visie 2008).

Source: made by author based on official plans

Legend:
- Existing tram network
- Proposed tram line
- New tram line (to be ready in 2020-2025)
- Tram stop
- Study area
- Future bridges
- Tram station cover area
- Proposed tram stations cover area

Existing centralities linkage

New centralities linkage in case of a new metro line

The second proposals for the development of public transport in Rotterdam are the construction of two tram lines. The first one would make connection of train station Blaak with the south part of Rotterdam, and includes the extension of the Willmensbrug from Noordereiland on the south bank. This expansion of the tram network will improve considerably the accessibility of the Feijenoord neighbourhood, and will create a new interconnected public transport node with Rotterdam Zuid train station.

The second tram line is proposed to be developed along the south bank of the river Maas, and further on the east site of the city on a third bridge over the river. The development of such a new tram line will create the conditions for the appearance of a set on centralities on the waterfront line in south of Rotterdam and the arise of a new landmark though the construction of a third city bridge.

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New landmark on the Maas

Possible new landmark on the Mass

Source: flickr.com

Source: flickr.com

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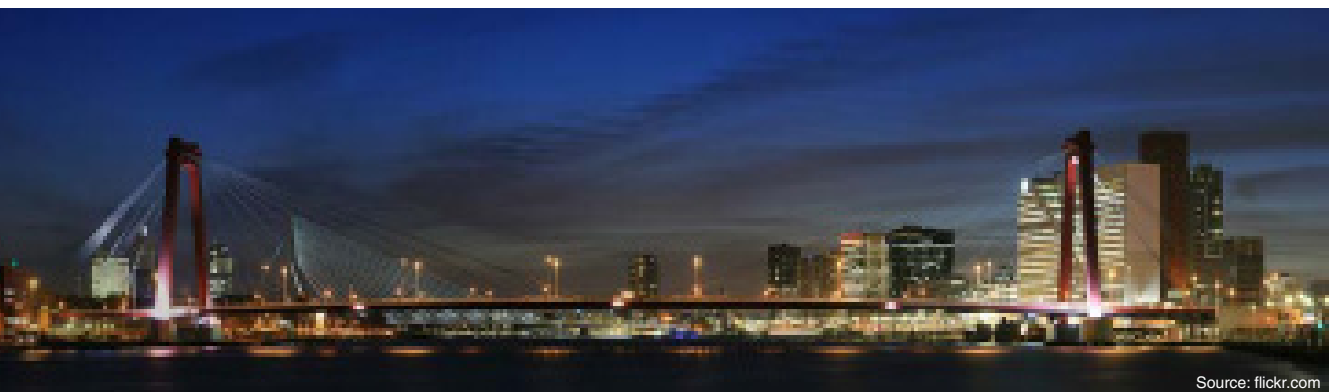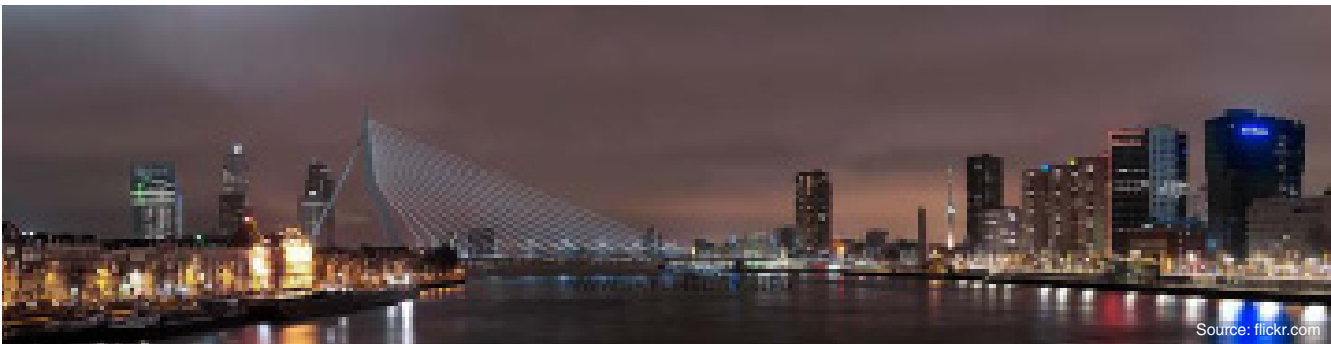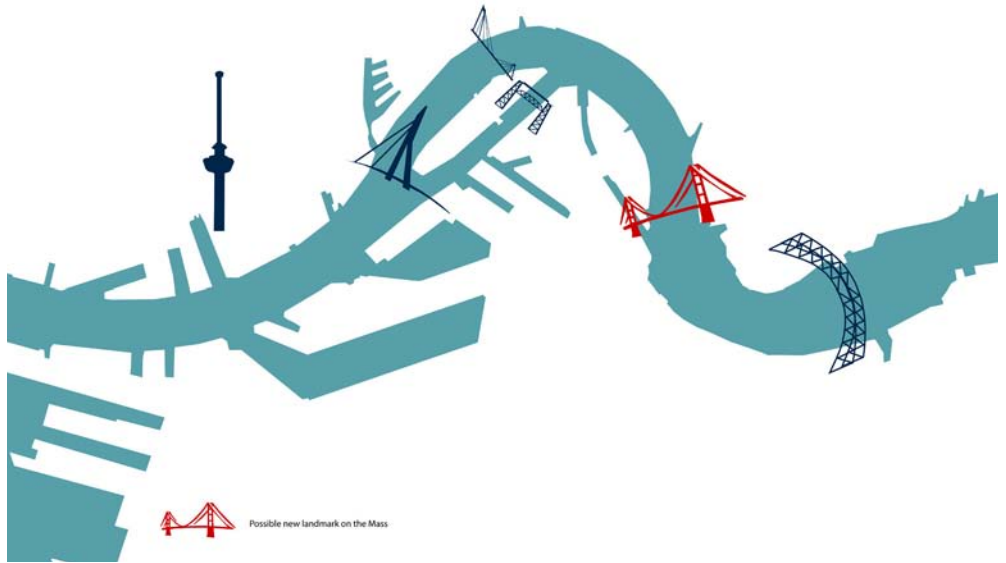
Current accessibility of the main infrastructural nodes
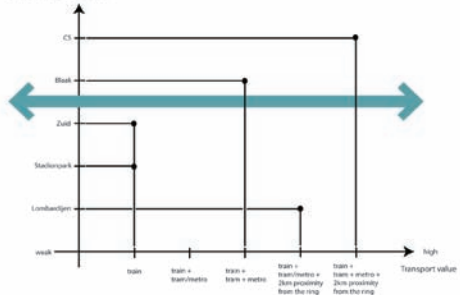
Possible future accessibility of the main infrastructural nodes
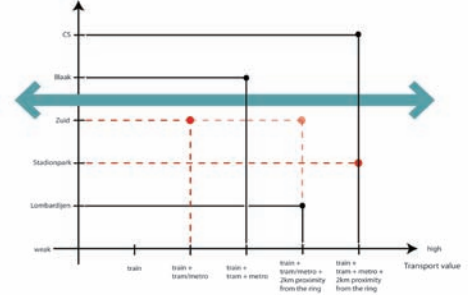
These improvements of the connectivity level are going to equilibrate the balance between the north and the south of the city in terms of transport value of the major transport nodes. This phenomenon can be easily observed through the transformations that are currently taking place around the stations with already a high transport value. For example the new central station of Rotterdam and the area around it are going through significant transformation. The area around the train station Blaak is also supporting improvements.

In the south bank of Rotterdam the important development that is currently taking place is around train station Lombardijen through the construction of one of the largest healthcare centres in the city. Around the Feijenoord train spot the improvement of the accessibility attract future plans for this area, and a new stadium, education facilities and a mixed use living - working environment are proposed. These observations serve like proof that the empty land area around Kop van Zuid will support as well future developments, under the new conditions settled by the new infrastructure.

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Statistical facts

Social composition

Ethnic composition
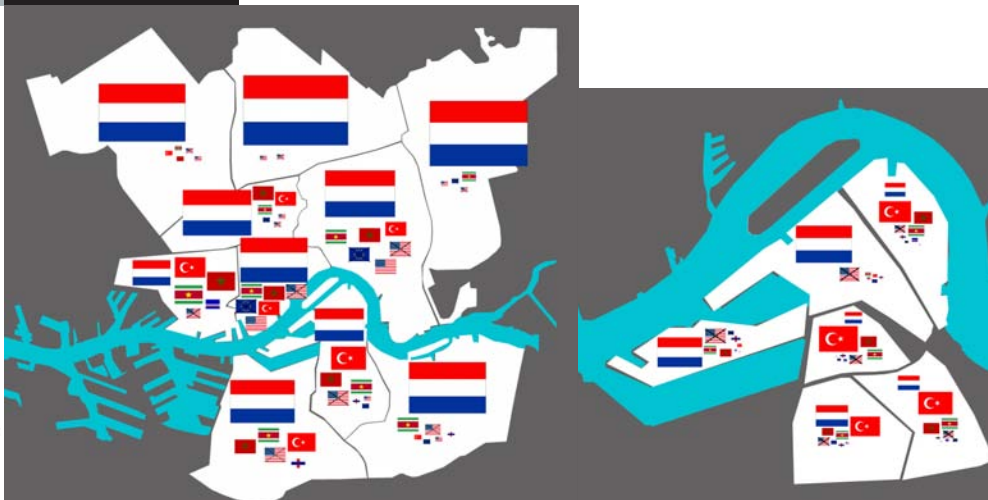
Source: COS Rotterdam 2009

Rotterdam has 45% of its population as foreigners with 173 nationalities, of which 8% is represented by Turkish immigrants. In the Afrikaanderwijk there are 84% foreigners, of which 34% Turkish, in Feijenoord there are 82% foreigners, of which 28% Turkish, while and Kop van Zuid there are 51% foreigners, of which 4% Turkish. This could mean that the Turkish culture represent a strong part of the identity of the Afrikaanderwijk and Feijenoord neighborhoods, however diversity is the best way to describe the identity of the two neighborhoods.

This high diversity illustrates the diversity in demands that are raised from the public space, which leads to the question of how to meet this diversity in demands?

Income

In the Netherlands 9% of the households live under the poverty line and in Rotterdam 16% In Afrikaanderwijk 27%, while in Feijenoord 28% of the households live under the poverty line. The situation in these two neighbourhoods is similar with most of the surrounding neighborhoods, like Katendrecht (23%), Bloemhof (27%), Hillesluis (26%), and the de Kuip (29%). The Kop van Zuid presents 11% poor households, but this comes as a result of the inclusion in the statistical data for this neighbourhood of the Peperklip and the ODS complexes- both concentration of social housing. These findings illustrate the importance of the social group with low income as a target group, at least on the sort term, in this part of the city.

Work

The Afrikaanderwijk has more unemployed inhabitants and more welfare recipients than Feijenoord, and much more than the city of Rotterdam. 24% of the people living in Afrikaanderwijk are registered as unemployed, while in Feijenoord 15%, and 12% in the municipality of Rotterdam. The difference in the number of welfare recipients is similar: 18% in the Afrikaanderwijk, 14% in Feijenoord and 9% in Rotterdam.

Income per household

Source: COS Rotterdam 2009

High
Medium
Low
>28000
23000-26000
26000-28000
<23000
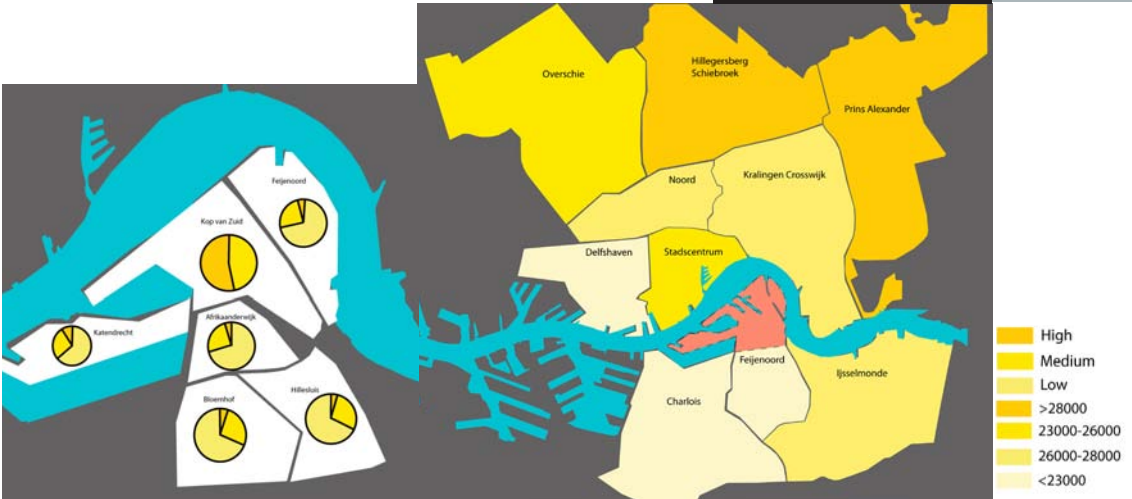
Despite the large amount of Turks, Surinamese, Antilleans and Moroccans living here, this has not led to a multicultural recognizable immigrant entrepreneurship.

The Afrikaanderwijk is a neighbourhood with not only high unemployment, but with very little work. One job would be theoretically available for every 8 workers in the Afrikaanderwijk (2006). While in Feijenoord there would be a job for every three workers. This is obviously a mismatch with the amount of young people and the large workforce in this district and the neighbourhoods around it. The consequences are reaching far: a high unemployment has disruptive effects on the liveability in the neighbourhood, and also reduces long-term opportunities for young people and children through the vicious circle of unemployment and poor education. Creating jobs in the Afrikaanderwijk for the people living in

Procentage of job seekers

Rotterdam 12%

Deelgemeente Feijenoord 12%
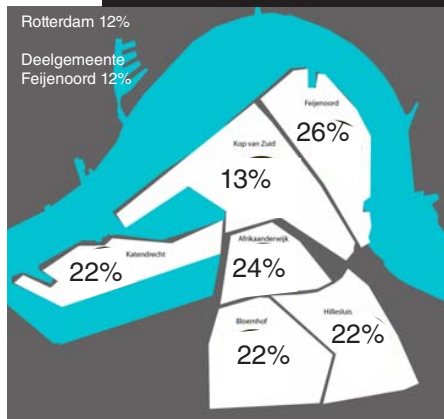
Source: COS Rotterdam 2009

will not be the solution of the structural unemployment, but will entail a change and therefore an important sign issue for the perspective in this district.

Number of people per available job

Kop van Zuid   Feijenoord   Afrikaanderwijk   Feijenoord Municipality   Rotterdam

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Education

Rotterdam 533,2

Deelgemeente
Feijenoord 530,4

Feijenoord
527,4

Kop van Zuid
537,3

Afrikaanderwijk
530,6

Katendrecht
533,5

Bloemhof
529

Hillesluis
529,6
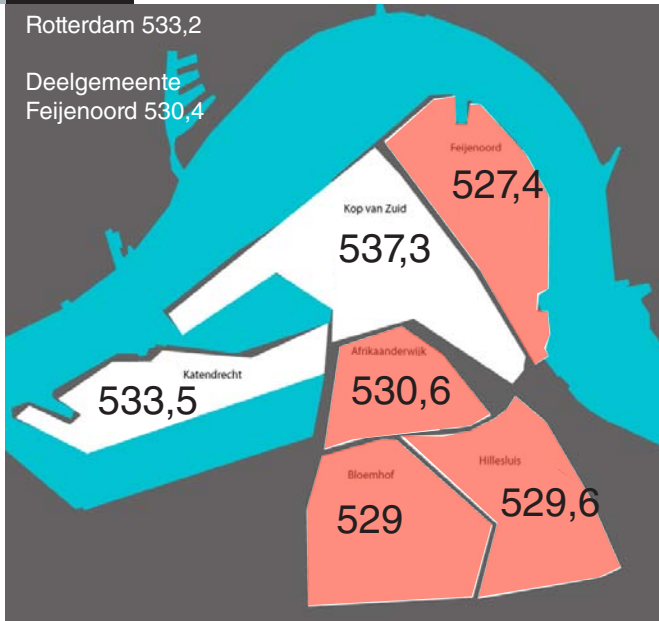
Source: Sociologica

The schools in the Afrikaanderwijk registered an average CITO score of 530.6 achieved. This is slightly higher than the one in the municipality of Feijenoord with 530.4, and much higher then the one in the Feijenoord neighbourhood. However, both scores are significantly lower than the ones of Rotterdam: 533.2. Afrikaanderwijk has 67% of the registered job seekers enrolled in VMBO training and only 3% in a bachelor's or master's degree, in Feijenoord these percentages are 63%, respectively 5% and in Rotterdam 58%, respectively 9%.

The challenge is to help the kids to score better, but the reality is that the majority of children are most likely to fallow vocational and pre vocational types of schools.
This has consequences for their employment prospects, their income expectations, and thus the program of the district over a period of about a decade.

- One person
- Two persons
- Two persons (married)
- Family with children (not married)
- Family with children (married)
- One parent
- Rest
- Institutional amount

Source: COS Rotterdam 2009

The household composition reveals one clear trend: the increased number one person households, in the Kop van Zuid, and the general trend in the society of an increasing number of one person households. In the Afrikaanderwijk and Feijenoord there are high percentages of families with children living in the two neighbourhoods.
The differences in lifestyles in the neighbourhoods with a majority of one person households and the neighbourhoods with many families with children became evident through the use of public space. Thus, the public space receives a much higher importance in the two neighbourhoods, where there are a lot more children than in the Kop van Zuid.
However, this represent a consequence as well of the fact that in Afrikaanderwijk and Feijenoord the number of children with a place in childcare is very low: 1 of 13 in Afrikaanderwijk, and 1 of 16 in Feijenoord.
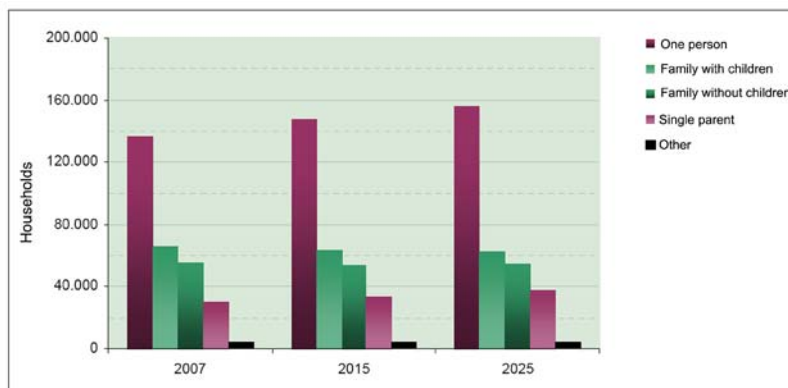
Bron: COS; Development of numbers of household types   (na 2007: prognose).

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Facilities

Procentage of children with a place in childcare

Procentage of childrens between 4 and 6 with a place in a childcare inside neighbourhood

🔴 Childrens with place

⚪ Childrens without place

Source: COS Rotterdam 2009

Number of square meeters of shops per household

Hillesluis: 5,23 sqm/household

Kop van Zuid: 2,7 sqm/household

Oude noorden: 4,4 sqm/household

Afrikaanderwijk: 1,4 sqm/household

Feijenoord: 0,59 sqm/household

Rotterdam average: 3,22 sqm/household
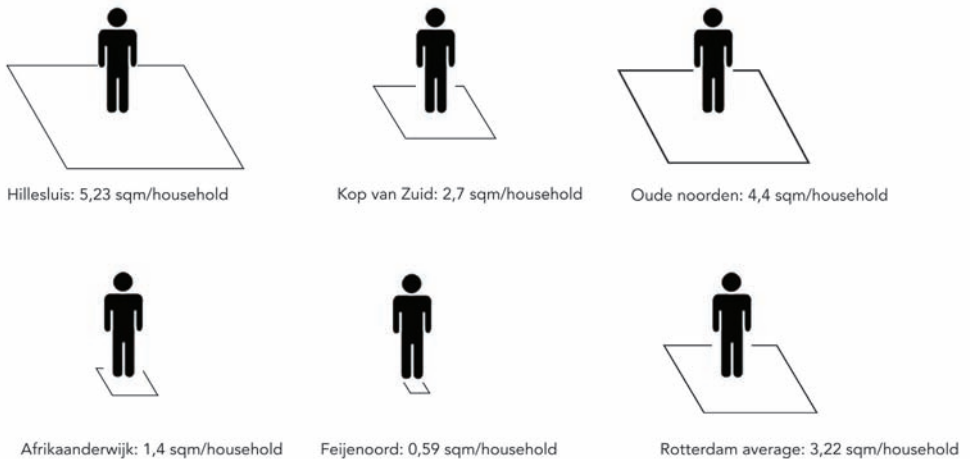
In the Afrikaanderwijk there are 1,4 sqm of daily good shops per household. If we compare this number the ones in Hillesluis and Oude Noorden, there is 3 times less shops space, and more than 2 times less shops space than the average of Rotterdam. The amount of space for daily goods in Afrikaanderwijk comes also as a result of the presence of the market, which supplies the neighbourhood with the daily needs

goods, three times a week. The most striking result comes from Feijenoord, where there is only 0,59 sqm of shop space per household, 5,4 times less than the average of Rotterdam. In conclusion, the market in Afrikaanderwijk represents a very important element for the functioning of the neighbourhood, while in Feijenoord there is a big need for attracting and developing more functions.

Built environment

Housing size

1 room
2 rooms
3 rooms
4 rooms
5 rooms and more

Source: COS Rotterdam 2009

Housing type

Detached house
Individual house
Apartments
House porch without lift
House porch with lift
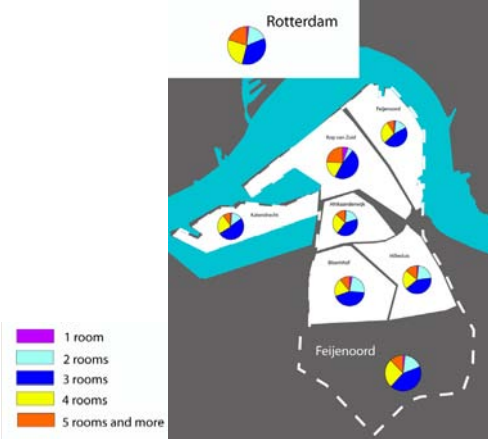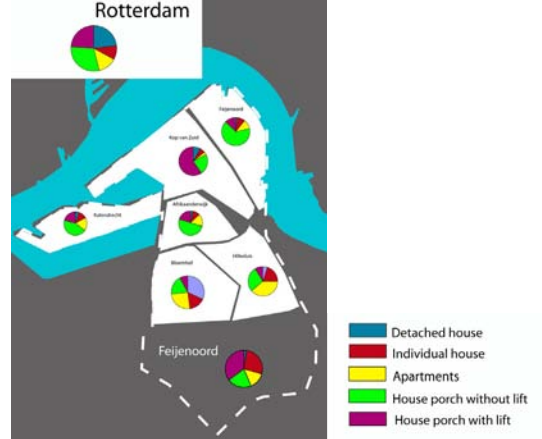
Source: COS Rotterdam 2009

Housing building period

Before 1946
1946 - 1968
1969 - 1993
After 1994

Source: COS Rotterdam 2009

Housing value

< 85.000 euros
85.000 - 107.000 euros
107.000 - 131.000 euros
131.000 - 170.000 euros
>170.000 euros
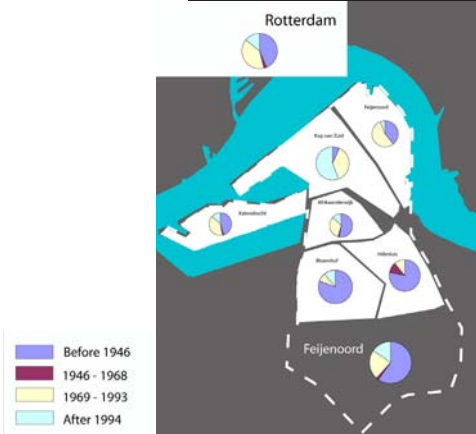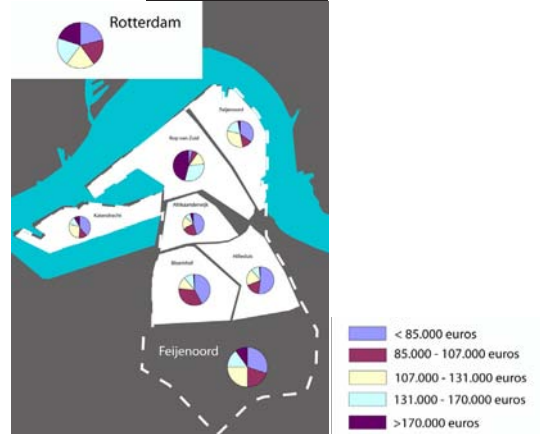
Source: COS Rotterdam 2009

The Afrikaanderwijk and Feijenoord share the most problems with the areas with very high percentage of social rented property. 85% of the housing stock in Afrikaanderwijk, and 96% in Feijenoord are under housing associations, are they are all held by Vestia Rotterdam Kuip. Afrikaanderwijk has one of highest densities in the South of Rotterdam, with 79,6 dwellings per hectare, of which 52% built before the war. However, in the periods through which the neighbourhoods got through urban renewal, a big percentage of these have been renovated. In the Feijenoord, 62% of the housing stock has been build after the war, fact that

can be easily read in the structure of the neighborhood.
Both neighbourhoods have a high amount of very cheap housing, which leads to a high concentration of residents with low incomes. However, the high amount of original buildings in the case of Afrikaanderwijk, and its position in the city – close to the city centre, and very good connected with the public transport network- can appeal to students and artists. These groups can represent targets in the future transformation of the area, while through the development of the Parkstad, a higher variety in housing typologies can be introduced.
In Feijenoord, the low density of the

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Housing ownership
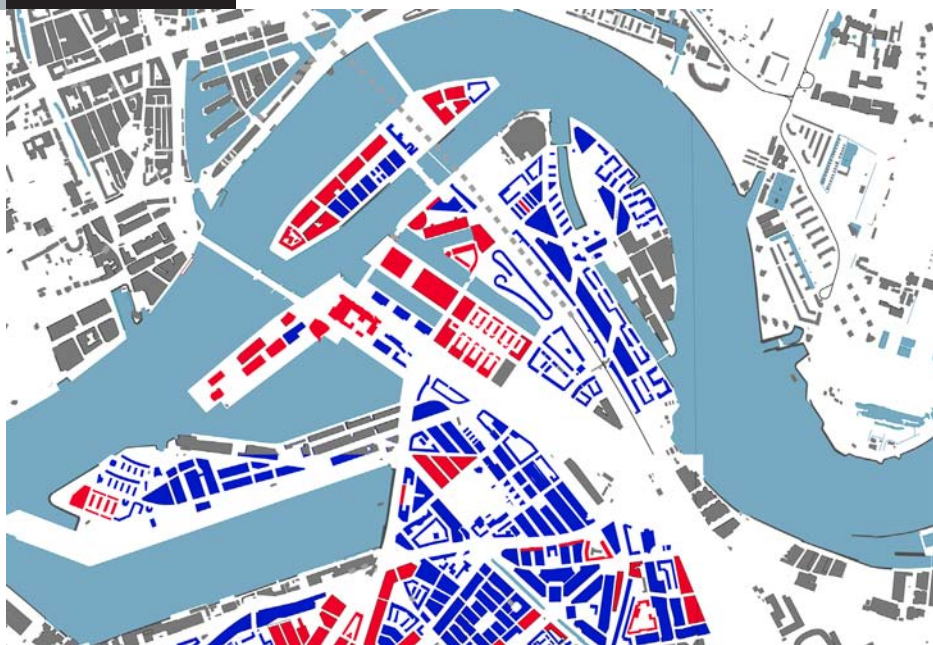
private housing

under rental association

Source: IFOU summer school 2009, Gemeente Rotterdam Presentation

Building in Afrikaanderwijk
Source: flickr.com

Building in Kop van Zuid
Source: flickr.com

Building in Feijenoord
Source: Google street view

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existing typical post war environment, poses a high potential for transformation, by increasing its density, and introducing more variety in the housing topology.

The local scale

Land use

Industry
Mix-use blocks (new building)
Residential blocks
Vacant land
Sport facilities
Comercial facilities
Public building
Green area
Historical building
Public space supporting
temporary uses

Source: made by author based on offical plans

Local connectivity and missing functional links

Highway
Main road network
Secondary streets
Local streets
Missing link
Intersection with
Lan op Zuid
Study area

Source: made by author based on offical plans

A revitalized Kop van Zuid
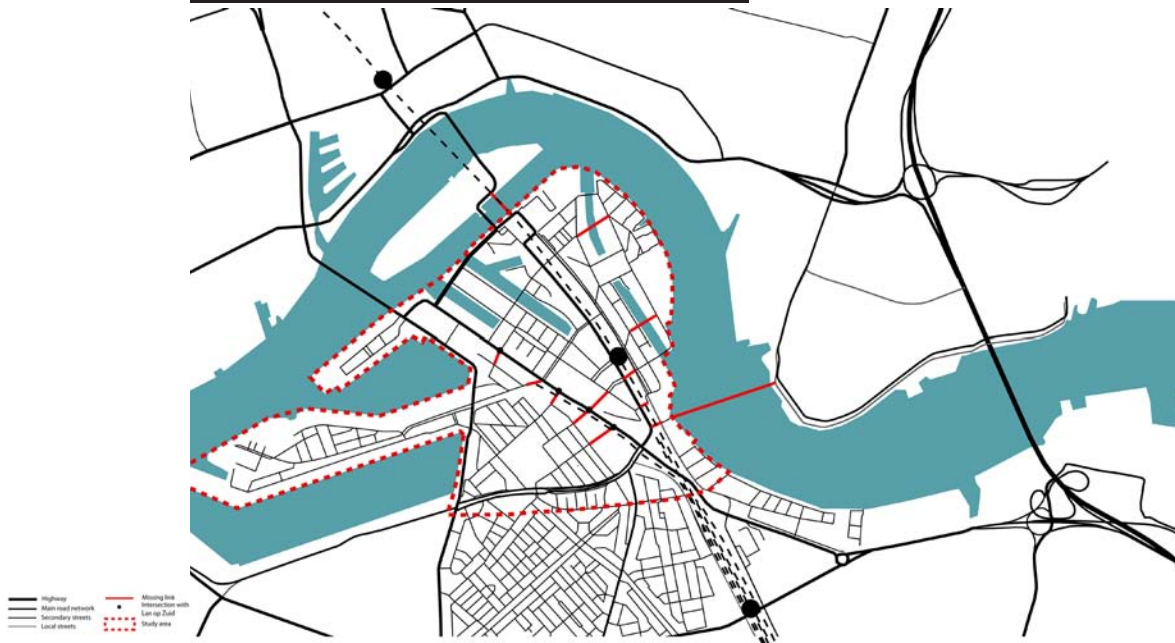
The Kop van Zuid area is clearly still under transformation. Because of that, the extensive vacant land, represents physical barriers in between the neighbourhoods, and impoverishes the local connectivity. Thus the current tram rest and the several train lines being present in between the Afrikaanderwijk and the Kop van Zuid neighbourhood separate totally the two neighbourhoods. While in between the Kop van Zuid and Feijenoord, the local connectivity is improvised, on one hand by the vacant land resulted after the construction of the train tunnel, and on the other hand by the train tracks, in the south part of the train route, where the tunnel ends, and the train tracks appear on the ground.
As a result, the East-West connectivity in between the Feijenoord, Kop van Zuid and Afrikaanderwijk can be significantly improved by adding the missing functional links.

Train track in between Kop van Zuid and Afrikaanderwijk
Source: Panoramio.com

Train station Rotterdam Zuid
Source: Panoramio.com

The built environment

Exisiting mixed use ground floor and ground floors with potential for transformation

Built environment
Mixed - use frontage
Ground floor with potential for transformation
Blackwall

50m   150m   N

Source: made by author

The research on the built environment has focused on several aspects like:
-          the building period and the current stage of the built environment
-          the ground floors with potential for transformation
-          density and potentials for increasing the density
-          and on the relationship between the private open space and the public space

The chosen themes have been strategically selected in order to create a clear overview of characteristics of the current built environment, and its potentials for transformation.

The analysis on the existing mixed use ground floor had the intention of discovering, which are the potentials for intervening in current built environment, in a very soft manner, in order to bring more potential mixed functions into the neighborhoods. The ground floor that has been considered as having the highest potential for transformation were the ground floors with app artments directly connected with street, and ground floors with storage space.

Building period and current stage of the build environment

Legend:
- original buiding renewed
- original buiding
- constructed after 1975
- monument
- town monument
- in need for technical research
- industrial building

50m   150m   N

Source: Sociologica for Afrikaanderwijk, and completed by author for Kop van Zuid and Feijenoord

The building period analysis reveals which is the character of the existing urban fabric, while the current conditions indicates buildings that will need extra attention in coming years, which can be subject for transformation. In the Afrikaanderwijk urban fabric comprises a high percentage of original housing, which on one hand presents technical problems that need to be investigated, and on the other hand they give a lot of character to the area. In Feijenoord, the highest percentage of built environment is represented by post war housing, which creates an urban environment with little variety in terms of housing typologies. This type of urban fabric offers a potential for transformation.

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Density and buildings height

■	high (57 stories)
■	high (55 stories)
■	high (50 stories)
■	high (33 stories)
■	high (22 stories)
■	high (18 stories)
■	high (17 stories)
■	high (15 stories)
■	high (14 stories)
■	high(12 stories)
■	high (11 stories)
■	high (10 stories)
■	medium (9 stories)
■	medium (8 stories)
■	medium (7 stories)
■	medium (6 stories)
■	medium (5 stories)
■	medium (4 stories)
■	low(3 stories)
■	low (2 stories)

Source: made by author

Housing density

Source: Sociologica

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Opportunity for increasing the density in the existing built enviroment

Opportunity forbuilding on the vacant land

50m   150m   N
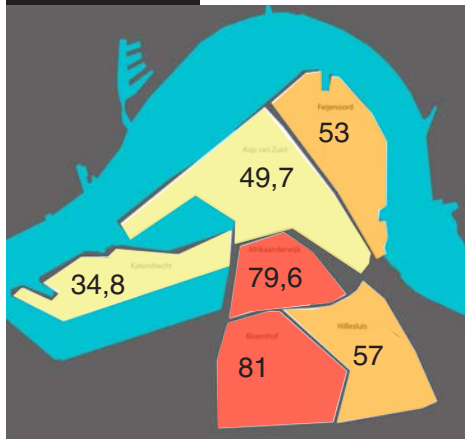
The Afrikaanderwijk is one of the highest densed neighbourhoods in the south of Rotterdam. Thus, the main potential for increasing this density is in the vacant land on one hand, or in the transformation of the existing blocks on the other. However, the existing high density requires a particular attention to be paid to the parking facilities. In Feijenoord, the relatively small density offers much more space for intervention.

The density analysis points out potentials for increasing the density on the main corridors, on one hand by using the available land, and the other hand by transforming the existing urban fabric. The increased density should emphasize the hierarchy of the corridors, and provide a concentration of people and functions, in order to activate them.

Relation between building typology and semi-public space

- ▮ building
- ▮ private open space
- ▮ semi-public space
- ▯ semi-private open space

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The relation between the semi-public space and the public space analysis had as a main goal to indicate, which are the existing situations in the different neighborhoods, of the relationship between the public life, and the integration and participation of the semi-public space into the public life. The main element that was analyzed was the degree of permeability that the different building typologies offered. The permeability was considered as physical permeability: to who is the semi-public space physical accessible; and visual accessibility: how permeable is the semi-public space to the crossing public.

The proposed relationship between the public space, typology and permeability at the different the hierarchical levels, is presented at the pages 60 and 61.

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Types of relation between building typology and semi-public space
in Kop van Feijenoord
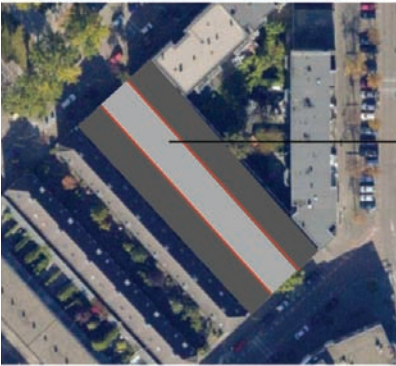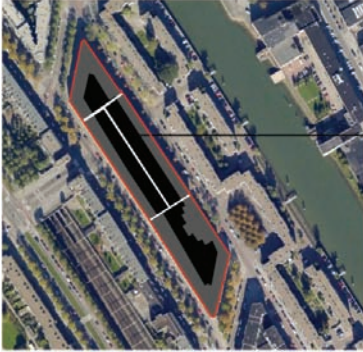
1. private gardens with semi-private passageways
   (open for the block residents)
2. common courtyard open to a side street
3. semi-private space open to a side street
4. common courtyard with public access durring
   day time

In the Feijenoord neighbourhood there are two cases, which are the most often to be found. The first typology refers to the very long blocks, with interior public space occupied by private gardens and semi-private passages, which improvises considerably the permeability of the urban fabric. While the second very often category, refers to a typology typical for the post war urban fabric, with semi-public space inside the block, open to a side street. This typology offers on one hand a great potential for integrating the semi-public space into a public space network, and on the other hand a potential for enclosing the semi-public space and create a more commentary space, but which offers great visual permeability from the street.

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Relation between building typology and semi-public space
in Kop van Zuid
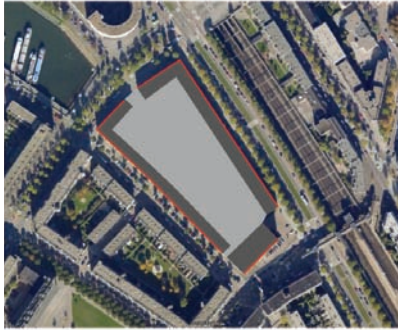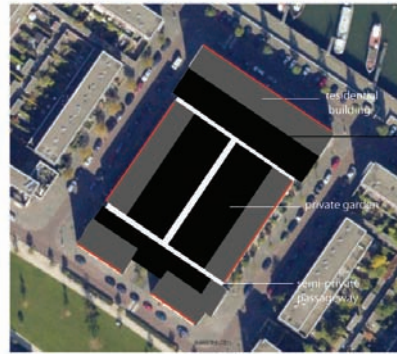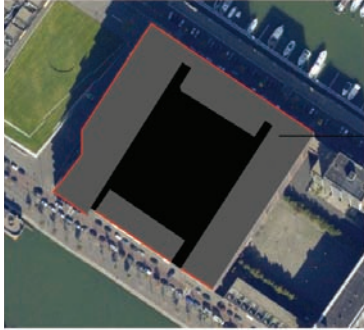
1. common courtyard inside a residential
   building without public access
2. private gardens with semi-private
   passageways (open for the block residents)
3. common courtyard open to a side street

In the Kop van Zuid the new developed typologies are mostly characterised by private open space, with no visual permeability from the street. These typologies create very introverted blocks, with little connection in between the private open space and the public space.

The first typology is represented by a high dimensioned block with an inside common courtyard, accessible to the blocks residents, with poor visual permeability. The second typology, is often met in the south part of the Kop van Zuid development, is represented by blocks with private gardens and semi-private passageways. In this situation there is present also front

1.

2.

garden on two part of the block, however, the generous back garden, gives no need for the use of the front garden. The third typology is a typical post war block, with private gardens, and big common courtyards. In this case, the main negative point is represented by the strong, visual impermeable delimitation in between the private garden and common

courtyards, which results in spaces with not visual control.

Relation between building typology and semi-public space in Afrikaanderwijk
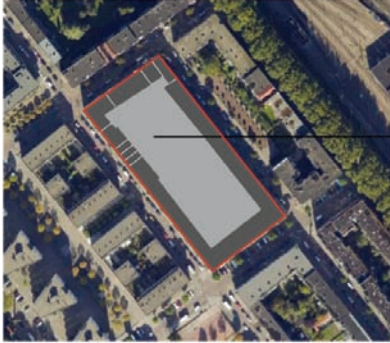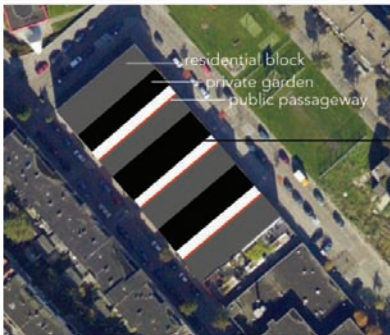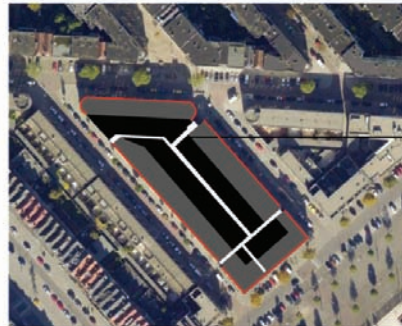
1. common courtyard with public access durring day time
2. inside block public space mainly ocupied by parking open to a side street
3. private garden and public passageway
4. semi-private passageway

The Afrikaanderwijk urban fabric can be characterized as a typical 1930s one, with building typologies that are distinguishing them selves through the long narrow form, with an interior open space occupied by private gardens and semi-private passageways. This type of urban fabric presents a poor physical permeability, between the private open space and the public space. Ho

However, this is not the only situation that is met in the neighbourhood. The other typologies are meat also in the previous case in Feijenoord, with the same type of advantages and disadvantages.

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A revitalized Kop van Zuid

The public space

Theoretical framework

Public space as an integrative platform
The characteristics of the public space as an integration setting of a multicultural society

Abstract – The process of globalization, the transformation in the economies all around the world, and the accentuated immigration changed dramatically the multicultural character of the western societies (Burgers, 2000). Public domain represents the place where the ethnical and social diversity becomes evident, and is sustained by various scholars that is the place that sustains and facilities public life (Lofland, 1998; Jacobs, 1961; Gehl, 1987; Hajer & Reijndorp, 2001). Therefore, the public domain can be seen as favourable for social interaction, social interaction that is considered to support social cohesion (Maloutas & Pantelidou, 2004, Marschall & Stolle, 2004). In the debate about the public domain there are two main components that are considered crucial for a successful public domain: physical environment and activity.

The objective of this paper is to identify and collect the most important physical characteristics of the public domain that are critical in context of a multicultural setting, and the activities that have proven to attract a variety of social and ethical groups. In conclusion the characteristics of the public space that have been discussed will be summarized and translated in a list of critical components for a public space that sustains and facilities the social interaction of a highly multicultural society.

Key words – public realm; multicultural society; social interaction; physical characteristics; anchor point activities.

1 Introduction

Globalization process leads to transformations in economies all around the world. As a result the society of today is characterized by a high variety of different overlapping networks of economical, social and cultural affiliation. This comes as a consequence of the internationalization of the economy, which leads in a major increase of the immigration all around the world. This accentuated immigration brings a dramatic change on the multicultural nature of the western societies (Burgers, 2000; Knox and Pinch, 2000). Furthermore, due to the fact that most of the immigrants need cheap housing, they tend to concentrate in already poor neighbourhoods (Burgers, 2000). In order to achieve a more balanced situation between the different areas in a city, gentrification policies have been invented. Despite the strong academic debate about whether or not gentrification is a positive thing, or even creates more social polarization, it is increasingly promoted in policy circles in both Europe and North America on the assumption that it will lead to less segregated and more sustainable communities through 'housing re-differentiation' and mixed population. However, whether the simple presence of the middle-class group in the neighbourhood will increase social cohesion and social ties is a point of discussion.

The public domain represents the place where the ethnic and social diversity becomes evident. Classics on the subject sustain the public domain: represents the space that interrelates with social-cultural values (Lofland, 1998), is a manifestation of

diversity (Jacobs, 1961), is the space that promotes, facilities and sustains the public life (Jacobs, 1961; Gehl, 1987; Zukin, 1996), is the place where society is formed (Hajer & Reijndorp, 2001). Therefore, public domain can be seen as favourable space that can lead to social interaction between the different social and ethnic groups. It is claimed by various scholars that social interaction can support social cohesion (Maloutas & Pantelidou, 2004, Marschall & Stolle, 2004).

The debate about public realm is roughly divided into three points of view. There are authors who sustain that the public realm is directly influenced by the its physical characteristics (Gehl, 1987; White 1988), authors who consider that the public realm has both a physical dimensions (space) and a social (activity) one (Carmona et al., 2003; Jacobs, 1993), and authors who consider that the realms are social spaces rather than physical spaces, that are defined by the relationships among the people that are using the space more than by its physical characteristics (Lofland, 1998).

However, which are the most important physical characteristics of the public space that influences the public realm in the context of a multicultural society? And which are the activities the empirical studies have proven to attract a wide range of social and ethnical groups of users?

The aim of this paper is to understand and to gather the most important characteristics of a public space that can serve as platform for social integration. Its outcome is meant to serve as a theoretical framework for the author's graduation project which

proposes a strategy and interventions for social-spatial integration in Southern part of Rotterdam, the Netherlands

The answers of the proposed research questions are developed in the following sections, based on earlier and more recent literature. The first section is clarifying the connection between some of the main characteristics of the physical environment that are influencing the public realm, and people's response to it. The second section encapsulates a collection of activities that have proven to gather and attract a vast range of groups of users. In the conclusion a sum of the most important characteristics of an integrative public space are illustrated.

2 People and their physical environment

The understanding of the relationship between the people and their environment – the space – is essential in urban design (Carmona et al., 2003). There are three different ideas regarding the environmental influence on the people's actions. The first one, as is expressed in its name – environmental determinism - claims that the environment has a determining influence on human conduct, so it assumes that the people-environment is a one way process. The additional two ideas recognize the two-way process of the human-environment influence. The 'environmental possibilism' sustains that people choose based on the environmental opportunities available to them, and the 'environmental probalism' - where given the physical setting - some choices are more likely than others (Porteous, 1997 and Bell et al., 1990, cited in Carmona et al., 2003, pg 106).

2.1 Public space and accessibility
Carr et al. (1992, pg 138) identify three forms of access of the public space: visual access, symbolic access and physical access. The visual accessibility refers to the possibility of seeing through an environment, and it has two main roles: to offer the possibility of judging whether a place fells comfortable, inviting or safe, and on the other hand it serves as a gradation between the public and the private space. The symbolic accessibility regards the psychological accessibility of a place, like if a public space is occupied by a group of people that seem threatening then this "may affect the entrance into the public space" (Carr et al., 1992, pg 149), or the presence of a specific shop, which invites a certain category of people. This type of accessibility is a key component of the characteristics of a public space that wants to attract a big variety of groups, and thus the design of the public space should not create a sense of exclusion for the various groups. Hanhörster (2001) concludes as a result of her study, that residents of highly mixed neighbourhoods prefer "spaces that are neutral and offer a lot of flexibility and have few limitations on…uses" (pg 337).

The physical access concerns the physical availability of the space to the public. Montgomery (1998) emphasizes that the physical accessibility has two sides: the accessibility through public transport and by car, and the permeability of the space. According to him the permeability of the urban fabric is of high importance, because people seem to be less inclined to walk long unbroken streets (see Fig. 1). His point of view is that a permeable urban fabric generates more street life and activates back alleys and courtyards. The importance of a permeable fabric is also advocated by authors like Jane Jacobs (1961), Whyte (2000) and Carmona et al. (2003).
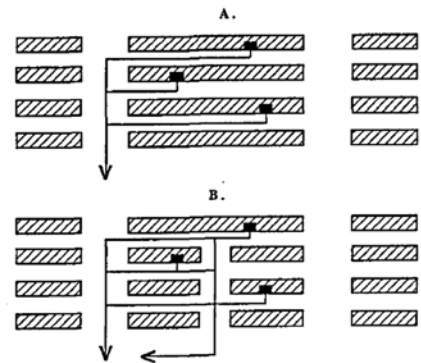
Fig. 1 City blocks: (a) long blocks hinder permeability;
(b) shorter blocks generate more street life.
Source: Jacobs (1961), in Montgomery (1998, pg 108)

2.2 Active frontages
According to Carmona et al. (2003) the building façade that has the active frontage on the street is "adding interest and vitality to the public realm" (pg 173). They are sustaining that "a high concentration of street level doors, are more conductive to social interaction then…structures with black walls" (Carmona et al., 2003, pg 107). Moreover, a high concentration of doors and windows contribute to the natural surveillance of the public space, which represents a key factor for its safety (Jacobs, 1961). This topic of safety is going to be further introduced as a standing sub-section.
Based on the study of Llewelyn-Davis (2000), Carmona et al. (2003) provides some quantitative indicators of a highly active frontage. On that account a highly active frontage should present:
- a fine grained block with more than fifteen premises every 100m
- more than twenty-five doors and windows every 100m
- a large range of functions and land uses

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- no blind/black facades and few passive ones
- much depth and relief in the building surface
- high quality materials and refined surfaces.

2.3 Spaces for walking, places for staying and the public realm
In his book Life Between Buildings, Jan Gehl (1987) develops a deep research for the understanding of how urban design influences the human behaviour. He argues that through design (from regional and climatic to design at architectural scale) – with certain limits – it is possible to influence how many people use the public space and what types of activities can be developed in the public space. He identifies, 'greatly simplified', three main categories of activities that take place in the public space. The first category, which is least influenced by the physical environment, is represented by the necessary activities, like going to work, school, etc.. About the second category – optional activities – Gehl sustains that is the kind of group of activities in which people get engaged only if the weather and the setting allows them: 'these activities are especially dependent on the exterior physical conditions' (Gehl 1987, pg 13). The third category – social activities – comes as a result of the first two categories of activities under the condition that they are supported by good environmental settings (see Fig. 2
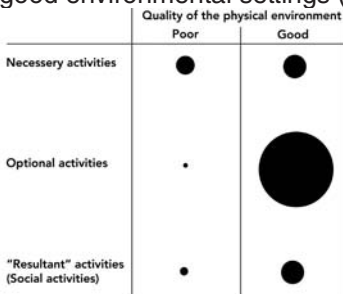
Fig. 2: The relation between the quality of the physical environment and the activities
Source: Gehl (1987, pg 13)

These activities depend on the presence of other people in the public space, and it can lead to passive contacts, to simply looking or hearing other people or conversations and communal activities.
Thus, the essence of Gehl's (1987) ideas is that in high quality public spaces, which offer the proper conditions for an intense pedestrian activity in combination with numerous possibilities for stopping and spending time in the public space, a wide range of social activities tend to occur. According to him the most important physical characteristics for pedestrian stimulation are (Gehl, 1987, pg 131-172):

for walking:
-	dimensions: small enough to create appropriation between the people, but big enough to be comfortable;
-	material: comfortable pavement;
-	routs: fluent and easy to orientate;
-	difference in level: ramps rather then stairs.
for standing and sitting
-	placement: offers cover, a felling of intimacy and not being exposed;
-	orientation and view: offers opportunity to see;
-	type of seating: a mix of primary (benches, chairs, etc.) and secondary (stairways, pedestals, steps, boxes, etc.) setting.

2.4 Green space and water space
A qualitative public space is most of the time associated with a green, environmental comfortable public space. Authors like Montgomery (1998) and Whyte (1980) emphasize that the city landscaping meets three major roles. First, the city landscaping constructs a visual setting by creating views, by adding interest and

colour. Second, in combination with water elements it contributes to the improvement of the microclimate of a city, by filtering the noise, light and the air of a city. And third, is proving the suitable environment for outdoor recreation.

More recent studies demonstrate that the greener outdoor public spaces contribute and support the social interaction (Sullivan, Kuo, and DePooter, 2004). Their research is based on the findings resulted from the empirical studies in Chicago, Illinois, where patterns of use and green coverage of the public spaces, in correlation with strategic interviews, formulated the conclusion that ''inner-city common green spaces contribute to the social cohesion and vitality of a neighbourhood" (Sullivan, Kuo, and DePooter 2004, pg 696).

2.5 The relation between safety, security and urban design
A sense of security is a very important feature for the public realm. In a multicultural society it is often the case that tensions arise in between the different cultures, due to intolerance, territoriality and differences in conduct values. If people don't feel safe in the public space, and they don't use it because is empty or is populated by people that seem intimidating, the public realm is substantially impoverished. Jacobs (1961) is one of the first authors who emphasizes that the key to a safe environment is the natural surveillance resulted from visibility towards the public space and activity in the public space (See Fig. 3 and Fig 4). For her the main requirement for a successful public space was that people feel secure on the street among strangers (Jacobs, 1961).
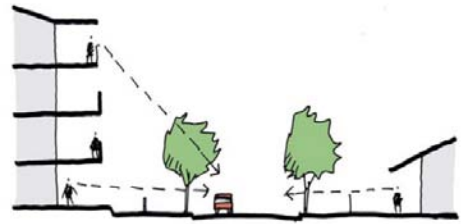
Fig. 3 Seeing what is happening in the public space.
Source: CPTED for Queensland, Chapter 3
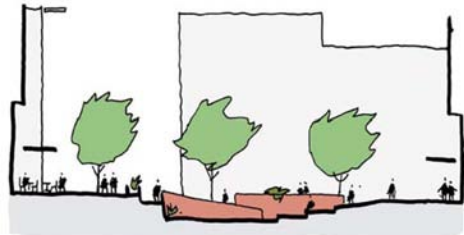
Fig. 4 Active public spaces with amenities and good visibility.
Source: CPTED for Queensland, Chapter 3

Later, Newman develops further some of Jacobs ideas in his book Defensible Space: People and Design in the Violent City (1973), and he identifies – based on a study of the crime locations in correlation with the design on some housing projects from New York - three factors that are associated with the increased crime rate in neighbourhoods: anonymity (people do not know their neighbours), a lack of surveillance within the buildings, and availability of escape routes. As a result of the study he developed the concept of defensible space, through which he defines key principles for the restructuring of the urban environments that would increase the sense of control of space. Similar approaches that have a lot in common with Newman's defensible space have been developed, until the recent history, in Crime Prevention Through Environmental Design (CPTED) strategies. These strategies left for the assumption that "the proper design and the effective use of the built environment can lead to a reduction

in the fear of crime and the incidence of crime, and to a improvement in the quality of life" (Crowe, 2000, pg 1). Crowe's book is the most recent edition of CPTED principles, and it illustrates an updated version of Newman's and Jeffery's – criminologist who originally formulated the CPTED, based on which Newman's based his concept - ration. However, some of the principles of the concept of defensible space have been strongly criticized along the time. Hiller (1996) highlights the fact that through the implementation of the defensible space principles, enclaves are created, that prohibit the natural movement of people through space, and thus natural surveillance.

In a more recent studies Van Nes and Lopez (2007) and Van Nes and Rueb (2009), explore through a micro scale research the inter-relationship between building and their related street segments in correlation with the crime distribution. After a study of empirical research that took place in several neighbourhoods from different cities in the Netherlands, they have created a correlation between some micro scale elements and public space safety and street life. Thus, they have defined two major characteristics of the build setting that contribute to a safer environment: the inter-visibility and the density of entrances from the street (calculated by the number of entrances that are facing each other, and they define as a high inter-visible a street that has more then 75% of the entrances facing each other) (see Fig. 5), and the constitutedness of the street (calculated by the number of entranced directly connected to the street, and they define as constituted street a street that has more then 75% of the entrances directly connected to the street) (see Fig. 6) (Van Nes & Lopez, 2007, pg 5-8). However, they also recognize that there is a strong relationship between the micro and

macro scale variables, and emphasize that the micro scale characteristics are inter-dependent to the relation with the main routs through the city (Van Nes & Lopez, 2007; Van Nes & Rueb, 2009). the public realm is substantially impoverished. Jacobs (1961) is one of the first authors who emphasizes that the key to a safe environment is the natural surveillance resulted from visibility towards the public space and activity in the public space (See Fig. 3 and Fig 4). For her the main requirement for a successful public space was that people feel secure on the street among strangers (Jacobs, 1961).
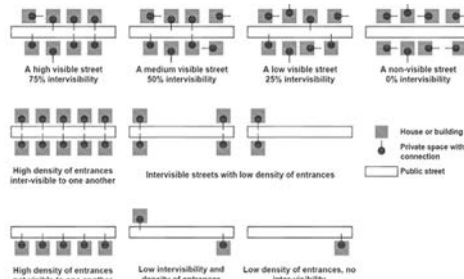

Fig. 5 Degrees of inter-visibility.
Source: van Nes and Lopez (2007, pg 8)
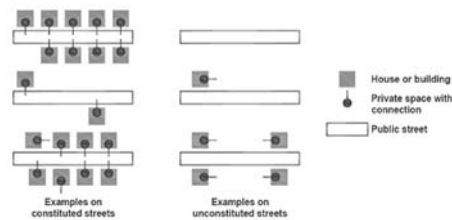
Fig. 6 Degrees of constitutedness.
Source: van Nes and Lopez (2007, pg 4)

3 People and activities as anchor points

As already mention in the previous part, many authors associate successful public spaces with highly active places that support and facilitate the public life. Since 1961, Jane Jacobs draw the attention in her book Death and Life of Great American Cities that the most successful public spaces offer a high mixture in the combination of activities. Based on her observation in North American Cities, she emphasizes that in order to create a successful public space it is important that a fine grained economy is developed, that attracts a diversity of people (See Fig. 7). This

idea of Jane Jacobs has been recognised and perpetuated by many authors until the recent history (Alexander et al., 1977; Gehl, 1987; Montgomery, 1998; Carmona et al., 2003; among others).
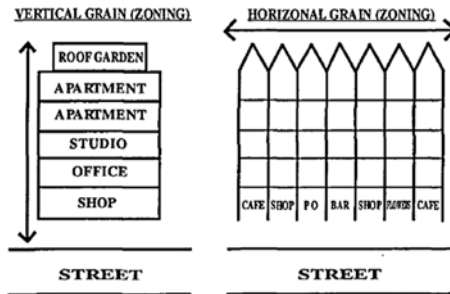
Fig. 7 Designing a good street: vertical and horizontal grain (zoning).
Source: Montgomery (1998, pg 110)

Thus, the attractability of a certain place is directly connected with the possibilities for various activities to take place. Sociologist Lyn Lofland (1998) identifies, in her book The Public Realm: exploring the city's quintessential social territory, "person-to-place connections" through which specific places become symbolically important for the persons who frequent them, and grow connected to them (Lofland 1998, pg 63-70). She also claims that interactions in the public realm can be emotionally significant, and apparently unimportant fleeting ties can evolve into emotionally meaningful connections to the public realm.
The following sections will focus on presenting some key activities that empirical studies have proven to attract and bring together a wide range of users, with different backgrounds and from different social-economical classes.

3.1 Markets as sites for social interaction
An empirical study developed by Watson and Studdert (2006) in the UK, demonstrates that markets attract and facilitate the encountering of a highly mixed social public. From the observations and interviews gathered in various markets from the United Kingdom it has emerged that they play a crucial role in the local communities (Watson & Studdert, 2006, pg 50). They are drawing a high interest from both week and middle class social groups, by providing a source of financially accessible food and goods for the weaker groups and a source of exotic food for the more powerful ones (because it is often the case that the market vendors are immigrants that have as an occupation the sale of traditional products). Thus, markets have proven to be places where "high levels of social interaction, social mixing, social bonding and social inclusion" (Watson and Studdert, 2006, pg 49) takes place. Moreover, strong social ties appear to emerge between the long-lasting trader families and regular customers.

3.2 Art spaces and the link to social interaction
Recent studies reported strong connexions between the art spaces and the increase of social ties. Grodach (2009) developed a research in USA, - where by empirical analysis and interviews in various types of art spaces like artist cooperatives, ethnic-specific art spaces, and city-sponsored art centres – based on which he consolidates the argument that art spaces "create opportunities for community engagement and interaction within and between groups" (Grodach, 2009, pg11). Moreover, his research reveals that through art spaces underrepresented groups become visible. According to him this has an important effect on the unveiling of the traditions and the characteristics of the different cultures, which influence positively the acceptance and bridging between the different social and

ethnical groups.
Similarly, Lowe (2000) highlights the fact that art facilitates the cross-cultural understanding, and as a result of her research she concludes that "community art could ameliorate social problems" (Lowe, 2000, pg 382). Kay (2000) takes another path and by analysing which is the role of public art in regeneration projects, she arrogates that art places play an important role into the regeneration of decayed areas, by improving "the image of an area", the social cohesion, and by making the local people aware of their cultural identity (pg 423).

3.3 Third places and social interaction
Scholars suggest that the link between people, places and events contributes to the build up of the sense of familiarity (Oldenburg, 1981; Hester, 1984). Places that support community interaction and shapes the community identity become social valuable and meaningful (Lofland 1998). According to her these places are small local business or community gathering places in the neighbourhood and are what Oldenburg (1981) named third places.
In his book, The Great Good Place: Cafes, coffee shops, bookstores, bars, hair salons and the other hang outs at the hart of the community (1989), Oldenburg asserts that in order to be relaxing and fulfilling, daily life must balanced in the experience of three realms: domestic, work and social. He claims the contemporary daily life makes these types of spaces to be a requirement, due to the fact that people need to get released and stimulated, and this can be offered by the social realm. Through his term of third places, Oldenburg designates "a great variety of public spaces that host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work"

(1989, pg 16, cited in Lofland, 1998, pg 62).
A recent empirical study that focused on the research of The Impact of the Third Places on the Community Quality of Life (Jeffers et al., 2009) concluded that in a community the access to third places plays an important role in the people's satisfaction with the quality of life in their neighbourhood. In a community characterized by a highly mixed population in terms of ethnicity and income levels, the third places are mostly associated with places to eat and drink (like exotic restaurants). This comes as a result of the attraction that a diverse assortment of food products constitutes for a variety of groups.

3 Conclusions

By summarizing the introduced documentation in the previous sections one can conclude that there are three main characteristics that a public space has to meet in order to support and enhance the interaction of a multicultural society (see Fig. 8).

Public space can support the integration of a multicultural society when:

1. the public space is safe 2. the public space is active and attractive 3. the public is flexible

Fig. 8 Characteristics of an integrative public space

The first criterion, of safety, refers to the characteristics of the built environment in order to create natural surveillance of the public space over the whole day. Therefore, it is important that the public space is well connected with the main routes through the city, is permeable and the built environment is well constituted and inter-visible

(Jacobs, 1961; Carmona et. al, 2003; Montgomery, 1998; Whyte, 2000; Van Nes & Lopez, 2007; Van Nes & Rueb, 2009).

The second characteristic, of activeness and attractiveness, relates with the capacity of the public space to support and enhance the multicultural public life. It is therefore important to develop a fine grained economy, in combination with anchor point activities in order to create the attractive environment for a variety of groups of users (Jacobs, 1961; Watson & Studdert, 2006; Grodach, 2009; Lowe, 2000; Oldenburg, 1981). On the other hand, is crucial that the built surroundings create the proper setting for an active public life, and it presents active frontages, the right characteristics for pedestrian stimulation and a green environment that creates a comfortable microclimate (Gehl, 1987; Carmona et. al., 2003; Whyte, 2000).

The flexibility of the public space concerns the establishment of a neutral public space environment, which is not creating exclusion or limitations of the users and uses (Carr et al., 1992).

The public space of a city presents various degrees of publicity. There are public spaces that relate only to the use of local residents till public spaces meant to attract people from a city to global scale to use it. However, these difference in groups of users claim also differences in characteristics of the public space. Thus, the developed characteristics of the public space in this paper are referring especially to a public space with a high degree of publicity.

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A revitalized Kop van Zuid

Relation between the street hierarchy, program and public space character

	Local street	Neighbourhood street
Goal	- to activate the local life - to create a safe living environment	- to offer a soft transition from the most public street in the neighbourhood (the city street) to the very local streets - create the condition for living and working environmets, which would bring extra quality in the neighbourhood, and could attract new groups of inhabitants
Main user groups	- local residents	- local and neighbourhood residents
Connectivity concept		
Main program	- residential (predominatly mono-functional) residential	- residential - work and live - schools, day care, sport centers residential work&live school day care sport centre community centre
Public space character	- street: possibility to stop, linger, seat... - in relation with communal spaces integrated in the urban context - cultural related uses Main use pattern — day Character — specific public space (cultural relarated uses) semi-specific public space Functions — community gathering places play	- street: possibility to stop, linger, seat... - in relation with playgrounds, sport fields - with main usage pattern during the day time (receveing full sun in the middle of the day) Main use pattern — day Character — semi-neutral public space Functions — play community gathering place sunbath sports water sports games public places to seat and linger
Typology	1. Active frontages (Carmona, 2003): - housing with direct entrances from the street (with 20-25 doors and windows every 100m) - soft transition between the public and the private space - high articulated frontage (nooks, corners, alcoves, small setbacks, steps, and ledges at the street level - no blind/black facades and few passive ones	1. Active frontages (Carmona, 2003): - housing with direct entrances from the street (with 20-25 doors and windows every 100m) - possbile work and living typologies with working space at the ground floor with direct access from the street - high articulated frontage (nooks, corners, alcoves, small setbacks, steps, and ledges at the street level - no blind/black facades and few passive ones
Permeability	- integrated semi-public spaces into the urban fabric , with accentuated connections between the public space and the semi-public spaces (Vigano)	- unbroken blocks not longer than 60m

A revitalized Kop van Zuid

|	City street	Boulevard
	- to create an activator in each neighbourhood, that targets several groups - to create the condition for economic development - to bring extra quality in the several neighbourhoods in order to improve their image and attract a more diverse group of users for the existing and proposed facilities - to create the proper environment in which the different groups meet and greet	- to transform the existing boulevards characterised by the transport lines (tram, metro and train) and fast auto traffic, that create barriers in between the several neighbourhoods, in connectors in between them
	- local, neighbourhood and city residents - tourists	- local, neighbourhood, city and regional residents - tourists
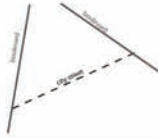
City street	Boulevard
- residential - work and live - retail (with a variety of target groups) - culture and leisure (with a extended range of opening hours: day and evening)	- residential - office - eat & drink - regional functions

residential, work&live, cultural facilities, art studio, brand shop, local shop, restaurant, fast-food

cafe, thematic cafe, bar, brand daily goods shop, local daily goods shop, services, office

residential, restaurant, fast-food, cafe, bar, office, regional functions

City street	Boulevard
- street: pedestrian comfort, possibility to stop, linger, seat, through both public (through both primary and secondary seeting) and private facilities (from teraces, restaurants...) - spaces for temporary uses (markets, etc.) - scuares and parks that offer events space - usage pattern both durring day and eavening (in full sun until late in the eavening) - neutral character	- street: pedestrian comfort, promenade character, possibility to stop, linger, seat, through both public and private facilities (from teraces, restaurants...) in relation with the infrastructure facilities (the tram, train and metro stops) - in relation with small scale scuares as spaces for short time stops - neutral character

Main use pattern: day, evening
Character: neutral public space
Functions: play, sunbath, games, temporary uses, events, eat&drink, public places to seat and linger, private places to seat and linger

Main use pattern: day, evening
Character: neutral public space
Functions: eat&drink, public places to seat and linger, private places to seat and linger
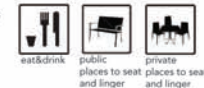
City street	Boulevard
1. Active frontages (Carmona): - housing with direct entrances from the street (with 20-25 doors and windows every 100m) - high concentration of functions, with various target groups taking place at the ground floor - high articulated frontage (nooks, corners, alcoves, small setbacks, steps, and ledges at the street level - no blind/black facades and few passive ones	1. Active frontages (Carmona, 2003): - collective livind buildings, with ground floor reserved for office, services and/ or catering functions (which create a critical concetration of 20-25 doors and windows every 100m) - high articulated frontage (nooks, corners, alcoves, small setbacks, steps, and ledges at the street level - no blind/black facades and few passive ones
	- unbroken blocks not longer than 90m	- unbroken blocks not longer than 90m

The development of the relational matrix was intended to establish a general framework for the relationship between the public space and the built environment at the different level of the street hierarchy. This framework was intended to serve as a tool for the evaluation of the existing public space network, and the potentials for functions that could be added in the several public spaces, based on their position in the network.

The local street, the lowest in the hierarchical level, represents the street with mainly a residential program, which is going to be use mainly by the residents. In order to create a safe environment, the main goal for this level of the street is to activate the local life, goal that can be achieved if the environment supports and enhance the local life. Thus, the public space related with the local street should be able to support community activities, it can have a more specific character, with cultural related uses, which answer the need of the local community, and it should offer visual and physical access to the semi-public space. While the built environment should offer an active frontage with a high concentration of direct entrance from the street to the residents and a soft transition in between the public and the private environment (Carmona, 2003). The proposed neighbourhood street, represent the next street in the hierarchy, with social functions like schools, childcare, etc. and live and work environments adding to the main residential program. This level of hierarchy has as a main goal to potentiate the local entrepreneurship,

and attract new groups of residents in search for a space that could support very specific functions. This type of environments can be created through CPO strategies, where custom made environments can be created. In order to potentiate the street life, the visual permeability in between the public space and the private space should be enhanced.

The city street is proposed to be the most active of the network. This street represents the level the hierarchy where the most mixed program should take place, program that targets and attracts a very high range of costumers, with a public space that offers a neutral character, which moulds on the need of several groups and that could host a variety of temporary uses. The built environment should offer a very active frontage, with display windows.

The boulevards are at the heights level in the proposed street network, and they are related with the city and regional   public transport network. At this level the hierarchy regional functions can be accommodated.

The potential for the public space network has considered based on three different aspects: the functions, the character of the space and the morphology, based on which it has been determined the way these public spaces contribute into the whole public space network, and the potentials for adding functions into the public space.

public space (parks and squares)
buildings
private open space
semi-private open space
(accessible to the block's
residents)
semi-public space

The potential for the public space network has considered based on three different aspects: the characteristics, the functions, and the morphology, based on which it has been determined the way these public spaces contribute into the whole public space network.

Characteristics
The characteristics of the public space refers to the materialization of the public space, and considers the degree of specify that the public space is presenting, the attributes of the public space: so the public space a place to stay, to traverse, is centrally or sub-centrally located, is paved or with grass, and the use pattern so is the public space is physical and mentally accessible during evening time and day time?

Functions
The physical characteristics of the public space determine that certain

functions can be housed by this.

Morphology
The morphology of the public space, and the connectivity with the different street hierarchy, determine that certain functions can take place into the built environment.

Relation between the street hierarchy, program and public space character

CHARACTERISTICS

specific public space (cultural relatared uses)

semi-specific public space

semi-neutral public space

neutral public space

USE PATTERN

evening

day

INSIDE PUBLIC SPACE FUNCTIONS

sports

play

eat&drink

sun bath

temporary uses

events

games

water sports

BUILT ENVIRONMENT FUNCTIONS

residential

work&live

cultural

fast food

brand supermarket

local supermarket

school

day care

mosque

library

community centre

ATTRIBUTES

place to stay

centrally
located

grass
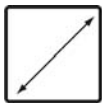
place to
traverse

sub-centrally
located
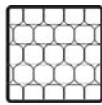
paved

private
sittings

xommunity
gathering
places

public
sittings

restaurant

thematic
cafe

bar

brand shop

local shop

art studios

sport centre

cafe

office

regional
functions

service

A revitalized Kop van Zuid

Public space potentials evaluation-Afrikaanderplein

Connectivity diagram/ Existing functions and character

Connectivity potentials/ Potential functions and character

- tram station
- bus station
- metro station
- local street
- neighbourhood street
- city street
- boulevard
- potential connection
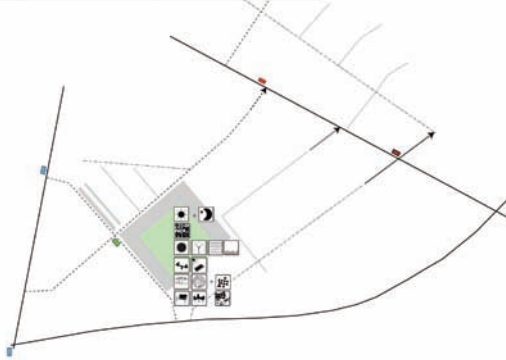
Views from the Afrikaanderplein
Source: pictures taken by author

III.

Relation with the built environment/ Existing program of the built environment

mixed function
official building side with entrance
library entrance
sport centre entrance
school entrance
mosque entrance

Source: Google street view

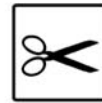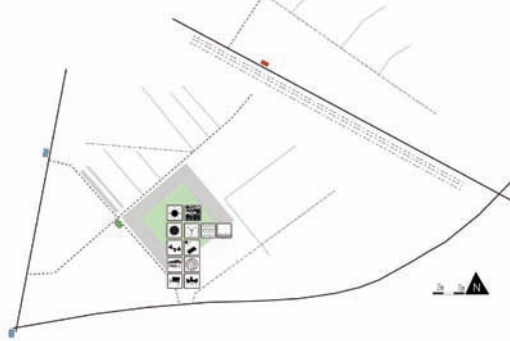The Afrikaanderplein is the neighborhood park in the Afrikaanderwijk. The park is surrounded by a very mixed program, and its housing a variety of functions inside the public space. The potential of connecting the main street on which the park is connected, with boulevards, create the conditions for further economical diversification, and thus of adding extra program inside the public space, program which could relate more with evening uses and temporary events like concerts, expositions, etc. This park should be the activity core of the neighbourhood, together with the shopping street.

A revitalized Kop van Zuid

Public space potentials evaluation- Rosestraat Park

Connectivity diagram/ Existing functions

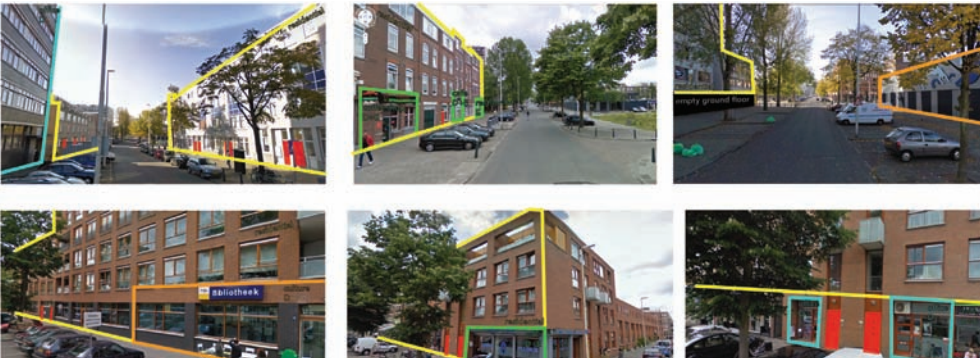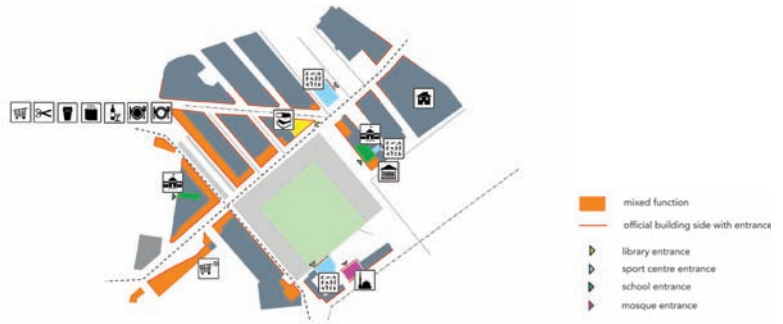**Connectivity potential/ Potential functions and character**
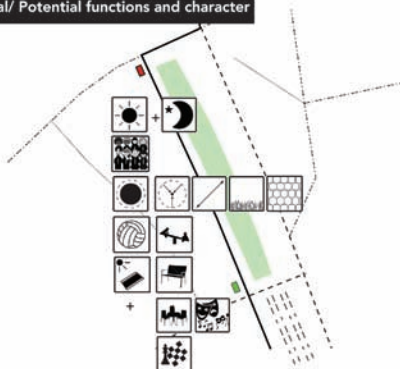
- bus station
- local street
- neighbourhood street
- city street
- boulevard
- train traks
- future tram station
- potential pedestrian connection

Views from the Rosesstraat Park
Source: pictures taken by author

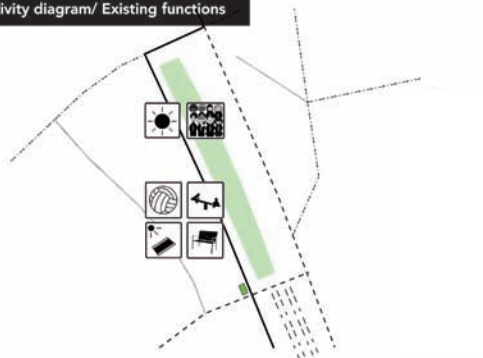Relation with the built environment/ Existing program of the built environment

mixed function
official building side with entrances
library entrance
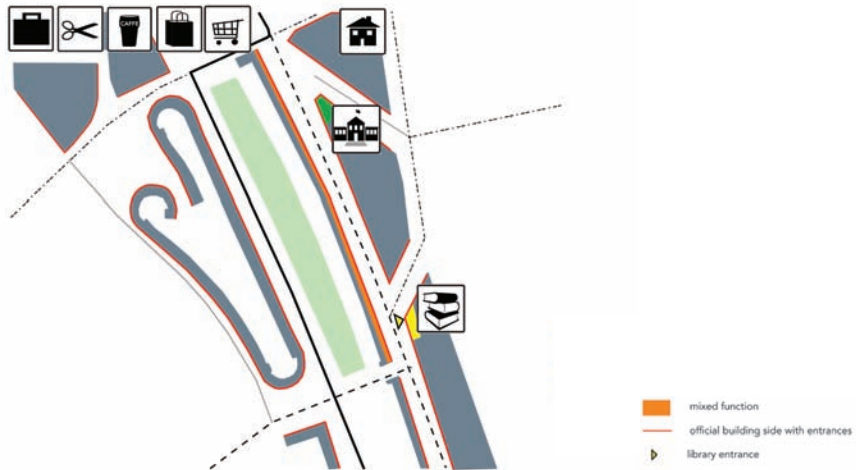
The Rosestraat Park has been created after the construction the train tunnel. This park is on one hand directly connected, with a future city boulevard, on which a new tram line is going to be added, and with the shopping street from the Feijenoord neighbourhood, and is housing at the north edge of the park a concentration of sport field activities. However, the park has much more potential. On one hand the future connectivity with a city public transport line creates the environment for a much more mixed program in the surrounding built environment, which will reflect in the functions existing in the public space it self. And, on the other hand, a very big potential comes from the connection with the Oranjeboomstraat, which in this moment happens only at the limits of the park. A connection with this street on several points, will create the setting for a much more active public space, which could host a variety of functions.

Public space potentials evaluation- Feijenoorddijk

Connectivity diagram/ Existing functions

Connectivity potentials/ Potential functions

- ▉ bus station
- —— local street
- ------- neighbourhood street
- ········ city street
- —— boulevard
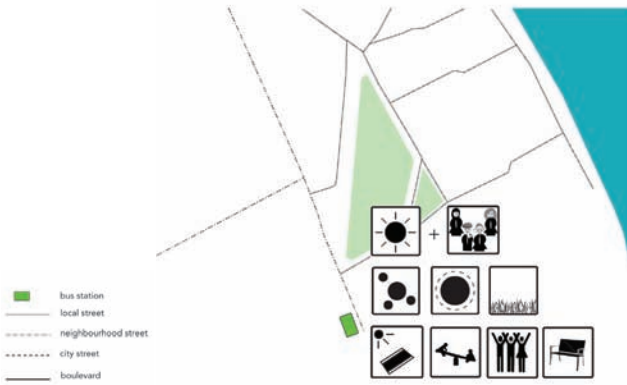
The Feijenoorddijk is a small local public space, surrounded by residential functions, which houses no current functions inside the public space. The connections with the local environment give the potential of creating a public space for the local community, which can have a specific character, and answer the needs of the particular local groups.

Source: Google street view

Relation with the built environment/ Existing program of the built environment

■	industry
—	official building side with entrances
—	blackwall

residential

residential

black wall

Source: Google street view

A revitalized Kop van Zuid

Public space potentials evaluation- Plein Loods 24

Connectivity diagram/ Existing functions
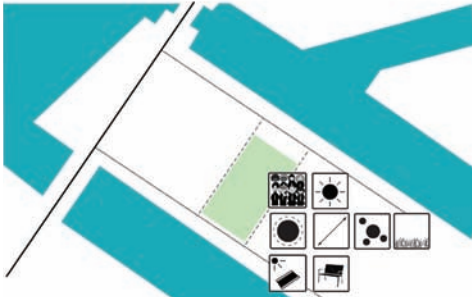
Connectivity potential/ Potential functions
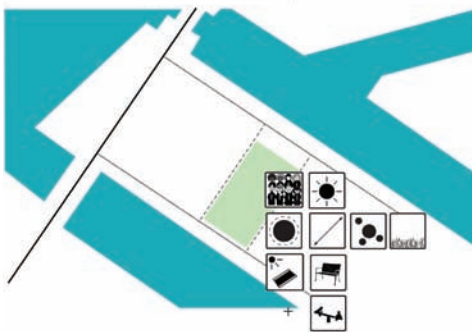
---------- alley
——————— local street
——————— boulevard

Plein Loods 24 is a square in the Kop van Zuid neighbourhood, surrounded by residential blocks, highly designed but with very little activity taken place in this space. The current characteristics of this public space, and its connectivity, bring the potential of only adding functions for the local community, like functions for playing.

Source: Panoramio.com

A revitalized Kop van Zuid

Relation with the built environment/ Existing program of the built environment
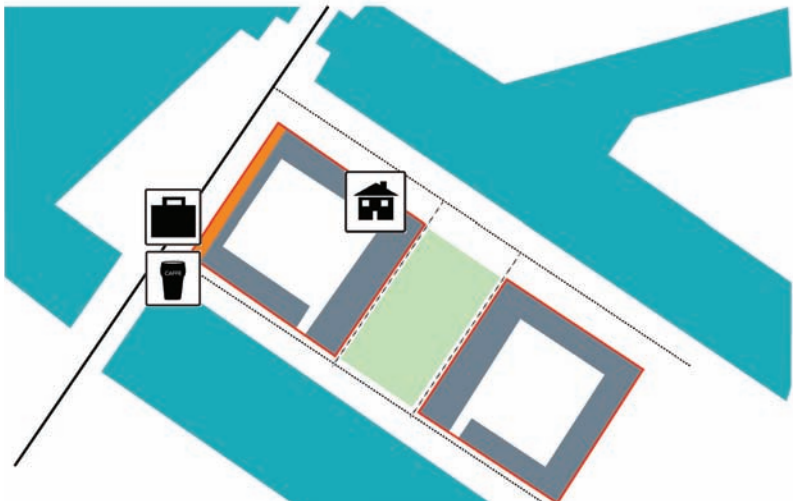
official building side with entrances
mixed function

residential

residential

Source: Panoramio.com

Public space potentials evaluation- Zinkerplein

Connectivity diagram/ Existing functions and character

Connectivity potentials/ Potential functions and character

bus station
local street
neighbourhood street
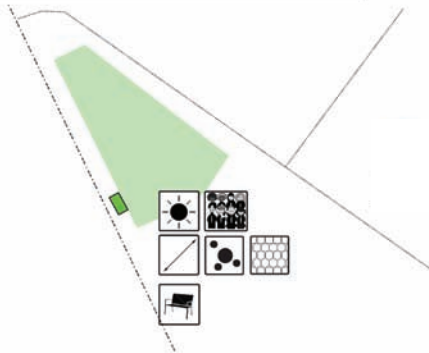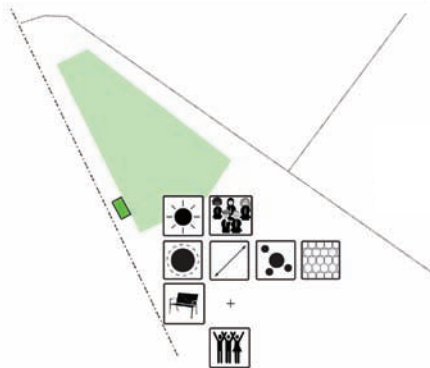
Source: Google street view

Zinkerplein is a square in the Feijenoord neighbourhood, in close relation with the Nassau Park, with a bus stop next to the square, and surrounded by residential blocks. The connectivity with a secondary street brings to potential for adding firstly functions into the built environment, and possible extra private seating and community functions into the public space itself.

Relation with the built environment/ Existing program of the built environment

official building side with entrances

residential

residential

Source: Google street view

Public space potentials evaluation- Nassau Park

Connectivity diagram/ Existing functions and character

- - - - alley
——— local street
- ·- ·- neighbourhood street
🟩 bus station

50m   100m   N

Connectivity potential/ Potential functions and character

- - - - alley
——— local street
- ·- ·- neighbourhood street
🟩 bus station

Source: Pictures taken by author

A revitalized Kop van Zuid

Relation with the built environment/ Existing program of the built environment

mixed function

official building side with entra...

school entrance
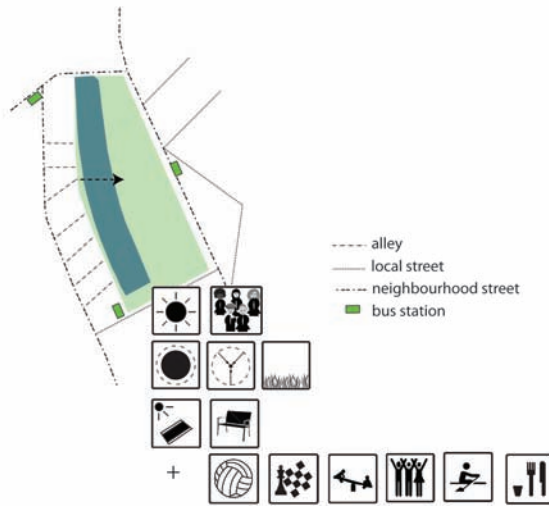
Source: Google street view

The Nassau Park is the main park in the Feijenoord, is surrounded by mainly residential functions and is connected to a neighbourhood street. The functions existing in the park are very limited, and the connection with a secondary street brings the potential of adding many extra functions, like sport functions, water sport, playing functions, eat and drink, community functions, etc.

Public space potentials evaluation- Lodewijk Pincofsweg

Connectivity diagram/ Existing functions and character

Connectivity potentials/ Potential functions and character

local street
neighbourhood street
city street
boulevard

Source: Google street view
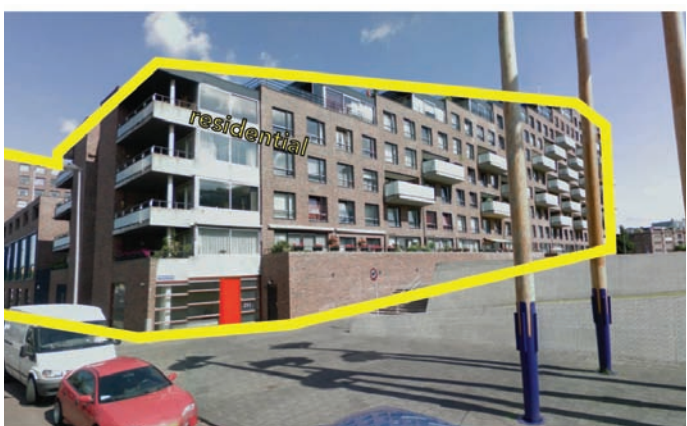
Relation with the built environment/ Existing program of the built environment
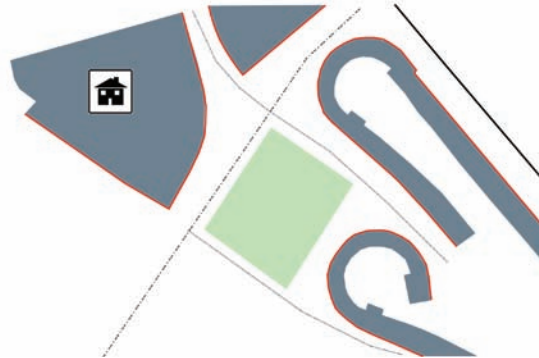
official building side with entrances

Source: Google street view

The Lodewijk Pincoffsweg, is a square in the Kop van Zuid, next to the Paperklip, connected with a neighbourhood street, and surrounded by residential functions. The existing public space houses very little functions, and by its position in the network: connected with the neighbourhood street, and close to main boulevards, creates the conditions for adding extra functions and bring a sense of place to this space.

Public space potentials evaluation- Witteveenplein

Connectivity diagram/ Existing functions
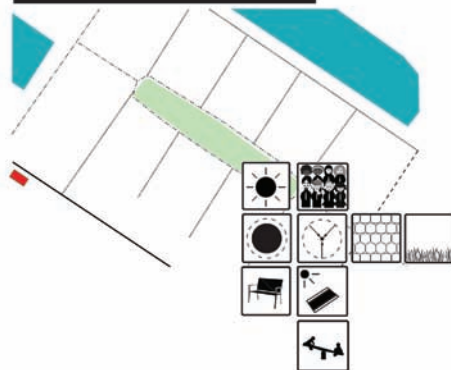
The Witteveenplein is a centrally located square in the Kop van Zuid, surrounded by residential units and by a school, and connected to a neighbourhood street, and local streets. This is a quite successful public space, which attracts a lot of activity.

Connectivity potentials/ Potential functions

tram station
local street
neighbourhood street
city street
boulevard

Source: Google street view

Relation with the built environment/ Existing program of the built environment

mixed function

official building side with entrances

school entrance

residential

school

de Pijler

residential

Source: Google street view

Public space potentials evaluation- Christian de Wetstraat

Connectivity diagram/ Existing functions
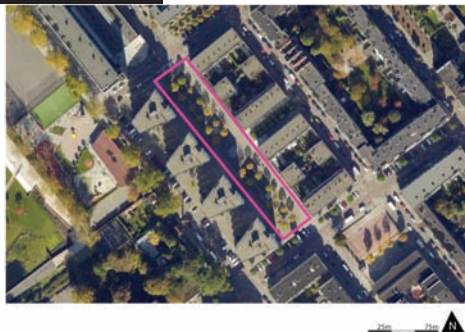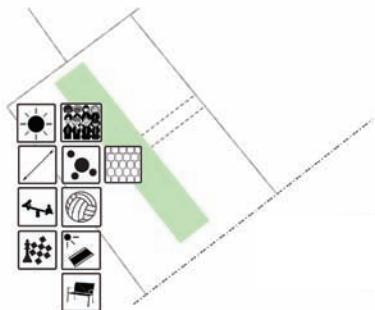
Connectivity potential/ Potential functions
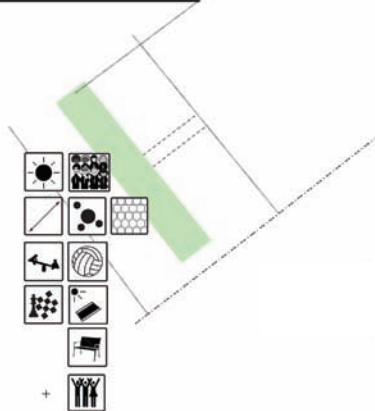
- - - - - - - - alley
———— local street
— · — · — neighbourhood street

Source: Pictures taken by author

A revitalized Kop van Zuid

Relation with the built environment/ Existing program of the built environment


— official building side with entrances

Source: Pictures taken by author

Christian de Wetstraat is a square surrounded by residential blocks, on one hand by high apartment blocks, and on the other hand by closed four stories blocks, with entrances from the square, and is connected at a neighbourhood street and a local street. Even if there are several functions present into the public space, the square attracts little activity, due to its morphology: many black walls facing the public space. The further connection of the neighbourhood street with the boulevard, and development that this is going to receive as a consequence of this, will bring the condition for adding functions into the public space, functions that could target the needs of the community.

Public space potentials evaluation- Stootblock

Connectivity diagram/ Existing functions
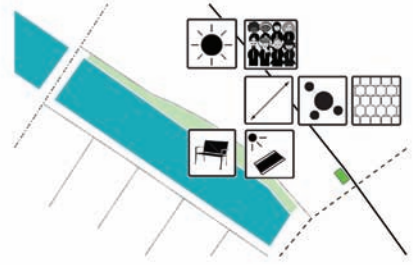
Connectivity potentialas/ Potential functions

■ bus station
—— local street
—·—·— neighbourhood street
-------- city street
—— boulevard
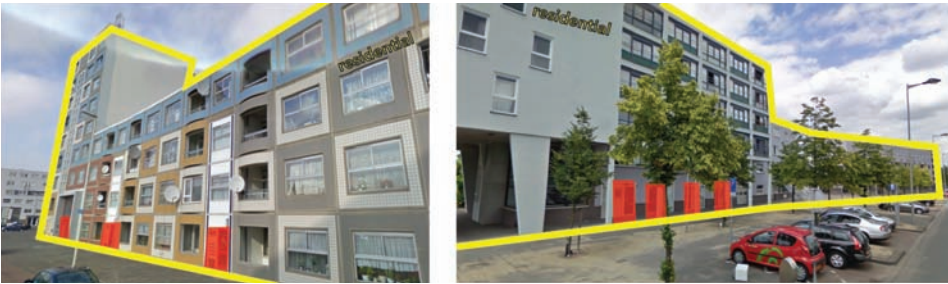

Source: Google street view

A revitalized Kop van Zuid

Relation with the built environment/ Existing program of the built environment

mixed function

official building side with entrances
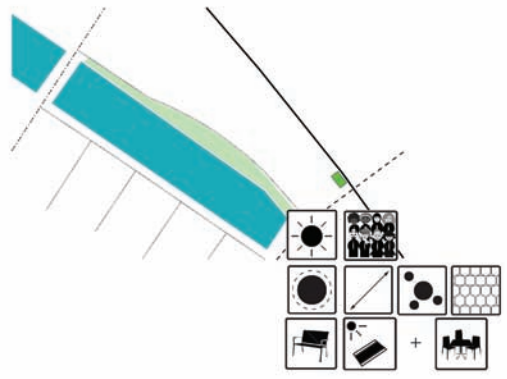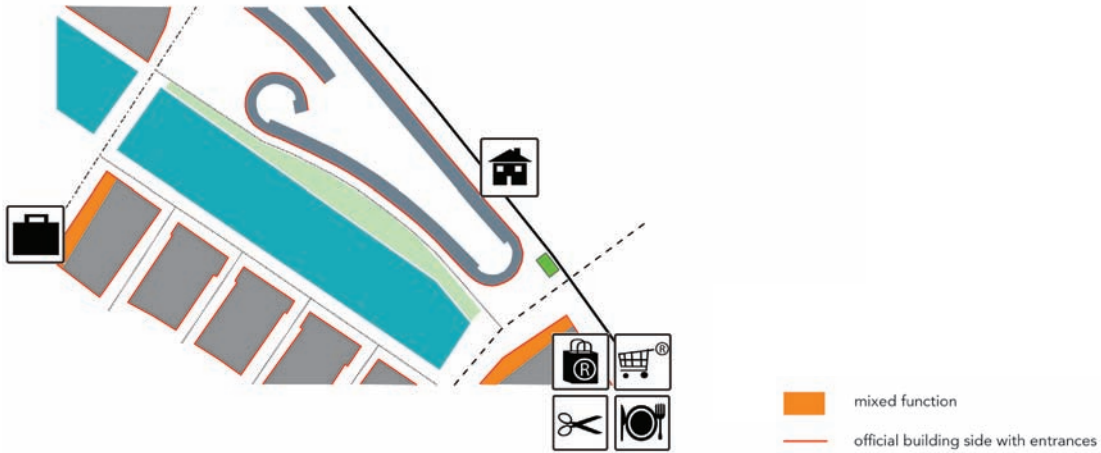
Source: Google street view

The Stookblock is a linear public space, next to Binnenhaven, limited at the east side by the Peperklip, and connected to the city street of Vuurplaat. At the present the public space houses few functions, while the connection with the city street and the perspective towards the little harbor, brings the potential of adding potential seasonal functions like eat and drink.

Public space potentials evaluation- Spoorweghaven Park

Connectivity diagram/ Existing functions and character

Connectivity potential/ Potential functions and character

tram station
train station
local street
neighbourhood street
city street
boulevard
train tracks
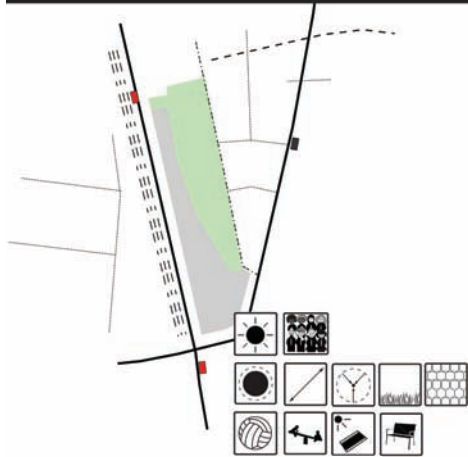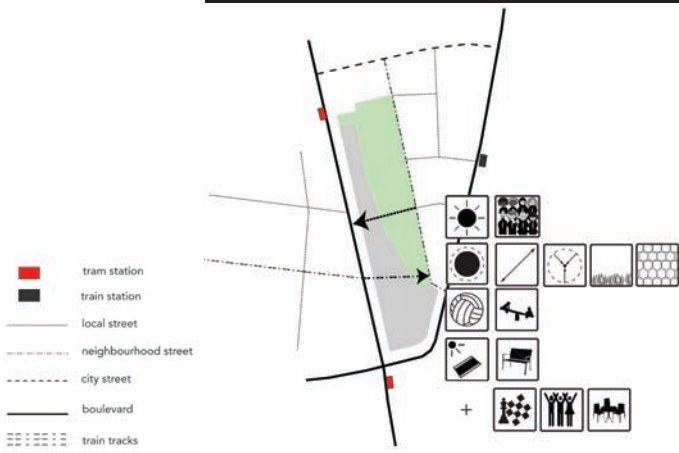
Source: Panoramio.com

Relation with the built environment/ Existing program of the built environment

mixed function

official building side with entrances

school entrance
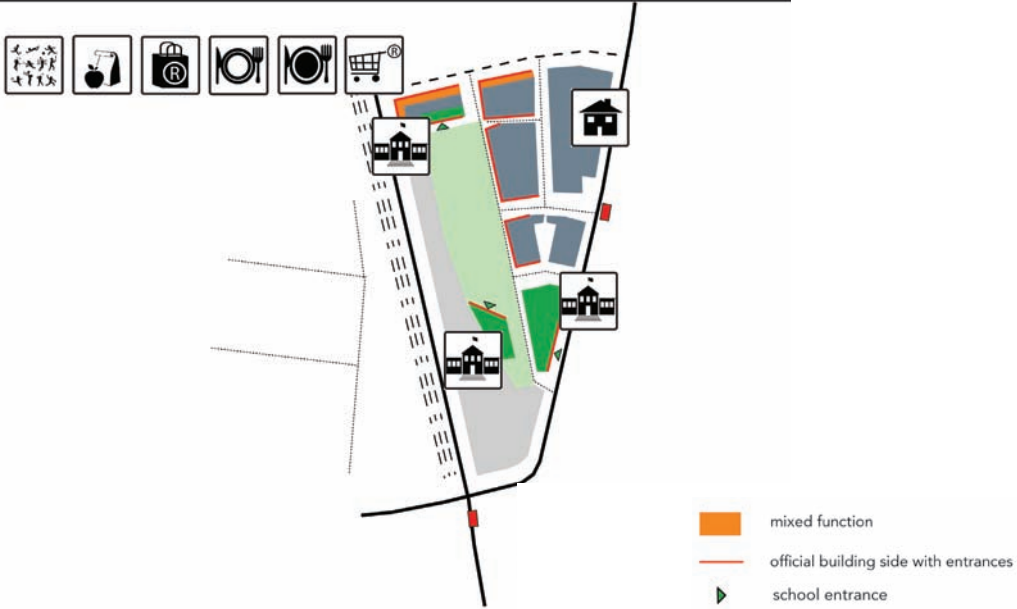
Source: Google street view

The Spoorweghaven Park is the public space that makes the connection in between the Kop van Zuid and Afrikaanderwijk, and is on the route from the train station Rotterdam Zuid towards Afrikaanderwijk, and is connected with a city street, a neighbourhood street and boulevard. This configuration of space brings a lot

of potentials to the park, which could house s high variety of functions.

Public space functional potentials
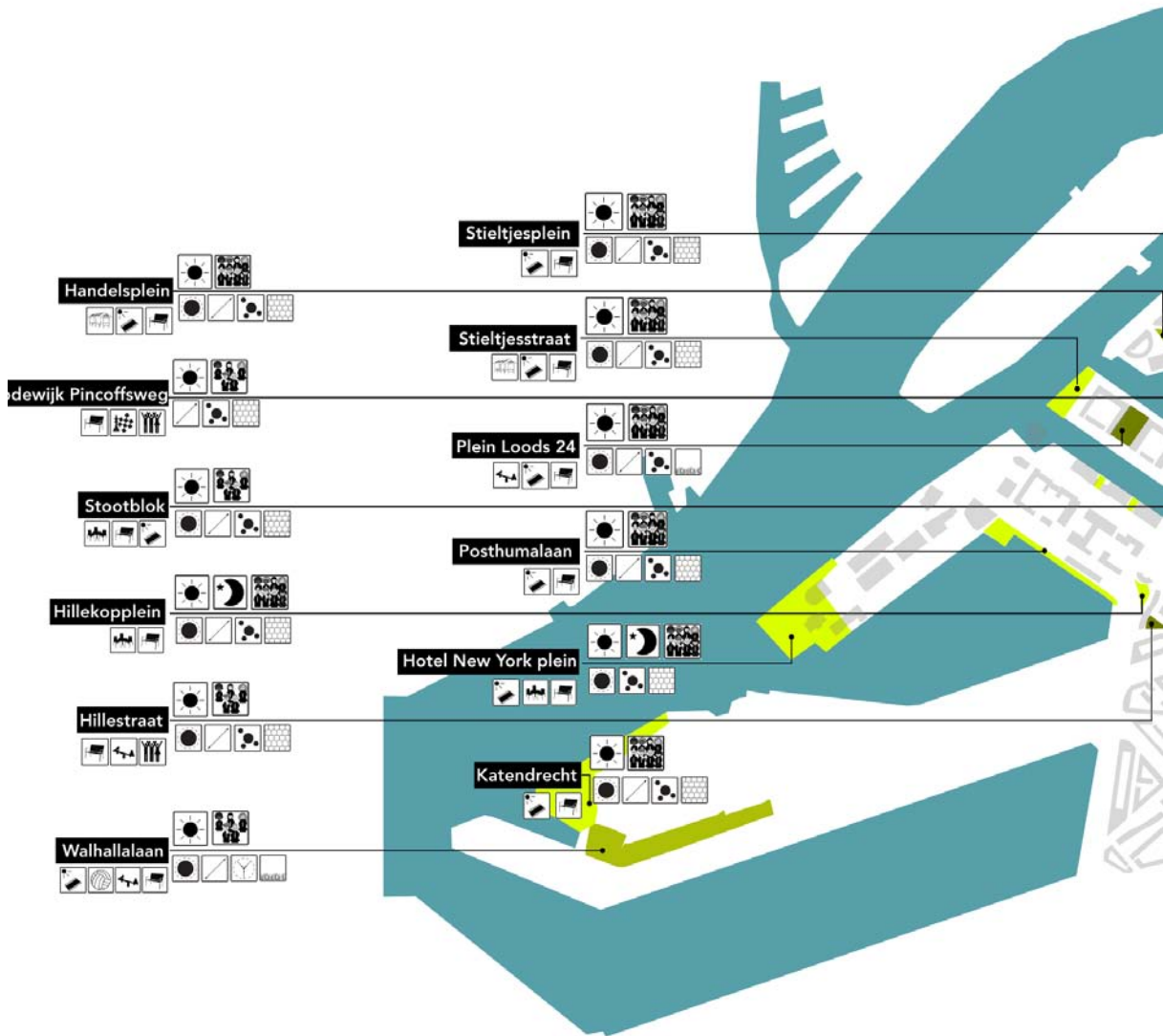
The different demands determine different emphasis of the construction of an integral open public space system, which brings the influence of the more regional orientated actors to the local performance of the public space.

As a result of the evaluation of the existing public space, four categories of potential public space have been established: the city public space, the neighbourhood public space, the local public space and the very local public space. The established categories differ especially in one aspect: the degree of specificity that they present. The most public space – the city public space- are related with the higher hierarchical street level, and they

Nassau Park

Zinkerplein

Feijenoorddijk

Persoonsdam

Rosestraat Park

Witteveenplein

Spoorweghavenpark

Tweebosstraat

Christiaan de Wetstraat

Afrikaanderplein

250m   750m   N
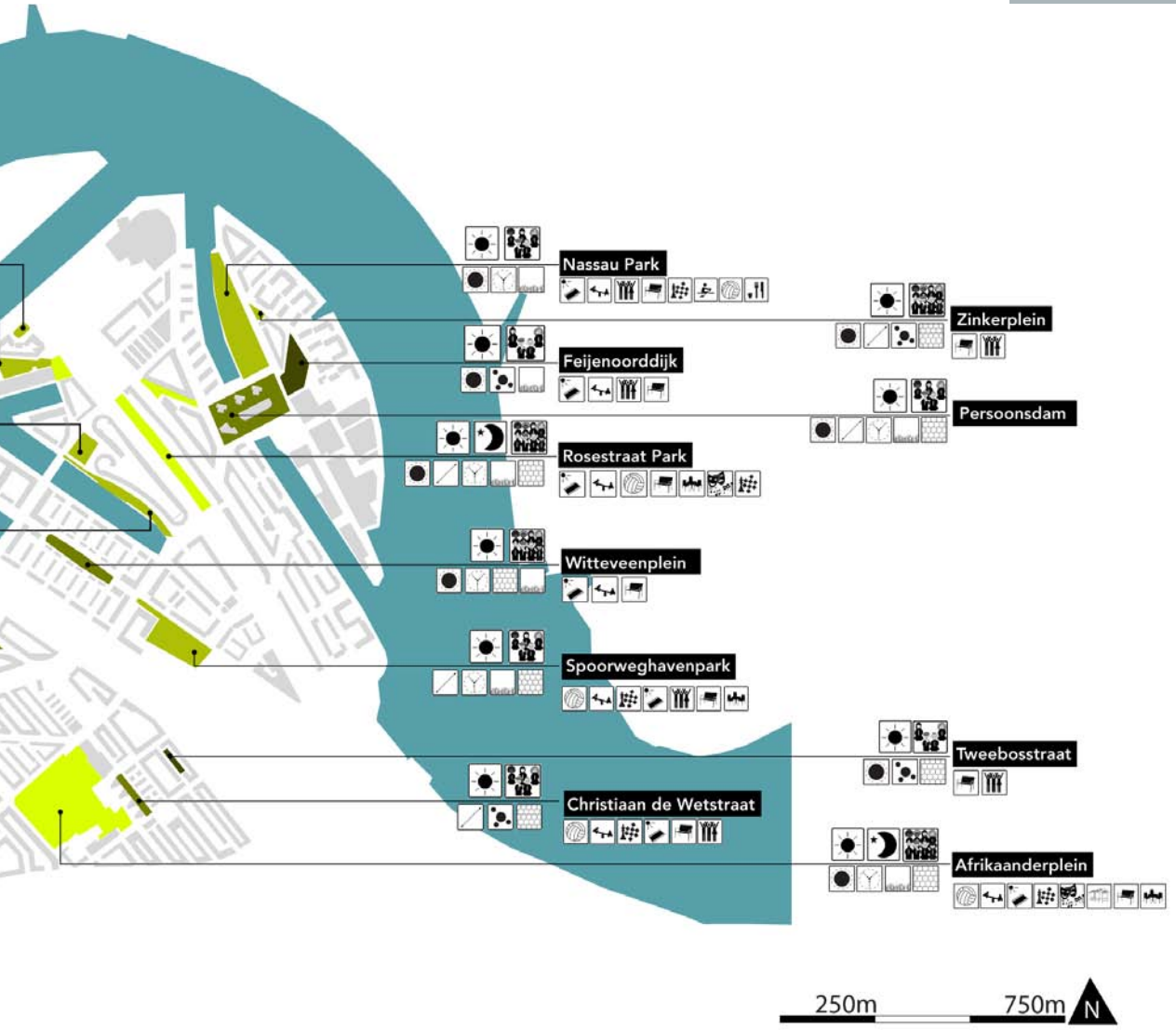
suppose to attract a high degree of users, which can be translated into a more neutral character that the public space should illustrate. Theory sustains that the more neutral the character of the public space is, the less potential users are excluded.

At the other extreme, the very local public space, suppose to be related with more cultural related uses, which means that those public spaces can

have a more specific character. For the design of these category of public space, the local communities should be involved, in order to be able to provide them the type of space that suit best their needs. However, considering the continuous change that the social composition is on, the design of this public space should have a very flexible character.

The municipal plans

Municipal plan for Parkstad

Source: Palmbout pland for Parkstad

The official plans for the transformation of the Kop van Zuid area focus on two specific points, which constitute the subjects of two plans: the Parkstad, at the intersection between Kop van Zuid and Afrikaanderwijk, and the Kop van Feijenoord, at the edge between Kop van Zuid and Feijenoord. The typical planning tool of area development makes the two projects to be developed and treated as individual plans, without one considering the other.

In the case of the Parkstad, the municipal plan, proposed a very extensive intervention into the area, with a 9 block being demolished and reconstructed. The effects of such an extreme intervention would be extremely high on the current social structure, by the fact that their social rental housing will be replaced with expensive housing that they can not afford, forcing them to move out of the neighbourhood. Such an intervention, will completely change the character of the area, with what is basically an further continuation of the Kop van Zuid model, model that creates introverted

Source: made by author based on the municipal plans

blocks, with very private, impermeable private spaces. Moreover, the amount of mixed functions proposed into the plan is limited, and this creates a sleeping neighbourhood.

Municipal plan for Kop van Feijenoord

Source: Vision for the Kop van Feijenoord

In the case of the Kop van Feijenoord, the municipal plans focus on developing the vacant land resulted from the construction of the train tunnel. The main critics regarding this plan refer to main target group of the plan, which is the high income group, targeted by 70% of the proposed housing units. Besides that, the official plans create a mixed function area, as a continuation of the Entrepot area. The existing mixed functions in the Entrepot area, composes of a series of expensive restaurants and shops, inaccessible to the low income groups. If the extension of this areas, has as target groups the same high income group, than it can be said that there are again no public space created with functions that target the diversity of groups, which can result again in a propagated fragmentation.

Source: Vision for the Kop van Feijenoord

A revitalized Kop van Zuid

Research conclusions

The research presented into this chapter reveals the potential of implementation of one open integral open system that correlates the connectivity with the potential of the public space and the functions.

The research has been divided into three different categories: the city scale and Kop van Zuid in the context of Rotterdam city; statistical facts; and the local scale, which focused on the local connectivity, the built environment and public space.

The future infrastructural development will bring the condition for transformation in the area

The city scale analysis revealed that the future infrastructural development plans, will directly influence and transform the area in subject for the research. This transformation will have a clear impact on both the physical configuration of the space, and the social structure of the neighborhoods.

The area is characterized by very diverse social groups that pose different demands from the public space network

The statistical data analysis reveals the super diverse social composition present in the neighborhoods, diversity which poses also a high diversity in the demand from the public spaces, the functions and built environment.

There are potentials for improving the connectivity, for adding extra functions, for transforming the built environment and to create an integral public space network

The local scale analysis illustrates several elements. Firstly, the local connectivity can be considerably improved but adding the missing links. Secondly, the built environment offers a lot of opportunities for transformation, and extension, with indications of how can the characteristics of the current

urban fabric being improved. And thirdly, the public space analysis reveals which are the potentials for bringing extra functions, and in consequence activity, to the existing public space network, and create an integral open system, which targets and considers the demands of the diverse groups.

The municipal plans continue the Kop van Zuid model

The critical evaluation of the municipal plans for the two developing projects, reveal that main focus group is still represented by the high income group, which will even replace a big part of the existing social structure.

The gathered information sets the basis for an intervention, which correlates the different layers of the analysis and proposes an integral urban plan which complements and improves the municipal individual proposals, into one coherent plan that considers the diversity of groups and their demands, and is activated by a public space network.

IV Proposal

Vision

Bringing the advantages of the new infrastructural developments into the neighborhood through a clear street and public space network connecting the main corridors with the local scale

The new improved accessibility advantage will settle the foundation for development of the area. In order to bring these advantages into the neighborhood a clear and recognizable public space structure is crucial for connecting the main infrastructural corridors with the local level. The connecting networks have to ensure a permeable easy to read urban fabric, which connects, qualifies, organizes and emphasizes the different hierarchical networks.

Create an integrated area

The connecting networks – the street and the public space network - will create a clear linkage in between the different neighborhoods. This will secure the integration into the urban fabric of the most local places of the different neighborhoods, and will enable their participation into the overall structure.

An area with a variety of housing typologies, public spaces and functions

The development will settle the base for creating a more diversified housing market, which can attract a higher variety of life stiles. In order to create an environment that answers the need of a super diverse group, a higher variety of public space that will secure a cover of different needs, will be created. While a highly mixed urban program, with a variety of local and brand shops will also answer the need of the different groups. .

A revitalized Kop van Zuid

An integrated area
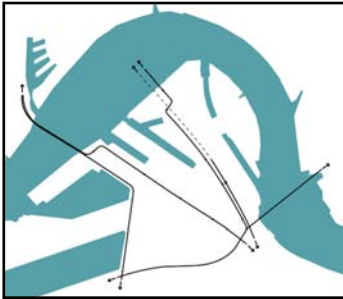
1. Take advantage of the improved infrastructure!
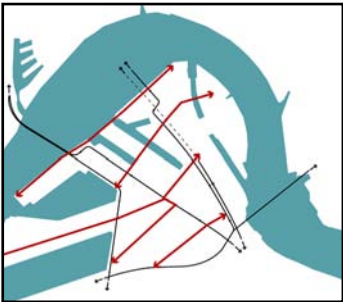
2. Brake the barriers and connect the neighborhoods!
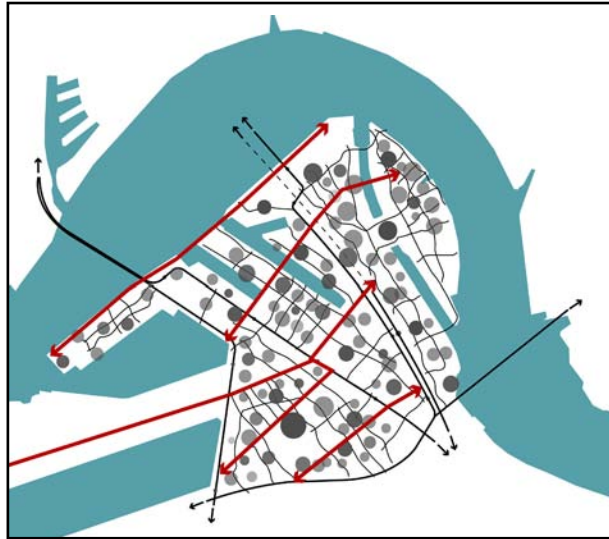
3. Connect and activate the locality
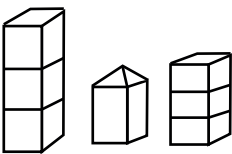
high variety of housing typologies
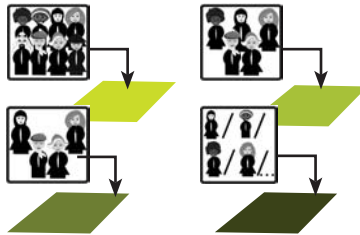
high variety of public spaces that answer various needs
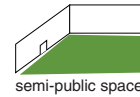
semi-public space
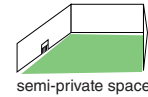
semi-private space accessible to the block residents, visual accessible
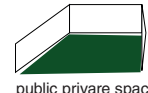
public privare space visual accessible

high variety of semi-public spaces

high variety of functions

residential · work and live · cultural activities · fast food · restaurant · thematic cafe · bar · brand shop · local shop · art studio

brand supermarket · local supermarket · school · day care · sport center · cafe · office · regional functions · services

mosque · library · community centre

A revitalized Kop van Zuid

Strategy
Street hierarchy proposal

local street
neighbourhood street
city street
boulevard

250m   750m N
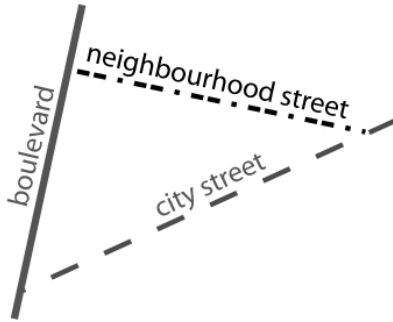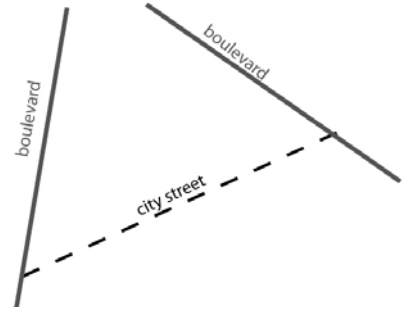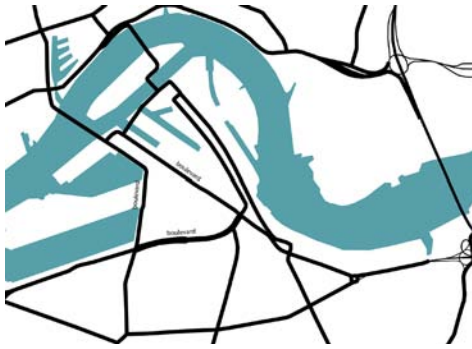
The strategy is to create a clear street hierarchy that connects the different neighbourhoods, based in the following connectivity concepts. The highest level of the network is represented by the main infrastructural corridors that are connecting the area with the city and the regional scale. The second level of the hierarchy is represented by the city street, and this is the line that crosses the neighbourhood and connects two main corridors. The third level is represented by the neighbourhood street, and has the main goal of creating a soft transition from the most public street into the neighbourhood, to the local level. The lowest street in hierarchy is represented by the local street.

Each hierarchical level has different demands, however, it is needed that at each level it is considered and included the performance of the other level.

Strategic guidelines for boulevards

1. Foster physical
connectivity and continuity

2. Encourage street level
activity

3. Use incentive zoning
strategies in order to attract
the investment in a higher
mix of functions, and
investments into the quality
of the public space

The boulevards represent the
separation lines in between the
different neighborhoods. This happens,
because on one hand, these lines
are also into relation with the vacant
lines that exists in between the
neighborhoods, and on the other hand,
because of the strong public transport
lines that exist on the boulevards.
Moreover, the limited amount of
functions taking place along these
lines, give the boulevards the main
character of infrastructural corridors.
The strategy for this level of the
network is to create from boulevards as
barriers, boulevards as connectors.
In order to achieve this goal, three
main strategic guidelines have been
formulated. First of all, the boulevards
should foster physical connectivity
and continuity, with the lower levels of
the street hierarchy. Secondly, there
should be encouraged more street
level activity along the lines, where
the existing public space could be
transformed into linear parks. And
thirdly, in order to attract investment

thirdly, in order to attract investment
into the public space, and more mix
functions, incentive zoning strategies
should be used.

buildings
mixed use ground floor
soft transformation (ground floor conversion with possibility of extra floor added)
building conversion
proposed for reconstruction
new building
height accent
city public space
permeable point
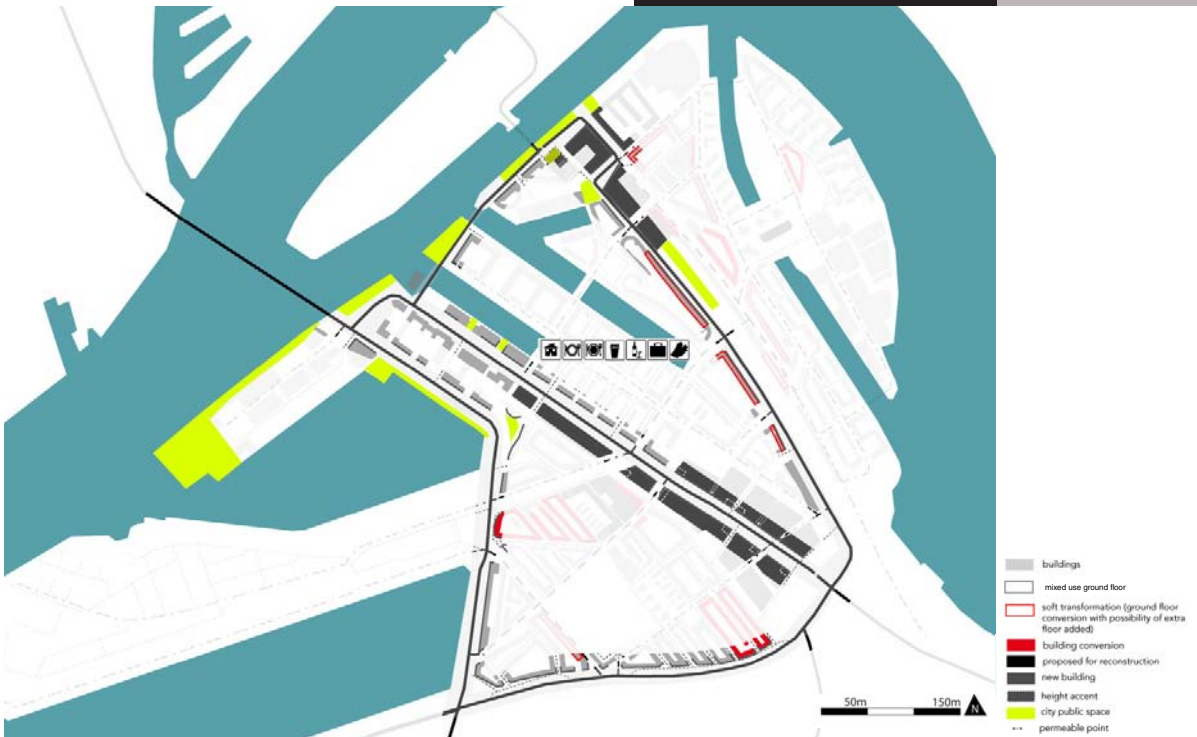
The design strategy for the boulevards proposed interventions in the build environment and at the public space level. On the built environment, the interventions are taking two directions. Firstly, develop the empty vacant land, and secondly intervene in the existing built environment, by increasing its density and b adding more mixed functions at the ground floor level. The very good connection with the regional scale, from both public transport, and auto network, brings the opportunity of housing more regional orientated functions, together with a high mix of residential, office and leisure functions. The interventions at the public space level have as a main goal to create a permeable and active urban fabric.

Stakeholders for the boulevards transformation

Public

MUNICIPALITY OF ROTTERDAM
Defining planning principles, investing in infrastructure

Private

DEVELOPERS
Build   housing, offices, mixed-functions, with incentive zoning strategies to be used in order to attract investments from the private investors into the improvement of the public space.

COMPANIES
Attracted by the improved accessibility.

The boulevards
Improvement of the public space, new housing, mixed-functions, regional functions, transformation of the existing urban fabric, new tram line, new bridge, cultural centre

Private

RET
Rotterdam electric tram company for the construction of the new tram line

Private

Vestia
Main owner of the rented housing

Residents

Local residents, neighborhood groups, civic groups, involved in the decision making regarding the transformation of the current urban fabric, and the new urban fabric

NGO's

Social organizations, citizen action groups

A revitalized Kop van Zuid

1. Encourage intense street level activity

2. Encourage high diversity in terms of land use and built form

3. Use incentive zoning strategies in order to attract investment into a highly mixed program, and a qualitative public space

The strategy for the city street, the secondary street level, street that is directly connected with the boulevards, is to create an environment that attracts a diversity of users. In order to achieve this goal, three main strategic guidelines have been formulated. Firstly, encourage intense street activity by creating the proper environment which supports an intense street activity. Secondly, encourage high diversity of land uses and built form, in order to be able to attract a diversity of groups. And thirdly, use incentive zoning strategies, in order to attract investment in a very high mix of functions, and in public space.

A revitalized Kop van Zuid

Design strategy for city street

buildings

mixed use ground floor

soft transformation (ground floor conversion with possibility of extra floor added)

building conversion

proposed for reconstruction

new building

height accent

city public space

permeable point
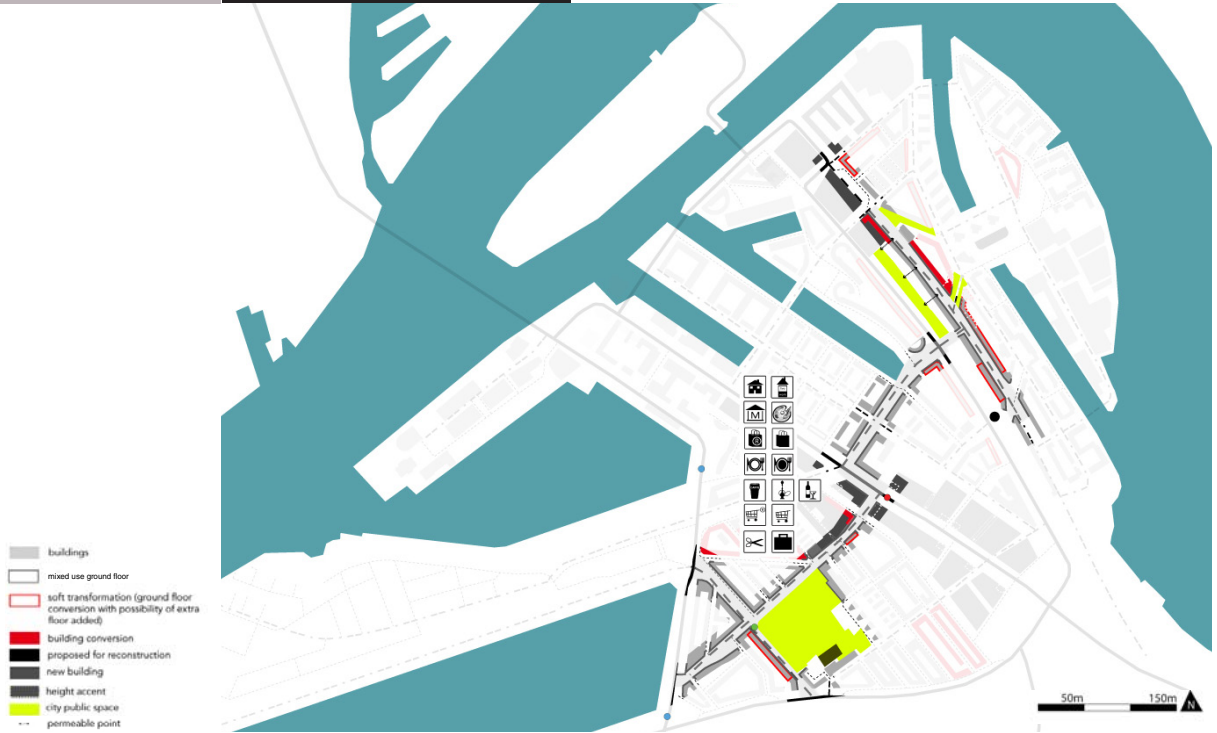
The design strategy for the city street has as main goal the connection of the three shopping street existing in the study area, and transform them into one recognizable line that extends through all neighbourhoods. In order to create the environment that can house a highly mixed program, transformations in the build environment are required at several levels: develop the vacant land, and transform the existing urban fabric.

Public

MUNICIPALITY OF ROTTERDAM
Defining planning principles

PACT OF ZUID
The Afrikaanderwijk and the Feijenoord neighborhoods make apart of the most 11 project sites in South Rotterdam, and through the Pact of Zuid agreement there are going to be investments made in better housing conditions, improvement of the public space and for the support of local start-up entrepreneurs.

Private

DEVELOPERS
Build housing, transform the proposed urban blocks, build mixed-functions, with incentive zoning strategies to be used in order to attract investments from the private investors into the improvement of the public space.

EXISTING ENTREPRENEURS

COMPANIES
Attracted for establishment by the new transformations

The city street
Transformation of the public space, housing transformation through CPO strategies, new housing, highly mixed-functions, guest parking inside the blocks

Private

Vestia
Main owner of the rented housing

Private

Parking companies
Involved in the constructions of guest parking lots inside the blocks

Residents

Local residents, neighborhood groups, civic groups, involved in the decision making regarding the transformation of the current urban fabric

New residents
New participants in the CPO transformations and building on subscription possibilities

NGO's

Social organizations, youth groups, citizen action groups

Strategic guidelines for neighbourhood street

1. Involve the local communities in the transformation process

2. Encourage the local entrepreneurship

The neighbourhood street represents the third level of the hierarchy, with the functions that are important for the neighbourhood social network. In order to achieve this two main guide lines have been formulated. First, in the transformation process along this level of the hierarchy the local community voice should play an important role. And secondly, in order to create more economic incentives into the area, work and living environment should be created, and local entrepreneurship should be encouraged.

buildings

mixed use ground floor

soft transformation (ground floor conversion with possibility of extra floor added)

building conversion

proposed for reconstruction

new building

height accent

neighbourhood public space

local public space

permeable point

50m   150m
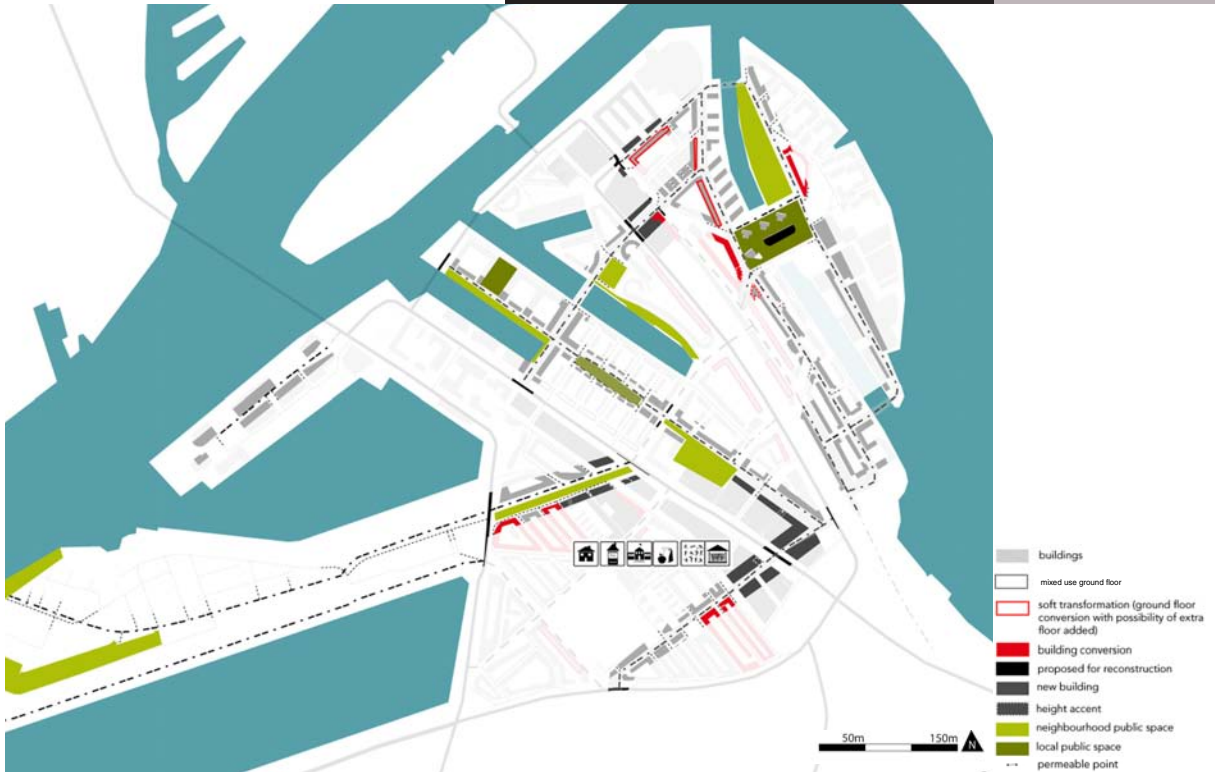
The design strategy for the neighbourhood street proposed interventions in the built environment and the public space. The interventions in the built environment have as a main goal the diversification of living environments, while the interventions in the public space refer to the adding functions that support a neighbourhood public life.

Stakeholders for the neighbourhood street transformation

Public

MUNICIPALITY OF ROTTERDAM
Defining planning principles, investing in the social infrastructure

PACT OF ZUID
The Afrikaanderwijk and the Feijenoord neighborhoods make apart of the most 11 project sites in South Rotterdam, and through the Pact of Zuid agreement there are going to be investments made in better housing conditions, improvement of the public space and for the support of local start-up entrepreneurs.

Private

DEVELOPERS
Build housing, transform the proposed blocks, build mixed-functions, with incentive zoning strategies to be used in order to attract investments from the private investors into the improvement of the public space.

EXISTING ENTREPRENEURS

COMPANIES
Intrested for investing in spocial infrastructure

The neighbourhood street
Improvement of the public space, housing transformation through CPO strategies, new housing, Work and live, new social facilities (schools, day care, sport centers)

Private

Vestia
Main owner of the rented housing

Residents

Local residents, neighborhood groups, civic groups, involved in the decision making regarding the transformation of the current urban fabric

New residents
New participants in the CPO transformations attracted by the working living environments, and building on subscription possibilities

NGO's

Social organizations, youth groups, citizen action groups

1. Avoid residential exclusivity by encouraging public accessibility to community spaces

2. Involve the local communities in the transformation process

The strategy for the local street, the lowest level of the hierarchy, is to create an active local live, which participates into the public life. In order to achieve this goal, two main strategic guide lines have been formulated. The first one is to avoid residential exclusivity by encouraging public accessibility to community spaces. And the second one is to involve the local communities in the transformation process.

A revitalized Kop van Zuid

Design strategy for local street

buildings
mixed use ground floor
soft transformation (ground floor conversion with possibility of extra floor added)
building conversion
proposed for reconstruction
new building
height accent
private open space
semi-public space
semi-private open space (accessible the blocks residents)
very local public space
permeable point

50m   150m   N

The design strategy for the local street has as main goals to diversify the typologies of semi-public spaces, and to create a permeable urban fabric, in which the local life gets integrated into the public life. Thus, the main interventions take place at the block level, and propose transformation of blocks and their interior semi-public spaces, by creating a diverse range of semi-public spaces, which allow physical permeability and/ or visual permeability.

Public

MUNICIPALITY OF ROTTERDAM
Defining planning principles, investing in the social infrastructure

PACT OF ZUID
The Afrikaanderwijk and the Feijenoord neighborhoods make apart of the most 11 project sites in South Rotterdam, and through the Pact of Zuid agreement there are going to be investments made in better housing conditions, improvement of the public space and for the support of local start-up entrepreneurs.

Private

DEVELOPERS
Build housing, transform the proposed blocks, build mixed-functions, with incentive zoning strategies to be used in order to attract investments from the private investors into the improvement of the public space.

The local street
Improvement of the public space quality, housing transformation through CPO strategies, new housing, transforming and diversifying the typology of the semi-public spaces

Private

Vestia
Main owner of the rented housing

Residents

Local residents, neighborhood groups, civic groups, involved in the decision making regarding the transformation of the current urban fabric

New residents
New participants in the CPO transformations attracted by the working living environments, and building on subscription possibilities

NGO's

Social organizations, youth groups, citizen action groups

123

General design strategy for the built envrironment

buildings
soft transformation (ground floor conversion with possibility of extra floor added)
building conversion
proposed for reconstruction
new building
height accent

50m   150m
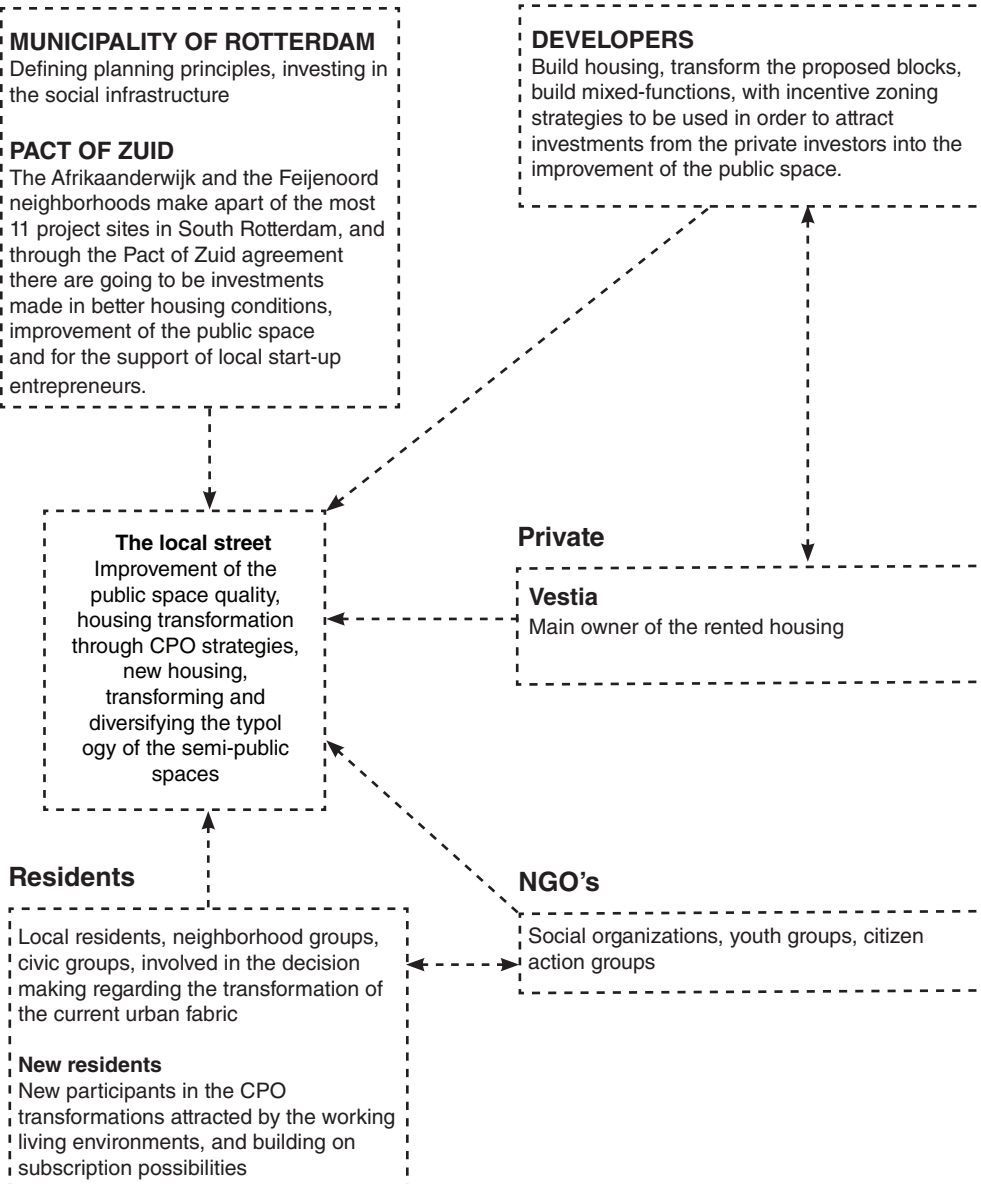
Soft transformation
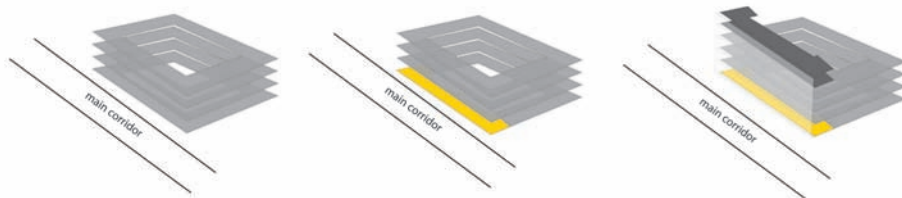
The general design strategy for the built environment proposes four different types of interventions, from a very soft intervention, to a hard one- the building reconstructions. The soft intervention regards two types of transformation. The first one refers to the conversion of the ground floor from residential to commercial or work space. This type of intervention has the main advantage, that the local inhabitants can be involved in the transformation process, or even them being the ones developing their own business in a part of their residence. The second type of soft transformation considers the involvement of private investors in the transformations process, and together with the transformation of the ground floor extra floors can be added on top of the existing building, with galleries and lift. From such an intervention, the existing units benefit as well, by the fact that they get lift accessibility, and a façade face lift, which adds to their value.

Building conversion through CPO strategies

The second type of transformation proposed in the design strategy for the built environment is the building conversion through CPO strategies. Such a strategy has many advantages. First of all a very high variety of living environments is generated, according to the buyer's choice. Secondly, such a strategy requires a constant communication and collaboration in between the buyer's group, which creates a strong connection with the neighborhood, which results in a more sustainable improvement of the district as a whole.
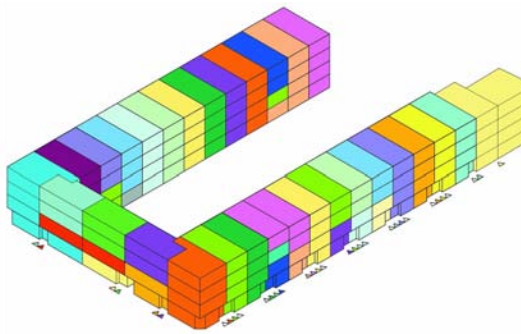
Transformation through CPO strategy in Rotterdam
Source: hulshof-architecten.nl

General design strategy

buildings
mixed functions
soft transformation (ground floor conversion with possibility of extra floor added)
building conversion
proposed for reconstruction
new building
height accent
city public space
neighbourhood public space
local public space
very local public space
semi-public space
private open space
semi-private open space (accessible to the block's residents)
permeable point
boulevards
city streets
neighbourhood street
local street

The general design strategy illustrates the correlated interventions on the different hierarchical levels. Thus the overall proposed interventions in the built environment, public space and semi-public space become evident. In this way the corridors are emphasized through an increased density and an added program, and the public spaces receive more functions according to their place and in the network, while the overall urban fabric becomes more permeable.

A revitalized Kop van Zuid

Urban plan

Urban plan public space network

existing building
new/ transformed building
pedestrian area
train station
tram station
metro station
tree in alignment on boulevard
tree in alignment on city street
tree in alignment on neighbourhood street
tree in alignment on local street
tree in parks and squares
permeable point through building

As a result of the strategy an urban plan for the whole area has been designed. In this plan the proposed networks are becoming evident, by the fact the several lines have been made recognizable in the public space network trough elements like tree alignments, pavements, and street profile. Furthermore, the proposed urban plan illustrated the proposed semi- public spaces to be incorporated into the public space network, by proving public access to these places, access that secures a more permeable urban fabric.

Office ground floor

Ground floor office space, with display windows

Wide walkway developed as a liniar park

Bike lane

Pathway that separates the bike lane from the street's traffic, with tree alignement

Duble lane street with paralel parking

Middle of the street green area, with duble tree aligment and tram lines

tram line with tree alignment | two lanes street | on street parking | pathway separating the traffic from the bike lane, with tree alignment | bike lane | walkway developed as a linear park

mixed use and office space

DESIGN GUIDELINES FOR BOULEVARDS
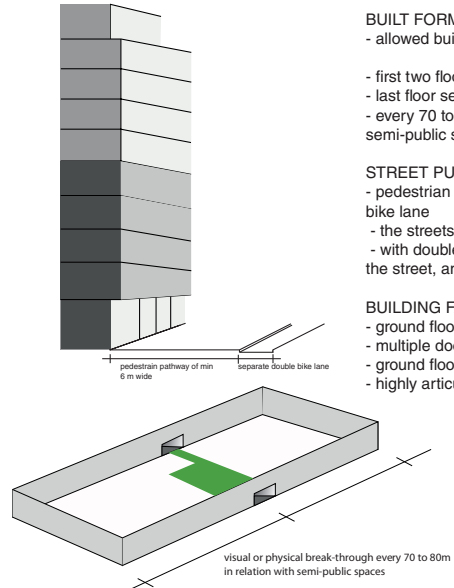
BUILT FORM
- allowed building height: max. 9 floors (27m)
                          min: 5 floors (15 m)
- first two floors (5.5m total high) set back 2 m
- last floor set back 2m
- every 70 to 80 m a visual or physical break- through in relation with semi-public spaces
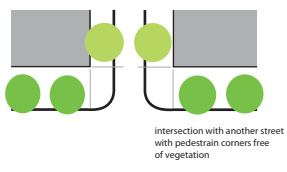
STREET PUBLIC SPACE
- pedestrian pathway of min 6m wide, developed as a linear park, with separate bike lane
 - the streets corners free of vegetation
 - with double tree alignment, one on the separation between the bike lane and the street, and second in the middle green space

BUILDING FAÇADE
- ground floor at foot path level
- multiple doors
- ground floor façade predominantly clear glazed
- highly articulated

pedestrain pathway of min 6 m wide   separate double bike lane

visual or physical break-through every 70 to 80m in relation with semi-public spaces

intersection with another street with pedestrain corners free of vegetation

City street public space

Ground floor retail

Highly mixed programe

Display windows

Outdoor dinning and commercial activity

Wide walkway with tree alignment and benches

Parking on the street at a 45 degrees angle

street with one traffic lane per sense | 45 degrees parking | wide pathway with tree alignment and benches | outdoor space for dining and commercial activities

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DESIGN GUIDELINES FOR CITY STREET

BUILT FORM
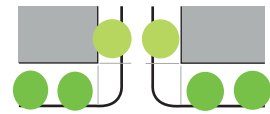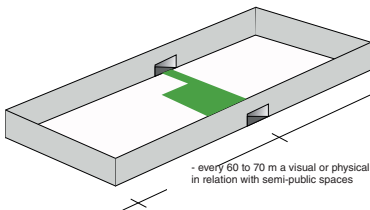- allowed building height: max. 6 floors (18m)
                                         min: 5 floors (15 m)
- first floor set back 1,5 m
- every 60 to 70 m a visual or physical break- through in relation with semi-public spaces
- with commercial spaces in a variety of sizes

STREET PUBLIC SPACE
- pedestrian pathway of min 5m wide, that accommodates both public and private seating
- the streets corners free of vegetation
- with trees aliment
- distinctive pavement

BUILDING FAÇADE
- ground floor at foot path level
- multiple doors
- ground floor façade predominantly clear glazed

margin strip of 1,5m

- every 60 to 70 m a visual or physical break- through in relation with semi-public spaces

commercial spaces in a variety of sizes

intersection with another street with pedestrain corners free of vegetation

Ground floor live and work

Transparent facade

Doors at sidewalk

Soft public-private transition

Paralel parking

street with one car lane | street parking | walkway with tree alignment | soft transition public-private

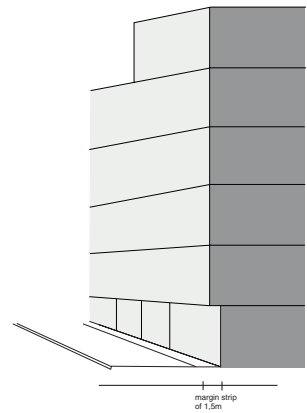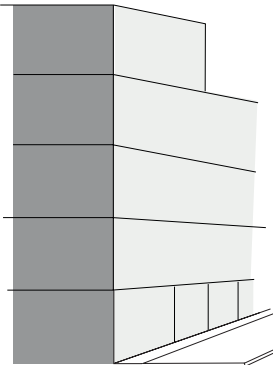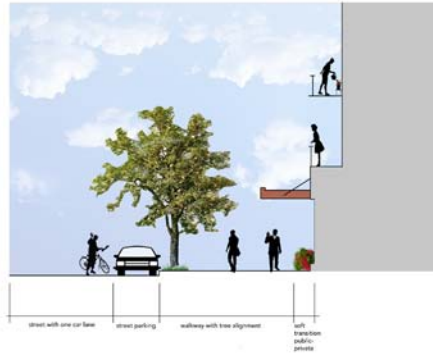## DESIGN GUIDELINES FOR NEIGHBOURHOOD STREET

BUILT FORM
- allowed building height: max. 5 floors (15m)
                                        min: 4 floors (12 m)
- every 60 to 70 m a visual or physical break- through in relation with semi-public spaces

STREET PUBLIC SPACE
- pedestrian pathway of min 4m wide
- the streets corners free of vegetation
- with tree alignment, and public seating

BUILDING FAÇADE
- ground floor at foot path level
- multiple doors
- ground floor façade predominantly clear glazed
- highly articulated

- every 60 to 70 m a visual or physical break- through
in relation with semi-public spaces

intersection with another street
with pedestrain corners free
of vegetation

A revitalized Kop van Zuid

City street public space

Residential ground floor

High concentration of doors

Soft transition public-private with landscape and siting places

Integrated semi-public space into the urban fabric, with transparent gates which allow also visual permeability

Parking alternating with extended walkways for community use and landscape

Slow traffic street, with unike driving sense and parking at 45 degrees

parking alternating with extended walkways for community use and landscape

walkways

soft transition public-private

DESIGN GUIDELINES FOR LOCAL STREET

BUILT FORM
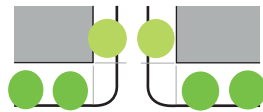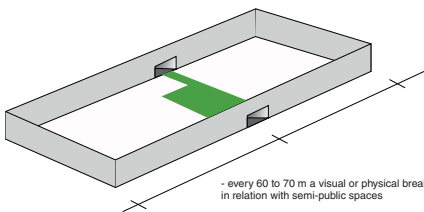- allowed building height: max. 5 floors (15 m)
                                        min: 3 floors (9 m)
- no set back
- every 50 to 60 m a visual or physical break- through in relation with semi-public spaces

STREET PUBLIC SPACE
- bundled pedestrian pathway on one side of the street of around 5 m wide, and margin strips that accomodate front gardens
- the streets corners free of vegetation
- with trees aliment on the side of the street with bundled pathway

BUILDING FAÇADE
- ground floor at foot path level
- multiple doors and windows
- highly articulated

every 50 to 60 m a visual or physical break-through in relation with semi-public spaces

intersection with another street with pedestrain corners free of vegetation

extended pedestrian area that accommodates community life

Highly mixed use ground floor
Mixed use ground floor, with predominant office functions
Social infrastructure
Work and live ground floor

① Theater
② HBO
③ School
④ Sport centre
⑤ Art and community centre
⑥ Child care
⑦ Mosque
⑧ Training centre
⑨ Job information centre
⑩ Municipality
⑪ Library
⑫ Eldery centre

50m   150m

The integration of mixed functions and social functions into the network provides a critical amount of activators of the public space along all the hierarchical levels. Firstly, the main intersections in between the different street level hierarchies are marked and emphasized by special functions, which accentuate the switch to another level, of the continuation of the same level. For example the continuity of the city street through the different neighbourhoods is punctuated at different points: the connection of the boulevard with the city street is marked with special functions on the two corners of the street (marked funtions on the plan nr. 9 and 10); the connection between the Paul Krugerstraat and Vuurplaat, where the street takes a Z form, is marked by a special functions and a landmark building (marked function

on the plan with nr. 6); and the connection between Vuurplaat and Oranjeboomstraat is emphasized by special function, positioned as end perspective point towards the Oranjeboomstraat (marked function on the plan with nr. 11). Secondly, several local streets are provided as well with activator functions, important for the neighbourhood community as schools, day care centers, libraries and youth centers, etc. Beside an activator role, these functions will also secure a more permeable urban space.

Design project

The area for a design project has been strategically selected in order to illustrate the transition from one hierarchical level to other, and the continuity of the city street from the Afrikaanderwijk to the Kop van Zuid. Starting from the lowest level of the network, a local street together with a block has been designed in order to picture, on one hand the different interpretations of a semi-public space and its design flexibility, without compromising the desired visual permeability of the space, and on the other hand the way the locality integrates and participates into the public life at the other levels.

The selected block incorporates a serie of 4 existing blocks and a new construction, and a proposed school. In order to create a space that supports the blocks community life, a new interpretation of the semi-public space was given in contrast with the municipal design for this block. The typical 1930's urban fabric of the Afrikaanderwijk requires a special attention to be paid to the parking facilities. And because of that, it is absolutely necessary that parking facilities are accommodated inside the blocks space. Due to this, the official plans proposed that the interior space of the block to be occupied with parking and private gardens, model which offers no place for community spaces.

In contrast with the municipal plan, the

new proposal takes advantage of the existing terrain level and recommends a semi berried parking, with a decking cover that accommodates private and semi-private spaces.

In contrast with the municipal plan, the new proposal takes advantage of the existing terrain difference level, and recommends a semi berried parking, with a decking cover that accommodates private and semi-private space, which receives two different design options that illustrate the flexibility of this space. In the first proposal, the decking is at one single level and private gardens are delimitated by small glass panel and flower pots. This represents the most ideal situation when all the owners desire and agree with use of a common space, and a very symbolical delimitation of the private space. Such an interpretation has the main advantage of enhancing the community life and casual encountering in between the blocks inhabitants.
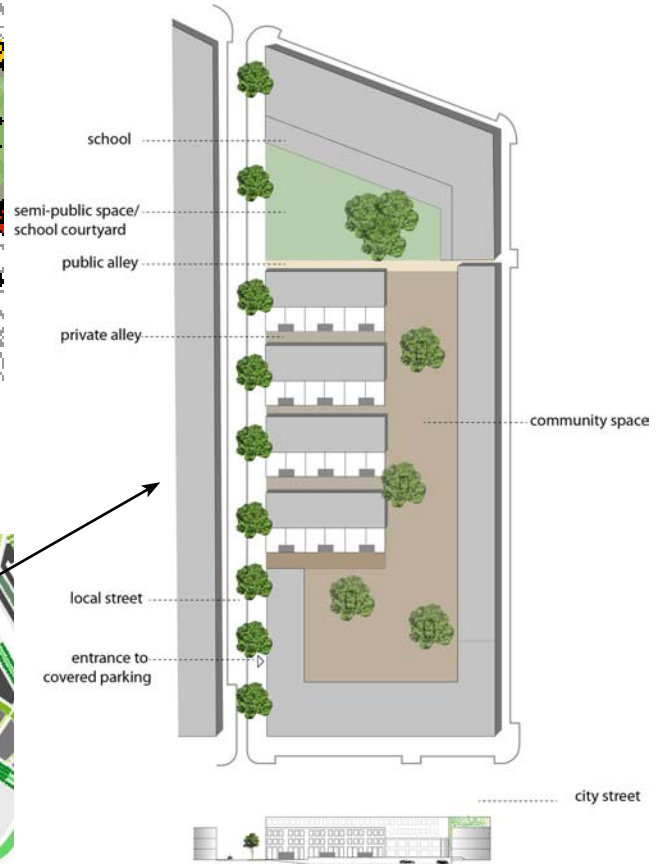The second interpretation provides a slightly elevated private garden, which

gives a little stronger delimitation between the private and the semi-private space.
A safe and active public space requires high degree of permeability of the space. In order to secure such a space the connection between the semi-public space of the courtyard and the public alley should offer good visual permeability though a visually permeable limit. Furthermore, the connection between the semi-public space of the schools courtyard and the local street should offer both visual and physical permeability. In this way, the function of the school will activate the semi-public space during all days of the week. The active local space is integrated into the higher hierarchy through good visual permeability towards the local street.

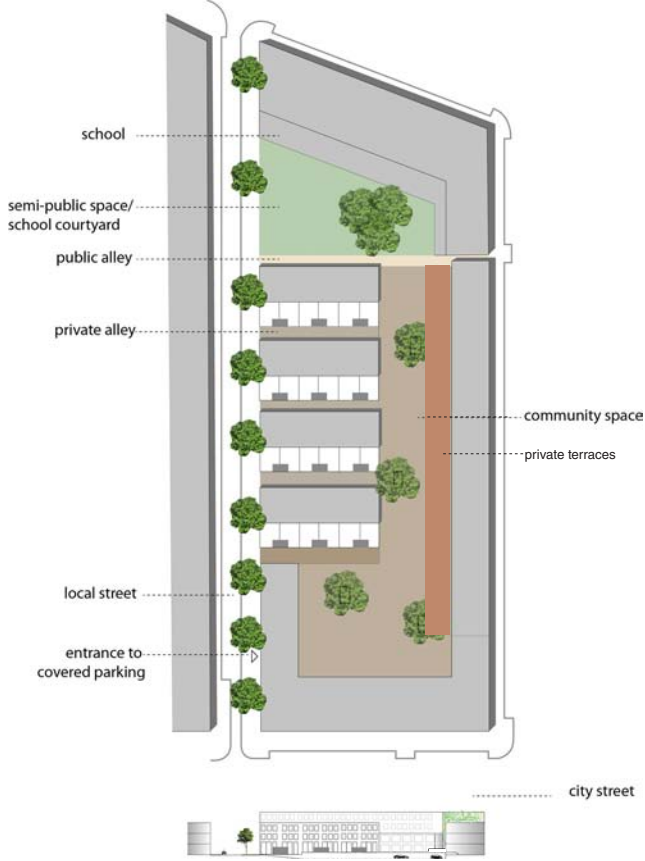## Block design proposal for the semi-public space first interpretation

Municipal plan design for the
proposed block
Source: Palmbout

school

semi-public space/
school courtyard

public alley

private alley

community space

local street

entrance to
covered parking

city street

Visualisation semi-public space first interpretation

A revitalized Kop van Zuid

Block design proposal for the semi-public space second interpretation

school
semi-public space/
school courtyard
public alley
private alley
community space
private terraces
local street
entrance to
covered parking
city street

Visualisation semi-public space second interpretation

View from the school
courtyard towards the
semi-public space

View from the school
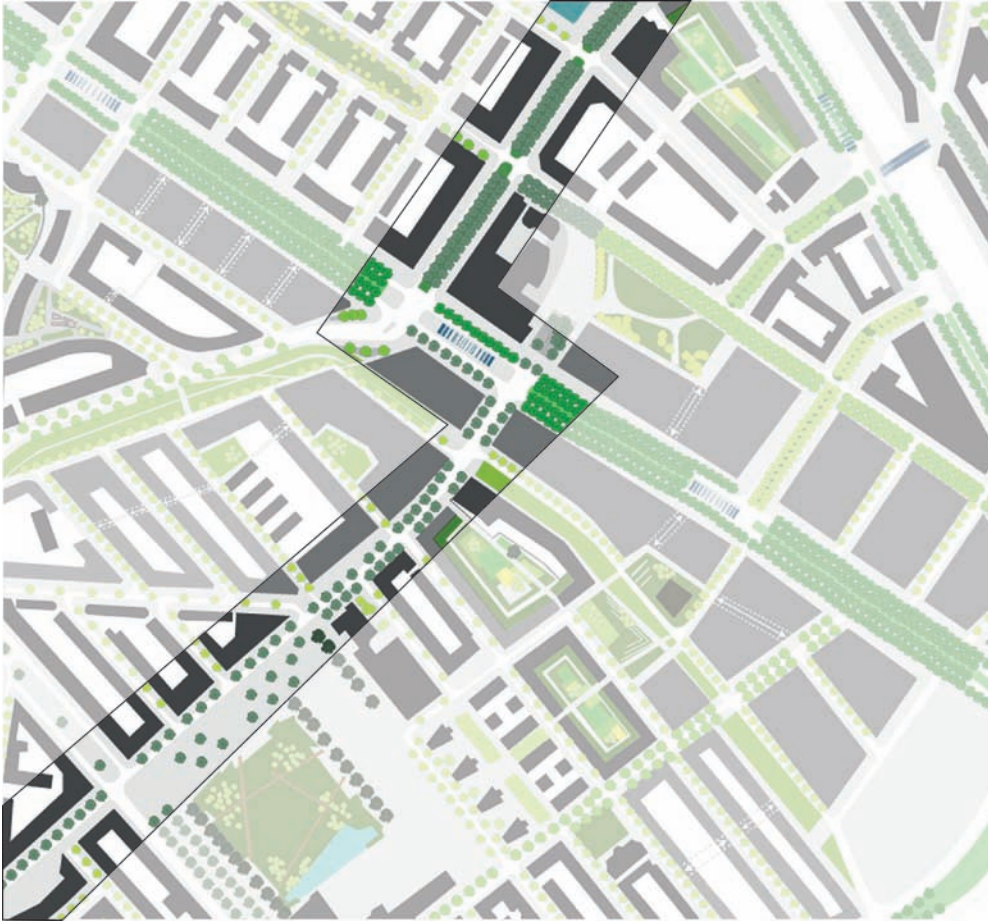courtyard towards the
local street

View the Paul Krugerstraat towards
Bothastraat

A revitalized Kop van Zuid

Due to its broken Z shape the continuation of the city street in between the Kop van Zuid and Afrikaanderwijk represents a crucial design detail. The continuity of the city street from Vuurplaat is suggested through several elements. First, the new landmark building and the commercial spaces present at the ground floor of this building, indicate the Z move. Secondly, the distinctive trees alignments on the boulevard, which represent a continuation of the ones on the city street, emphasize as well the continuance of the city street across the boulevard. Moreover, a peculiar pavement for the city street is also going to indicate the continuity of the city street.

View fromVuurplaat towards Laan op Zuid

View along Laan op Zuid towards Paul Krugerstraat

A revitalized Kop van Zuid

View from Laan op Zuid towards Paul Krugerstraat

A revitalized Kop van Zuid

V Evaluation and Conlcusions

Evaluation and conclusion

An integral system that enhances the performance of the locality

The proposed methodology that considers and integrates the potentials from the high city and regional scale, to the local one, into an integral system that creates an area where the locality is performing, is active and it makes apart of the whole system. As a result a safe and permeable urban environment is created.

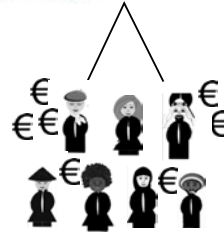## An integral system that considers the diversity of groups and their demands

The municipal plans strategies and use the area development tool, an efficient tool, but a tool that keeps the focus on the local scale of development. The plan proposed in this thesis considers the developments at the different scales, and their effect on the study area, and proposes an integral open plan for the whole area, which considers the variety of groups and their different demands.

An integral centrality that spreads its benefits further in Rotterdam South

The revitalized Kop van Zuid integrates some of the most poor and least appealing neighbourhoods in Rotterdam South and creates one empowered centrality that offers a variety of living environments and public spaces, which provides the proper setting for economical development and creates an livable attractive urban environment.
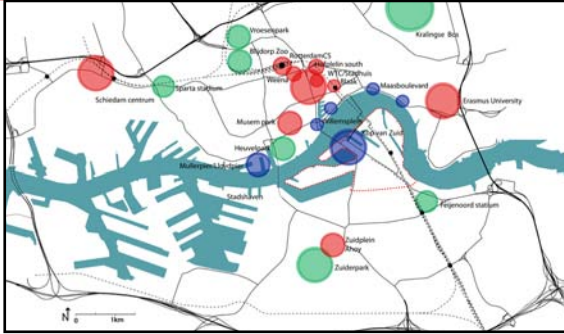
An integated system that takes advantage of the
infrastructural developments and enhance the
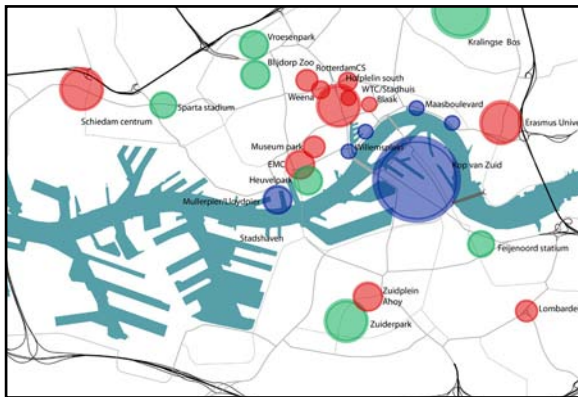performance of the locality

From two individual plans
that focus on the high
income group mainly

To an open plan that
considers the diversity of
groups and their demands

From Kop van Zuid an exeption in Rotterdam South

To Kop van Zuid an empowered and integral centrality that spreads its benefits to the surrounding neighbourhoods

A revitalized Kop van Zuid

A revitalized Kop van Zuid

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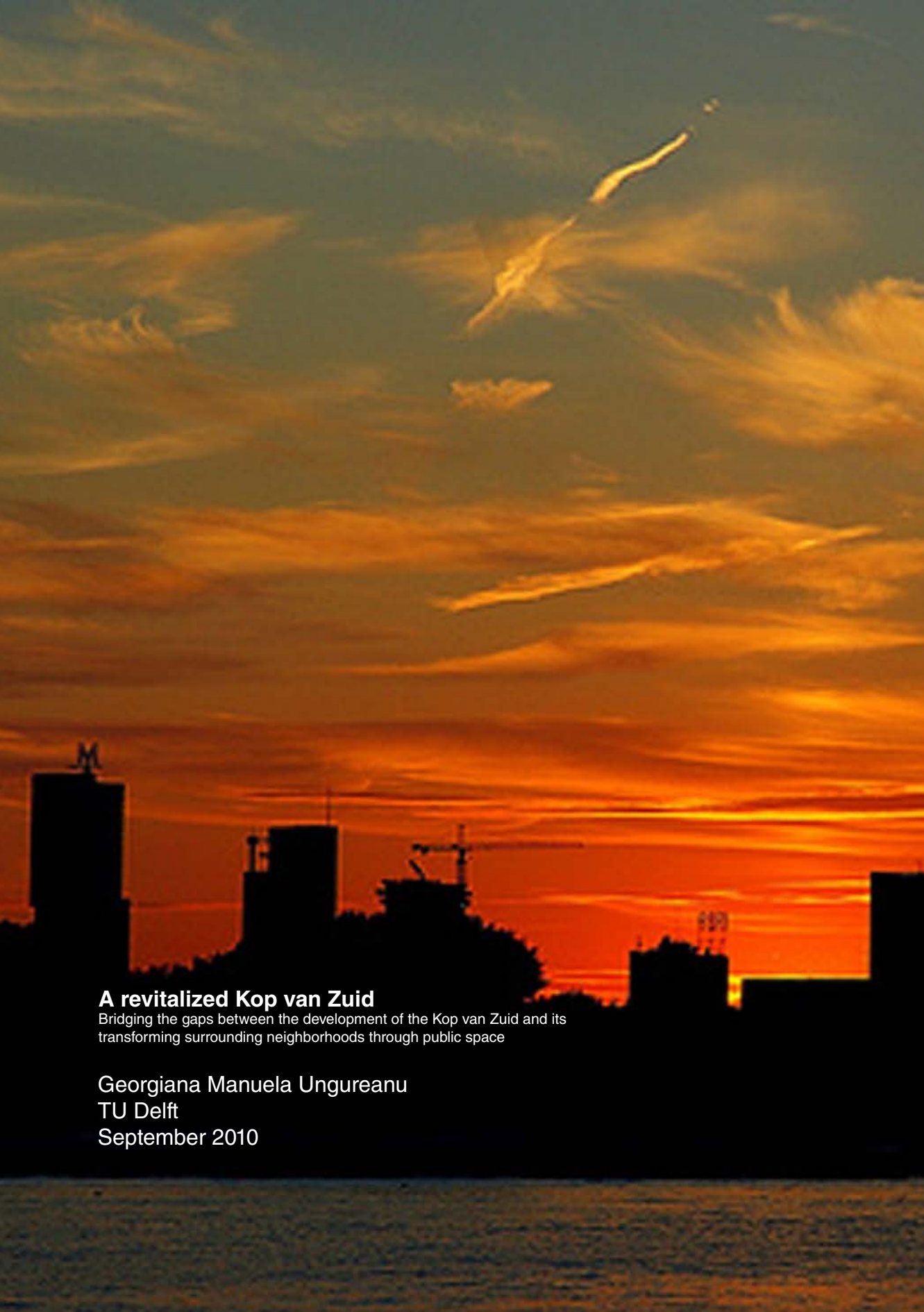
Sites:

CBS- Central Bureau of Statistics

COS- Center for Research and
Statistics

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www.panoramio.com

www.flickr.com

A revitalized Kop van Zuid
Bridging the gaps between the development of the Kop van Zuid and its
transforming surrounding neighborhoods through public space

Georgiana Manuela Ungureanu
TU Delft
September 2010