Title of Graduation project:

Cityception
Starting point for urban redevelopment

P4 REPORT

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CITYCEPTION
a starting point for urban redevelopment

Studio
Hybrid Buildings - Zaanlijn

Theme:
Zaanlijn, an urban artifact in the zaanstreek
Urban regeneration, what's next?

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Literature
1. INTRODUCTION

Cityception, a starting point for urban redevelopment

Cities grow, and to grow, cities normally need space and they expand outwards. Unfortunately some cities don’t have this expansion space in order to grow. Those cities need to find other ways to accommodate the growth. One of those cities lacking space to expand is Zaanstad an old, from origin, industrial city.

Zaanstad is part of the metropolitan area of Amsterdam, located to the north-west of city center of Amsterdam. Zaanstad as part of this metropolitan area offers all the good things of being close to the capital but also offers a different living environment as Amsterdam does. Zaanstad has cheaper and more affordable housing for starters and is more rural and quieter compared to Amsterdam.

Zaanstad has a lot of outdated industry within its borders. For Zaanstad to grow it has to redevelop these industrial sites. The assignment of the studio is to redevelop those industrial areas into living areas. With the redevelopment the emphasis is put on the areas around the stations. By redeveloping those areas close to the station, the number of houses per station increases, called station coverage. The increase of coverage results in more people taking the train and enhancing the accessibility of Zaanstad to Amsterdam and vice-versa.

One of those stations with an excess of outdated industry is station Kogerveld. To trigger the redevelopment of the Kogerveld station area in Zaanstad besides the train another direct link to Amsterdam is made. This new HOV (Hoogwaardig Openbaar Vervoer) connection is a bus line to Amsterdam North and the North-South Metro line of Amsterdam.

Where these two lines meet a transferium will be built. A transferium in itself is not a building per se. It is a space, a place where multiple kinds of transport are intertwined, both public and private transport. Where the purpose of a transferium is to accommodate an easy transfer from one to the other supported with functions of convenience and comfort.

Nowadays transferiums are shaped as big parking lots on the outskirts of the city with only a fast-food restaurant. What makes this transferium so special is that it is located very convenient, like most transferium next to the highway, but is on the inside of the city border. Here the transferium is part of the public space of the city. It hosts more functionality and importance then just being an oversized parking lot with a fast-food restaurant, which is the today’s standard for transferiums.

As for the station of Kogerveld itself, because the station is raised the station is placed outside the daily city public life. With the design the station is placed back into the urban fabric and becomes again a part of the city’s public life.
2. PROBLEM STATEMENT

Zaanstad can be seen as a peripheral municipality of Amsterdam, and is therefore more likely to use cars as means of transport instead of the train or other forms of public transport (Bossink, 2011). By increasing the density of housing around the stations within a circle of 800 meter the population coverage of train stations is increased and the ability of municipalities to use the station is increased. (Engel, 2011)

The houses close to the train stations are making it easier to reach and use the station, this leads to an increase in train traffic and a stop on growth of car traffic to city of Amsterdam.

The cities, Amsterdam and Zaanstad, as well as the municipality of North-Holland, would like to see an increase in train traffic between the two cities. To accommodate an increase of train traffic on the tracks the NS has developed the PHS program. The PHS program means 6 Intercities and 6 Sprinters in one direction every hour, giving 24 trains every hour, both ways (Brochure PHS). The NS is going to run this program on intensive train tracks throughout the country among these is the Zaanlijn (Brochure PHS). The Zaanlijn is the train track going from Amsterdam to Zaandam and Uitgeest.

Also the city of Amsterdam says in their structural plan of 2040, 2/3 of the new build houses will have to be built in the surrounding cities. (Bossink, 2011) This comes down to 10.092 houses in Zaandam (Engel, 2011)

Cities normally tend to expand outwards and create new neighborhoods on the city’s edge. Zaanstad did the same in with Kogerveld, Hoornseveld, Poelenburg and later with westerwatering and Rooswijk. Now the city has reached its limits, enclosed between national protected natural landscape on one side and highways and nature on the other side. For this reason Zaanstad can’t expand outwards and has to densify and add the estimated 10.000 houses within its own city borders.

For Zaanstad to be able to reach the number of houses it has to restructure and reorganize its outdated industry. (Engel, 2011) Zaanstad as the first industrial city of Europe (Kleij, 2003) has a lot of industry within its city limits. Zaanstad used to be built along the Zaan for industrial purposes. In the so called comb-structure the houses were organized along small ditches perpendicular to the Zaan. In due time bigger buildings appeared next to the Zaan, mostly factories, and these ditches got covered up and the connection of living next to the Zaan got lost.

In 1867 when the train made its appearance in the Zaan area the track was laid out on the outskirts of the city. First forming a border for the city to grow towards and within, later it became a barrier between the older city and the newer expansion areas. Now this barrier forms a big problem within Zaanstad because the east, the older side, and west side of the tracks are very poorly connected to each other.

When the first stations were built along this Zaanlijn, they showed a certain kind of monumentality. They had a symmetrical layout, a square in front and housed different public functions. Nowadays the stations are demoted to mere tram stops. Hardly any functions are left in the stations, and the building itself is nothing more but a roof. With the functions and monumentality, also the position of the station within the urban fabric disappeared. Where the station used to be a center point, with a square in front it now is framed by roads and the square disappeared. The station building itself is now more comparable with a tram stop than a building, though the numbers of passengers and trains passing through it have increased in time.

The stations do look like tram stops, they will, with the PHS program, even act like tram stops, but the context of the two is completely different. Were a tram stop is placed along streets or squares, embedded in the urban fabric. The platform for a tram is the public space itself. The train platform however is a lot harder to reach. To reach a platform people have to climb stairs up or down, cross fences and gates.
Kogerveld is one of the 5 stations in Zaanstad, next to Zaandam, Koog aan de Zaan, Koogbloekwijk, Wormerveer and Kormmenie-Assendelft. Kogerveld is also the latest addition to the network of stations, build in 1989.

Kogerveld station is also the only station located on the eastside of the Zaan in Zaanstad. The station was added on the line from Zaandam to Hoorn to accommodate the new neighborhood of Kogerveld.

The train track had to cross the Zaan river and was therefore raised and kept raised to cross the Heijemanssstraat, an important access road to the A7 and A8. Because of the raised track the station is also raised.

The area of Kogerveld is built in different stages. Before 1850 the industry was built on the Zaan banks. This industry expanded between 1910 and 1940 (Engel, 2011). Between 1960 and 1970 the majority of the housing in Kogerveld was realized.

The housing of Kogerveld is of a typical post war organization, the open city, in this case also called a “Stempel wijk”. The Stempel wijk consists of ground bound dwellings interspersed with apartment buildings in a repeating pattern.

Because of the raised track the neighborhood is cut in to two parts, north and south. The connections between both are limited to 2 streets accessible to cars. Of which only one is mainly used and forms a major traffic road, the Heijemansstraat, that later continues into the Doctor HG Scholtenstraat. Here the Heijemansstraat and the Doctor HG Scholtenstraat cuts the area into east and west, cutting the entire area into four quadrants.

The station is at the center of these quadrants, and facilitates a connection between the north-east and south-east parts of Kogerveld but the connection from east to west is entirely missing.

The majority of housing is now in the north-east part of Kogerveld. The houses are separated from the Zaan, by the Doctor HG Scholtenstraat and the industry. The Zaan is still the main structural element of Zaanstad and has enormous public qualities. The houses behind the industry can’t profit from these qualities.

**GOALS**

To increase the coverage of the station a densification of the station areas is needed.

This densification can be achieved mainly by reusing the outdated industry and reorganizing it. In some parts of the city there are empty plots without any use or buildings, these can also be assigned to develop housing.

For the Kogerveld area there is a lot of outdated industry along the Zaan river, north and south of the train track. By replacing those parts of industry with high density housing a lot of the estimated housing can already be built.

The football club playing in Kogerveld recently merged with another club, leaving the fields next to the station as a good redevelopment area.

The kogerveld station is being marked as a future stop of an HOV connection directly to Amsterdam. The HOV provides the opportunity to integrate a transferium into the station of Kogerveld. A transferium is an area where there is a combination of multiple kinds of transports into one single node, making it very easy to change from private to public transport or from public to public transport, mostly combined with parking areas and supporting facilities like restaurants.

A major theme in Zaanstad, as well as for this station, is the connectivity of the separated parts. By making connections between these parts it generates interesting places to add functions and special places to the city. As well as easy transitions between these parts.

By enlarging the station to a transport hub and shifting its location towards the west of the current position, transformed into a transferium area, it could facilitate the connection from
north to south as well as the connection from east to west over the Heijemansstraat. This will make the station the major connection between the quadrants of Kogerveld.

With the station becoming more of a tram stop, there is still a major difference. A train station platform, especially Kogerveld, is never part of the public urban environment. People have to take stairs, ramps, elevators etc. to reach the platform. Were as for tram stops, the platforms doesn’t really exist, they are part of the streets, squares, the urban fabric. Integrating the platforms of the station into the public realm it is a lot easier for people to reach and use the train.

The connection with the Zaan got lost in due time by the development of larger industrial buildings. For industry this connection is nowadays not important anymore. With the redevelopment of the industrial areas next to the Zaan this lost connection can be re-established and re-enforced back into the city and the neighborhoods.

**RESEARCH QUESTIONS**
How can the transformation of a station to a transferium activate the redevelopment of neighborhoods?
- What is a transferium?
- How can a redevelopment be activated?
With the continuing devolution of the peripheral train station, how can new qualities be added by placing them directly in the public space?
How can one design or building connect one or multiple neighborhoods together?
According to Leupen (Leupen et al. 2007) in “Ontwerp en Analyse” a morphological study is a study aimed at understanding the special structure of a location. It has the purpose to make the special features visible of any building, site or location. With the study void and mass are drawn opposite of each other, in black and white. Normally the mass in black and the void in white, though when the goal is to put emphasis on the spaces and the voids between the buildings then the mass is drawn in white and the void in black. Within these maps further differentiations can be made by adding particular elements to the drawings as squares, green structures, roads, canals.

To make these kind of maps a base is needed to draw upon, best suited are topographical maps, but any map will do. Scale of the maps is depending on the kind of object under analysis. The bigger scale maps are well suited for the analysis of landscape themes, the position of villages and cities towards each other and the bigger landscape elements such as highways and rail roads.

The development of the urban structure is drawn in a series of maps of same scale and same position on multiple times through history. This can explain certain developments within the city, like the construction of rail roads or roads and their impact on the development of the urban structure. (Leupen et al. 2007, 214)

The first 3 paragraphs use this technique to understand the Historical development op Zaanstad, the Historical development of Kogerveld and the Morphology of Kogerveld itself.

HISTORICAL DEVELOPMENT ZAANSTAD
The historical development of Zaanstad is analyzed by this mapping of the city in 4 different time frames through the course of history. The analysis reduces the picture of the city to only the main elements, the built mass, the river, the surrounding water structure, main roads and the rail road.
The purpose is to understand the direction of developments within Zaanstad and to see whether the rail road has influence on this development.

HISTORICAL DEVELOPMENT KOGERVELD
The historical analysis of Kogerveld is a Zoom in and more detailed map of the previous analysis where all the buildings are mapped according to their year of built.
It is a more detailed analysis of the area then the previous study. This analysis is also to understand the areal developments towards the rail road and the Zaan.

MORPHOLOGY
The specific morphology of the site is made to understand the pixel size of the buildings and the structure of the urban elements. The map is also made to understand the characteristics and the properties of the urban development’s herein.

STRUCTURAL ELEMENTS
The analysis of the structural elements is a study in order to understand the readability of a Zaanstad. Kevin Lynch explains the readability as legibility of a city in “image of the city” (Lynch 1997). According to Lynch the legibility of a city is the ability to read and understand the city, the ease in which the parts can be recognized and can be organized into a coherent pattern for the observer (Lynch 1997, 2).
In the process of way-finding, the environmental image, the general mental picture of the physical world, is the key. This image is the product of experiences, sensations and the interpretation of information by the observer.
These environmental images can be understood and divided into typical elements. The image of the city is composed out of; path, landmark, edge, node and district. (Lynch 1997, 8)
The public image of a city is the overlap of many individual images each from a significant number of citizens.
This image can shift according to the observer and the scale. For instance a driver sees the high-way as a path where the pedestrian sees an edge. Same for central areas in the city, it is a district on city level but considering the metropolitan area it is a node.
Though this analysis is not made by asking people to give their image of the city, the analysis is based on the assumption that people will recognize certain objects and elements in their environment.

The analysis tries to understand the legibility of the city and the ability to recognize certain parts and elements in the city. The analysis is to see what the main elements within the city are.

**TYPOLOGIES**

Based upon the morphology map of Kogerveld a typology study is made. The map is showing all the different kinds of typologies within the area. With this study the diversity of the building typologies is made visible to understand and learn the variety of buildings and to determine whether there are types missing to support the neighborhood.

**CONNECTIVITY**

To understand the connectivity of a place, a building or a site, it can be analyzed through the Frame, Pattern, Circuit method of Peter du Bois (Bois 2010).

The connectivity is characterized by the frame. The frames of a city are the roads and streets upon which we move. Du Bois states that the better the frame of a city it allows to explore and use the city, the more this will actually happen (Bois 2010, 37)

By using the 1-2-3-order frame-analysis a cognitive map is made radiating from one point. The analysis method says that based upon cognitive psychology people can remember only 3 steps. When asking directions you always here; “continue straight on and take the 3 road to the right, and then the 2 again to the left”. This explanation tells us that when you do not have to take a decision in directions you can continue forward. When an explanation becomes too complex and more than 3 turns and changes of directions are involved people tend to say; “when you are there, ask again”. Our brain registers changes in direction and places them on our mental map. The better the network or the frame the more places can be reached within 3 steps.

Places within a city become important when they can be reached by a great number of addresses or points in the city within 1 or 2 steps. (Bois 2010, 37)

This also works in reverse, to see how important of a place is, the analysis can be done from this place instead of from a number of different addresses in the city. The more addresses the place can reach within 2 steps the better the place is connected and the more importance it can hold.

This analysis is done exactly for that reason. To see how well connected the station is to the frame, how much importance it holds and how easy the station is reached within the mental maps of the citizens.

**STATION AS A TRANSPORT NODE**

This analysis will map all the different kinds of transport on and around the station other than trains. Looking at the different kind of busses, where do they go and where they come from, if they stop at regular intervals etc. From this analysis we hope to gain insights to whether the station of Kogerveld and the area are well connected to the city of Zaandam, other cities, or maybe any other parts of the region.

**STATION BUILDING**

For the station buildings it is noticed that they now represent little of what they used to be. In order to understand this phenomenon better an analysis of the station buildings in appearance and function is needed. This analysis first looks at the appearance of the station and the changes it went through in time. Later is tried to understand the functional development of the station.

This analysis is to see whether there are tendencies and trends in station developments and how to react with your design towards these tendencies.

**MASTERPLAN**

The masterplan is an analysis of all the accessible and possible redevelopment areas ordered into categories and certain scenarios. The scenarios are different redevelopment possibilities including and excluding categories of areas. The scenarios give structure to the calculations. The categories mapped are the possible to redevelop industries, the empty plots and the sports areas in and around the station areas. These areas are then calculated with a number of houses according to their size and density.

For this analysis is to see whether it is possible to fit the 7000 estimated dwellings around the station areas, maybe even the 10000 estimated by the municipality.
MODEL STUDIES ON SITE
This analysis tries to find the best shape for the new proposed station area. The analysis starts with the basic shape of a rectangle on site. With every model this basic shape is altered towards the context, or other influences on the site.
Within this study there are no guiding principles, no predetermined steps to follow. As Steven Holl says: “To open architecture to questions of perception, we must suspend disbelief, disengage the rational half of the mind, and simply play and explore. Reason and skepticism must yield to a horizon of discovery. Doctrines cannot be trusted in this laboratory. Intuition is our muse. The creative spirit must be followed with happy abandon.” (Holl 1993, p 21)

PUBLIC SPACES
To understand the public spaces of the station area first a descriptive research is done to see what kind of typologies for public spaces there are, where they come from, and how they function.
Next step in this study is to place well-known places, lesser known places from around the neighborhood and city and well working places on site by photo montage to understand the ratios of measurements in these public spaces. It is meant to be a check to whether the outcome of the model studies is any valid or has any potential of becoming a real urban, well-functioning public space.

SCENARIO STUDIES
The scenario studies are a series of sketches based on three written scenarios of people passing, approaching and using the design. These sketches, made in watercolor, try to explore the imageability (Lynch 1997, 9) of the design. The imageability is the quality within a physical object which gives a strong image in the observer. To heighten this imageability of the urban environment is to give the design visual identification and to structure the paths. Lynch describes certain qualities of form (Lynch 1997, 105). Lynch splits them into Singularity, Form simplicity, Continuity, Dominance, Clarity of joint, Directional differentiation, Visual scope, Motion awareness, Time series, Names and meanings. None of these qualities however work alone or are weak in conflict. A design can be unmistakable when it contains more of the elements.
The scenario study recognizes these elements and will explore them within the sketches with an aim to understand how they can be used and incorporated in a design. Making it part of the citizens urban environmental image.

FLOWS OF TRAFFIC
The site of a transferium is a complicated site with a lot of different kind of flows of traffic. The study is mapping all these different kinds of traffic in a physical model. A physical model is easier to handle and work with compared to a computer model and can show more layers at above and underneath each other compared to a drawing without complicating it. With this study an understanding of the different kinds of traffic, how they interact and how big their presence within the area is, is made.

PROGRAM
There is no given program for the assignment, to still understand the size and the size relation between the different kinds of program, a study is made to compare different kinds of buildings with almost the same gross floor area. The chosen buildings are all hybrid buildings with housing, commercial and offices.
This study hopes through analysis help in determining the minimal needed floor area per function for the design.
4. ANALYSIS AND ARGUMENTATION

HISTORICAL DEVELOPMENT ZAANSTAD
Zaandam first began to grow along the dykes of the Zaan River. A few farms and windmills where in the hinterlands. The villages later began to grow towards each other and with the dykes becoming fuller and more occupied by buildings, the villages also started to grow along little canals perpendicular to the dyke into the countryside.

On the image below a schematic section is made, where the black houses are the first houses build along the dykes of the Zaan and the later expansions were in grey along the dug canals of the polder. With the train track built in 1867 the cities almost have grown together to form a long ribbon city along the dyke and expansion started towards this railway track. The track was built on the outer city perimeters. After the west side of the Zaan was filling up between the river and the tracks, some expansions started on the east side of the Zaan.

After World War 2 the city growth boomed and began growing east with mayor housing expansions. The city stopped growing in the east direction when it reached the A8 highway. And to the west the expansion of the city was stopped by a big natural reserve. In fact the highway and the natural reserve limit future expansions. The city of Zaandam is now fully entangled with the municipalities of Koog aan de Zaan, Zaandijk, Wormerveer and Krommenie, all along the Zaan. Together it is now called Zaanstad. It is interesting to see that the city has always been guided by natural barriers or infrastructure when it comes to direction of growing or limiting growth.
**HISTORICAL DEVELOPMENT KOGERVELD**

The waterside of the Zaan was developed first, already before 1910. Later the bigger industry buildings from the beginning of the 20th century were built. The big expansion Kogerveld, north of the station, was built between 1960 and 1970. The hospital was built in 1967. The expansions on the east side are all from the 1970s. What is important to notice is the fact that the station was actually built more than 15 years after the big neighborhood expansions around the station area.

**MORPHOLOGY**

When zoomed in to an 800-meter-circle around the station, because this is the area from where people could reach the station in 10 minutes walking, the structure of the Kogerveld neighborhood on the eastside of the Zaan is clearly visible. The neighborhood is built as a ‘stamp neighborhood’, with a lot of green between the dwellings. The built up of the neighborhood is done with strips of housing or apartments repeating over the area. The pixel size of these kinds of neighborhoods is fairly large, certainly when comparing to the old vernacular of the Zaanstreek. This old vernacular is at some points still visible on the west side of the Zaan. Along the Zaan the pixel size is even bigger. That’s because of the large industry buildings. Only in the north and the south along the Zaan the grain gets smaller. Here again is housing. Also the Hospital with its characteristic footprint on the south is recognizable.
STRUCTURAL ELEMENTS

The urban tissue of Zaanstad is mostly defined by the river, the railroad and the highways. As seen in the historical development of the area, the built fabric was at first orientated on the river. The industries and worker homes were all built around the water. Halfway through the 19th century the railroad was built. The city expanded in between the railroad and the water. Now more of the area was orientated on the railroad. The highway, built in the 20th century, forms the east border of the city and, just as the railroads, it connects the city to a larger network.

TYPOLOGIES

Due to the ‘stamp neighborhood’ the typologies are limited in the Kogerveld neighborhood. The neighborhood is built up repeating a stamp of the same typologies. Mainly single family housing of 2 floors, mixed with apartment buildings of 5 floors in height. Overtime the single family housing expanded and some inhabitants started building an extra floor on top. The industries are large halls of 1 floor in height and sometimes fronted by an office building of 2 floors. The apartments are all gallery apartments and have the so called “through lounges”, dwellings with windows to both sides of the building. The ‘rest’ of the typologies are very different, ranging from hospital to local gym, from elementary school to restaurant.
The location of Kogerveld is very well connected through train, HOV and Car to the city of Zaandam, the Northern part of Noord-Holland but most importantly also to the major employer of the area, Amsterdam. On image 4.10 these connections are made visible in a scheme of the Amsterdam metropolitan area. The Station of Kogerveld is located in the grey circle and connects through Zaandam station to Amsterdam by train. A new HOV line will connect Kogerveld directly to the new North-South metro line of Amsterdam. In Kogerveld there are also two highways, the A7 and A8. The A7 starts at Kogerveld and intersects...
with the A8, where the A8 runs all the way to the A10, the ring road of Amsterdam. All these are connecting Kogerveld on different levels and in different means to Amsterdam, the metropolitan area and the hinterlands. When looking at the travel times, there is not much difference between train and car to major work areas or surrounding cities. Though on further investigation, traffic jams around Amsterdam, especially those to cross the Noordzee canal are intense and take up a lot of time. As seen on image 4.11 and 4.12 On image 4.11 the contribution to the yearly travel time loss is seen where on image 4.12 growth of the workday average travel time loss is seen. This adds valuable time to the travel times, making public transport a good alternative for the car to reach Amsterdam.

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The connectivity or the ease of reaching the station is analyzed through the Frame, Pattern and Circuit method (Bois, 2010). But for the connectivity only the frame is used. This shows how far the station can reach within 3 steps. In this case the thick green line is the first order, starting at the roundabout directly next to the station. The second order is a dashed line where the third order is a smaller green line. These first orders are not too long, especially to the south it is hindered by the big roundabout with the access to the A8. Though these first orders connect to the old roads on the dykes of the Zaan and give a very long and far reach into the city. In the older parts of the city, the third order shows the “kam structuur” from where the city originates. However the new city expansions, southeast of our station are not connected to the station at all. On the contrary we see that the third order reaches to the A8 and other main roads, connecting the station to the city of Amsterdam. But if we look in the city, it is clear that the connectivity is decreased near the train tracks. For the 800 meter area the neighborhood of Kogerveld itself is good connected to the station. On the other side of the road the industries are blocking the connections to the Zaan, therefore giving a less dense network and poorer connection.
STATION AS A TRANSPORT NODE

The possibilities of changing to other means of public transport in Zaandam Kogerveld are quite limited. The station has limited parking space of 66, with around 21 extra unmarked tolerated spaces. There are quite a lot of bike stands with almost half of them being bike lockers/safes. Though judging by the amount of bikes being parked outside the bike stands, there might not be enough. And there is also no OV-fiets available. There is no taxi pitch but there is 1 greenwheels.

There are 2 bus stops close by, stop; Zonnedauwhoek and Kogerveld station. On the latter the most busses pass by. On Zonnedauwhoek only 64 passes which also passes Kogerveld station.

On Kogerveld station is stopped by lines:
63: Assendelft to Zaandam ‘t Kalf through Zaandam station and vice versa.
   Stops both ways every 30 minutes
64: Zaandam Rooswijk to Zaandam Kogerveld through Zaandam station and back.
   Stops every 30 minutes both ways.
391: Amsterdam CS to Zaandam Zaanse schans.
   Goes every half an hour and has extra buses in rush hours.
395: Amsterdam Sloterdijk to Wormerland P+R A7 afrit 2, through Zaandam Poelenburg and Zaandam Peldersveld, and vice versa.
   Goes every 15 minutes.
398: Amsterdam Riekerpolder to Womerland P+R A7 afrit 2.
   Is a special line, it goes in morning rush hours from Wormerland to Amsterdam every 15 minutes. And in evening rush hours every 15 minutes back to Wermerveer.
And the HOV line, running from Kogerveld station to Station Noord, also known as Sation Buikslootermearplein, of Amsterdam’s future North-South metro line. This HOV connection is however not yet in working order.

STATION BUILDING

The analysis of the station buildings shows that the station building actually in a way is devolving instead of evolving. The station buildings used to be more monumental and housed different functions ranging from an information desk and a restaurant to hairdressers and a house for the station manager. Now the development of stations seems to go into two directions; the main city stations, the icons, and peripheral stations like Kogerveld. As illustrated in image 4.15. The main stations of cities are made more explicit. They become icons, gateways of the city. They house all sorts of different functions like shops, restaurants, offices etc. The stations become places to

Image 4.14: OV-connections station Kogerveld

Image 4.15: Train station development
identify the city with, while the peripheral stations have, if you’re lucky, a kiosk. The building is now no more than a small roof, like a tram stop. This is of course because time changes and with it our needs and habits changed. We don’t need to buy tickets anymore, we just check in and out with our chip-card. The time of waiting decreased due to higher frequency of trains, the amount of passengers increased but our time spent on the station decreased. Therefore the functionality of the station declined and don’t have to be any more than a tram stop. For the Zaanstad area the development of the stations is put on a timeline in image 4.16. Here can clearly be seen that the stations, once not so different from each other and more monumental, making more of a statement devolved into small stops with a covered waiting area.

**MASTERPLAN**

The assignment of densification in the station areas was put on 7000 dwellings in total for the whole of Zaanstad. With 7 stations that would be 1000 dwellings a station. Though not all station can handle a 1000 dwellings due to already densely built urban fabric and the lack of space.

Therefor the master plan is developed in very systematic way, by first mapping all the available plots and categorizing them according to sports (green), empty with no specific use (red) and industry (blue) Seen in image 4.17.

The square meters of the plots where added to a table and calculated how many dwellings could fit and work with 20 dwellings/ha, 40, 60 and 80 dwellings/ha as densities.

From these calculations a few different scenarios where written.

Scenario 1 is a base scenario. Used as a point of reference and is using all the plots, industry, empty and sports. Then calculated how many dwellings fit with the different number of densities.

As can be seen on image; 4.18, with a low density of 20 d/ha the number of 7000 dwellings is almost reached and with 80 d/ha the number is almost threefold the 7000 dwellings.

In Scenario 2 only the industry and the empty plots are used. To reach the 7000 dwellings a
higher density has to be used. With 40 d/ha a 8585 dwellings can be built. Scenario 3 is not demolishing anything and only using empty plots already available. To reach the 7000, there has to be built in the highest density of 80 d/ha as can be seen on image 4.20. Scenerio 4 is only applying the redevelopment of the industrial areas. There is more industry available to redevelop so a lower count of density can be used 60 d/ha to reach the 7000. In image 4.23 a table is shown with all the number of dwellings per scenario that can be built compared to the 7000 and scenario 1.
Though the world is not that black and white. Some areas can sustain a higher density because they are themselves already built dense, some can’t, as well as some plots you can’t redevelop because they are already under redevelopment, or have specific historic qualities you don’t want to ruin.

Therefore a scenario 5 is developed using site specific densities and including and excluding certain plots due to their location, value or future plans.

In image 4.22 the numbers of density per site can be seen and in image 4.24 the site included and excluded from scenario 5 are shown. Again scenario 1 is used as a basis, the included plots are then filled and the excluded plots are outlined.

With these fore mentioned densities and the new selection of plots a number of dwellings twice as high as the 7000 dwellings can be reached.

On image 4.25 scenario 5 is visible with the division of houses per station area.

Next to the calculations on numbers of dwellings in the master plan also guidelines are developed to help and guide the design for the new dwellings.

Image 4.26 is showing the guidelines.
MODEL STUDIES ON SITE

The station should be reachable to all, from all parts of the Kogerveld area. Since the area is cut into four quadrants by the train track and the Heijermansstraat a redevelopment has to be able to connect all four sides. To make this possible the block has to transcend the biggest barriers on the location; the train track and the Heijermansstraat. Therefore a block is placed over the intersection at the location of the current station. The study starts with the basic rectangular shape, placed over the intersection, then a series of varieties are made based upon surrounding buildings and landscape elements.

The models:

All the models show an immense open space inside the block. For a public space to function properly the space is too big and should be altered in one way or the other.
SCENARIO STUDIES

The border of the block is in all the studies like a fortress wall, big, long, monotonous and closed. For people to understand the block, to be able to read the block, exceptions to this regularity should be made. These exceptions are made with entrances into the block, the emphasizing of functions and the train track. To study these exceptions, three scenarios are developed, 1. Foreigner on a train, 2. Walking the park and 3. Taking the bus. These three scenarios approach the block differently from different kind of angles and in different kinds of transport.

Image 4.39: Scenario routes in and around the block

Scenario 1; Foreigner on a train.
Here a foreigner just landed at Schiphol airport and has a business meeting the next day in Zaandam. He travels by train to the Kogerveld station, sees the station and the block from the window as he approaches. When he arrives he gets off the train and looks in the direction of the church, but before he checks in at the hotel he looks back towards the platforms of the train.
In sequence is shown in image 4.40.

Scenario 2; Walking the park.
On a sunny afternoon Linda is walking her dog in the park next to the train track when she looks up at the new building. She decides to take the route through the building to the other side and continue her walk towards the Zaan. When she is on the newly raised square inside the building she looks at the Hotel and continues walking towards the Zaan. At the other side of the building her dog runs off back to the new building, she turns around looking back at the building in search for her dog.
In sequence is shown in image 4.41.

Scenario 3; Taking the bus.
A commuter from Zaandam has had a long day of hard work in Amsterdam. He travels back to Zaandam by the HOV bus. When he is almost there he looks outside the bus window to
see the transferium. After he gets off the bus he looks up to the square and to the sky. He searches for his bike, and starts to ride home. On his way home he looks over his shoulder back at the block. Tomorrow he has to take the same bus again. In sequence is shown in image 4.42.

**FLOWS OF TRAFFIC**

This model and analysis is made to better understand the different kinds of traffic that will flow and navigate through the new build area. Also to see the intensity of traffic that could happen between the different places on the site.

The model, in image 4.43, shows all different kinds of transport. Trains are mapped in yellow, busses as red, cars in dark blue, bikes as grey and pedestrians as green.

In the case of commuters to Amsterdam, they arrive by bus, car, or bike at the site and from those points of arrival walk on foot to the station, the departure platform. Those arriving on foot can walk directly towards the platform. For those arriving from Amsterdam the process is reversed.

What we can see is that pedestrians are knitting all the points of arrival/departure of transport
together. Therefore the emphasis of the design, besides creating a smooth passing of all the other traffic, should be put on pedestrians.

For the pedestrians and other slow traffic the elevated train track is a good point of reference, and helping people orientate towards the stations.

As for the cars and busses, the busses should stick as much on the outside of the plot as possible, not venture to deed into the side to keep quick passing through the side. It also places the bus station next to the train station, making the walking distance as short as possible. The cars however can move into the site. They should when they park the car there before taking the train. However the cars have to be able to move back and forth to the access road without turning around or running into a dead end to give a smooth passage.

Image 4.43: Scan of the flow analysis model
PROGRAM

Transferia programs are now very limited to just big parking lots and the occasional McDonald. There are also some transferia located on major points of interest, like the Amsterdam Arena. These transferia host more functionality and attract more people. The location of my transferium so close to Amsterdam also calls for a broader spectrum of functions, as well as other program to the convenience of the users. The main program with the densification is housing, besides that the transferium can support functions like higher quality restaurants, supermarket, shops, flex offices and even a kwik-fitt. All functions should be flexible and “on the go”, accommodating commuters moving from one place to the other.

To understand this program better other projects with housing combined with different functions are analyzed based on their gross floor area compared to the projects.

<table>
<thead>
<tr>
<th>Project</th>
<th>Solid 18 by Claus and Kaan</th>
<th>Bryghusprojektet by OMA</th>
<th>Neuer Augustinerhof by Nieto Sobejano Arquitectos</th>
<th>Transformation of the Marcel Saupin Stadium by FGP(a)</th>
<th>Metacity Rotterdam by OMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross floor area</td>
<td>21950 m²</td>
<td>27000 m²</td>
<td>27452 m²</td>
<td>32665 m²</td>
<td>48480 m²</td>
</tr>
<tr>
<td>Housing</td>
<td>46%</td>
<td>15%</td>
<td>16.5%</td>
<td>21.4%</td>
<td>21%</td>
</tr>
<tr>
<td>Offices</td>
<td>14%</td>
<td>30%</td>
<td>6.2%</td>
<td>20.1%</td>
<td>18%</td>
</tr>
<tr>
<td>Commercial</td>
<td>15%</td>
<td>5%</td>
<td>4.7%</td>
<td>4.3%</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>14%</td>
<td>40%</td>
<td>28%</td>
<td>26.4%</td>
<td>39%</td>
</tr>
<tr>
<td>Car parking</td>
<td>10%</td>
<td>10%</td>
<td>44.6%</td>
<td>27.8%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Through the table can be seen that some percentages are close to each other on the entire line. Commercial for example has all percentages between 4 en 5% of 4 out of 5 times. With housing the percentages are also close to each other with 4 out of 5 between 15% and 21.4%, though the emphasis of the project and the masterplan is put on housing and should be more than 20%. For the office space 115 is used, the design is to transfer people from the Zaanstad region and hinterlands to Amsterdam and back, not to create its own business district. With also the office building market in decline it wouldn’t be wise to build a lot of office spaces. The offices are due to this and the position in the designed put at 11% of the gross floor area. Though offices at this point are highly valuable for foreign business people landing at Schiphol airport and need a not too expensive place to work, or for people from the region to arrange meetings. Therefore the office building concept is that of a flex office where people, freelancers and zzp-ers can rent individual rooms or desks and share the lunch room, front office desk, meeting rooms etc.

With the additional program it’s a bit more complicated. Here there are to sets 26 to 28% and 39 to 40%. In the later set the projects are based in city centers, which the design is not. Therefore, based on the position within the design a 27.5% other program is chosen split into 20% other and 7.5% hotel. The hotel needs a minimum of 100 beds. The hotel is aiming at business people and couples visiting Amsterdam and the Zaanstad region, with a ratio of 20 to 40 in single and double rooms. As an average the rooms need 45 m². (Neufert) 60 rooms times 45 is 2700m². For its location in the design the size of the hotel is established at 3000 m² and 7.5% of the program.
BUS STATION

The bus station is a vital part in the plan to make the entire building a transferium. The bus station has to be able to accommodate the already existing buses, an extra direct bus line towards Amsterdam North and a possibility of expansion within a very limited area. To design this station first the movements of a bus and the workings of a bus station should be understood. Due to the limited space there is put special focus on minimal requirements to work with and expand or enlarge when necessary. Within the Neufert (Neufert, 20XX, p.XX) the minimal turning circles and platform lengths are proposed.

Checked with the Station in Arnhem. The proposed station by UNstudio and the already existing temporary station. The Arnhem station was chosen because of the tight space available and the elongated buses it has to accommodate.

From these data 3 main types of stations are drawn; the station with parallel stops, the station with 45 degree stops and the station with perpendicular stops towards the road. Choosen was for the second option of the 45 degrees stops. A bus station of this type saves a lot of space compared to the perpendicular one and is easier to navigate for bus drivers. Also the bus drivers navigate towards the bus stop in the comfort and ease of the station instead of on the road, preventing car accidents. For cars passing the station, the shorter insert and deceleration lane are more clear. The chosen bus station also has the possibility to support taxis and to extend in the future with more stops.
TRAIN TRACKS AND STATION
The train station is situated in the middle of the block, running underneath the dwellings and over the square. The train track is already raised to cross the river Zaan and stays raised to cross the provincial road and another small stream. In the design the train track is kept raised throughout the building and the newly formed park around the building. To improve connections between the north and south of the track the traintracks are placed on a bridge over the park. The construction supporting the bridge through the park and the building is continues. The width changes where there is a platform needed to get on the train and the height of the columns change when the track runs over the bus stations, but the tracks itself keep levelled.

The construction itself uses organic shapes and forms a contrast with the angular and orthogonal building, emphasizing the park where it runs through. The shape itself is based on the lines of inertia.

The station is roofed over through the block. The roof provides besides shelter for the travellers also protects the dwellings and the square from the noises produced by the train. Therefore the roof also protrudes the blocks for a few meters to spare and protect the outside facade from the sounds and noices of the train.

The shape of the roof is a contineuation of the organic track construction. Completely made of glass for transparency the roof is made of a single curve. The shape is limited in height by the dwellings above the traintracks, though it needs a minimal height for the overhead lines supplying electricity to the trains.

To be able to use the platform to full extend the curvature of the roof goes directly up till 1.8 meters then curves to the other side of the tracks.

Due to the span of the roof the beams crossing the tracks need a significant height. Touching on the platform these beams become columns. The space between the columns is used to create seatings, ticket vending machines and waiting areas. The width of the columns provides a division between the seats, machines and therefore creating more privacy for the travelers waiting for the train.
DWELLINGS
The dwellings in the block use a gallery circulation. The galleries are placed inward towards the square for emphasis on circulation and people movement. Keeping all movements of people from house to train, bus, bike on the inside of the block. With gallery circulation less vertical transport is needed which serves the commercial functions on the ground floor giving them more space. These vertical transport points containing stairs and elevator are always situated on a passage through the block.

With the circulation typology part of the facade has to be used as entrance area and therefore leaving less facade surface area is available for the living- or bedrooms, making it in a way a single orientated appartments with one usable facade. By using a maisonette typology on the gallery an extra floor is available. The floor generates more facade surface, giving three usable facades, but also gives the opportunity to divide living from sleeping.

In a lot of standard appartments when entering you end up in the central hallway connecting the bedrooms to the bathroom to the livingroom and kitchen. When having visitors they first have to go through the most private parts of the house before arriving in the livingroom. Therefore in the design these areas of living and sleeping are seperated.

Besides the advantage of the seperation of living and sleeping it is also possible the make the appartments more narrow when using two floors. The narrower appartments would give more appartments on the same length of space, giving more front doors on the same gallery and more people using the same gallery. The intenser use of the gallery improves the social security and the quality of the gallery as a part of the dwelling. (Leupen, 19xx, p158)

Within the gallery type appartments there is made a division in different appartments depending on orientation and position within the block. The appartments on the north have the gallery on the south facade. Therefore these appartments have their living on the upperfloor. This gives these appartments the full use of
an south facing facade. The sleeping area in these appartments is placed on entry level below the living areas.

The south appartments however have their gallery on the north facade. Giving 2 fully usable facades on the south side. Here the living area is on entry level with the sleeping area on top. This appartments also has two floor high outside space on the south facade. This outside space can be closed of by sunscreens on the outer facade, creating a heat buffer in the summer between the outer facade en the inner facades.

On the west and east sides of the block the construction grid is wider then the north and south parts due to the train passing underneath. These dwellings, due to their wider with have more space and therefor more bedrooms. The living area is on entry level just as the south side dwellings, with sleeping on top.

Different non-gallery and non-maisonette type appartments are located on eitherside of the staircases and in the corners of the block.

The goal for the layout of the appartments was to place as much of the service spaces inwards, giving the bedrooms, livingrooms, kitchens and studies as much facade area and therefore natural lighting as possible. These service spaces are spaces that according to the building code do not need natural lighting. Service spaces include the toilets, bathrooms, storage areas and laundry rooms.

**COLLECTIVE SPACES**

Due to the size of the block it is easy for the design to become an atonomous and individual block with dwellings. Where people live their daily lives but have no interaction with their neighboors or other inhabitants of the block.

In an ordinary city street people meet their neighboors in the streets, have their children playing on the local playground.

Within appartment buildings nowadays these spaces are non-existent. Therefor the design introduces these spaces back onto the streets of the appartments. Where the galleries become more then just the shortest route to home. Its a place where a community can grow and gather in an otherwise very public building.

Important for these spaces is the placement and diversity. These places should be easy accesible and accesible by everyone. Therefor all the collective places are placed next to the staircases and along the galleries who lead to the dwellings. As well as every space should have the opportunity to sit and talk, to wait and to retreat when you meet friends, family or acquaintances on the galleries or stairs.
To make every space identical would mean to lose their purpose. Therefore every space does have the generic place to meet but this place is shaped and determined by the total character of the collective space. These spaces have different accommodations from urban fitness and sports to children’s playground, from green, relax and barbeque to unwinding with a game of chess.

OUTER FACADES
The outer facades of the block are about 150 meters long on all 4 sides. Roughtly divided into two parts. The plinth and the upper, main part of the building. The plinth of this building is occupied by the commercial functions. Within this plinth are besides the functions also the passages onto the innersquare of the block.
The plinth is to be the ground floor connection between the park the building stands in, the upper dwellings and the inside of the block.
The upper part where the dwellings are situated in the building the facade has to be recognisable as one part, as one building, from all sides. To make all facades in a way the same and recognisable, all four facades needed the same approach and the same appearance. This is achieved by a systematical built up of the facade.
A big identical mass identifiable and recognisable by the collective outside spaces. These spaces give orientation to the inhabitants and visitors.

The entire facade is divided into identical pieces or elements. These elements are 1350mm wide and floor high, 3300 mm.
The elements have a variety depending on the functional needs of the dwelling behind them. The basic elements is a window element. If the dwelling however has a loggia and needs an open element with a handrail, the element has a handrail. When there is a wall seperating rooms reaching up to the facade, the element is closed. Other elements include windows that can be opened, only the opening, and a double sized element. Therefore creating a variety within the mass of elements. Though all the elements stay recognisable as the basic element with an alteration.
Exceptions from these elements are the framing of the entire block and of the collective outside spaces. The elements are also designed identical to each other.

The systemathical build up of the facade and the size of the projects suggests the use of prefabricated elements for the facade. Prefabricated concrete sandwich panels are self-supporting and significantly speed up the construction process. Due to their integrated thermal insulation and shear mass of the inner concrete the elements have a favourable thermal inertia which helps in the building inner climate.

The plinth is made out of brick. Brick was choosen in contrast to the concrete upper floors.

**INNER FACADES**
The inner facades form a contrast with both the outer facades as with the plinth made of brick. Totally build up from timber framing the inner facade is also prefabricated for more construction speed.

**CLIMATE**
Climate design is about the indoor climate; temperature, air etc. as it is about developing systems and concepts to make our buildings more sustainable and less energy demanding. Important for this climate design, especially the temperatures, is to prevent overheating in summer. Overheating gives very poor indoor climate and costs a lot of energy to cool down again.

With big glass surfaces the temperatures might rise to heigh and the indoor climate becomes uncomfortable.

In the design the glass surfaces on the outside make up for 45.4% of the surface;
The appartments are 5400 mm wide with elements of 1350*3300.
1350*3300 - 300 for the element itself gives a glass surface of 750*2700 = 2.025m².
four windows of 2.025m² = 8.1 m² every appartment.
For the bigger appartments, with a width of 8100mm the glass surface is a bit more making up 68.2% of the surface.

In the design overheating is prevented by sunscreens that automaticly close when the sun reaches into the appartments, cooling in the floors through the system that in the winter is used for heating and ofcourse windows that can open.

The sunscreens are automatically operated. A pyranometer on the roof measures the sun intensity and controls the sunscreens of the appartments. All the sunscreens are operated on a building scale level, though all the appartments have their own override switch where they can manually adjust the screens.

All the appartments use floor heating. The heating comes from a heatpump underneath the building. The heat is transported to the appartments and warms up the appartments through winter. The cold water that returns to the heatpump is stored and used in summer to cool down the appartments.

In the appartments themselves there are smaller heatpumps used for the boilers where the hot tap water comes from.

For the appartments there are two kinds of ventilation. The basic ventilation, which runs all day to refresh the air inside the appartments and purge ventilation. Where the latter is operated manually by the users only on intent and when nesceccary. Purge ventilation works by simply opening windows on the opposite facades.
The basic ventilation sucks clean air from the inner facades and through a heat recovery unit the air is heated up with the air that is sucked out of the appartment and blown into the living
rooms, pre heated. This reduces heat loss and by sucking the bad air out of the apartment the comfort level and well-being is improved.
5. CONCLUSIONS

HISTORICAL DEVELOPMENT ZAANSTAD
From the analysis can be seen that the city of Zaanstad has always been influenced by its borders, whether it was the Zaan to build along, the rail road to build towards or later the high way. The development of Zaanstad has always filled in the gaps towards these structural elements.
Now with the HOV line a new element is added to the city and can again influence the development of Zaanstad. Especially in places like Kogerveld with a high count of outdated industry which can be redeveloped.
By the placement of the project along the HOV line, the redevelopment of industry is started as well the direction of redevelopment and development along this line.

HISTORICAL DEVELOPMENT KOGERVELD
From this analysis as with the previous can be seen that Zaanstad has been building away from the Zaan and closing the Zaan of from its living areas with industry.
The project is positioned in such a way that it guides the redevelopments along the rail road towards the Zaan. The redevelopment will leave enough space for the Zaan to be reintegrated into the city and to even reach further into the city.

MORPHOLOGY
The neighborhoods and areas in Kogerveld are very distinct and different from each other. The open structure of the “stamp neighborhood” doesn’t does not fit with small individually development of housing, neither with large scale closed urban blocks.
However it can work with large scale elements. Therefore it is important to open the block towards this part of the neighborhood. The rest of the context hardly exists considering the redevelopment of the industry.

STRUCTURAL ELEMENTS
The main structural elements of Zaanstad are first the Zaan, later the rail road and the highway, all of them being the main means of transport at the time.
The latter is also the latest main means of transport nowadays. With the PHS program the rail road grows in importance again. And with the introduction of the HOV a new structural elements, though less clearly visible as the previous ones is added to Zaanstad. Again guiding and influencing the growth and redevelopment of Zaanstad.

TYPOLOGIES
The typologies in Kogerveld are very poorly mixed and of poor variety. For the new design it is therefore best to implement the missing typologies to the neighborhood as well as typologies fit to living next to the station.

CONNECTIVITY
The area is well connected to the city of Zaanstad. Even to Amsterdam through the Highway. Though the industry is blocking a lot of connections and the sportsfields south of the station have no connection at all. With the redevelopment of those areas the connection to the site and the station should be well considered.
The industry which is blocking the connection to the Zaan should be reinserted with the redevelopment.
The Oostzijde is the road along the Zaan on the east side. This road, in this way or another, is almost as old as the city itself and connects all the main parts on the eastern side of the Zaan.
By integrating this connection into the redevelopment and the project the connectivity of the project is greatly enhanced as well as its importance to the city frame.

STATION AS A TRANSPORT NODE
The station of Kogerveld is well connected to Zaandam, and to Amsterdam. The after-transport, the part where you get out of the Public transport and still have to go a distance to your final destination, is very minimal. No rental bikes and no taxi’s or taxi pitch and not
enough parking spaces as it is right now. With the transformation of station to a transferium
the parking spaces is by far not enough.
It is important for the design is to incorporate more after-transport, more parking places for
the car and bike.

STATION BUILDING
The analysis shows there are two developments going on in the stations right now. First are
the stations that are the main stations of cities. They become big points or interest, they
become icons for the city they stand within. The others are the peripheral stations. They show
a decline and become more of a tram stop. These peripheral stations do not need a building
anymore, a shelter for rain or sun would suffice, though at its position right now they need
to be brought back into the city to be of more use and significance. The design is putting
this peripheral station like a tram stop, with only a little roof for shelter, on a public square,
accessible by all and easy to use for all.

MASTERPLAN
The assigned 7000 dwellings within the station areas can be reached in a number of ways.
Even the 10000 dwellings estimated by the municipality of Zaanstad can be realized with the
masterplan. The masterplan helps defining the redevelopment areas and helps guiding the
redevelopment by a number of guidelines. The guidelines do not work for every location, but
for my location the guidelines; 01. Connect with the existing water qualities, 02. Connect with
the existing green qualities, 05. Historical ribbons as structural elements for connection, 07.
Improve the main east-west connection and 08. Continuing with the building scale along the
river apply to the location.
These guidelines will be taken into account designing the project.

MODEL STUDIES ON SITE
The model studies show that there is so little context on site that adapting and reshaping the
block is very hard and results are very minimal. Because there is no context the project itself
can be the new context for the redevelopment. By creating an autonomous and authoritarian
object it will influence and direct the new redevelopments.
The edge, the wall around the project and its inner space is too big to leave it as one space
or one edge. This space and the edge should be cut, and shaped into smaller parts to become
more humane.

PUBLIC SPACES
As already said the space inside the block is too large of a public space to be of any significance.
The space inside the block will be divided into smaller places, squares, connected through a
network of public spaces, studied in the analysis. And the project itself will be connected to
its surroundings through this network.

SCENARIO STUDIES
With such a big project, or building, orientation and differentiation is very important. By
making different exceptions all with their own feel and experience, linking exceptions in
pairs opposite of each other in the block enhance the experience and orientation within and
approaching the block.
The differentiation in the block will be made by entrances, emphasis on functions, and
character of the public spaces inside the block.

FLOWS OF TRAFFIC
Lot of traffic flows on the site are intertwined, for smoother and safer handling of traffic the
flows of busses should be separated from the pedestrians. The right placing of functions or
built mass is able to guide the flows of pedestrians, where the busses should have a clear line
of movement. For the design it is important to know that some flows should not be interfered
with and others like pedestrians can be shaped according to wishes of the architect.
The buses follow a time schedule that interferences with the transfer to other public transports when slowed or halted. Therefore the bus should have a clear line of movement. The pedestrians and bikers however can be mingled very well, even cars, if not on access roads, can be mixed with slow traffic. The access roads stand higher within the urban hierarchy and demand faster pace of traffic.

PROGRAM
The program is developed according to the analysis in the previous chapter in accordance with the model and drawings of the site.

The program developed is as seen on image x.xxxxx. Where the other functions are a bike repair and rental shop, a kwik-fitt car garage, a crèche and a drop-off point for packages. The shops are mainly shops who supply in first demand, supermarket, drugstore etc.

Coming back to the research questions:
A direction of answers can already be given.

- How can the transformation of a station to a transferium activate the redevelopment of neighborhoods?
The implementation of a transferium and the functions coming with it will lead to an increase of activities in the area and with the position of the design along a new structural element in Zaanstad it will trigger new developments around it.

- What is a transferium?
A transferium is not a building per se but rather a transition space between various kinds of transport whether it be public or private. Such spaces are supported with additional functionality like restaurants.

- How can a redevelopment be activated?
A redevelopment can be activated by increasing the importance of a location. When a place becomes better connected to the urban frame and its legibility is increased, the potential of a location rises. This will trigger the redevelopments.

- With the continuing devolution of the peripheral train station, how can new qualities be added by placing them directly in the public space?
The new qualities will not necessary be added to the station building itself, but to the surroundings. Another quality is the way this new station is accessible. By placing the station into a public space like a square it is a lot easier to reach.

- How can one design or building connect one or multiple neighborhoods together?
The redevelopment of the station into a transferium, built in a single block, is a good way to connect all the different quadrants of the neighborhood. Though there has to be taken great care into the treatment of this block. This block can’t be made to large for its space within won’t work. As well as for the outside, a to monotonous exterior in combination with the further developments can disorientate an observer. The final result might be more of an ensemble around multiple public spaces.
6. DISCUSSION

The first ideas for the design project were ideas for the station and transferium alone. As the project developed, the ideas became bigger, and with it, the project, though all the decisions taken in the process and the changes in the ideas are based upon the research done.

The research gave me some good insights into the location, but most of all, how to handle such a big block. Here, the literature of Kevin Lynch helped me with his description of elements and his description of form qualities. Especially with the scenario studies, some of the things from the writings of Lynch can be recognized.

According to Holl, exploration of the design should hold no limits, no boundaries, should be free of rational thinking and disbelief. In my model studies, the models are still quite simple and above all rational. I would like to continue the series of models with more heart, extreme, making it more extraordinary. With these new models, I would also like to make new scenario studies. Explore new possibilities for the design, to create new images and visions.

For the station, or train stop, more study is needed on the interactions with its surroundings. For instance, how the train track can be crossed most easily. Where the tram rides on the street, the train has a higher velocity and a larger impact. And the trains are of different design as trams are, therefore, the design of the relation from street to platform is different and should be well considered.

The continuation of the research from now would be in the sections of the building. For mostly the section of the dwelling areas. It would be very interesting to see if this block, which could be seen as a small city within the city of Zaanstad, could continue this concept into the section. Where the collective spaces, streets and places continue up onto the higher floors of the buildings.
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