NEW CENTRALITY IN THE MAKING
WORKING TOWARDS AN INTEGRATED KOP VAN FEIJ ENOORD
Master Thesis/ Urbanism/ November 2010
NEW CENTRALITY IN THE MAKING

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KOP VAN FEIJ ENOORD

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MSC4 Urbanism
Foreword

This Master Thesis where written during the time-period from September 2009 until November 2010 in context of my Master studies of Urbanism at the faculty of Architecture at the Technical University of Delft.

This thesis has been developed under the supervision of:
- Ir. John Westrik / Urban Design
- Dr. Arch. Ana Maria Fernandez Maldonado / Spatial Planning and Strategy
- arq. Gabriela Rendon / Spatial Planning and Strategy
- Dr. Ir. Stefan van der Spek / Urban Design

The intent of this Thesis is to find the best tools, spatial tools, to achieve the integration of Rotterdam South in the city of Rotterdam on the city and urban scale.

I would like to thank my mentors, John Westrik, Ana Maria, Gabriela and Stefan van der Spek of being of great help and for their constructive critics during the development of this Thesis.
Other important persons concerning this Thesis, Paul Stouten and Herman Hulsbergen (Studio Urban Regeneration) and of course family, fellow students and friends of being a support during this 1.5 year.

Danique R.I. Zimmerman
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## Foreword

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INTRODUCTION
Urban problem

The life of a city is directly dependent upon its matrix of connections and substructure, because the geometry either encourages or discourages people’s movements and interactions.

“... a city made of distinct interacting networks, each of them working on several different scales. Though competing, these networks with different character have to connect with each other, and cooperate in a seamless fashion to define a living city.” (Salingaros, 2005)

The city of Rotterdam with a population of 600,000 is the second large city in the South wing after Amsterdam. Its position in the network plays an important role on the port activities in Europe.

For several years the city of Rotterdam is dealing with a main issue, how to connect the south with the rest of the city.
Due to the increase of the port activities and the population growth the city was forced to start with developments in this area.
Since that period several plans had been made to develop the area of the south and therefore to connect the south with the upper bank side.
In the 19th century the development of the Kop van zuid started with the main aim to connect the south. Several means had been used as a link, public transport, metro line, and the Erasmus bridge.

Until now this aim had not been reached. The district with a population of 228,839 but no urban center. With the Dubbelslag op Zuid the municipality want to create an urban centre with the Zuidplein as centre.
The Dubbelslag op Zuid consist out of four VIP projects from the Rotterdam Urban Vision 2030 from which three, Parkstad, Stadionpark and Oud zuid, are in the area of intervention. These projects with can have great potential are not well integrated into the urban context in a way that if they where integrated they would have had a bigger impact on the developments in Feijenoord.
Besides the location is dealing with fragmentation caused by the infrastructure separating neighborhoods from each other.

On the bigger scale the public transport systems in the south are not well integrated on the city network. For the whole area of IJsselmonde, 400,000 inhabitants, there is no inter city station and all public transport systems are oriented on Rotterdam central, non oriented on this part of the city.

This thesis reaches for the best solution for the integration of Rotterdam south public transport system on the city scale and deals with the fragmentation of the urban fabric and integration of the urban context with the VIP projects.
INTRODUCTION

New Centrality in the Making

Working Towards an Integrated Kop van Feijenoord

Research

Problem statement

The public transport in the south of Rotterdam is moderate. With a population of almost 350,000 inhabitants this area has no central point where all public transport means come together to strengthen the accessibility in this area. All lines are oriented on Rotterdam central while there should be a node in the southern part as well. Although new means of transport, Randstad rail, are linked to these area still the accessibility of this area is not improved because there is no integration on the existing lines.

The municipality created a master plan, Rotterdam Urban Vision 2030, consisting of 13 key projects that will sustain the main aims, creating a stronger economy and the city to become an attractive residential area. Of these 13 projects, 4 of them are in the south and 3 in the design location, Kop van Feijenoord. The issue is that none of these 3 project are integrated with each other or the urban context which is a missed opportunity for the development of the district.

Feijenoord has a fragmented urban structure caused by spatial barriers creating several islands with an introvert character.

Research question

What kind of urban regeneration strategy is needed to improve the social-spatial integration of Rotterdam south on the city and urban level?

How can the public transport in the south be improved?

How can the assigned projects be integrated into the urban context?

Method

Literature review

Literature is used as a basis for drawing up criteria on the following key issues, accessibility and quality of public space.

Theories of different authors, Lynch, Bertolini, Gehl, Jacobs will be reviewed. These theories are about networking, position of the train station in the urban context, shaping the city and the quality of public space.

Analytical study

(i) Mapping

Visualizing the current situation and problems in the location of interest stating where it is possible to have interventions.

The following will be mapped:
1. Infrastructure
2. Demographics
3. Current developments
4. History

(ii) Fieldwork

Besides using statistics for giving an overall idea of the situation, a fieldwork is another way to collect data, pictures, questioning inhabitants.

Case studies

Instead of reviewing classical and recent literature a study on projects will provide the solution to certain problems that are located in the area.
INTRODUCTION

Theory
Criteria for well functioning public spaces, positioning of the urban program and the elements for shaping the urban context.

Analysis
Analysis of Rotterdam south with the area of intervention as conclusion

Research by design
Define area of intervention
Answer to the problem definition

Case studies
Study on trans station squares and it design concerning program, scale and events.
Study of the Amsterdam Arena Boulevard on scale and program.

Design

Design Task
1. Improvement of the public transport system in Rotterdam south
2. Dealing with the spatial barriers
3. Composition missing link VIP projects

Strategy

Design Composition

Evaluation
Answer the research question
Theoretical Framework

Theory

The theory written by several authors on the topics concerning:

- Transit nodes
- Importance of a network
- Quality of the public space
- Elements that shape the city

Will be used to gain background knowledge for how to deal with the main problem, integration of a network and the connection between programs with the urban context and therefore define criteria for the design task and strategy.

NETWORK

Principles of a network
Nodes
Connections
Hierarchy

QUALITY PUBLIC SPACE

Gehl, J.
Coherence between 3 aspects:
  Scale, the human scale
  Intensity
  Location

Two types of spaces:
  Movements space
  Staying space

Criteria city space qualities
  protection
  comfort
  enjoyments

ELEMNETS THAT SHAPE THE CITY

Lynch, K.
Elements that shapes the city
1. Paths; streets, sidewalks, transit lines, railroad and canals
2. Edges; boundaries between two phases, spatial barriers
3. Districts
4. Nodes; strategic point, concentration, junctions
5. Landmarks

Moughtin, C.
The event in a square is important for its vitality and visual attraction

Size
Event  Scale
INTRODUCTION

DANIQUE ZIMMERMAN

The Criteria for the design of the public space is subtracted from the theory of Gehl and Moughtin. Both authors are looking for the best approach to design the public space in a certain way that it has a certain quality.

According to Moughtin there are two ways of categorizing squares, by function of form. Depending on the function the size of the square can be defined or the square is the outcome of the positioning of the urban blocks. Most important is the activity that the square is caring, because it is important for its vitality and the visual attraction. Therefore he explains the several relationships between the type of square and the program and diversity and square. The most successful city squares, though the may have a dominant function for which each is known and by which they may be classified, are often those that sustain activity through the diversity of uses (Moughtin, 1992)

Gehl characterized two types of spaces, movement and staying. While Moughtin is stressing on scale, size and event, Gehl looks at the scale as well with the intensity and location. Besides this three elements Gehl developed a criteria to define the quality of the square. Twelve point on the themes comfort, protection and enjoyment.

Theory

Criteria
Designing urban context

In his book Lynch describes what elements are needed to give a visual form to the city.

Therefore he describes elements that gives a physical form to the city. These elements paths, edges, landmarks, nodes and districts are simply raw materials that separately does not work. They influences each other by reinforcing each other or the can be a conflict together.

Important is that the cities form applies to the following three points:
1. Visible
2. Coherent
3. Clear.

Criteria for the Urban form:
1. Visible
2. Coherent
3. Clear

And at the same time using the five mentioned elements to shape the context. Paths, edges, districts, nodes and landmarks

Criteria
Well functioning public space

The Criteria for the design of the public space is subtracted from the theory of Gehl and Moughtin.

Both authors are looking for the best approach to design the public space in a certain way that it has a certain quality.

According to Moughtin there are two ways of categorizing squares, by function of form. Depending on the function the size of the square can be defined or the square is the outcome of the positioning of the urban blocks. Most important is the activity that the square is caring, because it is important for its vitality and the visual attraction. Therefore he explains the several relationships between the type of square and the program and diversity and square. The most successful city squares, though the may have a dominant function for which each is known and by which they may be classified, are often those that sustain activity through the diversity of uses (Moughtin, 1992)

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Criteria

**Well functioning public space**

**Square/ other public space**
1. Flexible
2. Different identity
3. Size
   - depend on the intensity program along the square
   - depend for stay r motion
4. Scale
   - human scale (interaction more impact n a small scale)
5. Pedestrian oriented
   - separation between traffic and pedestrians

**Program**
1. Mixed functions
2. Along the most important routes
3. The program should be spread on the location.

Criteria

**Public transport**
1. Transit node in the south focusing on the south
2. All public transport means are connected to this node
3. All important nodes in the city should be connected to this transit node
Aim

The whole project is basically about dealing with integration, the integration or Rotterdam south on the city network and on the urban scale the integration of the projects Parkstad Oud Zuid and Stadionpark with each other and the district. If Rotterdam south wants to have a position on the network it need to have a node on this network connecting with the other nodes.

In this area there is no specific node, transit node, that can be position on the network. Although the Zuidplein was designed to become the main centre of the south. Currently this project has a more local character.

Now the aim is to restore this idea that might be the solution for the Rotterdam south. Current events in this area are of great importance, so they might create a new opportunities to develop itself in the network.

The downside is that these assigned programs, Stadionpark and Parkstad are individually developed, no interaction between themselves and the district which might be a threat.

To achieve the vision, to create a new centre in the south connecting the area on the city scale, first the interaction between projects and surroundings has to be established therefore the south want to become a node on the city network.
ANALYSIS
Analysis Framework

The analysis performed on Rotterdam south and the Kop van Feijenoord, will indicate the potentials and problems in both areas. This research includes historical maps, morphology, maps, photos and municipality master plans that had been analyzed to illustrate the urban problems. The analysis consists out of three part:
1. The context analysis, analyzing Rotterdam south
2. Research by design focusing on the area of intervention
3. Case studies, gaining practical knowledge

South Analysis

Analysis on:
- Morphology
- History
- Demographics
- Infrastructure
- Current developments of the city

Conclusion will be used to define the area of intervention

Research by design

Define area of intervention
Answer to the problem definition

Urban Elements
Themes that might be use as tools or that causes the problem in the area

A SWOT analysis will show the potentials and treats which will be used to support the decisions taken for the design task and strategy

Urban Composition
The missed opportunities due to the design composition

Case study

Amsterdam Arena Boulevard

Quality of station squares:
- Den Haag central station
- Den Haag Holland spoor
- Rotterdam central station

Besides literature, existing projects will be analyzed to set up guidelines.
**History**

Rotterdam is a port city where the port has played a very important role in its development. Due to the increase of Port activities and population growth, the city was dealing with a shortage of space and needed to expand. The main question was in what direction should the city grow, to the west or south? To solve this issue the urban expansion happened in the west and south. Rotterdam had no interest in the land on the opposite side, the island of Feijenoord on the left bank, which has belonged to the city since 1591. Because of the increase of activities in the port and the increase in workers the south was the ideal place to house this group. Rotterdam south was born.

Several plans had been made to develop this part of the city. The first district was Hoogvliet followed by Pendrecht, Lombardijen, Zuidwijk and Groot IJsselmonde. The principle was that each of these neighborhoods will have their own identity and be self-sufficient in a surrounded by a main core, the Zuidplein. This principle had not been executed for hundred percent causing that the Zuidplein never gain that central position in the south.

Besides the aim of connecting the south with the north part was not a great success. At the end of the 19th century the south was linked to the city by bridges through the island of Feijenoord.

With the development of the Kop van Zuid, a new attempt had been made to create stronger link but the Kop van Zuid became an expansion of the inner city neglecting the south. To connect this part with the inner city a new bridge is designed, the Erasmus bridge, a tram network and a new metro station. In this way the north and south were connected.

In the daily situation Rotterdam south is totally forgotten and hidden behind the developments of the Kop van Zuid.
Historical morphology IJsselmonde
source: Stadionpark Gebiedsvisie
Demographics

Population

Approximately one third of the population lives in Rotterdam south. The percentage immigrants in this region (50%) is higher than in the whole city (46%).

Source: cos.rotterdam.nl (2008)

The unemployment percentage in the south is above the national percentage, 3.9%.

Source: cos.rotterdam.nl (2008)

Economy

Housing

A large part of the houses is owned by the housing corporation which can explain the that most of them are in the rent sector and that the diversity is limited.

Source: cos.rotterdam.nl (2008)
Municipalities

For this project two municipalities are of importance, the municipality of Feijenoord and IJsselmonde. Feijenoord consists out of: Noorder eiland, Kop van Zuid Entre port, Feijenoord, Afrikaanderwijk, Kattendrecht, Bloemhof, Hillesluis and Vreewijk.
IJsselmonde: Oud and Groot IJsselmonde, Lombardijen and Beverwaard.

Municipalities Feijenoord and IJsselmonde
Source: cos.rotterdam.nl

Municipality figures

<table>
<thead>
<tr>
<th></th>
<th>Feijenoord</th>
<th>IJsselmonde</th>
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<tbody>
<tr>
<td><strong>Population</strong></td>
<td>68,914</td>
<td>57,986</td>
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<tr>
<td>Native (%)</td>
<td>35</td>
<td>59</td>
</tr>
<tr>
<td>Immigrants (%)</td>
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<td>41</td>
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<tr>
<td><strong>Economy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>16,376</td>
<td>15,269</td>
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<tr>
<td>Unemployed (%)</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buy</td>
<td>17</td>
<td>33</td>
</tr>
<tr>
<td>Rent</td>
<td>83</td>
<td>67</td>
</tr>
<tr>
<td>Education (%)</td>
<td>45</td>
<td>52</td>
</tr>
</tbody>
</table>

Source: cos.rotterdam.nl (2008)
IJsselmonde is a island in the Maas delta in the Netherlands, surrounded by the Nieuwe Maas River in the north, the river Maas in the south and the Noord to the east. The island, is occupied by residential and industrial area. This island has an population of 423,000, Rotterdam south included.

IJsselmonde consists out of several municipalities, Rotterdam (districts in Rotterdam south, Hoogvliet and Pernis), Albrandswaard, Barendrecht, Ridderkerk, Zwijndrecht and Hendrik-ido-Ambacht. The area is accessible from the highway A4, A15 and A16. The public transport consists out of 3 train stations, Rotterdam Zuid, Lombardijen and Barendrecht together with the tram lines 2, 20, 23, 25 and metro line C and D.
Infrastructure

Road Network

The city of Rotterdam is surrounded by a road network, which is accessible by the A16, A15, A20 and A13. From the design location by car one goes from the Laan op Zuid and the Stadionweg to the A16 where they can take the highway to Utrecht, Amsterdam or The Hague. So by car the area is easy accessible. The south is connected with the north by two bridges, the Erasmus Bridge and the Willems Bridge.
All P&R facilities are immediately connected on the public transport network. Most of this P&R directly connected to the Metro line except Noorder helling in Feijenoord which is connected on the tram line 23.

The estimated time from one of this facilities to the inner city is mostly around 15 minutes. Some of them are for free while others one have to pay a small fee. In total is space for 2255 cars to park.

With the new program of the new stadium, the municipality provide additional parking, which will be a total of 6500.
SOUTH ANALYSIS

Local public transport

Focus on the south wing.
Stops at all stations on the Dordrecht-Hillegom

Most lines are oriented from north to south starting from the central station.

Only one line, tram line 2, in the south goes into the opposite direction and is integrated on the railway and metro network.
With the arrival of the High speed train, the travel time from Rotterdam to Amsterdam become shorter and one can travel apart from Belgium also to Paris. The advantage of the High speed train is that it stops only in certain station; Amsterdam central, Schiphol, Rotterdam Central, Antwerp, Brussels and Paris.
The main conclusions is that the accessibility is being increased in the region by the several transport means, stedenbaan which focusses in the south wing, the Randstad Rail connecting Rotterdam with the Hague, but the south still does not benefit from all this developments. Although a great part of the islands of IJsselmonde is not well connected.

This brings us to the second conclusion that there is need for a transit node.
Current Urban developments

The municipality developed several Master plans concerning the development of the city. Some of these plans are:
1. Rotterdam Urban Vision 2030
2. Waterfront; Stadscentrum aan de rivier
3. Havenplan 2020

For this project the most important is the Rotterdam Urban Vision 2030. Main objective is to transform Rotterdam into an attractive residential city and create a stronger economy. To achieve this, the municipality lounged/developed 13 key projects of which four are located in Rotterdam south.

4. Hart van Zuid

The Zuidplein mall and Zuiderpark Ahoy are developed into a leisure center with large-scale features and a modern shopping center. The attraction of the Heart of the South as a recreational area should be strengthened, therefore improving the public space. Condition is improving the quality of outdoor space throughout the area. Renewal of the bus station and tunneling the Pleinweg, will sharply reduced traffic congestion. In addition of the Zuidplein, the Motorstraat area provides space for businesses, educational facilities and new homes.

5. Stadionpark

In 2030 the Stadionpark is going to be one of the icons of Rotterdam. With the new Kuip stadium at the Maas River the south would gain international attention. In the design space is made for the sport campus Stadionpark with a variation of sport facilities, leisure and education which reinforces each other mutually. The transport node, with train station Stadionpark, ensures a good accessibility of the area. Further there are squares and green areas where the visitors can amuse themselves and spend some time. In short: Stadionpark is the Rotterdam sport city, the new central point on south and an attractive new district.

Elements of the Stadionpark

The Stadionpark, with the theme sports and leisure, consists out of three important elements:

- Sport Campus Stadionpark
- Transportation node
- New Kuip stadium

Sport Campus Stadionpark

The Sport Campus will consist out a diversity of buildings, squares, sport fields and biking and walking routes.
The sport campus consists out of two parts, the south and the north. The south has a more green character where the inhabitants have the possibility for recreation in the green or parks. Beside recreation the area has a housing and educational program. The north side offers a big variety of facilities such as leisure, shops, living and education.

Transportation node
This new transportation node will be located next to the old stadium, including the new train station, a new subway line and parking facilities. From the station the old Kuip, the new stadium and the sport campus are pretty visible.

New Kuip stadium
The new stadium offers place for 80,000 viewers. Moreover it becomes a large icon that will attract a lot of events to the area.

11. Parkstad
The developments around the Kop van Zuid and the Wilhelminapier will move to the south to the Beijerlandselaan laan, the Putselaan and Coloseumweg.

The northern part of the Kop van zuid is increasingly integral part of the center with many high-rise and urban facilities. To the south urban residential environment will be developed. This means it is also becoming more attractive for young families to live in this area.

Parkstad, the area along the Laan op zuid, has an residential orientation.

All these developments are associated with the restructuring and rehabilitation of older neighborhoods, the Afrikaanderwijk, Noorder eiland and Feijenoord. The result is attractive residential areas with international tune.

13. Oud Zuid
Oud Zuid is the collective name for the prewar neighborhoods in Feijenoord and Charlois.

This neighborhoods, Tarwewijk, Bloemhof South Hillesluis, Carnisse and Old Charlois, will be renovated.
Dubbelslag op zuid - Development of Rotterdam South

Rotterdam south was in the first decades after the war, a very popular residential area. To regain back this position some projects had been resigned to this area. With the development of the Kop van Zuid and the restructuring of a large number of districts, the south will become an attractive area. Together with corporations and sub municipalities, the municipality will use the Pact op zuid as the starting engine of all developments. Therefore the Dubbelslag op zuid will be the tool dealing with the socioeconomic and physical problems, creating opportunity for business and transformation of the neighborhoods into attractive residen-

13 VIP key projects

Source: rotterdam.nl
**Conclusion & Results**

1. For an area of 423,000 inhabitants, almost as big as Rotterdam, not one of the three station across IJsselmonde is a inter-city station. In addition, the public transport system is not integrated in the south. Of all 4 tram lines and 2 subway lines, only one tram line connects Lombardijen with subway line D. All lines work independently. There is no central node where these systems come together and from there connect potential areas making the south better accessible. Besides all systems are more oriented to the central station than the south itself.

**Overall map of the public transport in the city.**

**Only two station for the Rotterdam south area and either one of them is an inter city station.**

The public transport system in south needs to be more integrated. All systems should be south oriented than to the central station.

Line 2 connecting train station Lombardijen with the metro line D.
De dubbelslag op zuid main aim is improving of the spatial quality, creating attractive living environments and focus on recreation. Of the 13 VIP projects there are four in the south, all included in the De dubbelslag op zuid program.

The program of the Stadionpark is the most interesting because it introduces a transport node. The plans are in two different municipalities, Feijenoord and IJsselmonde. The location where all three plans are located is named the Kop van Feijenoord, area of intervention, which will be analyzed in the next section.
RESEARCH BY DESIGN

NEW CENTRALITY IN THE MAKING
WORKING TOWARDS AN INTEGRATED KOP VAN FEIJENOORD

SPATIAL BARRIERS

Landscape

RESEARCH BY DESIGN

NEW CENTRALITY IN THE MAKING
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SPATIAL BARRIERS

Landscape
Location

The chosen location consists out of the following VIP projects, Parkstad, Oud zuid and Stadionpark and stretches into several neighborhoods, Veranda, Hilleshuis, Vreewijk, Afrikaanderwijk and Lombardijen. This area has the potential to become the new centre of Rotterdam South.

There are some factors present in the location that have potential:
1. Two train stations: Rotterdam Zuid and Rotterdam Lombardijen
2. Boulevard op zuid: multi cultural local based economy
3. Veranda strip: cultural and commercial activities
4. Kuip stadium: monument and sport facilities

Future factors as outcome of the Parkstad, Stadionpark and other:
i. New train station and subway line: better accessible on the regional, city and district scale
ii. Sport campus: sport facilities, sport events, education
iii. Randstad rail
iv. Program: residential areas, offices, commercial, culture, sport, education
Kop van Feijenoord
In the middle of the location there is a big open space.

Strong division between the districts caused mainly by the infrastructure.

Void between the projects.
There is no transit node in the area. All public transport lines are working separately besides the tram line 2 being the only east-west connection in the area links railway station Lombardijen with the metro line D.
There is no link between the urban area with the water, because of the hard visible line caused by the infrastructure.

No direct link between the public spaces.
Functions: leisure

Functions: monuments

Functions: industrial area

Functions: public buildings

Functions: commercial

Functions: sport
Urban Composition

Boulevard op Zuid (Beijerlandselaan) and Veranda strip
BEIJERLANDSELAAN

(i) Functions
Multi cultural functions, shops, leisure (cafes, restaurant), 2 parking garages

(ii) Public transport
Well connected on the tram network
Three tram lines stops here. lines 2, 20 and 25.
Direct link with station Lombardijen by line 2, no link with station Zuid.

(iii) Street profile
Very chaotic street with the car traffic, tram lines. For pedestrian not favorable. The concept Boulevard op zuid is misplaced. To fulfill this concept all motorized traffic should be taken out leaving the place for the pedestrians: Boulevard where the pedestrian flow is important.

VERANDA STRIP

(i) Functions
Shops, leisure (cafes, restaurant, cinema, bowling), parking

(ii) Public transport
Only tram line 23 stops here.
No direct link with stations Lombardijen and Zuid.

(iii) Street profile
The Cor kieboom plein is only 11 m. wide. There is barely space for waking, 2.5m for a side walk. Sometimes the side walk is replaced for parking. Bicycles and cars ride on the same lane. The profile is to small for this street being the main street in the area.

(iv) Composition
All program concentrated around parking square.
No central square, no relation with the water.
Missed opportunity

1. Physical separation by barrier, railway
2. Boulevard concept in the Beijerlandstraat lost because of the traffic in the area
3. No link between the two different areas, Veranda strip and Boulevard op zuid

Opportunity

1. Connection with the river
2. Develop the axis between the areas, in this way making the connection stronger between both areas
Spatial barriers

The spatial barriers caused by the railway track and the dominant road network, fragmented the fabric making it difficult to link districts with one another. This is a point of interest since several plans had been made to deal with the railway track. Opportunity for developments in this area will take place when these barriers are dealt with.
Dominant position in the fabric

Dividing the area in several parts

Laan op zuid and the railway tracks

Source: google images

Separation
Three main axis starting from Hillesluis are the links from one district to the other, when developed. Besides this axis links the districts with the landscape.

During this project these lines are the backbone for the development of the Feijenoord Triangle. They have a starting point, Boulevard op Zuid, and at the river side as end point. According to Lynch, paths leads the way to a place in the city, which makes the city readable.

These three main connecting two potential areas, Beijerlandselaan and the waterfront. Urban context linked with the landscape.

Structure for the development of Feijenoord Triangle
Urban structure

Fragmented structure

Connecting the fragmented structure.
Waterfront mismatch

Along the quay, there are several industrial sites blocking the view on the river. Given the magnificent view one has on the river, the program should be changed.
To benefit the most from the waterfront, this industrial sites should be moved to other location into the area. In this way making space for the development or the waterfront.
Missing Link

Three of the VIP projects are in the area of intervention. This is interesting for the developments in Feijenoord. But none of this projects are linked together, they work separately focussing on there own program. Working together they might be of great value for the developments in the south.

Developing the blank space between the projects will be the next assignment.
Conclusion & Results

Conclusions

1. The composition of the urban context should be redesigned.
   Linkage:
   There is no link between both programs Boulevard op Zuid and Veranda strip. Together they might be of greater value.
   Concluding from the structure map again the link between the different neighborhoods is broken mainly because of the infrastructure.

2. The public transport system in the south should be more integrated.

3. Besides fragmentation of the urban fabric, the barriers also causes a big void in the structure as shown in the open space illustration. To overcome this, the spatial barriers has to be dealt with.

4. Along the waterfront there are several industrial buildings blocking the view. First the industrial sites has to be placed elsewhere in this way making the waterfront accessible and secondly develop the waterfront into an attractive area and linking it with the surrounded neighborhoods.
5. The municipality assigned 3 VIP projects in the Kop van Feijenoord but there is a piece missing between them. Now they are more three individual projects while if they work together they might become the new urban centre in the south.

**STRENGTH**

1. Multicultural community
2. Location near the inner city
3. Landscape
   - Green and water structure
4. History and monuments

**WEAKNESS**

1. Public transport is not integrated into the area as on the city scale. There is no main station where all public transport systems comes together
2. Missing link
   a. Between the two local centres Veranda strip and Boulevard op Zuid
   b. Urban context with the water structure
3. No use of the waterfront
   Miss position of the program, industrial

**OPPORTUNITY**

1. Development of the axis for linking the neighborhoods
2. Feijenoord Triangle missing link between neighborhoods and key projects

**THREAT**

1. Spatial barriers
2. Integration of the public transport on the city level

**DESIGN TASK**

5. Stadionpark
11. Kop van Zuid residential environment
13. Oud zuid

FEIJENOORD TRIANGLE

Sportwijk

Vreewijk

Lombardijen

1. Kop van Zuid residential environment
2. Feijenoord Triangle missing link between neighborhoods and key projects
Station squares

Arriving from the train station the station square is the entrance to the city and the main place to change from one public transport mean to another.

The station square of Den Haag central is big but almost nothing happens here, on the other hand Den Haag Holland spoor has a chaotic traffic square and Rotterdam station square is now under construction but the previous scenario will be used. What are the best possible ways to design a station square that is well functioning from the perspective of the traveller?

The analysis of train station squares will answer the following questions:
1. What has to be taken into consideration when designing a station square?
2. How does the traveller or a random person use the square in terms of public transport, program and destination?
3. What kind of program are desirable around these squares so after a certain time the will not be deserted?
Station squares

Den Haag CS

Tram


Aantal trams: 6 en boven: 4

Bus

Het bus station bevindt zit op de eerste verdieping. Deze is niet direct verbonden met de maaiveld men moet eerst naar binnen gaan en dan pas naar boven. Het station is best wel groot als er maar 3 bussen daar stoppen. Daarnaast stoppen er ook internationale bussen en tour bussen.

Square

Aan het plein zitten weinig voorzieningen, die het plein meer leven geeft bijv. terrassen etc. Het is meer voor voortbewegen. Hier heb je meer grote functies rond het plein zoals VROM of een bank. Een levendige stationsplein is niet van toepassing hier. Een plus punt van deze station is dat de tram gescheiden is van het plein.

Programma

<table>
<thead>
<tr>
<th>public</th>
<th>offices</th>
<th>education</th>
<th>living</th>
<th>leisure</th>
</tr>
</thead>
<tbody>
<tr>
<td>VROM</td>
<td>banks</td>
<td>inholland</td>
<td>low rise, family housing, 4/6 floors</td>
<td>restaurants, cafe, small shops, supermarkts, hotels, babylon mall, kappers</td>
</tr>
<tr>
<td>min. van onderwijs</td>
<td>manpower</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>min. van econmie</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
dit is meer een geschakelde systeem dat het gehele statinsplein in beslag neemt. Het plein is niet echt en verblijfs plek maar meer een verkeers plein. Dit is zichtbaar als e mensen op de trams staan te wachten.

vanuit deze tekening is meteen zichtbaar dat het statinsplein heel krap is aangelegd het is niet echt groot als bij het Cs station

<table>
<thead>
<tr>
<th>public</th>
<th>offices</th>
<th>education</th>
<th>living</th>
<th>leisure</th>
</tr>
</thead>
<tbody>
<tr>
<td>consumen-tenbond</td>
<td>TNT</td>
<td>inholland</td>
<td>torens 2</td>
<td>restaurants</td>
</tr>
<tr>
<td></td>
<td>verzekerings</td>
<td>haagse</td>
<td>4 hoog/6</td>
<td>cafe</td>
</tr>
<tr>
<td></td>
<td>woningcorporaties</td>
<td>hoge-school</td>
<td>hoog</td>
<td>small shops</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>hotels</td>
</tr>
</tbody>
</table>
Tram

De perrons zijn te smal je weet niet waar je heen moet
qualiteit openbare ruimte

Bus
Nu staan de bussen aan de rand van de hoofdweg rond het station in het
nieuwe situatie komt er een speciale bus halte die meer een relatie heeft
met het plein.
In tegen deel tot DH CS heeft deze plein meer een realtie met de omgev-
ing. Want het plein staat hier central.
Aan de plein heb je uitgangen van de Metro, standplaats van zowel tram
als bussen en natuurlijk mond het station hieraan.

Square

Programma

<table>
<thead>
<tr>
<th>public</th>
<th>offices</th>
<th>education</th>
<th>living</th>
<th>leisure</th>
</tr>
</thead>
<tbody>
<tr>
<td>banks</td>
<td>fatum</td>
<td>unilever</td>
<td>low rise,</td>
<td>restaurants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>familie-</td>
<td>cafe</td>
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<td></td>
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<td></td>
<td>housing,</td>
<td>small shops</td>
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<td></td>
<td></td>
<td>4/6 floors</td>
<td>hotels</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>mall</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>casino</td>
</tr>
</tbody>
</table>
Conclusion and Results

Flows
There are two main flows:
1. to other transportation mean
2. To the city, other destination

They have a big influence how the square is being used.

Secondary public transport
At the Den Haag Holland spoor there is no square where some one can sit, it more a traffic square where tram lines comes together creating a chaotic atmosphere.
At the central station the secondary transport means are separated from the square leaving it free for the pedestrian to use.
The Rotterdam situation is almost like Holland spoor but the lines goes side ways. Here there is a big confusion which tram to take, its difficult to see this.

Program
Program is very important if the square wants to be attractive if one wants to stay. Den Haag central station is a good example of a square that is big but no one stays there because the program is not attractive enough. There are only offices in the plint of the buildings surrounding the square.

Conclusion for design task:
1. Separation of the transportation means and the square -example: Den Haag central station
2. Program around the square should prolongate the stay - leisure or commercial n offices
DESIGN
Design Framework

Analysis

The main urban problems concluded from the analysis:

ROTTERDAM SOUTH
The public transport is down sized. In this area, with approximately 400,000 inhabitants, there are 3 train stations which none of them has an inter city stop.
The different public transport systems should be more integrated providing a better public transport quality in the south.

KOP VAN FEIJENOORD
Urban fabric is fragmented by spatial barriers. Urban composition mismatch with the waterfront by the position of industrial program along the river bank.
No linkage between potential key projects Parkstad Oud zuid and Stadionpark and their surroundings.

The main conclusion from the SWOT analysis:

Opportunity
Link between urban centers
Water landscape
Feijenoord Triangle

Threat
Integration public transport network
Spatial barriers

Design Task

1. The improvement of the public transport network in the south and on the city level.
2. Dealing with the spatial
3. The development of the triangle to link the key projects and their surroundings.

Strategy

Spatial concept

Design

Infrastructure: City line
Traffic node
Tram system
Transit node
Composition: Feijenoord Triangle
Public space: Feijenoord boulevard
De Kuip podium
Feijenoord park
Boulevard op zuid
Waterfront
Design Task

1. IMPROVEMENT OF THE PUBLIC TRANSPORT SYSTEM IN ROTTERDAM SOUTH
   Rotterdam south has only two railway stations, together with Barendrecht three, of which none of them has an intercity stop. From a research held by the municipality, the public transport system in this area is not efficient causing long travel time.

   There is no node in south where all public transport systems comes together facilitating the traveller to change from different transport means. Only tram 2, being the only east west connection in the area, connects the metro line with railway station Lombardijen. Apart from these all transport means are functioning separately and connected to the Rotterdam Central station.

   The new railway station and metro line, Stadionpark, are of great potential. It can become the main transports node for this area and there for connect the south with the important nodes in the city concerning public transport and functions.

   Task:
   1. Improvement public transport system in south
   2. Integration of the public transport on the city scale

2. SPATIAL BARRIERS CAUSING FRAGMENTATION
   The laan op zuid and the railway track are the main cause of the fragmentation of the urban fabric. These dominant lines has a big impact on the quality of the area visually and functional. They separate the district in several small areas that has no relation with one and other.

   Task:
   Removal spatial barriers

3. URBAN COMPOSITION OF THE FEIJENOORD TRIANGLE
   In the area of intervention, there are three main key projects which have potential for the development of the area.

   The main issue is that all three of them has their own program and focusses on their own location, while connected with each other the potency increases making the area attractive for further developments. Another downside is they are not integrated into the existing urban context causing the other districts in the area not to gain any benefits from their potential.

   There is an area of great interest, Feijenoord Triangle, between the projects that when developed will become the link between the projects and urban context will be established.
Three of the 13 VIP key projects of the municipality

Spatial barriers

Feijenoord Triangle
Strategic plan

The strategy applied in this project influences the position of Rotterdam south on the city scale.

The proposed strategy for the positioning of Rotterdam south on the city network, enhancing the proposed public transport network by the municipality into a new circle metro network, the City line, covering most important nodes, educational, transit oriented, residential zones, programs in the both districts.

The new train station in the Feijenoord Triangle will become the starting point for integrating both Parkstad and Stadionpark with each other and the surrounding areas.

By using the existing axis in the area together with the landscape elements green and water as the link between the Veranda and Hillesluis connecting the urban density and program.

**STRATEGY**

Proposed new metro line by the municipality

**SPATIAL CONCEPT**

Rotterdam south on the city network.
Key Projects

INFRASTRUCTURE
1. City line
2. Infrastructure node: Laan op zuid. Metro line and Railway line
3. Stadionpark railway station

URBAN COMPOSITION
Feijenoord Triangle

Public space
1. Feijenoord Boulevard
2. Kuip stadium
3. Boulevard op Zuid
City line: Public transport system in Rotterdam south

In the current situation there are two train stations in Rotterdam south, Station Zuid a stop train station and Lombardijen a snel train station. At neither one of them a intercity train stops. If one wants to travel, first one has to go to the central station and from there to the desire destination. This requires long travel times.

In the Stadionpark project an intercity station is introduced into the area along with a new metro line starting from the Kralingse Zoom to Schiedam centrum station. This node will be

This plan will include the beginning stages of the Stadionpark and the possibility for an extension of the program to insure that the public transportation in Rotterdam south and surroundings will improve.
For this project the Stadionpark principle is being taken over. Now the south is connected on the city network as well with the Randstad Rail which will connect Den Haag central with the Slinge in south. In the Stadionpark model the line only covers the south.

The potential of this line would be increased if it also covers the north part adding important functions, the Erasmus University, Brain park, Stadionpark, Zuidplein (hart van zuid), Stadshavens, Schieveste and the airport.
In the future the train stations like Rotterdam Zuid, Lombardijen will become stedenbaan stations.
Parking facilities

With the arrival of the Stadionpark plans had been made to add extra parking facilities for the sport program. The total estimated amount for this area would be around 6000.

In my sense this is now unnecessary because the public transport network has been enhanced to properly use.

Most of the P & R facilities are located along the metro network where one can travel by metro or tram in 12 minutes depending on point of departure, to the inner city.

The P & R facilities altogether has an total of 2255 parking lots. For the sport program only 500 parking spaces will be assigned and along the Randstad Rail a additional which runs to the total of 3955.

In this way the use of public transport is strengthened.

<table>
<thead>
<tr>
<th># Parking</th>
<th>public transport</th>
<th>time (min.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexander</td>
<td>437</td>
<td>M</td>
</tr>
<tr>
<td>Kralingse Zoom</td>
<td>730</td>
<td>M</td>
</tr>
<tr>
<td>Capelse brug</td>
<td>430</td>
<td>M</td>
</tr>
<tr>
<td>Noorder helling</td>
<td>350</td>
<td>T23</td>
</tr>
<tr>
<td>Hoogvliet</td>
<td>272</td>
<td>M</td>
</tr>
<tr>
<td>Stadionpark</td>
<td>500</td>
<td>M, T23</td>
</tr>
</tbody>
</table>
The fragmentation caused by the Laan op zuid together with the train tracks has a big impact on the urban fabric as the context. Not only the visual quality is deteriorating, functional it causes the isolation of neighborhoods in the area. In this way it is difficult to link these areas.
The main aim is to:
1. Find the best solution for the spatial barriers Laan op zuid and the railway tracks
2. To soften the dominant character of the infrastructure in the urban fabric but still keeping a well functioning traffic flow

Some models had been made to find the best solution how to solve the railway line and the Laan op zuid problem.
These solutions concerns:
1. The viaduct is made equal to the ground level
2. The Laan op zuid will be tunneled
According to Bach, dike, deck or dok, does not solve the visual and functional barrier.

Solutions spatial barriers

<table>
<thead>
<tr>
<th>model</th>
<th>Laan op zuid</th>
<th>Railway line</th>
</tr>
</thead>
<tbody>
<tr>
<td>model 1</td>
<td>ground level</td>
<td>tunnel</td>
</tr>
<tr>
<td>model 2</td>
<td>tunnel</td>
<td>tunnel</td>
</tr>
</tbody>
</table>

MODEL 1

The Laan op zuid at the height of the viaduct is leveled to the ground.
In model 1 the viaduct is removed which is no longer a physical obstacle and therefore enhancing the spatial quality creates while the visual separation is no longer available. The hard line in the fabric caused by the railway line is now not visible anymore but there is still another hard line in the area, whom compared with the railway line has not a huge impact on the fabric.

The advantage of model 2 is that the visible barriers, Laan op zuid and the railway, are no longer present in the fabric. This improves the spatial quality and creates opportunity for the development of this area. By tunneling both the Laan op zuid and the railway the vacant space in this project will be used for the developments concerning the integration of the urban context with the Stadionpark and Parkstad. Although this option would be quite more expensive than a ground level solution, the spatial quality gained is of a bigger value.
Road Network

The second criteria is that the road network should work as a whole, the traffic flow should be fluently. In the previous section model 2 had been chosen because of the spatial quality that can be achieved when this area is developed. The Laan op zuid wont be tunneled from the Posthumalaan till the Stadionweg. Only the part which goes through the Parkstad till the Stadionpark will be tunneled. The tunnel is 0.165 km long.

When the Laan op zuid goes under the ground level, the direct link between the A16, stadionweg, Laan op zuid, Posthumalaan connecting the rosestraat and Putselaan will vanish meaning that another road should become the new link A16 - inner city on the ground level.

The best solution, considering the structure, would be to elongate the Rosestraat into the colosseumweg. The new Rosestraat will connect the A16 through the Putselaan or the Vuurplaat to the inner city.

The system is finished when an extra road is added between the Laan op zuid and the Posthumalaan making the network work as a whole.
The above schemes shows how the whole system will work. Previously the Laan op zuid, Rosestraat and the Posthumalaan used to be the 3 main boulevard in the system, while in the new situation the Rosestraat will be the most important vein in the network. The Posthumalaan position will be the same as in the previous situation.

The picture following picture shows how the system will operate.
Public transport node

Previously model 2 had been chosen as solution for dealing with the spatial barriers gaining a better spatial quality. In the plan a new metro line is introduced. Now the main focus is to integrate this line into the node creating a well functioning system.

The difficulty lies in how to implement the metro line with the other two lines. For this model two variants had been worked out to show the best possible solution.

It is not possible to implement this solution because at first, the profile of the Breeweg is too small to support an elevated metro line. Compared to line D which is elevated at a certain point has a two times wider street profile.

Secondly the spatial quality compared to the situation of line D is deteriorating for the simple fact that the space is too small. For this option the profile should be at least 50 meters for having a better spatial quality considering that elevated constructions can become visual barriers.

<table>
<thead>
<tr>
<th>Model 2</th>
<th>Laan op zuid</th>
<th>Railway line</th>
<th>Metro line</th>
</tr>
</thead>
<tbody>
<tr>
<td>variant 1</td>
<td>tunnel</td>
<td>tunnel</td>
<td>+1 level</td>
</tr>
<tr>
<td>variant 2</td>
<td>tunnel</td>
<td>tunnel</td>
<td>tunnel</td>
</tr>
</tbody>
</table>

MODEL 2

Variant 1
In this solution the line does not affect the urban context like in the previous one being a visible and physical object in the space. The difficulty lies in the technical construction where the Laan op zuid crosses the metro line and the railway track which will be explained in the next session. The Laan op zuid and the railway track are no longer physical barriers in the urban context.
NEW CENTRALITY IN THE MAKING
WORKING TOWARDS AN INTEGRATED KOP VAN FEIJENOORD

Nodes

A

LAAN OP ZUID

Tram line

LAAN OP ZUID

B

LAAN OP ZUID

PARK

ROSESTRaat

RAILWAY

C

FEIJENOORD BOULEVARD

LAAN OP ZUID

Metro
Tram lines

To optimize the transport through the public transport, both the tram and bus lines are connected to the new station.

Tram lines 20, 23 and 25 are diverted to another route. The lines 20 and 25 do not go through the Biejerlandselaan to their destination. They are led through a side street to the Rosestraat, stop at the station and from there to their final destination.
By tunneling the Laan op zuid, line 23 follows the same route south as 20 and 25 to its final destination.
Only line 2 keeps its original route.
In addition, a new line is introduced, line 12, which connects the inner city with Ridderkerk.

An accessible node is a magnet for developments (Bertolini, 1998), in case of the Stadionpark station all transport means in the south goes through this point making the area attractive for developments and the area of south more accessible.
INFRASTRUCTURE

NEW CENTRALITY IN THE MAKING

WORKING TOWARDS AN INTEGRATED KOP VAN FEIJENOORD

Current road network

Beijerlandselaan situation after
Transit Node: Stadionpark station

Section Station

Public transport stops
Reference station exterior

Central station Turin, Italy

Reference station interior

Central station Berlin, Germany
Feijenoord Triangle plot

Structure

Boulevard
The basis of the design consists out of three main axis starting from the Boulevard op Zuid and finishes at the waterfront.
Along these axis the main program will be positioned.
The first axis in the area directly connects the Boulevard op Zuid with the Stadionpark station, the Kuip, the Veranda strip and the waterfront. This will become later one the Feijenoord Boulevard.

Stadionpark
From all over the area the Stadionpark should be accessible.
From the waterfront through the boulevard the stadium is directly accessible as from the station or else where in the area. From the boulevard there are 2 lines going straight to the stadium.
Besides the stadium the station should also be reachable whenever in the area.

Hierarchy between routes.

Urban form
Buildings

Buildings: Removed

Currently the main leisure activities are located in the middle of the plan, the veranda Strip, where there is no relation with the main axis. This paths, now only linking the Beijerlandsestraat to the waterfront, has no additional value. While paths should be leading to a place where something happens. Besides the starting and end point, there should be different activities, the place should be memorable and if the origin and destination are attractive the area will be welcoming (Lynch 1998).

In this situation the program of the Veranda trip should be removed and settled along the 3 main axis in the area.

Current situation
The Veranda strip lies between two axis, one of them the boulevard.

Buildings removed

Program of the Veranda strip positioned along the main axis.
Buildings Veranda strip

References new buildings

Pathe cinema

Cinema Building

View at the Veranda strip

View new shopping area

Shopping Buildings

Shopping Buildings
Buildings: Reused

The Kuip stadium is a monument with a rich history and cannot be demolished. Most of the sport events will be held in the new stadium. Like the old Arsenal stadium the Kuip will be transformed to establish housing and leisure facilities. Around the stadium new program will be added to keep the area around the stadium vividly.

De Kuip stadium

Around the Kuip some buildings will be added still leaving a part of the stadium visible. The maximum height is 20 meters.

Amsterdam Arena, The Netherlands

Old Arsenal stadium, Highbury
Exterior

Old Arsenal stadium, Highbury
Interior

This stadium was an football stadium which is transformed into apartments
Buildings: In

1. Commercial in the plinth, above residential
2. Commercial in the plinth, above offices
Residential and leisure

Office

Shopping and leisure

Office

Public functions and residential

Public functions and office

Commercial, office and residential
Infrastructure

Motorized traffic

Car and parking

Public transport
Non motorized traffic

Bicycle

Pedestrians
‘On successful city streets, people must appear at different times. The continuity of this movement (which gives the street its safety) depends on an economic foundation of basic mixed uses’ (Jacobs, 1992).

The program, mixed, is distributed over the entire area to stimulate the flow around the main squares, shopping streets during the day. For the residents or pedestrians to feel safe as Jacobs suggests, the night program is situated along the Boulevard, squares and the waterfront so the Arena Boulevard situation would not repeat, the area would be more vivid. Hereby this method compensate the absence of the traffic.

During major events, football, the public spaces, squares, waterfront, the boulevard, the main attractions would be placed here to relieve the inhabitants from the busy crowd.
Program

Housing

Office space
DESIGN COMPOSITION

NEW CENTRALITY IN THE MAKING
WORKING TOWARDS AN INTEGRATED KOP VAN FEIJENOORD
DESIGN COMPOSITION

DANIQUE ZIMMERMAN

Car
Pedestrian area

New
Existing
Renovate
Pavilion

Park
Public space paved
Public space green
Private space

40 > m
20-40 m
0-20 m
The Feijenoord Boulevard is the main axis in the plan connecting the Boulevard op Zuid (Beijerlandse-
laan) with the station and the waterfront. Along this boulevard the main program, residential, com-
mercial, leisure and cultural, is located.

This boulevard in the triangle has a width of 45 meters. This is chosen because of the events that might
take place during the year, annual markets, football events, that will attract a big mass of people. In
other words, event = scale = size. The boulevard should be wide enough to support the mass but dur-
ing the daily activities it should function normally. Besides one of the criteria for these kind of space
was that it should also be flexible, other program can also be added to or taken out of the boulevard for
example a pavilion can be added.
For this reason the design of the boulevard has limited design elements, benches, light poles and potted
trees. The space is left over for the pedestrians to walk freely from one point to the end of their destina-
tion.
For giving the boulevard a form, first urban elements trees, furnishers and water, had been used but the effect of the big space was still visible. There was need for an visible element between the urban blocks and the Kuip stadium. A linear block was the best solution, for shaping the boulevard.

Section a-a’
Section b-b’

FEIJENOORD BOULEVARD TRIANGLE

CITY LINE

Furniture Boulevard

urban street lights

sit element

big pots with tree
The Kuip podium

Section a-a’

Train Tunnel

STADIONPARK Station

ROSESTRAAT

KUIPPODOIUM

De Kuip
1. Two linear elements around the Kuip stadium

2. Large space between linear elements, urban blocks and Kuip.

3. Adding new linear element, space between buildings to small and with the big mass during events this composition does not fix this requirement.

4. The Kuip in a box with the stadium still visible. Space in between still big.

5. Breaking the box.
   Four linear elements around the stadium will create this new space around the stadium still leaving enough space for the big mass and by adding a block on the stadium the space between the linear block and the stadium is now 55 meters.
   The only problem is now how to separate the big crow after a match from the other buildings for
Flow during football matches in the new stadium.

7. To prevent that the buildings will be damaged after a game, on some places there is a level change and there where green elements, trees are planted to protect the buildings. This is the green zone.
The station is surrounded by two squares, the traffic square with the motorized traffic, taxi, Kiss & Ride, tram and bus lines and the second is the main station square. The station can be accessed in four ways, from the traffic square, the Boulevard, station square and from the Taxi stand. The station is transparent because like the new stadium, de Kuip stadium it should be also a landmark. Because of its transparency one has the feeling that he is outside but still inside.

The station square is the main square of the area and is surrounded by several programs to keep it lively during the day and night. On one side it is surrounded by a transparent station and on the other side by a block with several programs, residential, leisure and commercial.

Other like the Hague central station the square needs to be more than a space for bike parking or people to cross over. It should have an inviting character. The area will be designed as a lunge but still being flexible. One of the main criteria was that all public spaces should be flexible so then can carry several programs during the season.

Deign Traffic square
The Rosestraat which is a 4 line street will become at this point a 2 lane therefore creating space for an extra tram lane, in case of accidents.
Section c-c’

Design square

Urban lounge

Classic design
Feijenoord park

- Park design
- Urban park design around the buildings
- Strolling and bike paths
- Recreation facilities different ages
- Pavilions for events
Boulevard op Zuid /Beijerlandselaan

**Current situation**

Boulevard is taken over by the public transport and the cars leaving a small pavement for the pedestrians.

**New situation**

The Beijerlandselaan along with the Feijenoord Boulevard are now pedestrian areas. All type of motorized traffic had been removed from this street. Now it can be developed as a boulevard where the costumers can do their shopping not caring about the traffic. There is now possibility for new program and events.

Tram lines removed and cars as well.
Waterfront

Current situation

New situation section

Design waterfront

Buildings along the waterline

Different programs along the year
EVALUATION
EVALUATION: BEFORE

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WORKING TOWARDS AN INTEGRATED KOP VAN FEIJENOORD
NO LINK BETWEEN VIP PROJECTS
NO LINK WITH SURROUNDINGS
SPATIAL BARRIERS
BOULEVARD OP ZUID
VERANDA STRIP
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