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Foreword

Peter de Bois
TUDelft

New Towns in de Master program of the TUDelft
Urbanism

During the last 2 years, the city of Zoetermeer has been one of the research & design locations for the Master project MSc2 Urban Plan & City Analysis. The project was part of the curriculum of the Department of Urbanism, Faculty of Architecture, Delft University of Technology.

A group of 18 (inter)national master students have worked for 8 weeks on the subject of the MSc2 Urban Plan & Analysis Zoetermeer.

The chair of Urban Design made this choice for the city of Zoetermeer because next to Almere this city became one of the most important New Towns of the Netherlands and also in Europe.

The planning & design paradigm

If we look more closely to the planning, origination and development of New Towns in general, we can only be fascinated by its feasibility and the faith of designers & planners in the experiment of making New Cities. Not only in the Netherlands but all over the world the development of New Cities started almost from scratch in order to give space and life to an enormous amount of people. They where in search for a better life and place to stay.

Governments and local politicians made the decision to facilitate the planning of New Cities instead of extending the older existing cities more and more.

Because of this political decision New Cities where dominantly placed under the influence of these older cities, as well in there physical, social and economical content. The basic motivation was to give hope and prospect of a better future to inhabitants who game mostly from the worst parts of the older cities. The Garden City Movement and the CIAM made a clear statement about the instruments of planning & design and pointed out the necessary Urban and Architectural qualities to achieve this better world.

Unfortunately not every New Town paradigm was successful. Especially the CIAM doctrine turned out to be contraproductive mainly because of the strong division of functional patterns and the ambivalent distinction between private and public properties. It is of course easy to criticise their approach and ideas afterwards. In fact their ideas where as always a part of the actual situation they had to respond to. Nevertheless, today many New Towns find themselves in a critical position mainly because of the great lack of Urban and Architectural qualities. Some of the English New Towns, the
most famous one being Cumbernauld, need to be reinvented and rebuild in order to preserve the city for demolition. It argues that the ideas and paradigm who where meant to facilitate the cities with a sustainable physical construction and context did not stand the test of time.

**The challenge of make a New Town**

It is of course impossible to build up a new town in 30-60 years. Moreover the idea that new things are always better than the old ones is not always correct. We believe in modernity, there would be no reason to make something new then, is it. But is that a true statement and where does it fail? Unfortunately the concept of modernization is not enough to achieve a good effective balance of quality in New Towns. As soon as the new city derives from the tabula rasa we need to start the transformation as well to keep the city vital, alive and kicking. That is a contradiction in itself and most of the time a strange message to tell politicians and inhabitants.

Urban Vitality is based on a constant interactive flow between physical, social and economic qualities basically coming from private investments, not so much from public authorities. There are many definitions of Urban Vitality often related to the aspect of social activities. I consider Urban Vitality as the ability to triggering and maintaining a self-organized bottom-up process of re-validation and rehabilitation, related to this interactive flow. And I have reason to believe that within the triangle the physical component is pre-conditional to the other two aspects.

It is interesting to have a closer look at this aspect of vitality; it is the most important ability of cities, they exist because of their vitality. It makes them adaptable and flexible to support and facilitate the questions and need of constant change from the society, through all levels of scale. The society has been in transition all over the years and inhabitants of cities need other facilities than 30-60 years ago in their actual time–space budget of everyday life.

As we stated before, next to Almere Zoetermeer is one of the most important New Towns in The Netherlands and likewise in Europe. Both cities where developed in a period of city overflow. The case of Almere was related to the overflow of people from Amsterdam and Zoetermeer of the city of Den Haag.

**Risk management**

In general a New Town is: 1) A New City under influence of an old one, functionally more or les
depending on it: 2) A city built up in a short time with a simple or specific physical structure and a spatial stratification without risk and conflict: 3) A city with an unambiguous social-economical paradigm mirroring the concept of society.

The common motive is: 1) Usually fast and efficient building process for large groups of inhabitants out of the central dominant city, conform market principles in terms of housing and related to a specific lifestyle: 2) Often to solve the social and spatial problems of the dominant central city.

Most dominant factors within the motif: 1) The factor of TIME, represented by, the factor of planning, represented by time, fast process, technological attitude, functional segregation, urban hygiene, spatial solutions without risk: 2) The factor of IDEOLOGY-ACTION, represented by the principles of equality, spatial accessibility, social emancipation and security, break with the tradition of historical context, modernity; 3) The factor of TOPOGRAPHY-POSITION represented by the lack of historical context and urban rituals, a fixed unbound relation with the surrounding landscape, the tabula rasa.

The factor time in particular had a strong influence on the concept of the public space, the urban frame, and the whole set of streets, parks and squares in the city. The urban frame of a city is preconditioning for the way users of public space of the city have access to the city as a whole and the connected neighbourhoods. It facilitates the circuits of movement in the city related to retail centres and the urban anchor points like squares, parks and other places of life related action in the urban landscape. As a matter of fact it is preconditional to the identity and liveliness of the city as a whole. 1

To know the path is to rule the system

But, there is a strange contradiction in the relation between the process of planning a city, giving structure to its urban frame and the way we use this urban frame by living in it day and night. Planning the city, a serial process of making decisions became dominant and because of that most New Towns became cities with a serial spatial urban frame. Unfortunately the quality of urban life derives from coincidence, of parallel use of the spatial urban frame, a condition of being related in time and space.

In a serial spatial urban frame there is only one way to connect points of action/destinations, but we want to have more connections, differentiated in time and space, to make our own decision by using it. Urban life needs a
parallel urban frame.

Zoetermeer is situated in the so-called Green Hart “Groene Hart” of the Randstad, the Dutch Metropolis, a landscape interior made by water and low lands. This area is in essence the result of 1200 years of man-made water management. There is a strong resemblance to Almere, the New Town in the central lake/polder district of Holland. Because of this similarity it is interesting to visit and study the case of Almere because of the specific historical background, specific problems in regards to their spatial quality, public domain, spatial fragmentation, socio-economic development on the long term.

**The Anchor Point Research and Design project**

The proposed project will be focused on research and design related to these problems.

Urban and landscape Anchor points are important public areas in cities and probably they are most important because they provide us users of the public domain with day to day knowledge about our position, context in the city and collective cognition about where we are and why. Anchor points are those areas, spots and lines in the city frame indicating how are the places to be, to meet and to coincide with your friends. Anchor points are most important for orientation and cognition about the structure of the city and they give info about what your current position is, or what you would like to have in the urban frame. At the same time the connection with the whole collection of elements in the public domain is clear. We need anchor points to make decisions about are daily TIME-SPACE budget.

Zoetermeer will be subject of analysis & design in this anchor points project. Next to the city Almere Zoetermeer is one of the most important New Towns in the Netherlands, as well as in Europe. Almere has been an amazing interesting graduation assignment for the last 6 years.

Because of their short time development and specific history both cities have a lot of problems in common: 1) In regards to their spatial quality; 2) the use and coincidence of people in the network of the city, the public domain; 3) spatial fragmentation of the relation between almost all public areas of importance, the anchor points.

It weakens socio-economical development for the long term in cities in general but especially in New Towns due to their specific spatial construction. We will focus on 7 to 8 different types of anchor points. Each pair of students will be in charge of one of them in analysis and design. Functional and spatial interrelation
between the anchor points and their benefit for the city will be part of the workshop research and subject for the design assignment in the final phase.

We will work with a generic set of analysis & design methodological instruments. These instruments have been developed during many other assignments over the last 8 years including the New Town Almere laboratory. The instruments make it possible to compare the results of the different analysis groups, understanding the importance of the anchor points. It makes it also possible to interrelate the research outcome with research from other assignments and cities.

The analysis will be guided along 3 main issues according to the R&D model “Frame - Pattern – Circuit”, and 8 sub-factors of quality and Urban Vitality:

(1) “Frame”, complete network of streets, squares, public space.

(2) “Pattern”, all possible destinations, anchor points, landmarks

(3) “Circuit”, the projected functional system of routes and nodes

Within the FRAME the following aspects are included: 1) Reach, how far is the reach

<table>
<thead>
<tr>
<th>FRAME</th>
<th>PATTERN</th>
<th>CIRCUIT</th>
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<tr>
<td>frame</td>
<td>pattern</td>
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### Structural characteristics: Type of transformation / intervention:

- **everything is fixated, no real transformation whatsoever** (1)
- **“optimalisation”, repprofiling & capacity boosting** (2)
- **relocation of programme elements, functions** (3)
- **rerouting / diversion of people & traffic movement, flows** (4)
- **“Urban Acupuncture”** (5)
- **superposition of new structure and routing, "Hausmann”** (6)
- **redevelopment, f.e. of problematic Post-War quarters** (7)
- **all things variable, demolition, eradication, "tabula rasa”** (8)

**BOLD CAPITALISED** = fixated, unquestionable, invariable, leading

**regular** = flexible, questionable, variable, following

Fig. 0.5 the R&D model “Frame - Patter - Circuit”
for pedestrians, cyclists and car drivers: 2) **Connectivity**, how is the anchor point spatially connected to the city: 3) **Accessibility**, how many connections are available to reach the anchor point: 4) **Routes**, which type of routes are available from the anchor point.

Within the **PATTERN** the following aspects are included: 5) **Density**, how many inhabitants are housed within the territory of reach: 6) **Mixed functions**, which programmatic mix is available within the territory of reach: 7) **Uniqueness**, how many alternatives are offered in the city.

Within the **CIRCUIT** the following aspect is included: 8) **Identity**, what is the quality of the anchor point.

**The design assignment**

The design assignment for the last phase is based on comparison and a SWOT of the analysis results.

The content of this book will take you by the hand and will give you a splendid tour through the different Research and Design projects of our International Master Project of Zoetermeer. It will also guide you through the subject and importance of Anchor Points, the body of knowledge incorporated in the R&D tools and hopefully also the challenge and beauty of this New Town Zoetermeer in the Green Hart of the “Dutch Delta Metropole”.

**Future R&D projects**

The city of Zoetermeer will be subject for Research and Design for the coming time and casus for the IP, International Project Public City in April 2009 of the universities of Alicante, Berlin, Copenhagen, Krakow, Amsterdam and Delft.

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PART I
ANCHOR POINTS ANALYSIS

ANCHOR POINT A – MARKT
Michael J. Lievenoogen, Yi-Chung Huang
1st step analysis

Good connection to the RandstadRail but extremely short lines out of the centre.

Two other anchor points (station centrum west and station Zoetermeer) connected to randstadrail.

2nd step analysis

Much local streets connected but still very short lines.

Poor and few north-south connections.

Waterways out of the centre-area.

3rd step analysis

Only two roads go beyond 1000 meters of the anchor point.

Not a single connection to the south - south west and east of the centre.

Residential areas hardly connected within three steps.
CONNECTIVITY

To approach these assignments the definition and boundaries of the anchor point are crucial for the result of the number and length of connections. Both the market square and the 'stadhuis' square including the public space in between is defined as location area. All the lines connected to this area are very short. There is a weak connection to the old centre, it is connected by 3 steps although it is not a very logical route. In general, a connection to a structure on higher level, mainly concerning east-west and north-south connection is not there.

SWOT

Strength
- Water connection has the longest line which can link to much further.
- Randstad rail cover almost the whole Zoetermeer.

Weakness
- Poor connection on local scale especially to the north-south; just 1 road out of the area within 3 steps.

Opportunity
- Water way link to almost the edge of Zoetermeer.

Threat
- Short streets lines have difficulties to expand the territory.

Fig. 1.1.4 Connectivity map
REACH

Fig. 1.1.5 Reach - walk (radius = 1km)

Fig. 1.1.6 Time / spatial - walk (radius = 1km)(15 min.)

Fig. 1.1.7 Reach - bike (radius = 2km)

Fig. 1.1.8 Time / spatial - bike (radius = 2km)(15 min.)

Fig. 1.1.9 Reach - car (radius = 7.5km)
REACH

To determine the reach from the market, a division between walking and biking has been made. A bubble around the anchor point shows the reach and the barriers like dikes, roads and water decrease the range unless there is a passage. For walking 15 minutes is equal to 1000 meter radial and from the market you can easily walk into the residential areas. For biking 10 minutes is equal to 2000 meters radius and you can reach the edge of the city and landscape. 3 Anchor points can be reached walking and 4 by bicycle.

The theoretical reach is quite similar to the actual reach bubble because of the many passages. Only the highway is a big strong barrier, with just a few passages so there is a kind of division between a big part of Zoetermeer and the south part beneath the highway.

The reach bubble for the car is 7.5 km, which is equal to approximately 15 minutes drive in the city centre. With the car you can reach whole Zoetermeer and surrounding landscape areas and also cities like The Hague, Leidschendam, Voorburg, Delft and Bleiswijk.

SWOT

Strength
- The quantity of passages minimize the influence of the barriers - Ring roads and randstad rail track.

Weakness
- The quantity of passages, no matter for ringroads, randstadrail track or between two square, etc., is very dry and poor. (Fig. 1.1.11)

Opportunity
- Residential areas quickly reachable by distance and the quantity of passage way.

Threat
- Visual orientation is poor because of the high barriers. (Fig. 1.1.12)
ACCESSIBILITY

The accessibility on the higher level is mainly about the entrances to the centre and in particular the shopping streets. The dominating orientation of the shopping streets is east-west, and as a consequence so are the entrances to the area. The east-west direction of the Randstadrail is a strong factor in this matter, with also 2 stations in the area to amplify this structure.

On a local level the market is close to the station, in fact it is actually above the station. On this anchor point there is an intersection on horizontal level as well as on vertical level. In reality the entrances on both levels are there, but hardly noticeable. The function of the market square and ‘stadhuis’ square is quite unclear, the stadhuis-square does not even have an entrance to the cityhall, you would have to go to the market square. Also the entrance to, for example the station, is not good visible and the back and front of the buildings are unclear as well so the public space quality is not amplified at all.
ACCESSIBILITY

SWOT

Strength
- Vertical overlapping system.

Weakness
- Station entrances are almost invisible. (Fig. 1.1.16-17)
- Bad view lines from the station square.
- The combination of the entrance, square, facade made the role of both square unclear.

Opportunity
- The Markt Square has the potential to be the gate for city center.

Threat
- Different height level of pedestrian paths made the situation confused. (Fig. 1.1.20)
ROUTING

Although there are quite a lot of parking facilities in the centre, the routes directing to the parking garages and parking squares on local scale are too complex for the traffic. This is due to the short and curvy streets, which makes it hard to navigate. Unfortunately the bus stops are not at the city hall station but at station west while they could really make the market point a much more interesting point in the route.

The routes through the area are dominated by the east-west connection and attached to it some short north-south streets. The public space is created by the space left in between the buildings instead of designed as a recognizable and comfortable space for the public to use. The squares are a perfect example of it as they have not the function squares normally have in a city centre; meeting point, orientation point, place for terraces, benches and pocket parks. The squares in the Zoetermeer centre are more or less collections of streets coming to these points and have little identity. This is very regrettable because the squares could really amplify these routes.
PART I

1111 FRAME - PATTERN - CIRCUITS: TU DELFT

ROUTING

SWOT

Strength
• The location of parking lots are near by.

Weakness
• The squares is un-activate. They are not functional enough.

Opportunity
• Extend the route to the south - old city center.
• The size and natural condition let the Market Square have the opportunity to upgrade.
• Make use of the “hidden gardens” for better quality of the public space. (Fig. 1.1.26)

Threat
• Water way will be the barrier.
UNICITY

The offering of shopping facilities in the city centre is something you cannot find within a circle of 20 km nearby and is therefore unique. However the way the centre is designed is more functional than creative and unique. People from outside the city probably would not prefer Zoetermeer above The Hague of Rotterdam. The market itself can be subscribed as a square like to be found in any other city in the Netherlands. The only part that can differ from other squares is the water that is right next to it. However there is little interaction with it. In general the completion of squares is rather poor and without identity. This centre might be unique when a combination of water, nice squares, a good network of shops, public facilities and mixed functions are well balanced and interconnected with each other.

Fig. 1.1.27 Markt Square
Fig. 1.1.28 Stadhuis Square
Fig. 1.1.29 Market Station
Fig. 1.1.30 Square (radius = 400m)
Fig. 1.1.31 Station (radius = 400m; 800m)
PART I

UNEICITY

SWOT

Strength
• Combination of parking possibilities, public transport, program and public space.

Weakness
• No outstanding identities. The unicity is only unique in local scale not regional scale.

Opportunity
• Grote Dobbe is the biggest water territory in high densed urban area.
• Spare spaces in east side of central station. (Fig. 1.1.37)

Threat
• Two Randstadrail station - Central station & Central West - can be competitive with each other.
**DENSITY**

The buildings in the centre area are mainly the type of 3 stores high little rooms with shops at the ground level. Therefore it is not strange that compared to whole Zoetermeer the city centre has a high number of single person households and most houses are to be rented, much more than average in Zoetermeer. There are also a lot of elderly people living in this part of Zoetermeer, who have no job as well, probably because of their retirements.

While walking around in the city centre you do not quite get the feeling of being in a lively, crowded and dense part of a city which a city centre should give you. Some parts even are so empty or quiet that you would think it is just a neighborhood at the city boundary. The back of buildings in the centre often are dark and unpleasant and seem to form no part of an urban designed space at all.

Fig. 1.1.38 Density
PART I

DENSITY

SWOT

Strength
• Market is very opened to the south and have rich sunlight. (Fig. 1.1.39)

Weakness
• A lack of city image with middle density in city center.

Opportunity
• There are spare spaces for new constructions or landuse.
• Good infrastructure foundation. (Fig. 1.1.40)

Threat
• Potential danger for criminal behaviour in parking lots. (Fig. 1.1.41)

Fig. 1.1.39 Markt Square

Fig. 1.1.40 Infrastructure foundation

Fig. 1.1.41 Parking lot entrance
MIXED FUNCTION

The centre of Zoetermeer has a lot of functions, that are well spread through the area. There is a wide variety of functions within 15 minutes of walking from the market. However, because of the complexity of the routing structure in the centre these functions could be used much better if connected to a better network. The potential of the old village connected to the new centre can be realized in combination of including the mixed functions to the new network. It is remarkable that around the water near the market there are hardly functions, while this is an important binding area between old village and new centre. A route can be a condition for functions to settle but functions can be a condition for a route to arise as well.

![Map of mixed functions](image.png)

Fig. 1.1.42 Mixfunction
MIXED FUNCTION

SWOT

Strength
- With in 15 minutes walking distance (which is 1km radius territory), it offers a complete program. (Fig. 1.1.42)

Weakness
- The various function are spread in the radius of 1km.

Opportunity
- Foundation for development of north-south route.

Threat
- Scattered network of functions.
ANALYSIS CONCLUSION

To conclude the analysis in Market anchor point, all the SWOT of each topic have been reviewed and summarized the crucial missing element from frame and pattern analysis.

The image of the city, the context as being the city centre as a whole is lacking. For example, the density of construction, or the density of the pedestrian flow in the city center are not densed enough.

Confusing Identity: Not only in regional scale the uniqueness is not outstanding enough, but also in the local scale – which square is the front square of this anchor point?

Weak connection to the old city center and local residential area, especially in the south.

The dominate direction, west-east direction, at the moment is basically parallel to the boundary – A12 in the north, instead of crossing it.

(In)visible accessibility, particularly the RandstadRail station entrance on Stadhuis Square.

These are the key problems from the analysis, and latter on become the them for the strategic plan.

Fig. 1.1.44 Markt Square
STRATEGIC PLAN

More connection to the surroundings.

- Especially to the north for the Stadhuis Square.
- To the residential area in the east for the anchor point as a whole.
- Strengthen the link between the Markt Square and the old city centre.
- Water and green connection to Zoetermeer Lake in the north and Sport Park in south-east. Links to the regional roads.

Strengthen the identity and visibility of the centre itself.

- Landmark in the south of Grote Dobbe for clear direction to the city centre in both way.
- Make the station visible by open the Stadhuis Square.
Fig. 1.1.46 RGBG strategic plan
Fig. 1.1.47 Strategic plan diagram
PART I
ANCHOR POINTS ANALYSIS

ANCHOR POINT B – CENTRUM WEST

Jeroen van den Heuvel, W. Yao
**CONNECTIVITY**

The city highway is important in the structure of the city because the centrum west station is right next to it. Thereby the whole city highway is the first step in the three step analysis. Besides how the anchorpoint Centrum West is positioned in the city it also gives a clear view on the city structure.

The city highway divides the city in sectors from A to F. Within these sectors the connectivity is different depending on the city structure.

Sector E is by far the best connected sector with a structure of crossing lines long and short. It covers amongst others the old village and the new city center.

The old and the new city center are both connected to the station, but they are not connected to each other.

In sectors A and D you recognize modern planning with a district round way which connects to the city.

Within the district however the connectivity is bad with almost no lines.

In sector D there is also a big bike and pedestrian network (the red lines). This indicates advanced traffic flow separation.

Sectors B and C are the most poorly connected with almost no connectivity lines at all.

Besides the different sectors there are two other aspects that stand out:

1. From the Centrum West station every other anchor point in the city is reachable.

2. The polder to the north of Zoetermeer is well connected; even better then some districts in the city.
CONNECTIVITY

From the first step analysis you can see that the city highway is a good connector on the global scale and local scale; in the first step in connects to two other anchor points. To the Stadhuisplein/markt it connects locally (bikes and pedestrians only) and to the station of Zoetermeer it connects globally.

From the second step Centru West connects to almost all other anchorpoints besides one, and that is Snowworld. The other anchorpoints are in the second step all only globally reachable.

In the third step the last anchorpoint is reachable; Snowworld. This is also an global connection.

The conclusion can be that all anchorpoints are globally reachable from Centrum West and only two (Stadhuisplein/markt and station) are locally reachable in the third step.
CONNECTIVITY

In picture 1.2.3 you can see the structure of the different districts in Zoetermeer across different time periods.

They are seen from the city highway which is a global connection but because it is so extensive you can also get a good idea of the connectivity of each district in relation to time.

The village has the best connectivity due to the old structure on which this district has its foundations.

Palenstein is a small district which consists of a ring road with high-rise buildings and green in the middle.

Driemanspolder has similar characteristics only this district is hang-up on an old structure line running at the top of the district.

Meerzicht is a classical example of Modernistic planning, while Leyens and Seghwaert have finegrained dwelling structures which are also dependent on ringroads.

Fig.1.2.3  connectivity of the different districts in time
CONNECTIVITY

Zoetermeer has a central location in southern Holland. The train and Randstad Rail only provides a east-west connection and that is the reason Zoetermeer has an extensive busnetwork connection to the outside.

This bus connectivity to the outside is concentrated in two hubs; one is station Centrum West and one is the central train station of Zoetermeer near the highway.

The reason there are two hubs has to do with the different locations. Centrum West is classical the city center near to the main shopping district and the center of power. The other location is a transport hub near the highway and access to the main train line from the Hague to Utrecht.

In most cities these two are more of less combined, like for example the central station of Amsterdam.

Fig. 1.2.4  Busnetwork connectivity from Centrum West
CONNECTIVITY

The separation of these two has advantages and disadvantages. An advantage being the fact that the highway, main train station and bus station are combined in one hub. A disadvantage being that this hub has little or no public quality because it is located far from center of activity.

If you look at the connections from both hubs you notice that the connectivity is almost identical. With the Zoetermeer central station concentrating more on inter regional fast bus connections and the Centrum West hub more concentrating on local more slow bus connections.

The only difference in connectivity is that Centrum West is more connected to the north and Zoetermeer central station is more connected to the south.

Fig.w 1.2.5   Busnetwork connectivity from Zoetermeer station
CONNECTIVITY

SWOT

Strength
- The anchor point has good global connectivity due to direct access to the city highway.

Weakness
- The anchor point has bad local connectivity due to connectivity lines which are not fully developed.

Opportunity
- A better local connection to the village and Driemanspolder (central station) (commercial) and to de Leyens/Buytenweg (residential).

Threat
- Decreasing global connectivity due to traffic jams or parts of the city not connected to the city highway.
REACH

Picture 1.2.6 shows the theoretical reach for pedestrians and bicycles. The reach for cars could also have been investigated but because Centrum West is a public transport hub only pedestrian and bicycle reach is relevant.

The theoretical reach is depicted by circles and these are based on a radius for pedestrians of 1 km and for bicycles 2 km. Within the circles and outside the circles there are barriers, depicted as red lines and there are holes or passageways in these barriers depicted by red dots.

The barriers can limit the reach depending on the amount of passageways within the barrier. Barriers can be formed by massive infrastructure like busy roads and train tracks. They can also be formed by waterways or other landscape elements.

Fig. 1.2 6  The theoretical reach from Centrum West for pedestrians (left) and bicycle (right)
The actual reach for pedestrians is good, they can come almost everywhere from the Centrum West station. The only exception to this in the west where the Randstad Rail forms a barrier to the west.

The actual reach for the bicycle is quite well. The barrier to the north thus conceals mostly the polder in the north and a little of the city to north east but this is not very bad because these are not vital parts of the city.

The barrier in the south is more problematic, it only gives the cyclist two options to reach the south of Zoetermeer. You can conclude from this that the south is more or less cut off from the north.

Fig. 1.2.7 The actual reach from Centrum West for pedestrians (left) and bicycle (right)

REACH

SWOT

Strength
- The actual reach is good for both cyclist and pedestrians, there are barriers but these have enough passageways.

Weakness
- The passageways in the barriers are sometimes of poor quality.
- The south of Zoetermeer is more or less separated from the north, because the highway is a large barrier with few passageways.

Opportunity
- Bring quality to passageways in barriers by using a combination of design and program.
- Connect the north to the south through the central station and highway (combination of design and program).

Threat
- Passageways are barriers due to safety issues.
ACCESSIBILITY

Picture 3.1 shows the accessibility of the Zoetermeer Centrum West station. The anchor point has 6 entrances of which the north entrance is the most important from a global perspective. This main entrance is used by cars and buses to enter or leave the anchor point from the city highway.

On the east side of the anchor point there are three entrances of which the middle one is the most important from a local perspective. It gives entrance to the shopping mall and the city center. The other two entrances on the east side are supportive to the before mentioned entrances.

That leaves the south and the west entrance. The south entrance is local connection for cyclist and pedestrians only to the Zoetermeer central station and the west entrance gives access to the road leading into the Hague.

Fig. 1.2.8 The accessibility overview of Zoetermeer Centrum West station with connections
ACCESSIBILITY

Now we take a more detailed look at the access point or entrances for the Centrum West anchor points.

The yellow access points are all infrastructure oriented. The north access is the most important, but the other two are also potentially so, especially the west access point. This entrance gives access to the main road leading into the Hague. Now the entrance is poorly recognizable and has little quality. Also the line extending from this access point has little public quality but potentially it could be much more.

The east infrastructure access point now is a backstreet to the city center shops which runs parallel to the city highway east-west. In theory this entrance could be more important if the line running from this access point is upgraded and made more public.

The green access points are the local and informal entrances.

The east entrance gives access to the housing district at the other side of the city highway. Normally this access point and the infrastructure access point in the north would be one and the same but because of the massive infrastructure fast traffic and slow traffic have been separated. One of the consequences of this is that entrance scores potentially bad on public safety.

The south entrance is important because it gives access to the line leading to the central train station and the south of Zoetermeer. The bridge across the train tracks is nicely designed. This entrance has definitely got something to expand on.
ACCESSIBILITY

Pictures 1.2.10 are impressions of access points meant to point out the following:

1. Main access to the city center designed as a flashy city gate. Esthetically pleasing but it emphasizes Centrum West as being outside the city.

2. Secondary access to the city center. Again esthetically pleasing facade to the left but little or no interaction with the public space of the street. This is especially important because the right side offers also no public quality.

3. Main access point to the Hague. Clearly the end of the city and no-go area.

4. Access point to the housing district across the city highway. The tunnel is necessary but potentially a public safety hazard. Again a flashy facade but no interaction with the public space of the street.

Fig. 1.2.10 Four impressions of access points at Zoetermeer Centrum West
ACCESSIBILITY

SWOT

Strength
- Buses and cars have a fast and direct connection to the city highway and with that to the regional highway.
- The south access point leads directly to the central train station and to the south of Zoetermeer.

Weakness
- The west access point (and line coming out of this access point) is of poor public quality while it is the main local connection to the Hague.
- The informal and infrastructure access point on the east side both need more interaction with the facade to add public.
- Quality.

Opportunity
- Upgrade the west access point and line running from there to the Hague and make it a city axes (connect Snowworld).
- Add more public quality to streets by opening up the facade to the street.

Threat
- The connection to the central train station degrades further due to erosion of program in Driemanspolder.
ROUTING

Centrum West is mainly an infrastructure junction with little public quality. The anchor point is unpleasant for travelers to find their way because of the massive infrastructure and the out of the way location.

Because it effectively located outside of the center (no pattern) people do not have a reason to stay here.

There is no clear and logic station square structure. It is assembled out of lose parts which do not form a whole, like with other station squares. The main public space in dominated by a big viaduct effectively separating the square. Also the relation Randstad Rail station vs. square is imputable, not clear.

The Centrum West anchor point has to all sides very nasty borders and no amount of green pastures or design can counteract that.

Fig. 1.2.11 The routing of anchorpoint Centrum West
ROUTING

SWOT

Strength
- The location has a very good position in the urban fabric.

Weakness
- Centrum West is an unpleasant anchor point because of the massive infrastructure and because there is no pattern/program.
- The station has no logic station square structure.

Opportunity
- Add more program to the station square and try to emphasize more on the public space instead of the massive infrastructure.
- Find a way to directly connect the station (square) and city center (shops); orientate the station on the shopping center.

Threat
- Less routes to Centrum West because they are not used any more.
**DENSITY**

Highways divide the reach area by foot of Centrum-West station into four parts, which belongs to four neighbourhoods with different figures of density and different compositions of housing types. Except the one to the east of the station, neighbourhoods were isolated from each other and also from the station and the city center due to the block of the highways, local connectivity condition to the west and the north is poor and little entrances are purposed for residential areas.
DENSITY

SWOT

Strength
• There exist a variety of housing patterns, which are near the main traffic systems (highways, randstad light railways, bus lines) of the city, within the reach area of Centrum-West station by foot.

Weakness
• Neighbourhoods' living quality within the foot reach area of the station is low and nearly all of them are isolated from each other because of the highways.

Opportunity
• To improve the living condition and to develop high-quality neighbourhoods.

Threat
• It is hard to solve the problem of isolation between neighbourhoods and city center across highways.
**MIXED FUNCTION**

Within the walking reach area of the Centrum - West station, the relatively more prosperous area of the city, densities of shops, bars, restaurants, offices can obviously be observed higher than those in other areas of the city, especially around the main shopping street connecting the station and the center. Other functions, however, are equally scattered within all the rest neighbourhoods and open spaces.
MIXED FUNCTION

SWOT

Strength
- The Centrum-West station is directly linked to the city center, where various kinds of functions gather together.

Weakness
- Distributions of shops and bars are not well-organized.

Opportunity
- To organize the distribution of shops and bars in such a way that they can strengthen the importance and prosperity of the city center.

Threat
- Whether the combination of the station and the city center and the re-organization of the functions can be successful depends on the quality of spatial design and needs support from local merchants.
UNICITY

There are another two stations, the Zoetermeer station and the Oost Zoetermeer station, that compete with the Center-West station.

However, all the bus lines that stretch into the local area start from the Center-West station while the Zoetermeer station share only the lines 121, 204, 170, 50-54 and 380-383, the East station only share the lines 50-54 and 380-383. These lines focus on exterior connections which means the Center-West station do have a better connection with the local area than Zoetermeer station and Oost Zoetermeer have.

Further more, the light-rail circuit going through the Center-West provide more convenience.

Fig. 1.2.16 Unicity of bus station

42  ZOETERMEER ANCHOR POINT RESEARCH 2009
**UNICITY**

**SWOT**

**Strength**
- All bus lines which spread over both the local and regional area start from this point

**Weakness**
- The physical condition of the station is bad with three sides isolated by the highways

**Opportunity**
- To integrate the improvement of the station as one part of the re-organization of the city center and to add more bus lines serving the local area to Zoetermeer station and Oost station so that the three stations can co-operate within one system

---

Fig. 1.2.17 Randstad lightrail v.s. railway

Fig. 1.2.18 Bus lines going through centrum west station

Fig. 1.2.19 Bus lines going through Zoetermeer and Oost Zoetermeer station
### EVALUATION

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<th>Comments</th>
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<td>Frame</td>
<td></td>
<td><strong>Connectivity</strong> - + There is good global connection due to direct highway access, but there is bad local connectivity because the lines are present but not fully developed.</td>
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<tr>
<td></td>
<td></td>
<td><strong>Reach</strong> + The reach for both cyclist and pedestrians is good, despite a few barriers. These barriers due have enough passageways but they are sometimes of poor quality.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Accessibility</strong> - + The accessibility on a global scale (for buses and cars) is of good quality. To the south the accessibility shows a lot of potential, towards the train station. However the important access point to the west, towards The Hague is really of poor quality.</td>
</tr>
<tr>
<td>Pattern</td>
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<td><strong>Routing</strong> + Centrum West is an infrastructure orientated station square with a lot of “fancy design” but with little public or programmatic quality and an illogical square structure.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Density</strong> - There exist a variety of housing patterns around the station while most of the residents can not directly get to it because of the highways between them. Besides, living quality of these neighbourhoods is poor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Mixed function</strong> + The city center is linked to the station by a path with dense functions (especially shops, bars and offices) along both sides. These functions are equally scattered within the area around the station which means no specific point is emphasized.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Unicity</strong> + Center-West station has the advantage of being near the highways and owning the randstad light rail lines and all the local bus lines. The design of the station itself needs improvement, however.</td>
</tr>
</tbody>
</table>

![Diagram](image-url)
Red

There are another two stations, the Zoetermeer station and the Oost Zoetermeer station, that compete with the Center-West station.

However, all the buslines that stretch into the local area start from the Center-West station while the Zoetermeer station share only the lines 121, 204, 170, 50-54 and 380-383, the East station only share the lines 50-54 and 380-383. These lines focus on exterior connections which means the Center-West station do have a better connection with the local area than Zoetermeer station and Oost Zoetermeer have.

Further more, the light-rail circuit going through the Center-West provide more convenience.

Green

Between the Ierlandlaan, de Van Leeuwenhoeklaan and the Dublinstraat there is a possibility to create a nice city park on the crossing of two important lines west-east and north-south.

Grey

It is important to develop the Centrum West station further as an 'classical' station in the middle of a settlement, like there are so many in The Netherlands. Important for this development is the adding of public and programmatic quality as has been stated. Centrum West has to take advantage of its excellent location, where low scale and high scale lines come together and develop especially the low scale lines how in Centrum West can be connected to the high scale lines making of Centrum West a knot in the city.
PART I
ANCHOR POINTS ANALYSIS

ANCHOR POINT C – HOSPITAL
Shih-Hao Tseng, Tom Schilder

- Hospital (C)
- Snow World (H)
- Shopping Center (F)
- Railway station Zoetermeer (G)
- Sport Park (E)
- School (D)
- Markt (A)
- Centrum West (B)
CONNECTIVITY

FIRST STEP

There is one dominant connection to the north to the lower scale. Another is the north-south main road which connects to the regional scale. The 1st step waterway directs to west and south.

SECOND STEP

The connectivity is higher in the north community. A few short connections appear in the west and south. Only a few short connections exist to the east community. The main road connects to the east-north community and in the south to the main ring road of the city. The 2nd step waterway connects the big lake in the north and canals to the west.

THIRD STEP

The dense connections to the west and north neighborhood reveals a strong local scale connection. The connection to the east part is poor due to the strong obstruction of the canal.

The main ring road links to the city center and to the higher level highway to the regional scale.

The 3rd step waterway connects to the canal of the Meerploder and lakes north-east.
CONNECTIVITY

The first step connects the hospital to the Zoetermeerse Plas which is a big lake and recreational area in the north of Zoetermeer.

With the second step we can reach a supermarket (Lidde) and the city centre as well as the ROC schools and the sports centre.

The third step connects the hospital to the Central Station of Zoetermeer and a big industrial zone. The SnowWorld area is also connected within the three step analysis.
CONNECTIVITY

GOOD CONNECTION TO GLOBAL AND LOCAL SCALE

CONCLUSION

- The local scale connections to the north-east, west neighborhood and water area is very well.
- The hospital is well connected to the global scale via the highway.
- The connection to the east community is very poor.
- There is a good connection to the city center for car but a bad connection for bike.
- From the location point of view, hospital is situated in the best place between natural and urban environment. It is easily accessible to nature as well as accessed from the city center.
CONNECTIVITY

SWOT

Strength
• First step connection to the global and local scale.
• Good local connection to the west and north.
• Good connection to the water.
• Connected to the Central Station within three steps.

Weakness
• No connections to the east.
• Local connection is concentrated, not spread out.
• Bad connection to city centre.
• No connection to south of Zoetermeer.

Opportunity
• Water connection to the lake.
• Improve connectivity to the east

Thread
• The main roads are global connections but also barriers.
• Complex road system in the neighbourhood decreases connectivity.
REACH

WALK REACH

The radius for walk reach is 1 km which is approximately 15 minutes walking. Biggest barriers are the ring road and the Zoetermeersche meerpolder. Only the direct neighbourhood of the hospital is within the walking reach.

BIKE REACH

The reach by bike is 2 km which is no more than 15 minutes of travel time. The biggest boundaries in this case are the highway and the canal surrounding the Zoetermeersche meerpolder. In this diagram we can see that the south part of Zoetermeer is not in the bicycle reach.

CONCLUSION

The actual walk reach area is slightly reduced by the Zoetermeersche Meerpolder. The south of Zoetermeer is not within the bicycle reach of approximately 15 minutes.
**REACH**

**CONCLUSION**

Although a large area of Zoetermeer is within the bicycle reach, it is mostly not connected to the Hospital.

Within the walking reach the west and north part of the hospital are connected quite good, the east is not.

Fig.1.3.10. Actual reach & connectivity
REACH

SWOT

Strength
• Walk reach is not affected by the barriers
• City center is within walk reach
• Lake is within bike reach
• More than one RandstadRail stops are within walk and bike reach
• Barriers in bike reach do not have much affect
• All RandstadRail stops are within the 30min travel time to the hospital.

Weakness
• Dike of Zoetermeersche ringpolder is barrier to approach the landscape
• South of Zoetermeer is out of reach
• Central station and sports centre are not within the reach

Opportunity
• Make polder more reachable

Thread
• Although water is within reach, no one will use it
ACCESSIBILITY

ENTRANCE

The north entrance is the most important node to connect to the global scale and to the local scale (1st step) and also is the main parking entrance.

The other entrances are well connected to the neighbourhood to the lower scale.

VISUAL CONNECTION

In the north, RandstadRail is built as a dike which blocks the visual connection from the north. Regarding the east side, the bush and the opposite neighbourhood totally obstruct the view to the hospital. The visual connection to west and south side is very well.

Fig.1.3.11 Entrance and Visual connection map
ACCESSIBILITY

- Main access is mostly from west neighborhood.
- Only one tunnel across RandstadeRail access from north.
- Although there are four bridges cross the canal but only two cross the main road link to the hospital, therefore, the accessibility is very poor from east.
- There is not much access from the city center, and the walk access is very rare.
- Access from RandstadRail stations is very unclear. People can not see hospital directly and do not know which way to go.
ACCESSIBILITY

CONCLUSION

- Car access from city center is based on the main road on the north.
- Lack of car access from east side and lack of bike access from the city center.
- Most access are placed in the west and connect to the neighborhood.
- Although there are four bridges which cross the canal only two connect to the territory.

LEGEND

- car access
- bike and walk access

Fig.1.3.14. Entrances to the hospital
ACCESSIBILITY

SWOT

Strength
• Main entrance is close to the main road as well as the emergency entrance
• Bus stops beside the hospital
• Open visual connection to the west neighbourhood

Weakness
• Visual barrier to north & east by RandstadRail and bushes
• East entrance is less accessible
• Only few access from city centre
• Bad accessibility from RandstadRail stations
• Only one access from the north

Opportunity
• Connect bridges from east to the hospital for more accessibility
• New main entrance directly to the main road
• South expansion can have better connectivity to the city centre and the south part of the city

Thread
• The existing main entrance is limited for the heavy traffic
• RandstadRail is a barrier for new entrances
• Complex local road system
CONCLUSION

- There is a ring road which surrounds the hospital as the direct connector to the urban network.
- East part of territory is occupied by car routes for parking.
- There is one walk route in the middle of the territory but it does not penetrate the territory.
- Lots of bike and walk routes are in the west which connect to routes in west and south neighbourhoods as well as to the RandstadRail station.
- Bus route runs on the main road and stops in front of the main entrance.
- Some open space is placed in the west side between neighbourhood and hospital.
- Fig. 4.2 shows that the access and visual connection is blocked by the building and it is hard to understand the route in the east community.
 ROUTING

SECTION A
The section shows a friendly open space between hospital and neighbourhood.

SECTION B
The section illustrates heavy infrastructure in the east and it is hard to cross to the east community.

SECTION C
The north section indicates heavy traffic and elevated RandstadRail are strong barriers.

SWOT

Strength
- Good car routes because of ring road
- Routes are mostly local scale

Weakness
- No route in eastern and northern part.
- Car & walk routes are clearly separated

Opportunity
- Create global routes in North South direction
- Create local route in East West direction
- Create mixed function within the local route

Thread
- No global route
- Dominant main road is a barrier.
DENSITY

- The east part of the walk reach area has higher density than west part.
- There is approximately 10 to 15% of the area which is not residential but occupied by parks, canals and infrastructure.
- There is not so much variation within the area, this means similar programs and building types surrounds the hospital.

Fig.1.3.20. Density map
Raduies: 1 km  Walking time: 15min
CONCLUSION

- The connectivity of hospital is mainly distributed in the relatively lower density area and almost none in higher density area.
- Hospital is placed in the area with more public open space means that people could use this space when they go to hospital.
- The routes in relatively lower dense area would be used frequently.

SWOT

Strong
• Located efficiently in high density area of the city.

Weak
• Denser area in east makes visual connection difficult.

Opportunity
• 10-20% open space could be profitable for hospital.

Threat
• Not much space to extend the hospital
UNICITY

ADVANCED INSTRUMENT

'T Lange Land Hospital and Haga Hospital achieve together a new kidney dialysis center in Zoetermeer. Kidney patients from Zoetermeer do not have to travel to other hospitals anymore which saves them a lot of travel time.

CAR REACH

The hospital in Zoetermeer is considered as a regional scale hospital. The ambulance must reaches the emergency within 8min and that is about 6km radius area. The car reach map shows that the regional scale hospital is quite enough for south Holland region. Their service areas are all overlapped and Zoetermeer hospital just covers the central area which is excluded by surrounded hospitals.

LEGEND

Regional hospital with kidney dialysis center
Hospital Car reach 75-100
Competitive hospital car reach

Fig.1.3.23. Normal visitor reach map
Travel time: 20 min Reduction: 10 km

Fig.1.3.24. Ambulance reach map
Travel time: 8 min Reduction: 6 km
UNICITY

SWOT

Strength
• Only one hospital in Zoetermeer
• Kidney dialysis centre
• People of Zoetermeer have more options

Weakness
• Hospital does not co-operate with a university
• Cannot compete with other hospitals

Opportunity
• Specialisation in one medical area will attract more people and improve unicity

Thread
• More people means more cars, more parking space is needed
MIXED FUNCTION

- There are not many different functions or programs near the hospital.
- The biggest concentration of functions is in the city centre.
- Shops, restaurants and schools are the most programs nearby the hospital.
- Mixed functions nearby the hospital are concentrated in three linear areas. See Fig. 7.3

---

**LEGEND**

- Shopping Street
- Shop & Supermarket
- Bars & Restaurants
- Office
- School
- Sport Facility
- Cultural Facility
- Religious Facility
- Public Facility
- Green Space
- Parks
- Parking Lots
- Concentrated area
MIXED FUNCTION

CONCLUSION

Although the hospital is not in the area with the most mixed functions, which is the city centre, the location is still within the walkin reach which means that people could access this area by foot.

The connectivity shows that the hospital has some but not enough access to the most concentrated area.

SWOT

Strength
• Most concentrated mixed functions are reachable within walk reach.

Weakness
• Not much functions near hospital

Opportunity
• To add functions, for instance flower shop, restaurant, pharmacy.
• The good location next to the main road could be profitable for the new added functions.
• The present concentrated function area is formed as linear distribution could be enhanced as shopping street.

Thread
• Not much space for new functions.
## EVALUATION

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<td>Connectivity</td>
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<td>Improve local connectivity to zoetermeer east</td>
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<td>Reach</td>
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<td>Mixed function</td>
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<td>There is not much functions nearby</td>
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<tr>
<td>Unicity</td>
<td>++</td>
<td>The hospital is unique in the city and also make up the deficiency of south Holland region</td>
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Fig. 1.3.27. Almost invisible from east community

Fig. 1.3.28. Back yard

Fig. 1.3.29. Main road as the barrier

Fig. 1.3.30. Overall view

Fig. 1.3.31. Weak connection to the east

Fig. 1.3.32. Weak connection to the east 2
RGBG MAP

RED

- New programs will be placed at both sides of the main road, for instance, flower shop, cafe etc.
- New parking space will also be set in the second level of the new program next to the present parking lot.
- Visual and physical connection from the station to the hospital should be improved to have clear direction.
- The access from the city center should be adjusted strictly to link the territory.

GREY

- New bridge for car will be set to link the car route from the east.
- The north present pedestrian bridge will be changed its direction to connect the main road in east neighbourhood.
- Traffic lights will be arranged in the main road to slow down car speed and to allow people to walk across the main road.
- South pedestrian bridge should be continued to go further.

GREEN

- Green corridor will be placed to connect the inner park to increase the accessibility to the open space than benefit those patients.
One of the fundamental issues of this case is the segregation of the east neighbourhood by the main road. Another problem is insufficient parking space. Roadside parking space in the neighbourhood is mostly crowded by hospital visitors in the daytime bringing annoyance to inhabitants. The proposal is trying to improve the connectivity to the surrounding and to create a people-based space between hospital and neighbourhood by redesigning the main road.
PROPOSAL I

NEW SHOPPING STREET

- Concentrate the road and roadside parking in the middle.
- Replace the green to the east side in front of the existing neighbourhood.
- Add shops in both sides of the main road to form a shopping street.
- Establish two new pedestrian crossings to create more walking routes.
PROPOSAL II

NEW CENTRAL SQUARE

- Separate the main road into two streets.
- Place a new square (40*60m²) in the middle of the streets.
- Add new shops in the north and south of the square.
- Downgrade the main road to a more local street.
INTERVENTION

The primary intervention is to improve the segregation of east part. Whereas the main road goes to the north to the natural landscape and could be down-graded as local street. Therefore, width and speed could be more friendly to people to allow them directly walk across the road. After that, more space is spared for more programs such as shops and squares. Than the main road becomes a new center for the neighborhood.

After placing the two crucial bridges, car and walk access are created to connect the east neighbourhood. The connectivity is completely improved in east and south part. The Hospital becomes much more accessible from each direction and people could enjoy other mix functions and more parking space in the same time.
INTRODUCTION

School triangle | Van Doornenplantsoen

Anchorpoint D is a school region (10 hectare) which is located in the east of the city centre (Stads-Centrum) at a small distance. It houses three schools with a total of around 5000 students:

Secondary education:
1. **Erasmus College**
   - VMBO, HAVO, VWO
   - public, catholic, protestant

2. **Stedelijk Lyceum**
   - VMBO
   - public

Vocational education:
3. **ID College**
   - MBO
   - Economics, Health care, Welfare, Sports & Movement, Security, Cosmetics, Education

The school region is given a triangular shape by the canal Leidsewallenwetering, the city ring road (Australieweg) and the RandstadRail.

---

Fig. 1.4.1 Location map
INTRODUCTION

Fig. 1.4.2 Stedelijk Lyceum VMBO

Fig. 1.4.3 ID College MBO

Fig. 1.4.4 Erasmus College VMBO, HAVO, VWO

Fig. 1.4.5 Area of three schools

Fig. 1.4.6 Plan of three schools

School  Sports field  Parking lot  Glass house (Practical lessons)
1st order steps

Only one grey line touches the school triangle
No connections to west side of the canal
Long water connection (old element)

1st and 2nd order steps

One connection to city centre
Inner ring neighborhood Seghwaert South-West connected
Connections to borders of neighborhood Palenstein
Grote Dobbe connected
CONNECTIVITY

1st, 2nd and 3rd order steps

Second connection to city centre (only for bicycle use)
Outer ring Seghwaert North-East connected
Lines into Palenstein
Connections to old centre (Dorp)
Water connections stretching to Leidschendam
CONNECTIVITY
FUNCTIONAL CONNECTIVITY

AUTOMOBILE SYSTEM

The canal Leidsewallenwetering prevents many possible connections to the school triangle. The connection to Australieweg and the main ring road of Zoetermeer is very weak (it takes five steps). The RandstadRail is isolated from the whole urban network, which deteriorates the connectivity to the surrounding areas. More under-bridges can be a good way to improve it.

BICYCLE SYSTEM

The bicycle system has better connections than the automobile system (however, the improvement is still not enough). Students who study at one of the schools (especially those from the high schools), highly depend on the bicycle system. It requires more efficient connections to the surrounding residential areas and the city centre.
There are 3 barriers around the anchor point, which also define its triangular shape. The barriers are the old canal connecting to Leiden (blue line), the city ring road (at raised level) and the RandstadRail (grey lines). They highly diminish the connectivity of the schools. The highway A12 reduces the connectivity towards the south of Zoetermeer.
CONNECTIVITY

DICHOTOLOGY OF FRAME

There is a clear dichotomy within the structure of the frame in Zoetermeer. The main direction in the western part of Zoetermeer is east-west orientated, while the main direction in the east is north-south orientated. The 1st, 2nd and 3rd order steps in these two parts are very much related to this dichotomy. This can be clearly seen in the connectivity analysis of the school triangle, in which the lines connect to either north or south, but not to east and west (city centre). The canal (Leidsewallenwetering) plays a leading role in defining the boundary of the dichotomy. Although the A12 separates the northern and southern part of Zoetermeer, the main directions in the south are equal to the northern areas.
CONNECTIVITY

SWOT

**Strength**
- Connection to new and old city centre within 3 steps.
- Next to RandstadRail and connect to RandstadRail in the 2nd order step.
- Connecting the main roads of the neighborhoods in the north (Seghwaert) and south (Palenstein). It makes more neighborhoods connected even if they are not next to the schools.

**Weakness**
- Leidsewallenwetering blocks the connection to the city centre: it only touches the border of the city centre, instead of going further into the centre area.
- The connection to Palenstein does not reach the low rise housing, only the high rise in the boundary have been connected.
- The connection to Australieweg and the main ring road of Zoetermeer is very weak, which takes five steps. It prevents the connection of the school triangle to the west and south direction.
- RandstadRail is isolated from the whole urban network, which deteriorates the connectivity of the surrounding areas.
- Connections to the neighborhoods stay at a more global level, while the local roads of those neighborhoods are rarely connected.

**Opportunity**
- Since the good location of the school triangle next to the city centre, the RandstadRail and the ring road Australieweg, there is an opportunity to strengthen the connection between them. It may lead to a strong connectivity of the global level.
- Under-bridging the RandstadRail and Australieweg can be a good way to improve the connectivity.

**Threat**
- The school triangle is isolated as an island in the city. Even if it is close to the city centre and the RandstadRail, people still feel difficult to find it. If there is no strong identity of the schools, the region will lose a lot of potential students especially those who do not live in the surrounding neighborhoods.
REACH

SPATIAL-RELATED REACH (RADIUS OF 800M)

Based on the size of the school triangle of 10 hectare, the spatial-related reach is a circle with a radius of 800m.

Ca. 80% of the potential reach is covered (which is the actual reach).

There are three main barriers, which reduce the efficiency of the potential reach:
* Australieweg (city ring road)
* Leidsewallenwetering (canal)
* RandstadRail

The influence on reach in the local scale is that the southern part of Palenstein (low rise part) cannot be reached.

It reveals an interesting relation between reach and connectivity:
* North-east: weak reach (only reachable through one barrier breaker), but strong connectivity
* West: strong reach (multiple reach circles overlapping each other), but connection to city centre weak

Anchorpoint E (the city centre) is included in both the potential and actual reach.

Fig. 1.4.13 Actual range of spatial reach

Fig. 1.4.14 Overlap of spatial reach

LEGEND
- Ring road
- RandstadRail
- Leidsewallenwetering
- Barrier breaker (bridge/under-bridging)
TIME-RELATED REACH FOR BIKING AND WALKING (radius of 1700m)

Ca. 95% of the potential reach is covered (which is the actual reach).

Three main barriers:
* Australieweg (city ring road)
* Leidsewallenwetering (canal)
* RandstadRail

The influence of the barriers is much less than on local scale since there are plenty of connecting points which break the barriers.

The border of the reach circle stays north of the A12.

Most of the area has two or more circles overlapping each other, which means there are multiple (under)bridges to take to break the barrier and reach a certain area.

Anchorpoints B (Centrum-West) and C (hospital) are within reach of this scale (both within potential and actual reach).
REACH

REACH CAR

RADIUS OF 10 KM

All the towns in the surroundings of Zoetermeer are within reach of the school triangle by making use of the car. Students living within the radius of 10 km can reach the schools within 30 minutes of driving. The reach of the car is therefore based on a regional level. Den Haag and Gouda are also within reach if the higher speed on the highway is taken into account.

Legend
Purple circle Reach circle

Fig. 1.4.17 Car reach
REACH

REACH RANDSTADRAIL

The schools are situated near RandstadRail station Palenstein. For that reason, the reach of the school triangle can be enlarged by adding reach circles around the RandstadRail stations within a total travel time of 30 minutes. The schools are connected to Zoetermeer city centre in only 1 min. and even to Den Haag Central Station (21 min.) and Den Haag city centre (23 minutes). The south of Zoetermeer is not within reach. The connection of this form of public transport is now based on an east-west direction. In the future the RandstadRail might be stretched towards Rotterdam. Neighbourhoods along this line will then also become in reach of the school triangle.
REACH

REACH BUS

There are 2 bus lines directly connecting the school triangle:
- Line 165 via Oosterheem to Alphen a/d Rijn central station (43 min.) with a nearest stop at the Australieweg
- Line 77 to Gouda station (39 min.) with a nearest stop at the Du Meelaan

These lines have bus station Centrum-West as final destination. They do not reach into the neighbourhoods of Zoetermeer, so that most students living in Zoetermeer who want to use the bus to come to school have to change buses at least one time.

To reach the central stations of Leiden (34 min.), Delft (44 min.) and Rotterdam (64 min.), students also have to use two different bus lines, which is not much appreciated in general.

The bus connection is based on the (cities in the) east direction.

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Legend

- City contour
- Direct bus line
- Indirect bus line
- Bus stop
REACH

SWOT

Strength
• The actual reach hardly differs from the potential reach within the time-related reach for walking/biking.
• The RandstadRail much increases the reachable area of the schools. Even students/employees living in Den Haag can reach the schools within 30 minutes travel time.
• All the towns surrounding Zoetermeer are within the car reach circle.

Weakness
• The three barriers highly diminish the reach of the school triangle, especially in the spatial-related reach.

Opportunity
• Break the barriers at more places to increase the actual reach within the potential reach.
• Enlarge the reachable area by changing the bus system. The directly connected bus lines are now leading to cities outside the city, while the reach will improve if instead neighbourhoods inside Zoetermeer are connected to the schools by bus.

Threat
• The public transport system (RandstadRail and bus lines) is orientated on the east and west (Den Haag, Alphen a/d Rijn and Gouda), but the north-south direction lacks in being reachable (Leiden, Delft, Rotterdam).
The 1st and 2nd order steps from the school triangle mainly remain within the border of the spatial-related reach (radius of 800 m). The city centre (E) is within the potential reach, but is now not connected. Within the time related reach (radius of 1700 m) for walking and biking, the anchorpoints hospital (C) and Centrum-West (B) are within reach, though they are also not connected to the school triangle.
The 3rd order steps lead into the time related reach (radius of 1700 m) for walking and biking, but still not cover it completely (less than 50%).
REACH+CONNECTIVITY
Reach RandstadRail

The schools are situated near RandstadRail station Palenstein. For that reason, the connectivity can be enlarged by adding the 1st, 2nd and 3rd order steps from the RandstadRail stations within a travel time of 30 minutes. The 3 steps from the RandstadRail station stretch far outside the potential reach circle (based on 30 min. travel time). This is mostly due to the steps from the newest stations in Oosterheem. Their 1st order steps are much longer than of the other stations. The connectivity lines even stretch into the city centre of Rotterdam. The south and south-east of Zoetermeer have little connections, where as the potential reach also does not cover part of the south. The potential reach also covers a lot of non built-up areas, so that it does not increase the potential number of inhabitants making use of the RandstadRail to reach the schools.

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**LEGEND**

- City contour
- 1st order step RandstadRail station
- 2nd order step RandstadRail station
- 3rd order step RandstadRail station
- Potential reach RandstadRail stations

*Fig. 1.4.22 Reach RandstadRail*
**REACH+CONNECTIVITY**

**SWOT**

**Strength**
- The RandstadRail much increases the reachable area of the school triangle. Even students/employees living in Den Haag can reach the schools within 30 minutes travel time.

**Weakness**
- There is much potential for the west side of the Leidsewallenwetering to be in actual reach of the schools, but the barriers now highly diminish the reach of the school triangle (especially in the spatial-related reach).
- The actual reach of the schools is much smaller compared to the potential reach and is mainly concentrated in the north-east of the school triangle (Seghwaert).
- The 1st order steps of the RandstadRail stations (except the newest ones in Oosterheem) all are very short lines, which reduces the connectivity of the school triangle and therefore its reach.

**Opportunity**
- Break the barriers at more places to increase the actual reach.
- Enlarge the reachable area by changing the bus system. The directly connected bus lines are now leading to cities outside the city, while the reach will improve if instead neighbourhoods inside Zoetermeer are connected to the schools by bus.
- Enlarge the 1st order steps of the RandstadRail stations to increase the connectivity and therefore the actual reach.

**Threat**
- There is a clear dichotomy in the frame structure of Zoetermeer between east and west. If there are not enough barrier breakers, this highly reduces the reach and connectivity of the school triangle within the city.

ACCESSIBILITY

SITE ENTRANCE

The contour of the school triangle has a length of ca. 1400m. There are four entrances at the border of the anchorpoint area. Three of them have no physical gates, which are the public site entrances; however they can be recognized from their spatial identity. The fourth one is a private entrance of one of the schools (Erasmus College), which has a gate to prevent unauthorized people from going through. The 4 entrances at the border of the school site are:

Entrance from Palenstein (south): a car entrance while passing a viaduct for the RandstadRail [1]
Entrance from city centre (west): a bicycle path sloping down from the level of the city centre to the school level [2]
Entrance from Seghwaert (north and east): a bicycle entrance while passing a viaduct for the Australieweg and car entrance (east) [3]
Entrance from station Palenstein (east): a pedestrian entrance for private use of Erasmus College [15]
SCHOOL ENTRANCE

Within the school area there are twelve entrances to each school, seven for Stedelijk Lyceum (VMBO) since the school area of the Stedelijk Lyceum is divided by the Van Doornenplantsoen into two parts, two for ID College (MBO), and three for Erasmus College (VMBO, HAVO, VWO).
Generally, the entrances leading to the anchor point area are considered as public; school gates are defined as semi-public since they are only for students, employees and others related. Besides, the backside, the logistic entrances and the emergency entrances are private for each school because they are normally closed.

In terms of the quality of entrances, the entrances which directly connect the surroundings are defined as direct entrances. The school gates, which are not at or facing to the border of the school site, are defined as indirect entrances. This is because people first have to enter the school area, and then go into the schools through the school gates.

The main entrances are the site entrances and the main school gates. The secondary entrances are secondary school gates. The tertiary entrances are logistics, emergency and back entrances.

Since the main entrances of the two separate buildings of Stedelijk Lyceum are not facing to each other, one of the secondary entrances opens an access to a shortcut for students travelling from the main route or the north main entrance to the other main entrance which is located in the south.
Use of entrance

There are five car entrances. All of the three site entrances of the school triangle can be used by car. Additional, the secondary gate of Stedelijk Lyceum and the main gate of Erasmus College are used by car as well since they lead to the parking lots within the school site. The pedestrian entrance of ID College is the main entrance. However, more students prefer to use the secondary entrance which is for bicycle use since most of them are going to school by bike.

Visibility

The schools are invisible from the north-east border because of the trees and bushes along the raised Australieweg. There is only one open vista at north-east entrance along the border since the barrier has been broken down by a tunnel.

The trees, concentrated in the middle part of the south border, and the raised RandstadRail, form a visual barrier from a southern view.

The west border is visible, because the canal Leidsewallenwetering makes it an open landscape.

Access

Among the three accesses to the school triangle, they each dominate access from a different direction. The north-east access is for bicycle and pedestrian use. Most of the entrances of Stedelijk Lyceum are only visible and quick accessible from the south access of the school triangle. The ID College and Erasmus College can be easily reached from the west and north-east access of the school site.
ISOVISTS

Entrances A and B are visible to each other while entrances A and C are invisible to each other. Although entrance C can be seen from B, people only see one road leading to the Stedelijk Lyceum without finding the school entrances.

From A and B, people can see the entire landscape of the school triangle and most of the school entrances within the site. From C, one can only see little part of the school triangle.
ACCESSIBILITY

From the overlapping isovists diagram of the three entrances, there are two places that are visible from all the three entrances. Now, one of them is the entrance of the school triangle [2], the other one is a water pool and a grass field with animals from the glass house for practical lessons belonging to Stedelijk Lyceum. To fully make use of visibility from the two places, it would be good to keep the main entrance and add more functions to the other place to make it more widely used and attractive such as a landmarks with mixed functions.

SWOT

Strength
- The main and secondary entrances of ID College and Erasmus College are all along and face the main route of the school triangle.

Weakness
- The three boundaries of the school (Australieweg, Leidsewallenwetering and RandstadRail) are all higher than the ground level of the school triangle, which makes the entrances of the schools invisible from the outside.
- The main entrance of Stedelijk Lyceum is not directly on the main route of the school region. Instead, it is on the back side of the other two schools, which makes Stedelijk Lyceum isolated from the whole region. Also, the entrance is only visible from the site entrance in the south, but invisible from the other two entrances.
- The main entrance of ID college is only for pedestrian use. Instead, the secondary entrance is for bicycle. However, more students use bicycles to go to school. Therefore, the most usable entrance is the secondary entrance, instead of the main one.

Threat
- The invisibility of the schools also makes the region become an island.
ROUTING

One main route (Van Doornenplantsoen) goes through the entire school triangle. The road is 8 metres wide with two lanes and can be used by cars. Each school has its entrances connected to this road.

There are connecting routes of Stedelijk Lyceum and ID College, linking Van Doornenplantsoen to the school buildings’ entrances. There is also one route connecting Erasmus College to the main route. However, the connecting route does not lead to the main entrances of the buildings, which means people have to choose which way to go when they enter the Erasmus College from the connecting road.

There is one pedestrian path in the green open space (2.5 m wide). Besides, there are some pedestrian paths in the Erasmus College, connecting the different buildings and its back garden.
**SWOT**

**Strength**
- The main route of the school site connects to all three schools.
- Neighbourhoods in the north, south and near the city centre are all connected from the main route of the school triangle.
- The city center and RandstadRail are connected to the main internal route of the school site.

**Weakness**
- Australieweg and the ring road of Zoetermeer do not connect to the internal routes of school area.
- Connections to the surrounding neighborhoods do exist but they are weak (especially to the southern and western neighborhoods).

**Opportunity**
- A tunnel and bridge offer opportunities to connect the school triangle routes to the roads of surrounding neighborhoods.

**Threat**
- Because all the traffic is concentrated on one main internal route, it is easy to bring up traffic jam during the days if special activities are held in the schools (e.g. open house, school parties, etc.).
UNICITY

SECONDARY EDUCATION

The school triangle houses 2 secondary educational institutes.

1. Erasmus College (public, catholic, protestant) VMBO, HAVO, VWO
2. Stedelijk Lyceum (public) VMBO

In Zoetermeer there are 4 other secondary educational institutes (at 5 locations):

- Alfrink College (catholic) Werflaan 45 (De Leyens) HAVO, VWO
- Oranje Nassau College (protestant) Parkdreef 282 (Seghwaert-Southwest) VMBO, HAVO, VWO
  Clauslaan 4 (Driemanspolder) VMBO
- Picasso College (public) Paletsingel 38 (Rokkeveen-Oost) VMBO, HAVO, VWO
- Het Atrium (public) Dr. J.W. Paltelaan 1 (Dorp) VMBO

If the religious background of the school is taken in account and whether it is a mixed level school or not, only Stedelijk Lyceum and Het Atrium (both public, VMBO) compete with each other, because their reach overlaps.
VOCATIONAL EDUCATION

The school region houses 1 vocational educational institute:

ID COLLEGE

In Zoetermeer there are 2 other vocational educational institutes, which are both branches of ID College:

- Bredewater 24 (Meerzicht-Oost)
  MBO: ICT

- Duitslandlaan 440 (Stads-Centrum)
  MBO: Dutch Academy of Performing Arts

Because all three schools have another specialism, they are not competing with each other, even though the reach circles of the branches in the school triangle and in Stads-Centrum overlap. But together they try to cover all possible specialism, and therefore give Zoetermeer the identity of being a city where you can study all possible MBO specialisms.

Reach circles based on spatial-related reach (800 m)
UNICITY

SCHOOLS OUTSIDE ZOETERMEER

SECONDARY EDUCATION
Within the area of reach by car (radius of 10 km), there are 6 other secondary educational institutes outside Zoetermeer. These are all located in the south-west of Zoetermeer. Towns in the north-east therefore depend on the schools in Zoetermeer (as well as on Leiden, Alphen a/d Rijn and Gouda). To attract those students, the school triangle should have a strong (positive) identity.

VOCATIONAL EDUCATION
There are 3 MBO's outside Zoetermeer, which are spread evenly around the city. However, they are not competing with the MBO's in Zoetermeer, because they all have a different specialism.

LEGEND
- Secondary education
- Vocational education

Fig. 1.4.47 Schools outside Zoetermeer
SWOT

**Strength**
- Three schools together on one site give the general impression of them being the main schools, because the school triangle is the only area with multiple schools together.

**Weakness**
- Within the school triangle, there is competition between Stedelijk Lyceum and Erasmus College. (if not taken into account the religious background and whether or not is has mixed level).
- There are fights regularly between students from the high schools of the school triangle.
- The high schools in Zoetermeer are concentrated in a central strip from north to south: students living in east and west now have to travel relatively far in order to reach their schools.

**Opportunity**
- Schools in the school triangle do not have enough space to develop/grow: opportunity for one of the high schools to move to another part of the city which is now not covered by a reach circle (west and Oosterheem).
- Towns in the north and east of Zoetermeer do not have their own high school system, therefore may depend on Zoetermeer.
- (together with Leiden, Alphen a/d Rijn and Gouda)

**Treat**
- All schools should have a strong, unique character so that schools which have overlapping reach circles, do not compete with each other.
DENSITY

Within the radius of 800m, six neighbourhoods are included. These are, in order of size, Palenstein, Seghwaert South-West, Stads-Centrum, De Leyens, Dorp and Seghwaert North-East. Palenstein and Seghwaert South-West together take up more than half of the accessible area. Most parts of the neighbourhoods are high in density and have the potential for the source of students. The density varies between 47 inhabitants per hectare (Dorp) to 90 inh./ha (Seghwaert South-West). The area with highest density is right next to the school boundary.

15,263 inhabitants resides within the reach of the schools. The students attending the high schools in Stedelijk Lyceum and Erasmus College are between 12 and 18 years old. There are 1022 teens in this age group living in the area. Students of ID College (MBO) are in a higher age group (18-22 years). 1466 inhabitants of this age group are within reach of the school. However, there are around 5000 students attending the schools, which is more than those living in the reachable area.

Fig. 1.4.48 Density
DENSITY

SWOT

Strength
- The schools are surrounded by different neighbourhoods with dense population. It implicates a large amount of potential students for the schools.

Weakness
- The Australieweg, Leidsewallenwetering and the RandstadRail form a big green area. They increase the distance between the schools and the neighborhoods and cut down the coherence between the two.

Opportunity
- There is still some area (20%) within the potential reach which has not been efficiently connected. This brings forth a potential to bring more students to the school triangle by enhancing the connectivity.

Threats
- The demographic composition of Zoetermeer reveals a big amount of aged people, which does not contribute to the number of potential students to the schools.
MIXED FUNCTIONS

WITHIN REACH CIRCLE

Generally, within the reachable area, there are not many mixed functions. One possible reason is the main covered area are schools and neighbourhoods, instead of city centre or other public areas. For the schools, they do not need many mixed functions. Also, since it is close to the new and old city centres, schools can take advantage of the facilities over there instead of locating them within the school region. However, it will be more convenient and attractive if there are more restaurants or shops which focus on the schools’ need and complement the schools’ own facilities.

SURROUNDING OF REACH CIRCLE

The city centre is at the west border of the 20 minutes walking accessible area, while the old city centre is located at the south-west border. Therefore, there are much more mixed functions attaching the western and south-western parts and extending to further areas.

LEGEND

- Shopping streets
- Shops and supermarkets
- Bars and restaurants
- Offices
- Schools
- Sport facilities
- Cultural facilities
- Religious facilities
- Public facilities
- Green space
- Parks
- Parking places

Fig. 1.4.50 Overlap of mixed function
MIXED FUNCTIONS

SWOT

Strength
- Within the region there are not many mixed functions which give the schools a good environment without many disturbance.

Weakness
- There are few restaurants and supermarkets which meet the schools’ need and complement the schools’ facilities.

Opportunity
- Better connections to the nearby new and old city centres which provide more mixed functions.

Threats
- Mono-function of the school triangle prevents the continuity of the city’s mixed function. It also cuts down the possible connections between students and surrounding residents which leads to problems of a functional isolated island of the school triangle.
+ Strategic location: The location of the school triangle is strategic. It is surrounded by high density neighborhoods, it is near the city centre and next to the RandstadRail and the city ring road (two main transition lines).
- Isolated island: However, the school triangle appears with a strong identity of an island, which is known for being isolated with clear borders and having little connections to the main land.

+ Variation in education: The combination of three schools on one site makes it a school region instead of just three stand alone schools. There is a flow of different students because of the variation in the level of education.
- Back to back relation: However, students from different schools often fight with each other, which forced the schools to try to avoid facing each other (main entrances), so that the opportunity of students meeting each other would decrease.
By reviewing the analysis of the school triangle from each topic, the essential problems are summarised here:

- Weak connections
  The local connections to the surrounding neighborhoods are poor, especially to the west and south directions. The global connections to the city ring road and the RandstadRail are also bad, which weakens the connections to the neighborhoods far away in the city or outside Zoetermeer.

- Invisibility and confusing entrances
  The school triangle is invisible from outside due to its three borders which are higher than the school ground level. There are 15 entrances in the area which is quite many but confusing which entrance is the main entrance. People still cannot find the proper entrance to enter the area and each school for the first time.

- Mono-functional
  Surrounding the school triangle, there are few mixed functions within a 20 minutes walk reach scope. However, this is not a problem for the schools itself, because they do not contribute to the city’s function and identity as a whole. Also, the mono-functionality cuts down the functional connection between the surrounding neighborhoods and the school triangle.

- The image of the city
  All the problems mentioned above, contribute to a strong identity of an island to the school triangle. It has been isolated from the city’s whole physical frame and has locked the interweaving of different programs.

### EVALUATION AND CONCLUSION

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<tr>
<td>Connectivity</td>
<td>–</td>
<td>Connection is along north and south, Leidsewal-lenwetering cuts down most connections</td>
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<td>Reach</td>
<td>+</td>
<td>Most potential reach has been covered by actual reach</td>
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<td>Accessibility</td>
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<td>Three barriers impede the accessibility and visibility of schools</td>
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<td>Routing</td>
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<td>Clear routes within school triangle, one man route connect the three schools</td>
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<tr>
<td>Density</td>
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<td>High density of surrounding neighborhoods contribute large amount of students</td>
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<tr>
<td>Mixed function</td>
<td>0</td>
<td>Not many mixed function, suitable for the school area</td>
</tr>
<tr>
<td>Unicity</td>
<td>+</td>
<td>A competition within the school triangle, little competition with outside</td>
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STRUCTURE OF THE FRAME

The structure of the frame within the several neighbourhoods in Zoetermeer correlates with the historical period in which they were constructed. The neighbourhoods of the ‘60s were built around the old centre (Dorp) and face towards it. The neighbourhoods built a decade later were orientated on the landscape around Zoetermeer. The areas built in the ‘90s are facing towards the centre again. Oosterheem, which is now under construction, is orientated on the landscape again. The industrial areas are situated in a north-south direction at once the east border of the city. Dorp and Rokkeveen-Oost together form a circle, as well as Seghwaert and Noordhove. The other neighbourhoods are more stand-alone.

Fig. 1.4.57 Thumbnail structure of the frame

Fig. 1.4.58 Structure of the frame

LEGEND
- Red: Built in ‘60s:
  - Stads-Centrum
  - Palenstein
  - Driemanspolder

- Orange: Built in ‘70s:
  - Meerzicht
  - Buytenweg
  - Leyens
  - Seghwaert

- Yellow: Built in ‘90s:
  - Rokkeveen
  - Noordhove

- Green: Under construction:
  - Oosterheem

- Purple: Industrial areas

Fig. 1.4.58 Structure of the frame
CURRENT SITUATION

Alongside shows the concept of Zoetermeers situation nowadays. Green fingers (the Green Heart of the Randstad) touch the border of the city, but do not stretch into the city.

The neighbourhoods in the centre zone of the city are divided into two regions, which do not face each other but have their backs towards each other. The industrial areas form a wall between east and west.

PROPOSAL

Zoetermeer is positioned at the border region of the Green Heart, though the city has not yet made use of this potential advantage. To improve the city, the green fingers should merge together and stretch into the city. This creates green corridors from east to west and brings the landscape into the city.

The two circles in the centre should merge into one big circle to improve the frame (connectivity, accessibility, reach and routing) within the city. The industrial barrier should be broken to merge east and west and improve the frame.
Fig. 1.4.60 RGBG Design proposal
CONCEPT

1. Enhance connectivity to surroundings

Red: Deeply connect to surrounding neighbourhoods especially those within 20 minutes walk reach by adding more local connections like a tunnel and routes to break the barrier of the school triangle’s border.

Green: Connect Van Tuyll Sportpark (F) by adding a recreational green corridor from the school triangle to the sport park.

Blue: Connect north-forward to Zoetermeerse Plas and south-forward to Grote Dobbe by filling some missing links of water.

Gray: Connect to the global scale of the city network by adding bridge linking to the city ring road and opening an access to the entrance of the RandstadRail station.

2. Increase functional coherence of the schools and the city and strengthen the visibility of the school triangle

Green corridor can absorb various mixed functions like commerce and recreation which can be used by both residents and students (meeting point). Landmark in an isovists overlapping point can increase the visibility and improve the identity of the school triangle.
CONNECTIVITY

1st order steps

1st and 2nd order steps

 Improvements with regard to the current situation

STEP 1
4 lines touching the school region instead of 1 in the current situation
1st order linQes going into Palenstein and Seghwaert neighborhoods
1st order line connecting the city centre

STEP 2
2nd connection to the city centre
Connection to Central Station (H) via city ring road
Connection to Seghwaert-NE
Connection into Palenstein

Fig. 1.4.62 1,2step connectivity analysis of proposal
1st, 2nd and 3rd order steps

CONNECTIVITY

STEP 3

Connections in the direction of Leiden and Delft (north-south direction)
Anchorpoints B, C, F and I have become connected
Connected to neighborhoods streets of local level in Seghwaert and Palenstein
Lines (3rd order) into Rokkeveen
Connections (3rd order) to old centre (Dorp)

CONCLUSION

The current 3 barriers are all broken in the design proposal:
The RandstadRail by adding a tunnel
The Leidsewallenwetering by adding an extra bridge (for cars, cyclists and pedestrians)
The Australieweg by adding an extra exit point next to the school triangle
REACH+CONNECTIVITY

**IMPROVEMENTS**: 1st and 2nd order steps
Lines now also touch time-related reach (radius of 1700 m)
Potential time-related reach of Centrum-West (B) now realised
Also a line outside time-related reach (to (H) and Rokkeveen)

**IMPROVEMENTS**: 1st, 2nd and 3rd order steps
100% use of potential spatial-related reach (radius of 800 m)
More coverage within time-related reach
Multiple line outside time-related reach, even outside Zoetermeer
ACCESSIBILITY

There are six public entrances leading to the school triangle. Four of them are added by the design proposal:

New bridge making a more direct connection between the school triangle and the city centre
Bridge on the Australieweg connecting Seghwaert, the Australieweg and the school triangle
Tunnel under the RandstadRail connecting Palenstein neighborhood and the school triangle
New road connecting the RandstadRail station and the school triangle directly

The main entrances of the school triangle are facing the main internal routes. The secondary or tertiary entrances are facing the back side of the school triangle. This makes the hierarchy of the entrances more easy to read, and makes it clear where to find the entrances.

There is also an entrance for the programme within the landmark, which is publicly accessible.
ROUTING

Three main internal roads connect six main entrances of the school triangle:

East-west direction: connecting a new bridge which links to the city center and a new RandstadRail station entrance

Connecting road leading to the city centre and the neighborhoods nearby: a new entrance of Australieweg and Seghwaert

Connecting Palenstein and Seghwaert neighborhoods by linking the two tunnels under the Australieweg and the RandstadRail

The connecting roads connect the main internal roads and main roads of the surrounding areas.
In enabling the schools in anchor point D to develop and grow, one of the secondary educational institutes should move to another place in the city. A potential location for this new school (VMBO, HAVO, VWO) is the newly built neighbourhood in the east of Zoetermeer (Oosterheem), where there are now no schools. However, the development of this new residential area has increased the number of students in Zoetermeer, which brings forth enough critical mass. It should be located near a RandstadRail station.

Besides the new mixed secondary educational institute in Oosterheem, there is an opportunity to add a HAVO, VWO school in Zoetermeer, because there is now only one school specialised in HAVO, VWO (Alfrink College). There are no schools in the west now, which brings forth a potential location for this new school (Meerzicht). The school should be close to a RandstadRail station.

Near the new school in Oosterheem, a MBO can be located, which will also profit from being near a RandstadRail station. The MBO should have a different specialism than the current MBO’s in Zoetermeer.

Fig. 1.4.68 Unicity of proposal
The green corridor and the landmark can attract different public mixed functions, especially all kinds of sports, small shops and cafes. All the mixed functions can be used by both students and residents of the surrounding neighbourhoods, such as an outdoor gym. It transforms the north border of the school triangle in a meeting point and a connection belt of the schools and the city.
External & Internal connections

+ Open access

+ Multi-functionality

= No longer an island!

Fig. 1.4.70 RGBG model of proposal
CONNECTIVITY

FIRST STEP

In the first step of connectivity we see the main routes passing by the sports park. As far as reach goes the routes do not go very far, with the exception of the road going through Zoetermeer leading all the way to Leidschendam in the Northwest. This makes a direct connection through the city possible.

The water connectivity is low scale with only one long canal passing by the park in the Southeast.

Fig. 1.5.1 1st step connectivity
SECOND STEP

The second connection leads more into the urban areas of Zoetermeer, but also the city centre of Zoetermeer. The reach of the connections in the second step is however very poor, covering very little space of Zoetermeer. The second step does however lead into some small scale surrounding cities, such as Pijnacker and Bleiswijk.

The water connections are expanded very poorly with some small canals in the North and East of the park.
CONNECTIVITY

Fig. 1.5.3  3rd step connectivity
CONCLUSION

The connections from the sports park into the city Zoetermeer are limited. The connections are clear enough towards the city centre and other areas connected to the local roads, but the connections to residential areas within the city are lacking. And these are important for the function of the sports park.

The water connections are also of low quality, with only a few canals expanding into the North and East of the park.

On a higher scale the connections are highly plausible. With its close proximity to the highway, other cities can be reached easily, leading all the way up to the North and South borders, but the urban areas within the city create poor connections in the third step.

The water connections have expanded very little since the second step. The canals in the landscapes do not make a good connection; which is strange, because the sports park not only offers landscapes like the surrounding areas, but also rich water areas.

SWOT

Strength
• Good connections to bus stations
• Good connections to small and large cities (Den Haag)
• Close proximity to highway
• Good connections to city centre

Weakness
• Low expansion into city, because of exiled location
• Water steps very limited
• No connection to Randstadrail

Opportunity
• Expanded frame to the West
• Water expansion
• Randstadrail connection

Threat
• Lack of interest in park, because of poor connectivity to urban areas
REACH

WALKING REACH

The walking reach shows a 1km radius around the sports park (approx. 15 min). The reach mostly covers industry areas, but also some small parts of residential areas. The main highway creates a boundary in the South, but with the exception of the N470 towards the South-west, the actual reach is expanded to a small part of the urban area on the South side of the highway.

LEGEND

- - - - Walking reach (1km)
= = = = Actual walking reach

Anchor point
Other anchor point
Gap between walking reach and actual walking reach

Fig. 1.5.4 Walk reach
REACH

BICYCLE REACH

The bicycle reach is an expansion of the walking reach, with a radius of 2 km (approx. 10 min cycling distance). The difference however is shown by an expanded reach into the residential areas towards the West, but also the reach into the city centre of Zoetermeer. The highway in the South remains the only boundary of the reach, but the actual reach does cover a larger area in the South of the highway.
REACH

CAR REACH

Because of the close proximity towards the highway, the connection to surrounding cities is outstanding. For the car, a reach of 25 minutes was taken into account, with 5 minutes to get on the highway, leaving 20 minutes on the highway and the connected cities (speed highway 75km/h and cities 37,5km/h, includes a 25% reduction.

Fig. 1.5.6 Car reach
SWOT

Strength

- Actual reach covers a lot of theoretical reach
- Highway reach and lot of reach on higher scale (by car)

Weakness

- Reach towards South, because of highway
- Some landscape boundaries

Opportunity

- Landscape use for urban areas
- Expanded sport/natural recreation park to make it more reachable on higher scale

Threat

- Lack of interest in park

REACH

CONCLUSION

The walking and bicycle reach contain the same boundary, which is the main highway. The actual reach for both topics do cover most of the theoretical reach, covering industry areas in the direct surrounding area of the sports park and more residential areas and the city centre on a larger distance. The car reach covers a large amount of space, with the highway connecting to other small and large cities. The acceptable time frame of travelling by car makes the sports park attractive not only for Zoetermeer, but also surrounding cities.
ACCESSIBILITY

ACCESSIBLE WAYS

Regional scale
To the sportspark, the nearest regional way is the national high way and the regional bicycle way. The rap-offs of the two highways are directly leading to the entrances of the park. But from the regional way there is not is any bicycle ways directly leading into the park.

LOCAL SCALE

The park is next to the city axis. But there is no formal accessible way directly leading from the city axis into the park. Also, the park is not well accessible from the surrounding neighbourhoods, because there is only one accessible city street. On the south edge of the park, there are several accessible motor ways from the business area, but there are no entrances for cars at this edge of the park.

Fig. 1.5.7 Accessibility
ACCESSIBILITY

ENTRANCES AND VISIBILITY

There are totally five entrances at the 3.765km edge of the park. Two of them are private, one is informal. Only two formal entrances distributed at the north and west edge of the park. One of them are only for cars.

HIGHER SCALE

The two formal entrances are directly connected to the highway rap-offs. And from the highway, we can see clearly into the park, because the highway is on a higher level than the park.

LOCAL SCALE

There is no motor entrances directly link to the city axis. Also there is no motor entrances face the business area around. For the nearby neighbourhood, there is only one entrance for pedestrian. And from the city axis and the local way around the park, there is not good visibility into the park, because the park is blocked by trees.

LEGEND

- More dominant
- Less dominant
- Public
- Semi-public
- Private
- Entrance
- Invisible
- Semi-visible
- Visible
- Location boundary
- No visual connection
- Strong visual
- Secondary access point
- Main access point
ACCESSIBILITY

CONCLUSION

The accessibility from high way is very well. But the entrances and accessible ways to the park from the city axis, neighbourhood nearby and the business area surrounding are in a highly shortage. Also the visibility from the local ways are blocked by trees.
ACCESSIBILITY

SWOT

Strength

• Good visibility from local roads
• Regional road has direct connection to main access

Weakness

• Not connected by biking route in surrounding area
• Not connected by car from city axes
• Only one accessible city street near main entrance
• Visibility towards the park from most sides, because of higher level road and trees
• Only 2 visible entrances
• No entrance on city axes
• Badly visible from local roads

Opportunity

• Entrances added on more sides of the park, especially on city axes
• Landscape routes for access
• Biking accessibility
• Clear visibility (blending with nature)

Threat

• With trouble finding the access of the park, people would skip a visit
ROUTING

FUNCTION ANALYSIS OF ROUTE

The problem of the routing system in the park is that there is not any main routes which connect the functions surrounding the park.

HIGHER SCALE

There are rich bicycle ways in the park, but they are not well connected to the regional bicycle way.

LOCAL SCALE

Although there are rich bicycle routes in the park, only one bicycle route links to the inner city street and no links to the city axis. Also the rich walk ways in the park links to the city axis with only one informal pedestrian. At the east of the park, there is large open landscape area, but there is no routes lead to there from the park. Next to the west corner of the park, there are two landscape line through the city, but they are cut off from the entrance.
ROUTING

STEPS ANALYSIS OF THE ROUTES

HIGHER SCALE

The PWA Silverdome and the Dutch Water dream are the main attraction of tourists from other cities. We do the 3-steps analysis from these two facilities, but many of the sports facilities in the park are not in the 3-steps. That means those sports facilities are hidden in the park.

LOCAL SCALE

A lot of sports facilities are not in the 3-steps from the entrances. That means the sports facilities are hidden in the park from the entrances, and there is not a clear structure of the road system in the park.
ROUTING

SECTION A:
On the two sides of the main entrance road, there is sufficient space for public use but not well designed. These spaces are used for parking or merely meadow, also have no view from this space into the park. There hardly is a recreation atmosphere at this entrance road.

SECTION B:
The entrance to the PWA Silverdome is dominated by parking place. In front of the PWA Silverdome there is little space and facilities for public use.

SECTION C:
This unformed entrance which linked to the city axis is blocked by trees and far from the entertainments in the park.

SECTION D:
The park separated by a narrow canal and blocked by trees from the city axis.

SECTION E:
The east edge of the park is cutted from the large open area by the canal.

Fig. 1.5.16 Road Section
Conclusions

Because the park is built from top-down mode, it is well connected to the highway system, but it is not well locally integrated. The surrounding neighborhoods, landscapes, business area and recreation routes are not well functionally connected to the park. Also the routing system in the park is not well organized, which lead to many sports facilities are hidden in the park.

SWOT

Strength
- Lots of open spaces
- High ratio connection routes to facilities
- Good walking and biking within park

Weakness
- No clear routes through nature area, can be confusing. Route system not clear.
- No main route integrated with grid structure
- To much parking space
- Biking route in park is not well connected to regional route
- Natural connection not well integrated with routing

Opportunity
- Creating clear routes
- Expanding routes, also towards outside of park

Threat
- People get lost in the park
- People will skip a visit if they do not know it
- People will not explore the park and its surroundings
UNITY

LOWER SCALE

Zoetermeer provides a variety of sports activities spread out over the city. The sports park, unique for its provision of more than one sport activity, does have some small competition with other sport facilities in the nearby area. These sport facilities are however diverse in program, with all facilities not providing the same program as in the sports park. The competition is therefore very limited and creates very little threat for the sports park.

LEGEND
- Location facilities (radius 400/800m)
- Competition facilities (radius 400/800m)

Fig. 1.5.17 Unicity sport facilities 1/2km reach
The uniqueness of the sports park is its program. It provides a variety of sports activities in a large natural recreation park. Zoetermeer does however contain some competition from nearby areas, the Burgemeester Hoekstra Park in the South and the Zoetermeerse Plas in the North, comparable in the variety of sports activities in a natural recreation area and comparable in size. The competition is however limited, with overlaps only really visible with a 2km radius. The uniqueness of the sports park compared to the other parks is its connectivity to towards the main highway, making the connection to outside cities better.

CONCLUSION

The nearby sport facilities create very little competition for the sports park, because other facilities provide different activities. The sports park also has uniqueness by providing more then one sport activity. With its program of sports facilities, the sports park has some competition with two other similar areas, where the overlap is only visible with both parks by travelling by bicycle. The uniqueness of the sports park, however, is its close proximity towards the main highway, making a good connection to other cities acceptable.

SWOT

Strength
- Competition only visible on larger reach scale (2km)
- In contrary of other sport facilities, sports park provides more program and more diversity in sporting events (also recreational)

Weakness
- Competition on large scale (people mostly go to sports by bike)

Opportunity
- Making it unique (adding program)

Threat
- Sports park will be forgotten because it covers a smaller area then other parks
DENSITY

Surrounding the sports park low density is clearly visible. This is mainly due to the industrial/business areas in the direct surrounding area of the park, giving the sports park an exiled location in the East side city boarder. The high density areas start more towards the city centre, where the residential areas take shape. The exiled position of the sports park is not very convenient in creating popularity among inhabitants or visitors of Zoetermeer.

Fig. 1.5.19 Population density distribution
## DENSITY

### SWOT

**Strength**  
- Lots of natural areas surrounding the park

**Weakness**  
- Low density surrounding the park making it unaware of existence for public

**Opportunity**  
- Including surrounding natural landscape for a more high scale attraction including new program  
- New neighbourhoods for more dense surroundings

**Threat**  
- The low popularity of the park could result in the industry areas taking over its main function
MIXED FUNCTIONS

REGIONAL SCALE
The most important traffic facilities near the park are the train station and the regional recreation bicycle way. But there are not enough mixed functions beside the routes which links the park to those areas. Around this park there are a lot of offices which service in a national scale.

LOCALE SCALE
The dominant functions in the park are sports facilities and around the park are companies. But there is a lack of service facilities in the nearby office blocks. Also there are no facilities and functions nearby or in the park that can serve for the office program near by. Also not far from the park there is a shopping street but it is out of the walkable distance. Also the nearby neighbourhood center with a lot of facilities, the school and the city park are not well linked to the park with a lot of mixed functions.

TIME OF USE
The main facilities in the sports park are Silverdome, Dutch Waterdream and sportsfield. They are all highly used in weekend and holidays by people for other cities or in the city far from this park. But the problem is that the facilities are seldom used during weekdays. The only use for local people is just doing physical exercise or walking their dogs in the nature routes. There are still some opportunities for the park. That is the nearby school and the large amount of companies. Also the shopping street and the city centre should not be forgotten.

Fig. 1.5.19 Population density distribution
**Routing**

**Time Table of Functions**

<table>
<thead>
<tr>
<th>Existing Function</th>
<th>Weekday</th>
<th>Weekend</th>
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<tbody>
<tr>
<td>Silverdome and Dutch Water Dream</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sports Facilities</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Nature Routes</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potential Function</th>
<th>Weekday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation for School</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Recreation for Company Staff</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Facilities for Pets</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Facilities for Residence Nearby</td>
<td>++</td>
<td>+</td>
</tr>
</tbody>
</table>

**Swot**

**Strength**
- Lots of parking facilities
- Lots of industry and offices (after hours sporting activities)
- Landscape surroundings
- Biking reach connects to school

**Weakness**
- Lots of industry and offices (not for youngsters)
- Very little amount of service facilities within walking reach

**Opportunity**
- Adding new functions to support connections towards city centre
- Adding new functions to industry areas as well

**Threat**
- The industry is dominating the surrounding area. This could take away the parks character and popularity.

Fig. 1.5.20 Population density distribution in detail
## EVALUATION

<table>
<thead>
<tr>
<th>Subject</th>
<th>Values</th>
<th>Comments</th>
</tr>
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<tr>
<td>Frame</td>
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</tr>
<tr>
<td>Connectivity</td>
<td>+</td>
<td>improve connectivity within residential areas of Zoetermeer</td>
</tr>
<tr>
<td>Reach</td>
<td>++</td>
<td>the reach covers a lot of ground, all the way to city centre areas of Zoetermeer</td>
</tr>
<tr>
<td>Accessibility</td>
<td></td>
<td></td>
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<tr>
<td>Routing</td>
<td>-</td>
<td>create main routes which connects the functional area in the city.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Making the sports facilities more visualable from the road.</td>
</tr>
<tr>
<td>Pattern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>-</td>
<td>park has an exiled location, with very low density</td>
</tr>
<tr>
<td>Mixed function</td>
<td>-</td>
<td>make good use of the business area and the school nearby.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>adding servical facilities for short term recreation such as coffee, restaurant and retailing shops.</td>
</tr>
<tr>
<td>Unicity</td>
<td>+</td>
<td>program is unique in its kind, creating very little competition.</td>
</tr>
</tbody>
</table>
RGBG DESIGN

OVERLAP

Fig. 1.5.21 RGBG design proposal
RGBG DESIGN

RED

New urban development area in Northeast, with visual relationship towards the sport park;

New program area in sport park, with visual relationship from industry in Southwest;

New program area in the West for connection between urban area and sport park.
RGBG DESIGN

GRAY

New primary green connection route from school area to the sport park.

New secondary green connection from parks in South.

New secondary green connection routes from urban areas in West (also connected to the primary green route).

New park development possibilities.

Existing park in sport park redevelopment by clear routes and added program.
RGBG DESIGN

BLUE

New secondary water connection from the existing lake in the sport park towards the North-west.

LEGEND: BLUE
- Water square
- Secondary waterline/Connect
- Existing industry

Fig. 1.5.24 RGBG-blue
RGBG DESIGN

GREEN

New primary green connection route from school area to the sport park.

New secondary green connection from parks in South.

New secondary green connection routes from urban areas in West (also connected to the primary green route).

New park development possibilities.

Existing park in sport park redevelopment by clear routes and added program.

LEGEND: GREEN

- Green condensation area/ City park
- Potential recreational area/ Park area
- Landmark/ Recreational anchor point
- Main landscape route
- Environmental connection
- Recreational/ Slow traffic route
- Existing industry

Fig. 1.5.25 RGBG-green
CONNECTIVITY

3 STEP ANALYSIS

Shopping centre Rokkeveen has good connectivity in the south part of Zoetermeer. But by car the connectivity is less better then for low speed traffic (pedestrian & bicycles). In the first step there is a long line between the neighbourhoods Rokkeveen East and West. The infrastructure corridor, A12 and railway block the connectivity to the north. In the third step the anchor point railway station is connected. This is the only connected anchor point.

Two long lines in the third step are going outside of Zoetermeer. One line ends in The Hague and another one stops near Pijnacker. These lines belong to the regional network.

Zoetermeer south is well enhanced in the urban fabric, with differences between car and bike.

LEGEND

- 1 step
- 2 step
- 3 step

link anchor points
CONNECTIVITY

SWOT

Strength:
• The supply area of shopping centre Zoetermeer-south is good connected

Weakness:
• Shopping centre is badly connected to Zoetermeer at the north of the infrastructure corridor

Fig.1.6.3. 1-2-3 steps analysis

LEGEND
- - - - 1 step
- - - 2 step
- - - - 3 step
⊙ link anchor points
CONNECTIVITY

3 STEP ANALYSIS - WATER

The connectivity by water to the shopping centre is only in Zoetermeer south.

It supports only the local network. Also it shows a top-down frame.

The water can help people for understand the city better. It become a stepping stone for better cognitive map.

Fig.1.6.4. Connectivity map (water)
**CONNECTIVITY**

**SWOT**

**Strength**
- Supply area of shopping centre Rokkeveen is good connected

**Weakness**
- Shopping centre is poorly connected to the north of Zoetermeer

**Opportunity**
- If we rebuild the old road, we can connect more the whole of the city.

**Thread**
- The improvement of connectivity can change the unicity of shopping centre

---

**LEGEND**

- 1 step
- 2 step
- 3 step

- link anchor points

---

**Fig.1.6.5. Connectivity map (water)**
REACH

BICYCLE REACH

Bicycle reach radius is defined within cycling ten minute (+/- 2 km).

BARRIER

The highway reduce reach of bicycle to the north. But because this shopping centre is located near the highway, the impact of the highway is not very high.

The impact of the landscape is higher than the highway. After we include the barrier, the actual reach decreases by 22%.

ANCHOR POINT REACH

Within bicycle, people can easily reach 2 other anchor points:
Centrum-west
Station Zoetermeer
**REACH**

**WALKING REACH**

Walking reach radius is defined within radius +/- 1 km. The highway reduce reach of walking to the north.

The highway reduce the actual reach of walking by 7%. This shopping centre is still in walking distance from station.
REACH

CAR REACH

Car reach is based on speed of 30 km/hours. With this speed, from shopping centre can get to many other cities.

RANDSTAD RAIL REACH

This is the combination of randstad rail and walking reach of 30 minutes.

From this image we can see that people can reach several other cities and villages.

CONCLUSION

SWOT

Strength
• Walking and bicycle reach is good. Even in the actual bicycle reach is reduced by 22%, but most of them are landscape so it does not really matter.

Weakness
Going into the landscape is not easy from shopping centre

Opportunity
• To enhance the urban fabric to the landscape

Thread
• Actual reach is a problem in the future
REACH AND CONNECTIVITY

These 2 pictures show the walking reach and the connectivity.

We can compare the actual reach and the frames which are provided by the city.

WALKING REACH - CONNECTIVITY

We can see that the frame is quite supportive for the actual walking reach. It means there are enough frame for people to explore the actual walking reach.

BICYCLE REACH - CONNECTIVITY

It is clearly showed by this analysis that the frames are not supportive for the actual bicycle reach.

The 3 frame is just support 40% from the actual bicycle reach. It means 31.2% from the ideal/theoretical bicycle reach. (actual reach is 78% from the ideal bicycle reach)
ACCESSIBILITY

At the north of the shopping centre is an important road for the accessibility. For bike the accessibility is better then by car.

All the entrances can be reached by bike, instead of by car. Visitors of the shopping centre by car has to park at the parking at the east- and westside of the building.

The public entrances are used for the visitors of the shopping centre. The delivery of goods to the shops will be done by the private entrances. The north (most visual) and south entrance forms the formal entrance.

The east and west entrance are less visual and more hidden. These entrances can be seen as an informal one. The east and west entrance are more used by visitors by car. Here is the parking. The other entrances are also good accessible by bicycle and by foot.

CONCLUSION

North entrance gives the identity of the shopping centre. East and west forms the entrance for the most visitors.
ACCESSIBILITY

SWOT

Strength
- Availability of parking
- The visual quality from the north is good
- There are entrances from every direction

Weakness
- The visual quality from other directions (except the north) is poor
- The parking area is decreasing visual quality of the market

Opportunity
- More visual contact to the station and to the south

Thread
- There is no hierarchy for entrance
ROUTING

Shopping centre area is surrounded by water.

NORTH

There are 3 bridges to reach shopping centre with 200 m distance from each other. People from North can only arrive to shopping centre by the bridges.

SOUTH

People from south are also blocked by water. The easiest way is go there by 2 streets near the axis. The axis that connect directly south part and the shopping centre is just for pedestrians.

WEST AND EAST

People from residential in the same area as shopping centre can go easily to the shopping centre. But outside the area, from east and west, people need bridges to come to the shopping centre.
DENSITY

Rokkeveen West
8.721 inh.
dwellings
52,9 inh./ha.
20,9 d./ha.

Rokkeveen East
165 ha.
13.793 inh.
5.053 dwellings
64,5 inh./ha.
23,6 d./ha.

South part of Zoetermeer has a balanced density in its total view.

Along the long line in first step is a higher concentration of inhabitants.

LEGEND
Density inhabitants per hectare
>100
75-100
40-75
10-40
5-10
<1

Fig.1.6.19. Inhabitants density in the actual reach area
DENSITY

SWOT

Strength
• It serves the residential neighbourhood

Weakness
• It is denser at the north part of bicycle reach

Opportunity
• There is opportunity to build higher density around the shopping centre.

Fig. 1.6.20. Shopping centre Rokkeveen

Fig. 1.6.21. Shopping centre Rokkeveen
MIXED FUNCTION

We can see many parking places in the cities. From this picture we can tell that this city is meant for cars. This city is built after there was a car network.

The sport facilities seems to be near to the park.

The function in the cities are spread out. There is rarely place where the functions meet.

Because these functions are spread out, there is no clear hierarchy in the city.

If there is no clear hierarchy in the city, there will be very little coincidence in the city. There will be little “real” public place.
Fig. 1.6.23. Mixed Functions

Offices
Bar/Restaurant
Culture
Sports and Park
Shop/ Supermarket
School
Cleaning, Childcare, Odd hobs
Chiropody, Hairdresser
Consultancy
Parking Places
MIXED FUNCTION

FUNCTIONS PATTERNS

If we combine the functions, we can see there is a certain pattern. Several functions are gathered near water. And several functions are gathered in the edge of the road.

BARRIER IMPACT

There is a big gap in the middle because of highway barrier. This gap shows there is a lack of frame connection from south to north part of Zoetermeer.

FRAME IMPACT

It also shows that the lack of frame impact on the patterns in the city.

LEGEND

- Bicycle reach
- Actual bicycle reach
- Gap
- Mixed Functions
- Mixed Functions near the water
- Mixed Functions near the roads

Fig. 1.6.24. Mixed Functions - combined
MIXED FUNCTION

SWOT

Strength
• There is a supermarket at the south of bicycle reach.
• It can become a competition for the supermarket in this shopping centre, but not for the shopping centre itself because it has more functions in it.
• It is unique for the south part of Zoetermeer. It is good to serve people at the surrounding area (it is also because of the barrier).

Weakness
• All the functions is spread out
• There is no hierarchy
• When the shopping centre is closed, the parking is also closed. This situation will make the area empty at evening time.

Opportunity
• More visual contact to the station and to the south

Thread
• Because there is no hierarchy, there is no place where a lot of people can gather together.
UNITY

WALKING DISTANCE

For the walking distance of 400 m radius of a shopping centre, there is no overlap for Rokkeveen with other shopping centres. By bicycle (800 m radius) shopping centre Rokkeveen compete with the other 3 surrounding centres.

COMPETITION

Looking at the programs of the shopping centres, Rokkeveen has little competition of other shopping centres. Shopping centre Meerzicht has an equal program like Rokkeveen. The shopping centres near Station Delftse Wallen and the one in Rokkeveen East have a small program. The shopping centre has in its direct surrounding no competition.

CONCLUSION

Shopping centre Rokkeveen has nearly no competition in direct surrounding. Its unique in Zoetermeer South.
UNICITY

SWOT

Strength
- There is a supermarket at the south of bicycle reach.
- It can become a competition for the supermarket in this shopping centre, but not for the shopping centre itself because it has more functions in it.
- It is unique for the south part of Zoetermeer. It is good to serve people at the surrounding area (it is also because of the barrier).

Weakness
- If we see from the city scale, people are more related to the shopping centre near the grote markt.
- Because of the barrier (highway) people in the north will choose to go the shopping centre at the north (even if they have to travel longer)

Opportunity
- Upgrade the quality of the shops

Thread
- If we upgrade the quality of the shops it might be a thread for the other shops.
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<tr>
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<th>Values</th>
<th>Comments</th>
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<td>Improve connectivity to Zoetermeer north</td>
</tr>
<tr>
<td>Reach</td>
<td>+</td>
<td>Shopping centre can reach almost all area in the south</td>
</tr>
<tr>
<td>Accessibility</td>
<td>++</td>
<td>Shopping centre good accessible from every direction</td>
</tr>
<tr>
<td>Routing</td>
<td>-</td>
<td>A lot of water in the surrounding of the shopping centre</td>
</tr>
<tr>
<td>Density</td>
<td>0</td>
<td>Density is good, but higher density creates in future more customers for the shopping centre</td>
</tr>
<tr>
<td>Mixed function</td>
<td>-</td>
<td>There is no concentrated functions</td>
</tr>
<tr>
<td>Unicity</td>
<td>++</td>
<td>The shopping centre is unique in its direct surrounding</td>
</tr>
</tbody>
</table>
Fig. 1.6.30. Water at north of shopping centre

Fig. 1.6.31. Barrier at south of shopping centre

Fig. 1.6.32. Barrier at south of shopping centre

Fig. 1.6.33. Situation at south of shopping centre
RGBG MAP

RED GREY

From this red - grey proposal, we can see that the added of grey scheme will enhance the red area.

Providing grey line means we propose frames for the city - which can enhance the frames as well and later on create circuits.

But it might not be circuits if the grey lines are not desirable.
In this combined green–grey proposal, we can see that there are several lines combined together. This area is meant to be the backbone of the city.

In the south part, there is lack of hierarchy. That’s why providing a good frame is very important. In this case, we are proposing a tramway combine with the green area.
RGBG MAP

RED GREEN

From this red - green proposal, we can see clearly the intension of the backbone in the south part of the city.

The backbone will be the a desirable place for pedestrians because of the green frame. The pattern (red) will also attract people to come together in this place.

With the good frame and pattern, there will be a clearer hierarchy in the south part of the city.
RGBG MAP

RED GREEN BLUE GREY

This is the RGBG map of the shopping centre. We can see all the layers are combined together.

With the combining of grey and green, we can provide a desirable frame. Desirable frame will enhance the patterns.

We can see the backbone at the south part which consist of red green and grey. With this backbone, the hierarchy is clearer in the south part.

With good frames and patterns in the city, more circuits will be created.

With clearer hierarchy in the city, more people will meet at the same place and this will create more coincidence in the city.

With more coincidence and more circuits, the city can become more lively and more enjoyable.
PART I
ANCHOR POINTS ANALYSIS

I.VII  ANCHOR POINT G – RAILWAY STATION
Ran Hu, Hannes van de Ven

Shopping Center  F
Railway station Zoetermeer  G
Markt  A
Centrum West  B
School  D
Sport Park  E
Hospital  C
Snow World  H
CONNECTIVITY

ROAD CONNECTIVITY

Good location, bad connection is the conclusion after analyzing the connectivity of main railway station.

A station is one of the places which has to be good connected with the city. But the station of Zoetermeer is not. The station just connects the north and south part of Zoetermeer, but does not connect the inner-city of Zoetermeer with it.

Lack of connections to neighborhoods which means that the central station of Zoetermeer bases on a high level (top down) connection. After analyzing station Zoetermeer East, we conclude that this station more base on a lower scale level connection, which means a better connection with the inner-city.
The Road Connectivity Map on the left shows the three steps linked with different function areas you can reach. The map shows the good connections of the Railway Station with industrial area, which is close to Zoetermeer but also basing on a high level connection. The high level connections with Leiden, Delft and Rotterdam are strong.

The main thing what we can conclude is the top down connectivity, which means a bad connection with the inner-city of Zoetermeer.
CONNECTIVITY

RAILWAY CONNECTIVITY

When looking at the connectivity of the railway, we can see that the station of Zoetermeer east is not adding a bigger reach than the main station. This can be considered that this station does connect another part of Zoetermeer. But the opposite is happening. Station Zoetermeer east is overlapping its connectivity circle with the circle of the main station.

Another thing is the difference of functions. The main station of Zoetermeer focuses on a high scale level connection, while Zoetermeer East Station focuses on a lower local level.
CONNECTIVITY

Fig.1.4.7. Third step
CONNECTIVITY

RAILWAY CONNECTIVITY

Railway connectivity is not bad. At Fig.1.4.9 you can see the map with linked spots basing on the railway connectivity.

Zoetermeer is connected to the Hague and also the beach of Scheveningen. To the east it is connected to Gouda.
**CONNECTIVITY**

**SWOT**

**Strength**
- High level connection.
- Good position close to highway, Green areas connect to west open landscape

**Weakness**
- Lack of local connections.
- Poor connections to highway. Poor connections to city centre. Not at central position in the city

**Opportunity**
- Good visible to get to the highway.
- Intensive use of station anchor point

**Threat**
- Competition with railway station East
REACH

WALKING AND BICYCLE REACH

The second part of frame is reach. We define the walking radius by 15 minutes walking distance; it is almost 1km radius. The bike radius is defined by 10 minutes cycling distance, which is almost 2km radius.

The railway and A12 highway are barriers for the Zoetermeer city. They separate the city into two parts. But for the station itself, it is a bridge for walking and cycling to cross the barriers.

For the walk reach, the south part of the station is all covered in the walking radius. The Randstad Rail is a barrier for the north part. There are some areas can not be reached by walking in 15 minutes, which are almost green areas and sports fields.
REACH

BARRIERS

Although the Randstad Rail is the barrier for reach, there are many bridges and tunnels to across it.

30 Minutes reach from Railway station to Randstaad rail

These 3 maps show the 30 minutes reach from railway station, by using Randstad Rail.

We can see from that the city centre west is covered by the most numbers of reach bubbles. It can be reached by many different ways. It has the best reachability by Randstadr Rail.

The east part of city is out of reach radius. We can see that the last stop of Randstadr Rail in the east can not be reached in 30 minutes. And another anchor point east park is isolated.

Combining with the mixed function map, the most concentrated area is next to the best reach area. And there are not so much functions in the badly reachable area in the east.
REACH + CONNECTIVITY

The connectivity map is much bigger than the reach bubbles. But most of the connections shown on the map are long lines, which are high level roads. So there are lacks of short lines, the local level roads sprawling into the neighbourhoods.

REACH + FUNCTIONS

From this map we can see that the function concentrated area is out of walk radius, and at the edge of bike radius.
REACH

SWOT

Strength
• Many accesses to cross barriers.
• Good reach on foot and by bike.

Weakness
• East part of city is out of reach radius
• City centre is at the edge of 10 minutes bike reach.
• Randstad Rail, the railway & A12 highway are barriers.

Opportunity
• The connectivity map is bigger than the reach radius.

Threat
• Improving randstadrail cause worse local level reach
ACCESSIBILITY

ACCESSIBILITY & VISIBILITY

To reach the station, there is no clear lines towards it. It is difficult to see where the station is, because it is in a bridge which connects the north and south of Zoetermeer.

The bridge has two entrances. In Fig. 3.2 it shows the most important lines towards the station of Zoetermeer.

The station has potentials, because it is on a good position and also has a good visible from the highway. But the building does not show well that a railway station is inside of it. Both of the entrances are public and can be used by every one.

It can be defined the visibility in two parts. At the highway we can see the station but cannot reach it - mental visibility. The north and south entrances are physical visible.
ACCESSIBILITY

Fig. 3.3 shows the physical visual map. View at the entrances and a direct possibility to enter the building, is meant. Fig.s 3.4 and 3.5 show these direct entrances of the station building. Fig. 3.4 is showing the physical visual map. At the being at the highway, it is impossible the enter the station directly. First you have to go to the entrance.
ACCESSIBILITY

Fig. 1.4.25. Entrances

Fig. 1.4.26. South entrance

Fig. 1.4.27. Higher level station entrance

Fig. 1.4.28. North entrance

Fig. 1.4.29. Crossing infrastructure
ACCESSIBILITY

SWOT

Strength
• Good visible from highway

Weakness
• Building for the station.
• Bad access possibilities- just 2 entrances.
• No accessibility directly from highway.

Opportunity
• Making recognizable building
• Randstad Rail

Threat
• Randstad Rail will be more
• Important than railway
ROUTING

There are 2 squares in front of station, both north and south side. Station Bridge for walk and bike connects two squares. To cross the barriers, people are forced to use the bridge of station, and this is the location of the railway and Randstad Rail stops, so there are big potential flows of slow traffic. Then primary road directly connect to the squares.
**ROUTING**

Most of the roads in the south lead to the east. And secondary road connects the parking place and station. In the north, 2 cycling routes go through the green areas. The primary connection road for cars to cross the railway goes along the dike, which separates the city into west and east parts (shows in Section A).

Fig.1.4.31. Three levels roads
ROUTING

SECTION

Section B shows the situation of north station square. There is a bike parking in the centre of square. When people get down from bridge they see a parking lots enclosed by bush in front of the square. The primary road connecting station to city combines fast traffic, bike routes, pedestrian and bus stop.

In the south part of station, one secondary road (Section C), two primary roads (Section D/E) connect to the square. Section C is a small scale road with pedestrian and cycling routes. Section D there is a canal in middle of two roads. The roads are not so wide, but the scale of the space is big. Section E fast primary road with bus stops. No cycling routes.
ROUTING

SWOT

Strength
• Two station squares.
• Cycling routes through green areas in the north of station.
• Directly connect to primary roads.

Weakness
• No public space to stay.
• Lack of routes to the west part of city in the south of station.

Opportunity
• Potential slow traffic.
• Cycling routes through green areas.
• People are forced to use the bridge of station.

Threat
• More bridges to across the barrier means less use of Station Bridge.
UNCHITY

RAILWAY STATIONS COMPETITION

There are two existing railway stations, main station and east station. The reach radiuses of these 2 stations have big overlapping areas. More than 30% walk radius and 60% bike radius are overlapped. They have fierce competition with each other.

The future station has less overlapping areas with main station. Walk radius have no overlapped area. Less than 20% bike radius is overlapped.

Fig. 5.1 - main & east station competition

Fig.1.4.37. Main & future station competition
UNICITY

RAILWAY-RANDSTAD RAIL COMPETITION

The competition of Railway and Randstad Rail is fierce in the north-west part of city, while no competition in the south and east parts of city.

ACCESS COMPETITION

The station is also the bridge for walking and cycling to cross the barriers of railway and A12 highway. There are 5 accesses to cross barriers. They are close to each other.

SWOT

Strength
- No competition with Randstad rail in the south.

Weakness
- Fierce competition between 2 existing stations

Opportunity
- Future station covering more areas less overlapping

Threat
- Compete with Randstad rail.
DENSITY

There is a big low dense area along the rail and randstad rail. The density along the dike is higher than other parts of areas. But there are low density areas in it, which are parking.

The diversity of density in the north is more than the south.

The areas around the primary roads connecting to station square have higher density than other south parts.
DENSITY

SWOT

Strength
• Comparable higher density around station squares

Weakness
• Low density around station

Opportunity
• Low density along the Randstad rail
• Low density in the dike area

Threat
• Have not enough attractions for higher density
MIXED FUNCTIONS

LEGEND
- Shopping Street
- Shop & Supermarket
- Bars & Restaurants
- Office
- School
- Sport Facility
- Cultural Facility
- Religious Facility
- Public Facility
- Green Facility
- Public Facility
- Green Space
- Parks
- Parking Lots

Reach by foot and bike

Fig.1.4.41. Mixed functions
MIXED FUNCTIONS

These maps show the different functions inside the bike and walking reach radius.

There is a concentration of offices around the main railway station. This (inter)national connection is attractive for offices. The rest of mixed functions close to the station are much spread.

SWOT

Strength
- Offices gathered around the station.
- Concentration parking lots around station.

Weakness
- No attractive facilities around.
- The facilities are spread in the city.
- Wrong use of station-main goal. It is a station but used as a cross by area.

Opportunity
- More facilities.
- Public space.

Threat
- Competition with city centre.
IDENTITY

Firstly, it is just a bridge, but on another hand, it combines a railway station. The entrances of north and south sides are not recognizable as a railway station entrance.

Secondly, there is no attraction. No function at the station means less use of the station.

This station is also an important connection of the North and South part of Zoetermeer. It should be made more visible. The station itself is an entrance on (inter)national scale for the city.

The current situation does not show it. Randstad Rail is one of the main infrastructures for Zoetermeer inner-city. Train, on another hand, should it not be the other way around? People can come from other cities and then use the Randstad Rail to go into the city. There should be more attractive shops to make it more lively.
IDENTITY

Function of Main Station

Railway Station entrance?

No functions, not attractive

Important connection point

(Inter)national entrance of the city

Activities

Lightrail on first hand

Train on second hand

Transfer point with lots of activities

Attractive Shops

Other way around?
### EVALUATION

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<td>Connectivity</td>
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<td>Reach</td>
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<tr>
<td>Accessibility</td>
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<td>No recognizable Railway Station entrance</td>
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<tr>
<td>Routing</td>
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<td>Combining of slow and fast traffic</td>
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<td>Pattern</td>
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<td>Mixed function</td>
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<td>No attraction at the main Railway station</td>
</tr>
<tr>
<td>Unicity</td>
<td>-</td>
<td>To much competition with Randstadrail and Railway Station East</td>
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</tbody>
</table>
RGBG MAP
RED GREEN BLUE GREY
RGBG MAP

RED

- Intensify two squares of station, make façade in front of north square.
- Higher the density of east side dike.
- Intensify around 2 Randtd Rail stops.
- Make west – east axis in the south for traffic.
- Intensify the south shopping mall areas.
GREEN

- Make green connections to west natural areas from north side through the green area and go into the neighborhoods from south side go along with the green of primary road
- Intensify the park areas along the new axis
- Through green areas to city centre
- Make cycling and walking routes from RandtadRail stop to south
RGBG MAP

BLUE

- Intensify the areas around canals from station to city centre water front.
- Intensify the canal in the south, to connect to the west green areas.
- Use the existing waters along the new south slow traffic axis.
- Make direct connection from east to west in the north.
- Make cycling routes from station to west through the GREEN connections, and link north and south.
- Make cycling routes from station to city centre through GREEN and BLUE connections.
- Make slow traffic connection from north-east to south-west in the south.
- Extend primary road to west and south in the south.
PART I
ANCHOR POINTS ANALYSIS

I.VIII  ANCHOR POINT H – SNOW WORLD
Tao Yang, Silvia Balzan
**CONNECTIVITY**

1. First step lines are all internal connection in this territory and very weakly connected with surroundings;

2. Second step lines do not extend a lot but there is one second step as a main motor road passing through the whole Zoetermeer from west to east while only available for cars and bikes without pedestrian. The link to the light rail is also available in second step.
3. Third step has good connection with the north border part of city centrum, the totally blank area in the south part has no enough connection, the only two connections are just going around the city outskirt boundaries in east and south.
CONNECTIVITY

Although the connectivity situation towards the city internals is not good enough, the regional connection is much better. As an amusement facility snowworld provided regional range service not only for the citizens in Zoetermeer but also at least people living in the nearest several cities, Den Haag, Leiden. From this connectivity analysis map we can figure it out immediately that several third step connections link Den Haag and Leiden city area directly.

First step Linked Spots: None

Second step Linked Spots: Centrum-west
PART I

CONNECTIVITY

Third step Linked Spots:

Markt
Station Zoetermeer
Van Doornenplantsoen
Ziekenhuis

LEGEND

- First step
- Second step
- Third step
- Lightrail
- 1st step water
- 2nd step water
- 3rd step water
CONNECTIVITY

Combining with the station walking reach bubbles we can get the conclusion of that which urban area could use the light rail system to get Snowworld, by walking-light rail-walking. Actually, if we add one more stop near this park’s entrance, it must help people choose one easier routing.

LEGEND

- First step
- Second step
- Third step
- Lightrail
- 1st step water
- 2nd step water
- 3rd step water
- Station bubble (5/10 min walking radius)
CONNECTIVITY

SWOT

Strength
- well connected with the main motor road;
- well connected with the Randstad Rail;
- good connection on a regional level.

Weakness
- very bad connections on a local level;
- connected with a small part of the city centre, most part of the city (north-south) is not connected.

Opportunity
- use of the Randstad Rail to access both to Zoetermeer city centre and The Hague (city’s level, regional’s level)

Threats
- there are no good connections for pedestrians between the Snowworld and the nearest stop of the Randstahl Rail, and also inside the Buytenpark as well.
REACH

For the outskirt location, there is no so much barrier surroundings. It leads to the result that the actual reach bubble is pretty large.

LEGEND
- Walking reach
- Actual walking reach
- Water barriers
- Motor road/Lightrail

30mins walking range/r=2km

barriers and entrances

small reach bubbles

cut off the unreached area
Large biking reach bubble also appears in this step of analysis for the same reason of seldom barrier works. However, the both huge reach area occupies a lot of rural part. It seems very inefficient.
From this map we can get the conclusion very easily which is the reach range of this anchor-point is pretty large no matter for walking or biking. However, after overlapping the real map as background, the conclusion could be changed into although large reach area is existing, amount of them, especially the north part are almost polder with seldom people living or other human activities, which cause the large area of reach lose its real significance.
Ignoring the empty area in reach bubbles, and overlapping the connectivity 3 step map, we pay more attention to the Zoetermeer urban area. The best connected area with Snowworld is north part centrum, centrum-west and the area along two main motor road, N470, N206. The higher level connection for regional use are much better than the lower level to link the residential area in Zoetermeer.
REACH

Combining with the light rail mapping, and adding the reach bubble to the available light rail stations, we can get the conclusion people in what area could use the light rail to get in the destination and switch to walk to Snowworld. The station walking radius is set 0.33KM for 5 minutes walking and 0.66 for 10 minutes.

As a regional leisure facility, we think Snowworld should service on a regional level. Paying 30-45 minutes by car or bus to this anchor point is acceptable. The reach radius we set as 30KM shaping the bubble as you seen covers the main part of Zuid-Holland. The civilians living in Den Haag, Leiden, Rotterdam all can go to Snowworld by car very convenient.
REACH

SWOT

Strength
- the reach bubble (both walking and cycling) is quite large, because there are not many barriers.

Weakness
- the most parts of the reach bubble consist in completely unpopulated polder landscapes or fields;
- the reachable area is for the most part useless.

Opportunity
- by biking you have the opportunity to arrive until the city centre (where there are many others anchorpoints) in 20 minutes;
- the people who live in the city centre have more possibilities to reach the Snowworld using Randstad Rail and then switch to walk.

Threats
- the Polder barrier does not give the opportunity to connect our park with another city park that is located in the north part of Zoetermeer.
ACCESSIBILITY
The Snowworld, together with the others sports facilities (Bytenpark), which surround it, is situated in a suburban area. This area, dedicated to entertainment, has several entrances. Only one of them is the real entrance to the park; the others are situated by places where there are almost no urban expansion (except for a residential area on the northeast, and for the cemetery) and they are not so visible. Through the main entrance the Snowworld is immediately connected with the principal motor road, which crosses the core of Zoetermeer, and, on the other hand, goes to The Hague.
The only entrance to be public is the orange one. From there, the people are able to see the fabric of the Snowworld and at the same time they can have a mental perception of this, because it is indicated through many signals, which there are from the lightrail station nearby until the main entrance. There is a semi-public entrance too, through which it is possibile to seen the buildings. The other entrance are private, because they bring to not populated areas (the fields at north-west and the Meerpolder at north) or they are used by the residents who live in the near residential area at north-east, who have also a good visibility of the Snowworld and of the football pitch.
ACCESSIBILITY

Strength
- easy connection to a regional level (above all with The Hague) through one main access;
- the people can have a clear perception of the location of the sports area because there are many signals that indicate it from another anchor point (Centrum West) for example.

Weakness
- the area, in which the Snowworld is situated, borders on empty spaces, where there are few entrances and so few way to access to the sports zone;
- the green area that divides the houses from Snowworld has no strong features; it is not an organized way to connect them each other.
**ACCESSIBILITY**

**SWOT**

**Strength**
- the main entrance is directly connected to the main motor road;
- from this entrance the people can have a good visibility of the fabric and so a clear mental perception of the Snowworld’s location.

**Weakness**
- there are few public entrances;
- the other entrances are private, invisible and useless because they border on empty spaces.

**Opportunity**
- the two east entrances could be used much better, improving the quality of the green area that stand by the residential zone.

**Threats**
- this area is eveloped by Polder and by fields and for this reason there is only one access point to the Snowworld.
The Snowworld area is crossed by several routes, but few of these are important. There is only one primary internal connection, from which start some secondary internal connections. Those are used to reach the parking and the semi-public entrance. Nearby the border of the area and near the main internal route it is possible to go with bicycle and car. Between the Snowworld and the residential area, there are only a route for pedestrian and for cyclists. Behind the fabric there is a wide zone crossed by several landscape routes, but this green area cannot be considered a park.
ROUTING

There is only one primary internal connection, that brings directly to the Snowworld’s entrance, starting from the motoroad. The section A shows how the routing from the nearest light rail station to the Snowworld has a cycle path but not a walking paths, nearby the motoroad. Actually this way is the only one that joins the station to the sports area. The section B shows the primary internal connection in its first part from the motor road. Also in this case, there is no space for pedestrians. The section C is the second and final part of the main street, which arrives in front of the building passing over a hill. The section D shows the wide area behind the Snowworld towards the Meerpolder. There are some landscape routes through the wild nature. This is means that there are no real connections with surrounded territory.
ROUTING

SWOT

Strength
- the high quality landscape beside the dominant way is organized efficiently.

Weakness
- lack of pedestrians paths nearby the motor road that conducts to the primary internal connection and also inside the local boundary;
- the landscape routes behind the Snowworld are not well organized.

Opportunity
- improving the pedestrians connections from the nearest Randstad Rail's station to the Snowworld's entrance.

Threats
- there are few important routes, the most are useless and not reachable by car and bicycle.
City area 11.300 ha
Inhabitants 120.000
Overall density 35 inhab / ha

Conclusion
The Snowworld is situated in an almost unpopulated area. It borders on the west residential zone of Zoetermeer which has a number of inhabitants that varies between 10 - 40 inhab / ha and > 100 inhab / ha; and on the north with an empy area of Polder and fields. It is clear how the site is situated just outside the dense urban development of the city, in a place easily reachable from the regional connections.

SWOT

Strength
- the Snowworld is located in a low dense area which it could be used for also others sports activities.

Weakness
- the Snowworld is situated outside the dense urban development of Zoetermeer.

Opportunity
- this area, that is almost wild and empty, could become a city park like the others that there are in Zoetermeer already.

Threats
- the Snowworld risks to remain a regional attraction that will not ever be bouded with the city’s identity, if the connections will not be improved, above all for walking paths.
**MIXED FUNCTION**

Nearby the Snowworld's area there are above all functions jointed with sports activities. The presence of the Westerpark, at south-west, one of the larger park in the city, is relevant. Near the park there is a residential area, which has inside several functions like shops, restaurant, offices and many schools. The residential zone on the right of the Snowworld has less functions. Along the main motor road few attractions were developed. There is a strong concentrations of theme nearby the Markt and the Centrum West, of course. These location are quite far from the Snowworld (about 30 minutes walking) so, it is clear how the anchor point is situated in the outskirt, compared to the city centre. It is in the west part of Zoetermeer's suburbs, directly connected to the motor road toward The Hague. This is an attraction that it was created at regional level. It is not bounded to the city in a peculiar way.

The main functions are spread out above all toward the city centre.

Nearby the Snowword there are only the functions related to two residential areas at north-east and south-east, like bars and supermarkets.

The area is characterized by the presence of many sports facilities and green zones.

The Snowworld is located out of the city and it is a regional level attraction.
MIXED FUNCTIONS

SWOT

Strength
- even if the Snowworld is located in the outskirts, is quite near a residential area that brings inside several functions.

Weakness
- it is quite far away from the commercial centre of Zoetermeer (especially by walking).

Opportunity
- there is the opportunity to increase the number of sports facilities near the green zone of the Snowworld;
- there is the possibility to connect the Buytenpark with the Westerpark in order to create a much bigger city park.

Threats
- even if it is near the residential areas, it is situated outside the city, where there are most of the functions. It will never be part of the city, even if there was the possibility to increase the number of sports facilities around it.
**UNICITY**

The overlapping areas are covering a large part of polder and part of urban as well. This mapping shows which area of Zoetermeer has the most strong accessibility towards both of these two sports theme parks.
UNICITY

The inspiration of make a circuit relation between Snowworld and Westerpark which is according to the last two steps analysis, will bring the positive power between the two. The flexibility and variety of entertainment or sport will be enhanced and might shape a large sports theme park to abstract more tourist around whole South-Holland even the Netherlands.
This part of compare with Zoetermeerse Plas is also concerned with creating an interesting connection from Snowworld to it through the polder landscape, in the meantime, building several circuits to link the south side residential area and the dominant routing. It would have a huge potential to be used by the citizens living nearby as a jogging place with very nice scene and also pretty good connectivity.

These two new connections will be very helpful to highlight the identity of Snowworld that not only a regional ski facility or sporting park but also one node of a city jogging park.
The comparison between Van Tuylpark and Snowworld shows the main character of each. No overlapping area reveals their different service part. Abundant facilities in Buyten Park and the potential of connecting with two other big parks must help attract people on a higher level.
**UNITY**

In the comparison between Snowwoeld and Westerpark is very interesting that these two territories have much resemblance for instance the outskirt location or the large but inefficient reach range. Although this is a unicity research, in our mind, the relationship between these two seems like collaboration more than competition especially after we know the different kinds of sports facilities are in the different parks.
Regional competition mapping shows there are several similar public indoor ski facilities in The Netherlands and even concentrating in South-Holland. The bottom right picture is a reach compared with three Snowworlds in Den Haag, Rotterdam and Zoetermeer. From this we can not get any conclusion that our Snowworld has more strength than others. Nevertheless, the inbetween location that make people living the surrounding small towns can arrive here more convenient, and the collobararion might also bring more oppotunities.
**UNICITY**

**SWOT**

**Strength**
- there are a big amount of particular sports activities in Buytenpark;

**Weakness**
- the Snowworld’s area is isolated from the main circuits that bring to the surroundings.

**Opportunity**
- there is the opportunity to collaborate with the Westerpark and the Zoetermeer Plas, in order to enhance identity, through the use of the Polder.

**Threats**
- there are several competitors;
- the Zoetermeer’Snowworld is not so special if we compare it to the others in south Holland.
<table>
<thead>
<tr>
<th>FRAME - PATTERN - CIRCUITS: TU DELFT</th>
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<tr>
<td><strong>EVALUATION</strong></td>
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<td>Frame</td>
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<td>many useless routes, only one is important</td>
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RGBG PROPOSAL

Linking to Green Heart

Linking to Delft Polder

LEGEND: RED
- Intensification area
- (new) "urban" dwelling area
- Programmatic anchor point
- Urban front
- Visual relationship
- Existing industry

GREEN
- Green condensation area/ City park
- Potential recreational area/ Park area
- Landmark/ Recreational anchor point
- Main landscape route
- Environmental connection
- Recreational/ Slow traffic route

BLUE
- Water square
- Secondary waterline/Connect
- Existing industry

GRAY
- Primary internal connection
- Secondary internal connection
- Bridge crossing
- Existing industry
PART I
ANCHOR POINTS
ANALYSIS

Shopping Center
Zoetermeer Railway Station
Sport Park
Hospital
Centrum West
Markt
School
School
Snow World

I.IX CONCLUSION
## Conclusion

### Zoetermeer Anchor Point Research 2009

<table>
<thead>
<tr>
<th>Subject</th>
<th>Markt</th>
<th>Centrum West</th>
<th>Hospital</th>
<th>School</th>
<th>Sport Park</th>
<th>Shopping Center</th>
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<th>Snow Word</th>
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<td>– –</td>
<td>Very Bad</td>
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CONCLUSION

If we have to make an overall conclusion about the quality of the different anchor points in the city of Zoetermeer, we have to be modest. The SWOT in itself made a clear statement related to the analysis of the research group and gave evidence of the design assignments.

Next to the SWOT we have validated the seven topics of the research assignment in a matrix. They were related to the Frame-Pattern-Circuit theory. 1

From other research assignments we have experienced that of these seven topics those on connectivity and unicity are the dominant and most important ones in their contribution to the success of the anchor points itself. But in the case of Zoetermeer we have to reconsider this statement due to the specific spatial structure of this New Town.

If we look at the connectivity and unicity score the Shopping Centre and the Hospital are most successful. They all have three + points in the two topics.

Because of the spatial structure of Zoetermeer, Snow World is dominantly connected to the higher levels of scale in the agglomeration and not to the local urban frame. And on the other hand all anchor points in the city are more or less unique; which make this parameter less useful for matching.

The Snow World area is mono-functional without reach in the surrounding area and with no density at all. It could have been located everywhere.

If we calculate the + - and look at the score the Shopping Centre in the south district of the city is the winner and the City Market and Centrum West are second best. Even if we take the neutral score into account the Shopping Centre ends at number one.

The Shopping Centre is well connected to the whole area of the south district, it is accessibility is very good and also quite unique. It could even be better if more and different functions were related to the centre area. According to the definition it is a well functioning anchor point but unfortunately only for the south district of the city.

1 Bois P. De, Buurmans A.K. (2005) Genesis of Urban Frame, Public Space in Contemporary City, Xth International Conference report, Cracow University of Technology
PART II NETWORK CONNECTION

II.1 RAILWAY CONNECTION
Bjorn G. Dieleman
STEP ANALYSIS

RAILWAY STATIONS

This chapter shows the steps of analysis of the railway stations of Zoetermeer to the anchorpoints. The exercise is to analyse how the anchorpoints are related, connected to the 3 railway stations. These anchorpoints are those who are analysed by 2 students per group. The railway stations are central station Zoetermeer, station Zoetermeer Oost (East) and the station planned in the future, station Bleizo. The exact location for station Bleizo is not precisely located. In this research it has the location direct near the highway A12 and the highspeed line.

The different maps on this and the next page show the steps of the analysis of the 3 different railway stations.

Most anchorpoints are reached within four steps. The education area Van Doornenplantsoen needs the most steps to reach from the stations.
CENTRAL STATION ZOETERMEER

CURRENT SITUATION

On this page the map of the steps analysis of railway station Central to the anchor points is shown. The ringway direct next to the railway station provides the main connection to the anchor points. The connection to the education area Van Doornenplantsoen uses the most steps.
CENTRAL STATION ZOETERMEER

PROPOSAL

The proposal map for connectivity show the new lines which are added or used for better connectivity. A first step line added/improved from the station along existing water makes connectivity to the city centre much better. The shopping street in the old centre will become an important turning point in the city.

The new situation shows longer first lines to shorter steps to the anchor points.
STATION ZOETERMEER OOST

CURRENT SITUATION

The steps of analysis of Station East is nearly similar to the analysis of central station. In a couple of steps most anchor points are reached, but Van Doornenplantsoen takes a few steps more.
STATION ZOETERMEER OOST

PROPOSAL

In the proposal the shopping street can be reached in the old centre in one step. Changes in public space in the surroundings of the above mentioned shopping street will reduce the number of steps to reach the anchor points. The proposed changes make again the old city centre a turning point.

The new situation shows clearer routes and less steps to the anchor points.
STATION BLEIZO

CURRENT SITUATION

The 2nd picture shows the current and the proposed situation. In the current situation the ringway is mainly used for reaching different anchor points. It takes 8 steps to reach all the anchor points. In the proposal the connectivity changes to longer, and direct lines. These lines are not designed like the top-down frame approach, but bottom-up. The new lines are more integrated in the urban fabric.
**STATION BLEIZO**

**PROPOSAL**

The new situation shows long direct lines. Central station and station East are nearly similar in connectivity to the anchor points. The planned future station has a completely different connectivity to the anchor points than central and east station. Station East can be removed because the added value for connectivity is low.

The changes in public space/steps from the stations to the anchor points are concentrated at the old city centre. Better enhancement of the shopping street in the urban fabric will improve connectivity to the anchor point. Between the old and the new citycentre will come a turning point. The water (singel) that goes from south to north through the city must be used better in the urban fabric. This line has great potential for developing a pleasant low traffic route.

---

**LEGEND**
- Anchorpoint
- 1st step
- 2nd step
- 3rd step
- 4th step
- 5th step
- 6th step
- 7th step
- 8th step
- Change in existing roads
- Added roads

---

*Fig. 2.1.16 Proposal in connectivity change*

*Fig. 2.1.17 New situation*
ALL PROPOSALS COMBINED

In the analysis the future railway station uses the existing roadstructure landscape. The length of the steps are very long and do not take much more steps to reach anchor points in comparison to the other 2 stations.
CONCLUSION

Proposed changes in public space are also shown in the proposal for station East. The changes in connection to the city centre, hospital and the highschools are the important ones.

In the new situation there is little difference with the ‘current’ situation. The railway station Bleizo can use the proposals of the earlier mentioned proposals.
II.II RANDSTADRAIL CONNECTION

Eline Oort, Tom Schilder
RANDSTADRAIL STATIONS

There are two RandstadRail tracks in Zoetermeer (line 3 and 4), which connect to 16 stations. Because the RandstadRail can fastly take-off and slow down, the time between two stations is just limited to 1 or 2 minutes. Leaving the city, it takes 5 minutes to reach the first station outside Zoetermeer (station Leidschenveen). In the future, the RandstadRail might be stretched in the direction of Rotterdam.

Fig. 2.2.1 RandstadRail Stations (two travel time between two stations)
RANDSTADRAIL STATIONS

1ST ORDER STEPS

Lines from the most recent built stations in the east (Willem Dreeslaan, Oosterheem and Javalaan) are much longer than the 1st order steps of the older stations. This increases the connectivity in the east side of the city.

The city ring road is connected to the RandstadRail too.

No other cities/towns are connected to the RandstadRail within the first step, though one line leads outside the (south) border of Zoetermeer.
RANDSTADRAIL STATIONS

2ND ORDER STEPS

The connections in the western neighbourhoods Buytenwegh and De Leyens are very short and reach hardly into the neighbourhoods.

The RandstadRail is not connected to anchor point Van Tuyl Sportpark (F) due to the canal along Zegwaartseweg.

The surrounding cities Leiden, Delft and even Rotterdam have become connected within 2 steps (cities in north-south direction).

Long lines through the polders/open landscape in the surroundings of Zoetermeer (based on old structures).

There are many 2nd order steps in Oosterheem, which shows that the frame in this most recent built neighbourhood is better than the frame in other parts of the city.

Fig. 2.2.3 RandstadRail station connectivity map : 2nd order step
RANDSTADRAIL STATIONS

3RD ORDER STEPS

Almost the whole frame in Oosterheem (east) is connected to the RandstadRail.

Rokkeveen, Palenstein and Dorp still have limited connections.

The cities Den Haag, Gouda, Schiedam, Leidschenveen, Nootdorp en Boskoop are now also connected (cities in east-west direction).
**REACH + CONNECTIVITY**

2ND ORDER STEPS

The reach of the 1st and 2nd order steps covers ca. 90% of Zoetermeer.

The 1st and 2nd order steps cover ca. 50% of the potential reach.

At four locations connection lines are going beyond the border of the potential reach (based on 30 min. travel time).

A small part in the south of Zoetermeer is not within the potential reach, because the RandstadRail does not cross the A12.

---

**Fig. 2.2.5 Reach and connectivity map : 2nd order step**
REACH + CONNECTIVITY

3RD ORDER STEPS

The reach of the 3 steps covers more than 95% of Zoetermeer.

The 3 steps cover ca. 75% of the potential reach, but a large part of the remaining potential area is non built-up area.

At ten locations connection lines are going beyond the border of the potential reach (based on 30 min. travel time), especially in the south-west.

Fig. 2.2.6 Reach and connectivity map: 3rd order step
SWOT

Strength
• The light rail system is a very quick and efficient form of public transport (only one or two minutes travel time between two stations).

Weakness
• Connection lines of the oldest stations are very short, which highly diminished the connectivity of the Randstad Rail.
• The Randstad Rail now only connects one other city outside Zoetermeer (Den Haag).

Opportunity
• Extend the RandstadRail in the direction of Rotterdam (or maybe also to Leiden and Alphen a/d Rijn, because there now is not a direct train connection to these surrounding cities).
• The actual reach of the RandstadRail does not completely cover Zoetermeer; optimal would be if 100% of Zoetermeer was covered, so every citizen is able to make use of it.
• Extend the 1st (and 2nd) order steps of the oldest stations to enhance the connectivity.

Threat
• Because the track of the RandstadRail is not interrupted by anything, it forms a clear barrier between the various neighbourhoods. There should be enough (under) bridges to preserve a good connectivity within Zoetermeer (although it will always be a visual barrier).
PART II
NETWORK CONNECTION

II. III
INTERCONNECTIONS BETWEEN ANCHOR POINTS
Hannes van de Ven, Michael J. Lievenoogen
INTERCONNECTION BETWEEN ANCHOR POINTS

Fig. 2.3.1 Top down map
TOP DOWN METHOD

This map is based on the 1-2-3-step analysis of all eight anchor points. The correlation between these anchor points shows the actual use of the Urban space, ‘Circuits’ and ‘Patterns’ strongly provided by a interconnected urban ‘Frame’.

If you overlay all these lines you get a map like this. Make lines the same transparency, the more hits, the thicker the line. Thick lines are used more and clearly you can see the connectivity of whole Zoetermeer.

In this method, the structure is analysed from a big scale to a lower level scale. For example coming from the highway to an anchor point. That is why it is called a top down map.

TOP DOWN ANALYSIS

Though the structure of the roads and areas in Zoetermeer are designed top down, it is hard to reach most addresses within three steps of the highway.

This is because the structure is badly connected to a local scale. Especially the north part of Zoetermeer has little connection to the local level.

The thicker lines are lines focussed on a more regional level. On this regional scale there are poor connections to the east.

Because there is no physical construction of public space, there is a poor connection of individuals, groups of people and worlds.
Towell Analysis

This map shows all North - South and East - West connections.

The more intersections, the more possibilities to get from point A to B. Also the longer the lines, the bigger the reach.

This gives an image of the potential of the city network, where to add the missing links.
Out of this two maps, you can conclude that there are almost no long lines. Especially the North - South lines are very short. They almost give no possibility to cross the city in a North - South direction in one step.

A good North - South or East - West axes is missing, like the Coolsingel in Rotterdam.
**BOTTOM UP**

After the towell analysis, it comes clear where to add the missing links. These links can improve the connectivity of the city, which gives more possibilities to cross the city.

Fig. 2.3.5 Buttom up connections
ADD MISSING LINKS

By extending some roads, the neighbourhood structure gets connected on a local scale as well. By adding the missing links, for example at the old city street in East West direction, it becomes possible to make connections that cross the city.
EXAMPLES

These maps show the advantages of possibilities in routes between two anchor points. The current situation shows the limitations of routes as a consequence of the top down urban design. After adding missing links the amount of possible routes will be higher.

These pictures show the route between the Van Tuyll Sportpark and the main Railway station. In the current situation there is only one quick route towards it. After adding the missing links there is another, shorter route available.
Fig. 2.3.9 Current situation
Fig. 2.3.10 Future situation
Fig. 2.3.11 Current situation
Fig. 2.3.12 Future situation
Fig. 2.3.13 Current situation
Fig. 2.3.14 Future situation
CURRENT REACH

To check the possibilities of adding missing links, an analysis of the main Railway station and Station Zoetermeer East is made.

The actual reach in the current situation of the main station is focussed on a regional level. Many parts of Zoetermeer are badly connected with the main railway station. Within three steps, the city Leiden can be reached.
FUTURE REACH

After adding some missing links, there is another line which connects Zoetermeer with Rotterdam in three steps. Also in the city of Zoetermeer there are more lines which connects the main railway station. But, can adding the missing links, be an advantage for the connectivity of Railway station East?
CURRENT REACH

The current reach of Station Zoetermeer East is almost the same as the reach of the main station. Maybe it is even better, but it has another function. The main station is focussed on a higher, regional level. While Station Zoetermeer East functions as a lower local scale level. The 3 steps of station east reach a lot further than station Zoetermeer but only Zoetermeer has a direct connection to the centre with the Randstadrail.

Fig. 2.3.17 East station current connectivity
FUTURE REACH

The future reach of station east, after adding the missing links is even bigger than the reach of the main station.

The first step is much longer than the first step linked at the main station. A very local structure is visible at picture 1.23 with a first step directly goes into the city centre.
OVERLAP

Not only the functions of the two stations are different, also the reach with the future Bleizo station which is planned at the east part of Zoetermeer is a different. If the reach of Zoetermeer East is better then the Main stations reach, is it possible to make station East more important than the main station nowadays is? The walking and biking radius is visible in picture 1.24. Their overlap is minimal.

Fig. 2.3.19 Reach bubble main station and future Bleizo station
If the Station of Zoetermeer East becomes more important than the main station is now, the reach bubbles will have a large overlap.

This same overlap is visible in the radius of Main station and Zoetermeer East. Also, they are not adding more connectivity.

Fig. 2.3.20 Reach bubble east station and future Bleizo station
**RANDSTADRAIL**

Main Railway Station is linked with the RandstadRail. This public transport is connected with the innercity of Zoetermeer. If looking at Railway station of Zoetermeer East, it is visible that there is no randstadrail located. If upgrading Railway Station Zoetermeer East, randstadrail has to be linked to Zoetermeer East.
CONCLUSION

MAIN RAILWAY STATION
– Current situation High Level Connected
– New situation even better High Level Connected
– BEST CONNECTED ON HIGH SCALE
– Less overlap with future Bleizo station
– Connected with Randstad Rail

STATION EAST
– Current situation Local Level Connected
– New situation even better Local Level Connected
– BEST CONNECTED ON LOW SCALE
– More overlap with future Bleizo station
– Not connected with Randstad Rail

Conclusion is, by adding missing links, connectivity of each station will be much larger. But each station has its own function, focussed on different levels.
THE OVERALL MAP

RED

The new housing areas are set in order to develop the anchor points themselves. At the same time, the connection between the anchor points and anchor points to the surrounded residential areas will be strengthened by constructing these locations.

GREEN

In the urban area, the north-south direction green route, which connects Zoetermeerse Plas through the city center to the south, is highlighted as the main axis.

Meanwhile, the strategy for the boarder is to introduce the green to the city. Especially the Middeltocht, the typical and protected landscape, in the north-west of the city.
THE OVERALL MAP

BLUE

Not only to remain the good quality of the original water way, but also to make use of them by two main approaches.

Firstly, starting from the city center - Gote Dobbe, re-emphasise the water ways in four directions, especially the way to the north - Zoetermeersse Plas.

Secondly, combined with the green strategy in the north-west of Zoetermeer, introduce the surrounding natures to the urban area by new created routes.

GREY

Two main problems are summarized from the analysis: the missing links between local areas and the barriers caused by railways and over-crossing roads. Hence, the main concept for infrastructure is to solve these problems. In other words, the new strategy is to stress on a bottom-up approach in a form of re-connecting the long local routes and crossing barriers.
After the SWOTs are built up in each anchor point, an overall strategic plan is summed up as a result of the analysis. The main concept of the strategic plan is to link the anchor points with the city itself more tightly. This can be achieved in two parts:

– Crossing barriers. Barriers such as railways, highways or the invisible city border are the main causes of the poor connection right now. The aim of the plan is to break these barriers. Particularly bring the nature elements from the east into urban area.

– Adding missing links. In general, the top-down infrastructure is quite comprehensive in Zoetermeer. However, the analysis has shown a relatively poor quality of bottom-up connections. There is a lack of long circuits in the existing situation, particularly when reviewing Zoetermeer as a whole. Thereby, we recognized and added the missing links, both as a bottom-up approach and leading direction of the developments.

Hence, the practical phase of the plan has both connected each anchor point to the surrounding community; and connect anchor points with each other, especially toward the city centre.
Fig. 3.1.6 Zoetermeer overall map
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