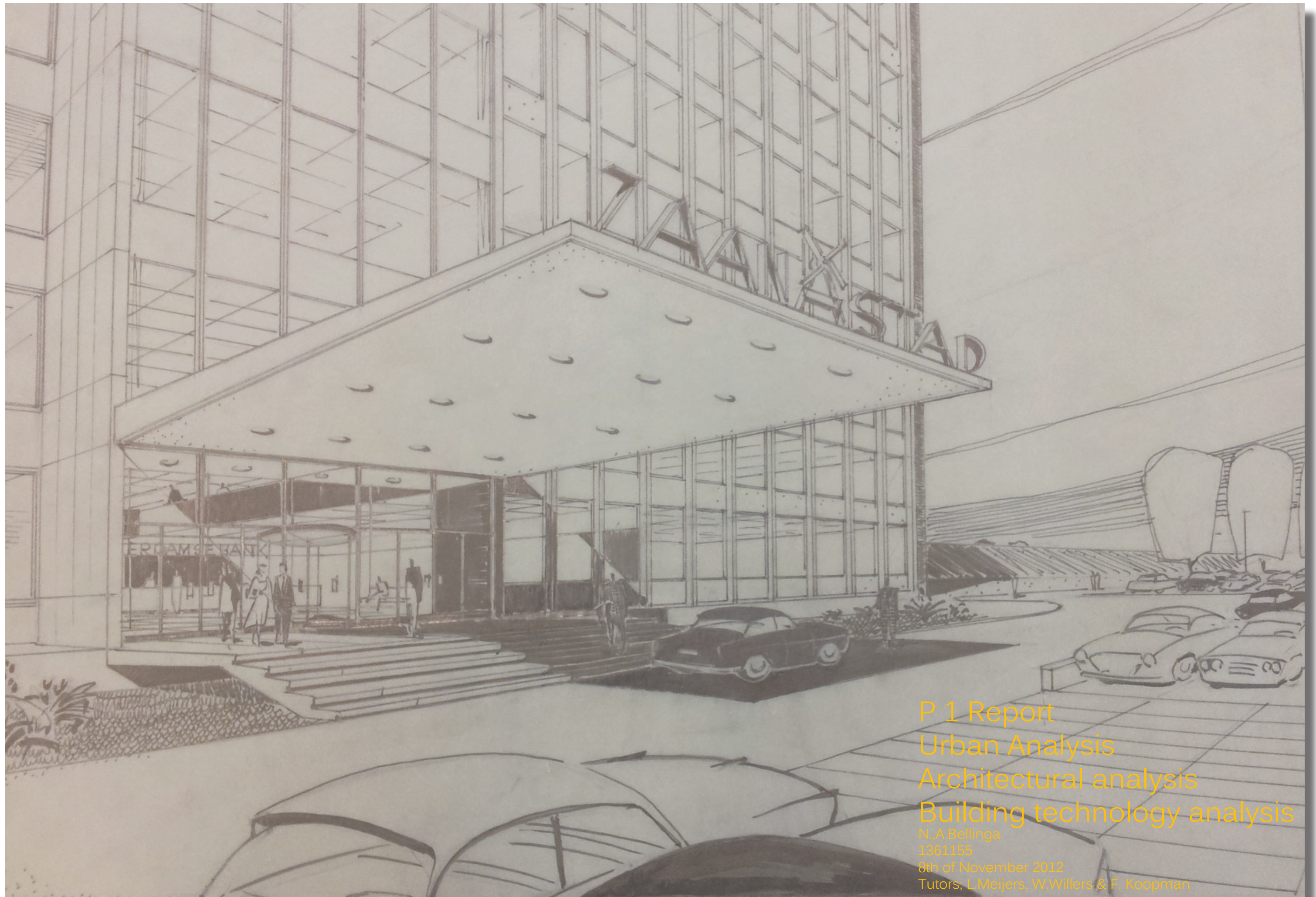




P 1 Report
Urban Analysis
Architectural analysis
Building technology analysis

N.A. Bellinga
1361155

8th of November 2012

Tutors: L. Meijers, W. Willers & F. Koopman

Urban analysis

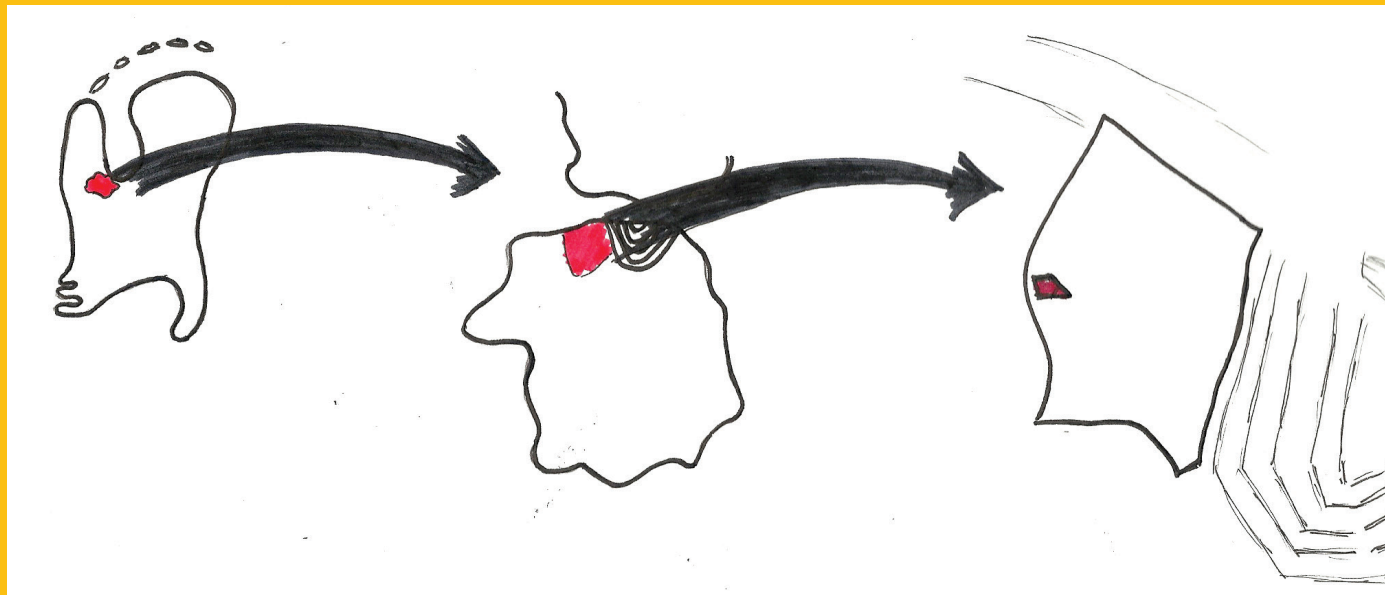
Introduction

This is the analysis report of the Urban analysis, Architecture analysis and the building technology analysis of the project Mixed projects. The project is focusing on the western part of Amsterdam. With this Urban part I visualize the outcomes of our first field trip and literature studies. The research question is stated: "What are the root causes nowadays, of diversity in the western part of Amsterdam?"

Amsterdam is located in the western part of The Netherlands and has a short history in comparison to other cities of The Netherlands. Funny, since it is today's capital city of Holland. Historically, Amsterdam was only connected to the former 'Zuiderzee' by the IJ, but today it also has a bypass to the North sea by the 'Noordzee-kanaal'.

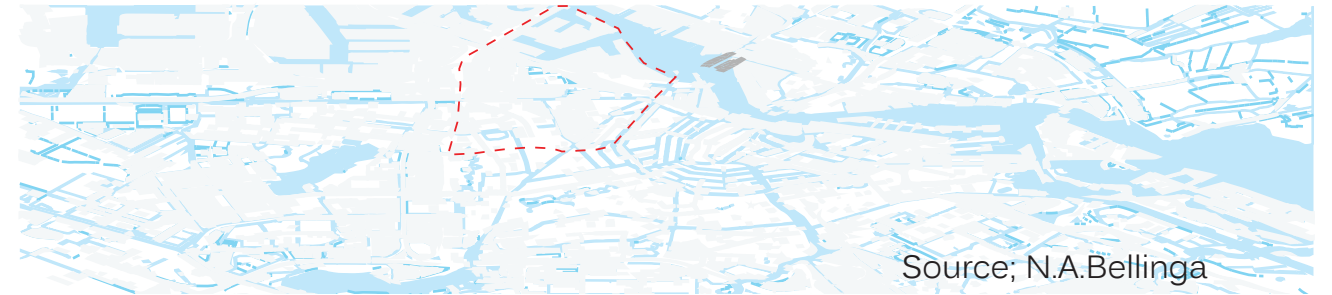
With my first visit to the Western part of Amsterdam I noticed the large diversity between people, housing, function and nature. What are the root causes of diversity in the western part of Amsterdam is thereby the first question that popped up in my mind. In this report I will analyze the reasons for this large diversity, based on the historical growth of Amsterdam and the current urban structure and function layout in the area. This report ends with a research question and will be a guide for my choice for a final graduation subject.

Design location



The location; Amsterdam West and The Scholendriehoek. (Source: Bellinga)

>1400



Source; N.A.Bellinga

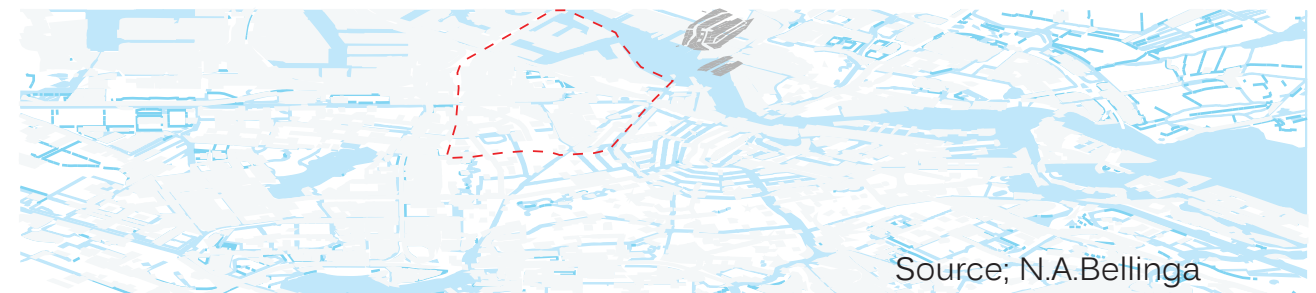
<1400

In the year 1000 people started with the development of the wilderness on the spot where Amsterdam is located now. In 1275 duke Floris founded a small hamlet on the dam at the Amstel. From this place they had a great way to gain toll money and the possibility for a free way to the Zuiderzee. In a natural and slow process the nature changed to urban use. The first church was founded in the small hamlet on the dike at 1300 on the Amstel bank. At 1323 the small city had a monopoly on trade to the rest of the country. In our area, today's western part, there was only land or sea at that moment.

On the city map of 1220 the hearlemerpoort is shown, the entrance for the west part of the city. Before 1400, the centre of current Amsterdam was founded.

1567

>1400



Source; N.A.Bellinga

1567

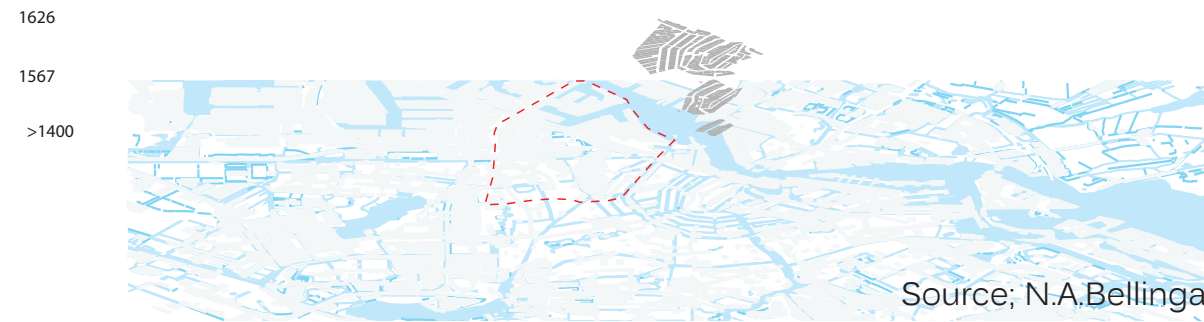
During the centuries that the city grew, the Dam stayed the centre of Amsterdam. The new canals were laid out as rings around this centre point, to obtain more and more embankment length and to allow more space for the ships and warehouses. In the Middle Ages the entrances to the city were blocked by gates. These gates ensured that the city was closed against robbing, looting and robbery. But also to monitor who is legally allowed to make use of the public areas.

In 15th and 16th century the trade in the city grew. The main trade materials at that century were imported wood and grain. These materials came from the East sea (Oostzee) countries. At that time the city included 30.000 inhabitants.

This century is marked by two major city fires in the year 1421 and 1453. Therefore, the city government issued a building code (bouwverordening). This code described the fire safety requirements and forced to build with brick.

The canal structure extended, brick buildings were required.

Urban analysis



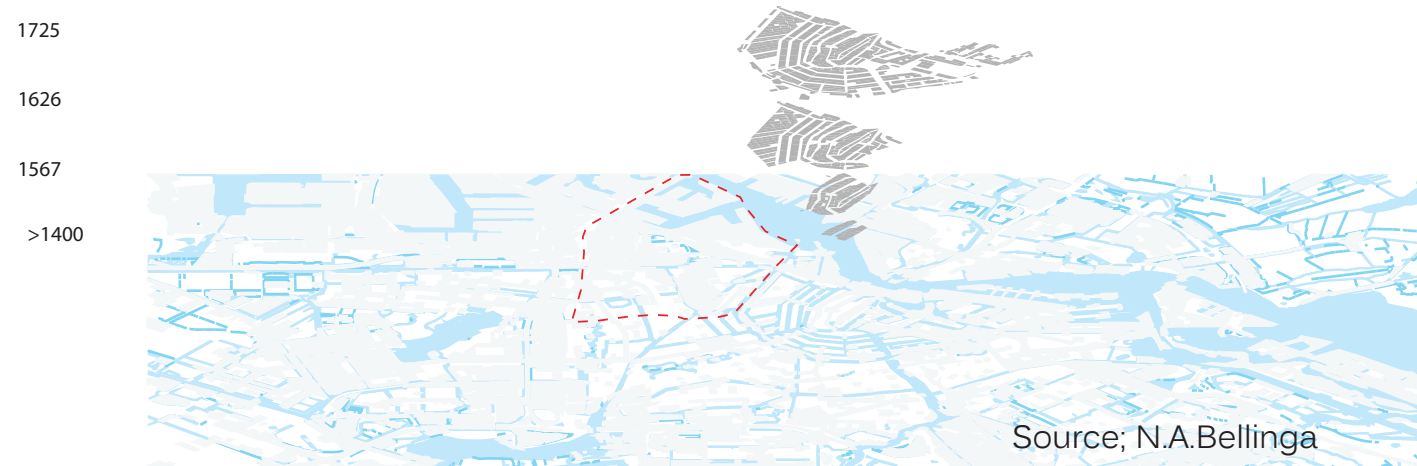
1626

In 1602 the VOC was founded, this stimulated the growth of the harbour in the direction of the IJ, which formed the link to the Zuiderzee and indirect the North Sea.

At the 17th century there was a big expansion of the city, the canal structure extended and the Jordaan was created (the first district that was located on the outside of the canal structure). In this period there was also an explosion of the art production and trade of art. What was representing an economic impulse to the city, whereby the inhabitants had more money to spend.

The last extensions of the canal structure and the new made defensive works were based on the first ideas for an ideal city. Military engineers turned these ideas into plan for the city expansion: the city defended itself to foreign invaders (like the Spanish).

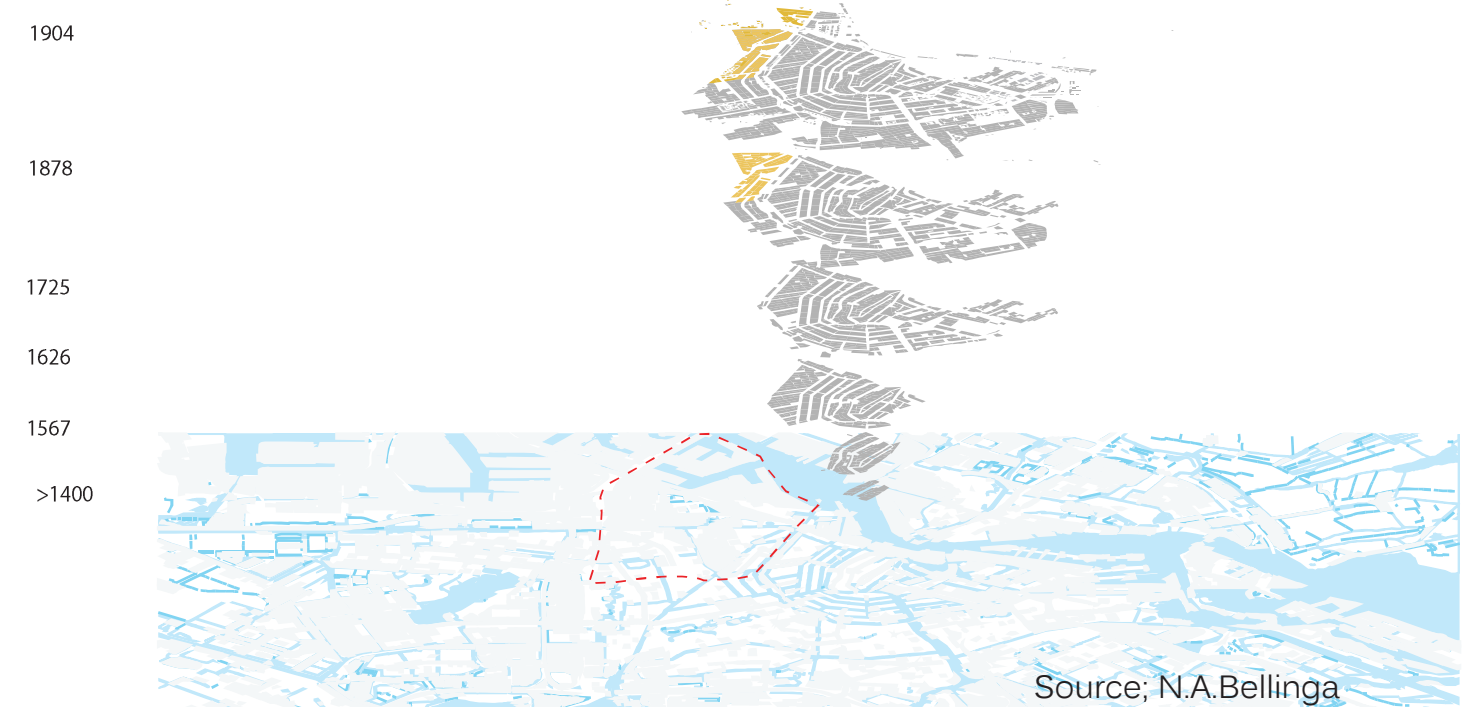
The first harbours were developed in the estuary, on the measurements of the ships of that time.



1725

In the end of the 17th century the economic growth was over. This ensured that in the 18th century the difference between rich and poor was big. With the introduction of iron and steam the industrialization of Amsterdam started and this gave the city a new economical impulse. Unfortunately there was a large majority that still lived in poverty. The working class was housed in new working class housing areas.

The first plan for city expanding made by Military engineers was completed in this period. In this plan there is a combination between defensive works and new housing. The new housing was clustered by their function; a distinction between rich and poor became visible in the development of working class housing areas.



1878

A new period of economic growth started. The opening of the North sea canal and the Suez canal in the Middle East made possible the trade with new parts of the world. A new trade route was created. The first ships with diamond from south Africa entered the city harbours. The expansion of the harbours continued and now also in the Western direction. On this map you see the foundation of the working class neighbourhoods (brown areas). By the rapid creation of these neighbourhoods there was no attention paid to the quality of the environment, nor the housing quality. The inhabitants of this part of Amsterdam were living in poor conditions. The growth of the city was linked to the industrialization; people from the country migrated to Amsterdam. The expansion plan of Amsterdam during this period was designed by Jan Kalff. He made the first expansion plan for Amsterdam that was realized.

Kalff's plan follows the water structure of the Kostverlorenvaart and the border of the city from 1877.

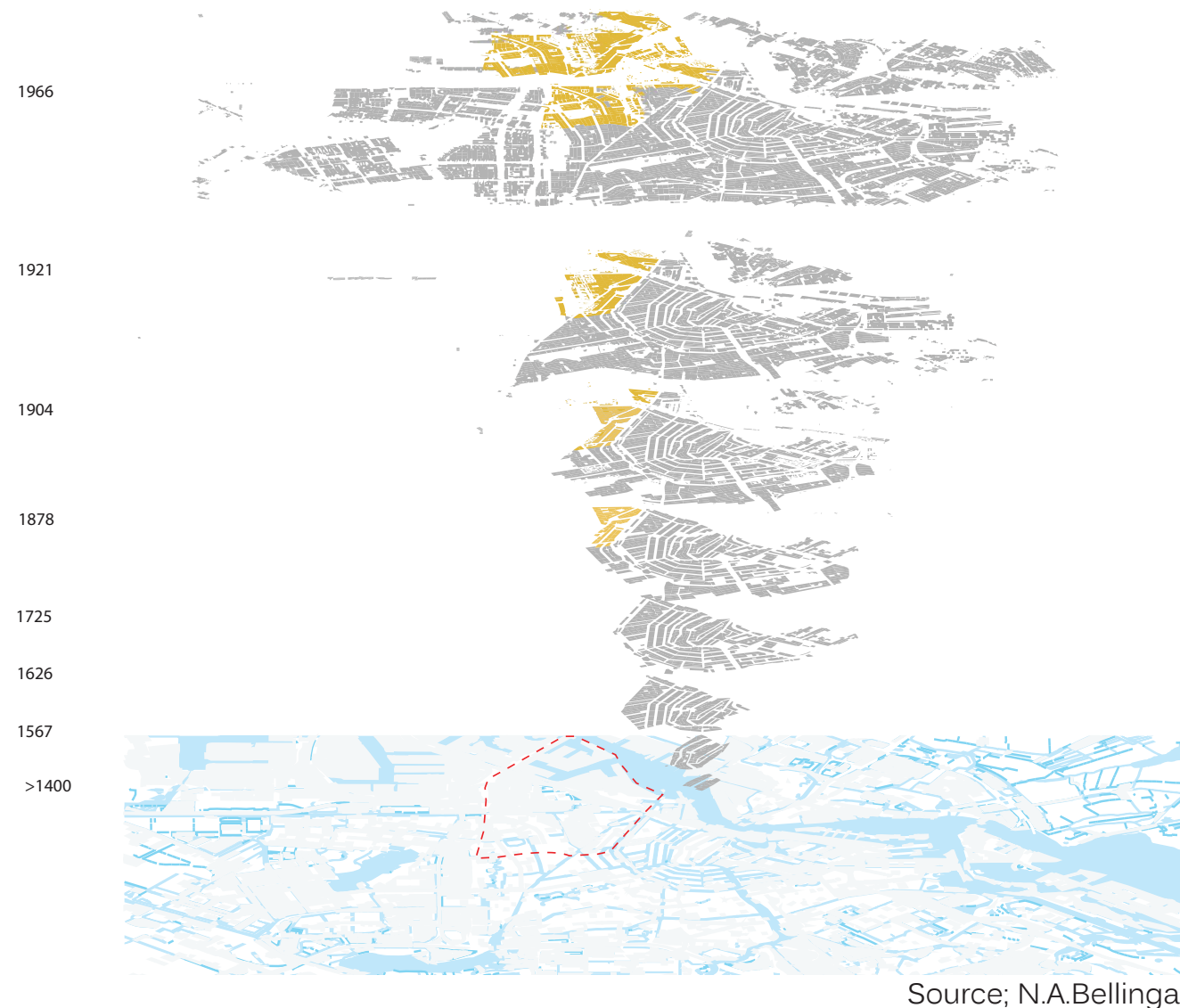
1904

At the end of the 19th century the harbours of Amsterdam were too small for the rapid growing trade of those days. That was the reason for the development of new harbour islands in the IJ. In 1889 the Central station was opened and gave the possibility for transport over land by new made railway tracks through the country.

On this map you see the growth of the cities around Amsterdam, they were also upcoming in follow up to the recovering economy.

Important for the urban structure in this time is the Housing Decree (Woningwet). This gave the city council a tool to make provisions for the construction of new housing. In the northern part the harbours grew around the IJ banks.

Urban analysis



1921

The Annexation with neighbouring municipalities was the first step to a larger expansion of Amsterdam. Also the Housing Decree (Woningwet), which prescribes the qualities of housing, made the decisive factor on urban planning and architecture. The first Garden Cities (Tuindorpen) were founded. Also the construction of housing in the northern part of Amsterdam started, here the idea was to combine living and working. This stimulated the industry in the northern part of Amsterdam, although slowly.

The structure of the harbours grew around the IJ. On the borders of plan Kalff new areas of housing were built.

1922-now

In the 20 years after 1921 there were many urban plans for the expansion of the city. Two of these plans were the Plan West and the Plan Zuid. These plans were for the lower part of the city. These districts were built in the Architectural style called Amsterdamse school. In this period the municipality founded a former department for giving advice for the new expansion of the city. One of these new plans was the AUP (algemeen uitbreidingsplan), designed in 1934. This plan gave a global structural idea for the new neighbourhoods. Because of the Second World War these plans were executed on a later stage.

An important development around 1920 was the growth of the airport Schiphol. This gave Amsterdam a stake in the upcoming aviation and more opportunities for trade with other countries.

After World War II Amsterdam had a huge growth of inhabitants. At this time they started with the built of new neighbourhoods structured by the AUP.

Nowadays Amsterdam is growing with 12.000 people per year. The expectation is that there are 850.000 people living in Amsterdam in 2040.

This explains all the new districts around Amsterdam and their neighbouring municipalities, which have grown together to one large agglomeration.

In the last decades the city grew based on different city plans, first the city plan Zuid & West made by Berlage. The plan West is important for the growth of our research area. Later there was the AUP "algemeen uitbreidingsplan". This plan gave a global structural vision on the expansion of Amsterdam and reacted on the 19th century belt. The structure of the current situation is based on these plans.

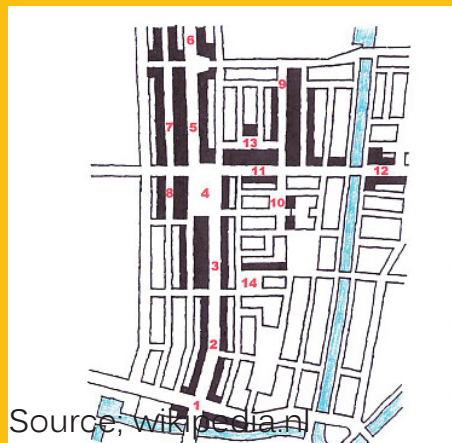
All these several periods of rapid expansion are the root causes for a divided area.

Urban analysis



Plan Kalff

The first organized expansion plan is made by Jan Kalff. A plan which would made an expansion around the city center. The neighborhoods which were designed by this plan are; van Lennepbuurt, Helmersbuurt, Staatsliedenbuurt, da costabuurt, Frederik Henderikbuurt, Spaardammerbuurt, Pijp-Noord and the Oosterparkbuurt. The expanding started at 1877.



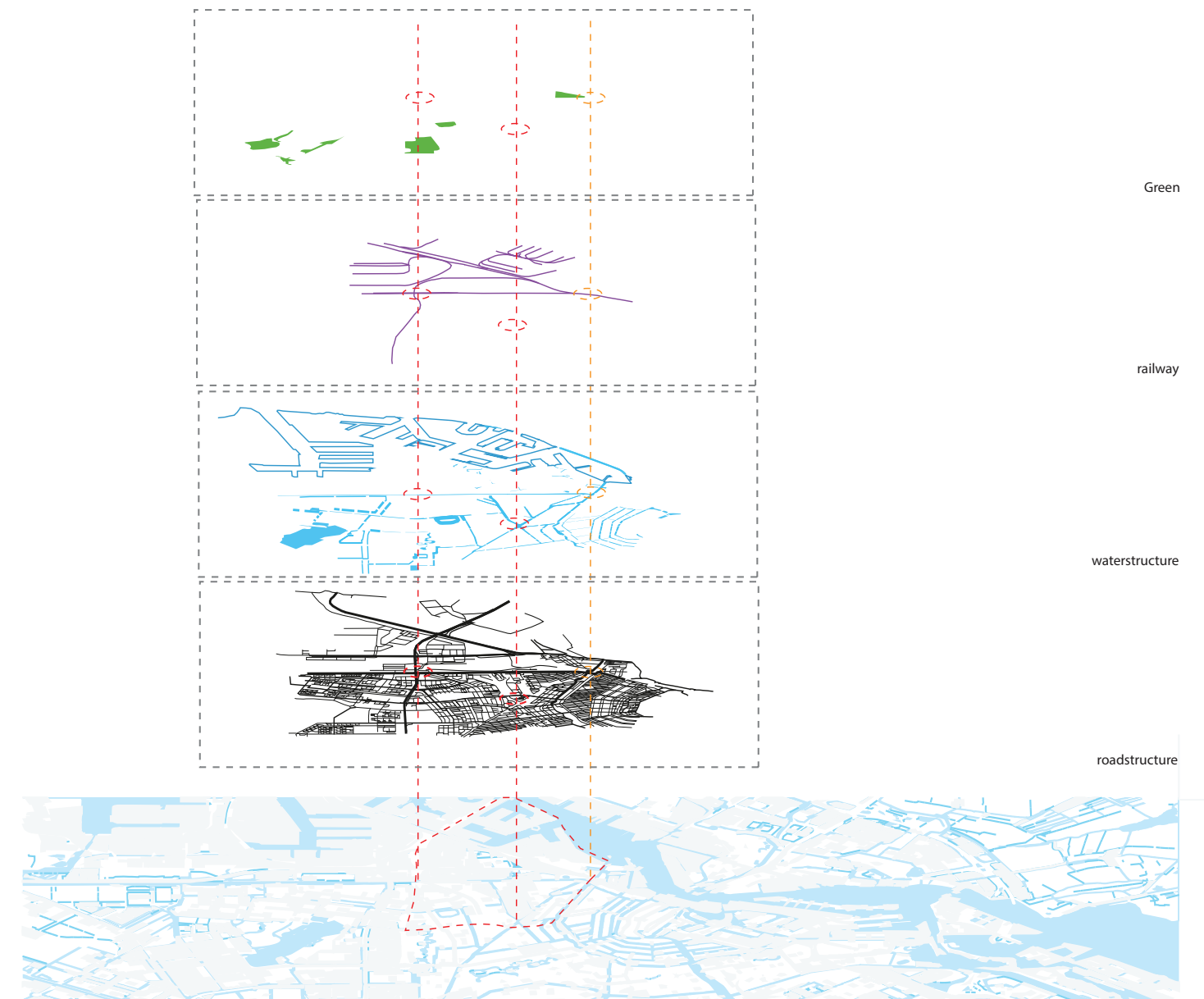
Plan West

Plan West is an expansion plan made by Jan Gratama Gerrit Versteeg. Berlage made a part of the master plan. Berlage was an architect who designed by the ideas of rationalism. Plan West was an expansion plan for 6.000 houses on the district Sloten.



AUP

The AUP, algemeen uitbreidingsplan, is made by the municipality in 1934. However, they started in 1939. It was an expansion plan mainly for the south and the west part of Amsterdam. There was more need for housing. They built these houses in the idea of "het nieuwe bouwen". "het nieuwe bouwen" is a building concept for constructing building blocks with much light, air and space.



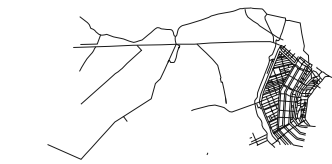
Sources; History analysis by N.A.Bellinga

Current situation

In this image you see the current situation of different layers. All these different layers meet each other on diverse points. On these points arise interesting areas, like the Westergasfabriekpark, but also a new living area below the food centre. All these kind of structures are barriers through and around our research area, some are physical, some are not. On the next page you will find the historical evolution in structures.

Urban analysis

1850



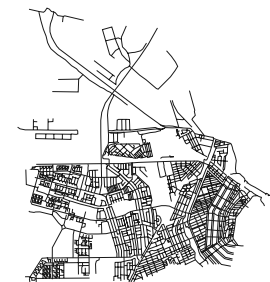
1905



1938



1967



Current



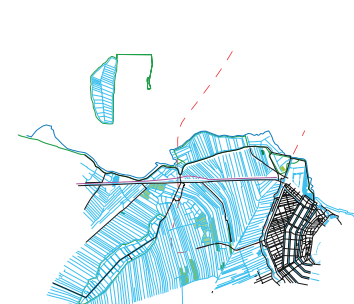
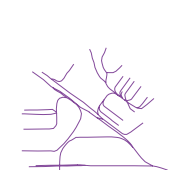
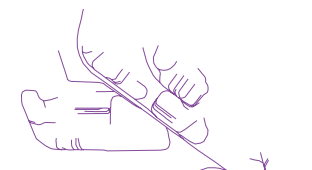
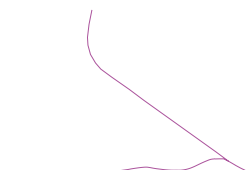
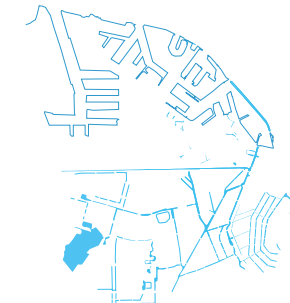
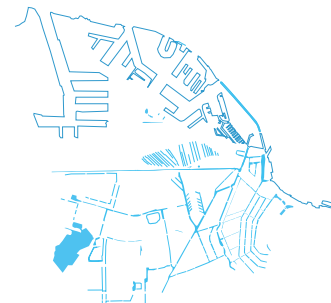
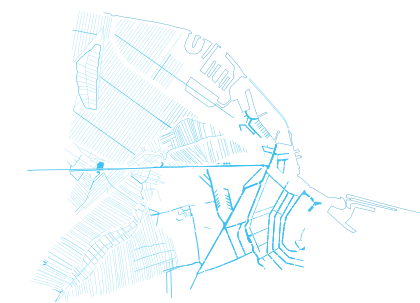
Structures

When we look at the structures of our area we can define it in different layers;

- Road structures
- Water structures
- Highways
- Green areas

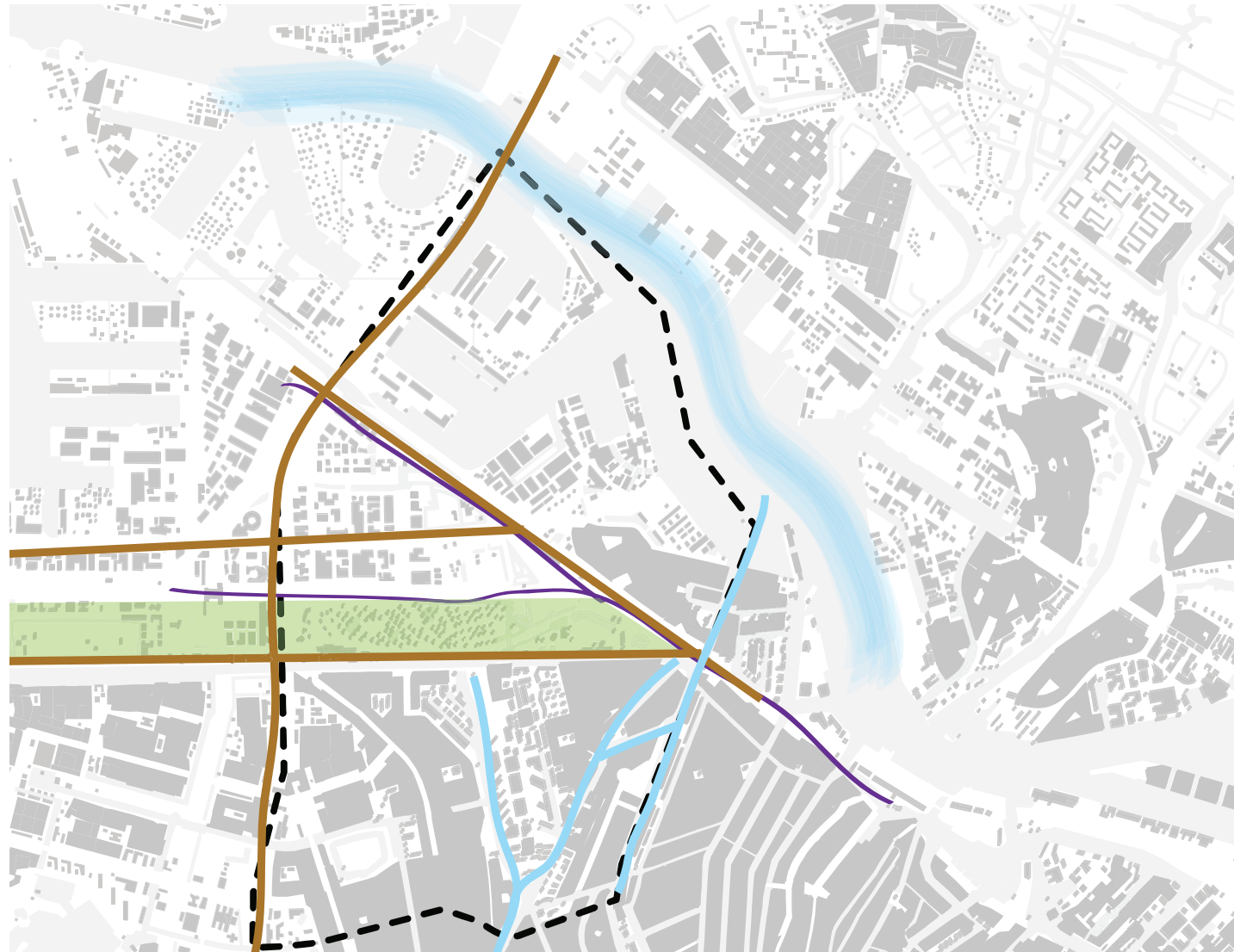
All these layers are linked to the historical morphology. In 1850 you see structure of peat mining areas with narrow pieces of land and small canals. This was typical for the landscape in our area at that time. The green structure was part of the municipal of Sloten, they called it 'Slatuinen'. At that time there was only one railway, from the Willemspoort to Haarlem. The railway connection between the city centre and the outskirts and the development of roads ensured the possibilities to live near the city centre. By the expanding of the city, the typical water structure of the peat mining areas was reduced by that time. Nowadays, only the main water structures are still present, e.g. the Haarlemmervaart and the Kostverlorenvaart. Gradually the city expanded and there was more need for road structures and railways to connect all the parts of the city. This structure is formed by functionally use.

In 1905 you see the influence of the reclaimed land in the northern part of our research area. There was a new dike needed to reclaim more land. By the urban planned expansion there was also more need for green formed areas like a park, that are the current green layers.



Sources; History analysis by E.Odijk, B.Maat & N.A.Bellinga

Urban analysis



Source; made by N.A.Bellinga

Barriers

The largest obstructive barriers are the highway A10 and the waterfront. These barriers are clearly present, when you visit or live in the area. But it is possible to break through this barriers; the water by boat and the A10 by viaduct or tunnel.

The green barrier is dividing the industrial part from the housing area of the research area.

This area is called the Brettenzone, the green structure between Amsterdam and Haarlem.

This zone was the connection between these cities. These cities were connected by water, the Haarlemmervaart, and later by the railway connection.

The brown line indicates the main streets, which are important axis through the area. This is in contrast to the small streets in the other parts of the area.



Index

- Living
- Industry
- Office
- Market
- Shopping Street

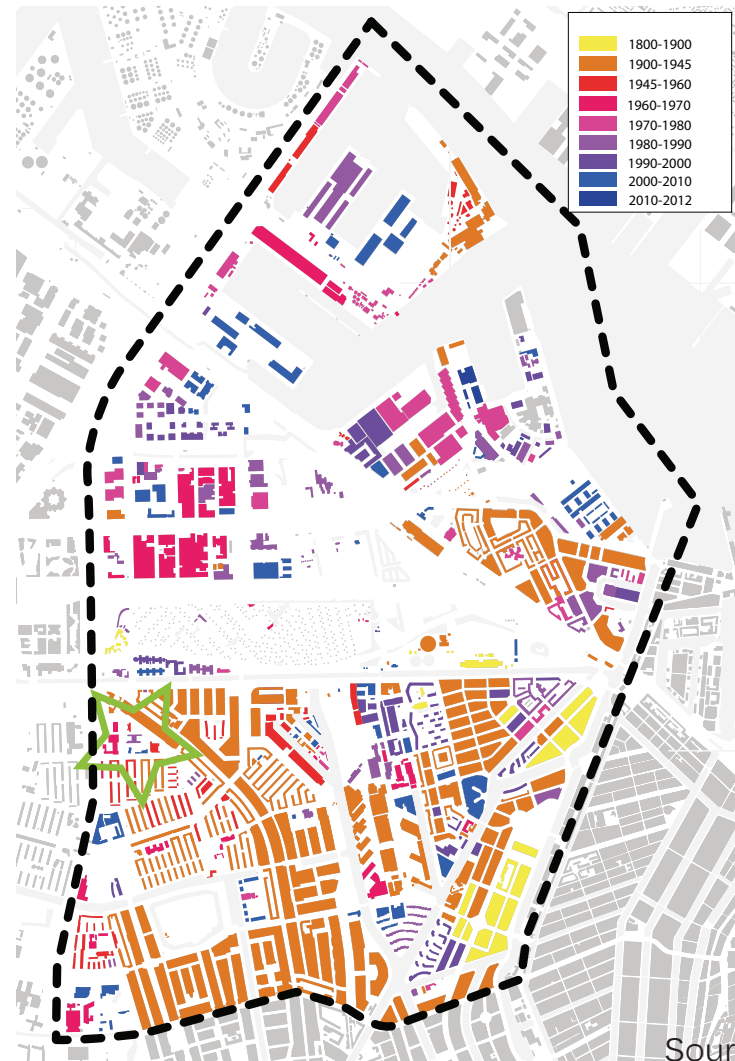
Source; made by Helen TaiHiuNing

Function

In this area there is a large partition between different functions. This can be explained by the historical growth of the harbours in the western direction, after the Noordzeekanaal was realized. The part around the historical city centre were the expansions of the city, adjusted as living areas. Nowadays these parts are still the living areas, derived from the plans of Kalff, Berlage and the AUP. The plan Kalff was focusing on the expansion in the western part in parallel to the expansion of the harbours. With the upcoming economy after World War II the office buildings were settled around the main connective roads, the highway A10 and the residential areas.

The food centre is a typical case. Historically, this food market was located in the city centre. At 1934, they moved from the city centre to the current place in the west area of Amsterdam, because there was not enough space for expansion of the market in the city centre. Today it is transformed into a large industrial area in the middle between living areas.

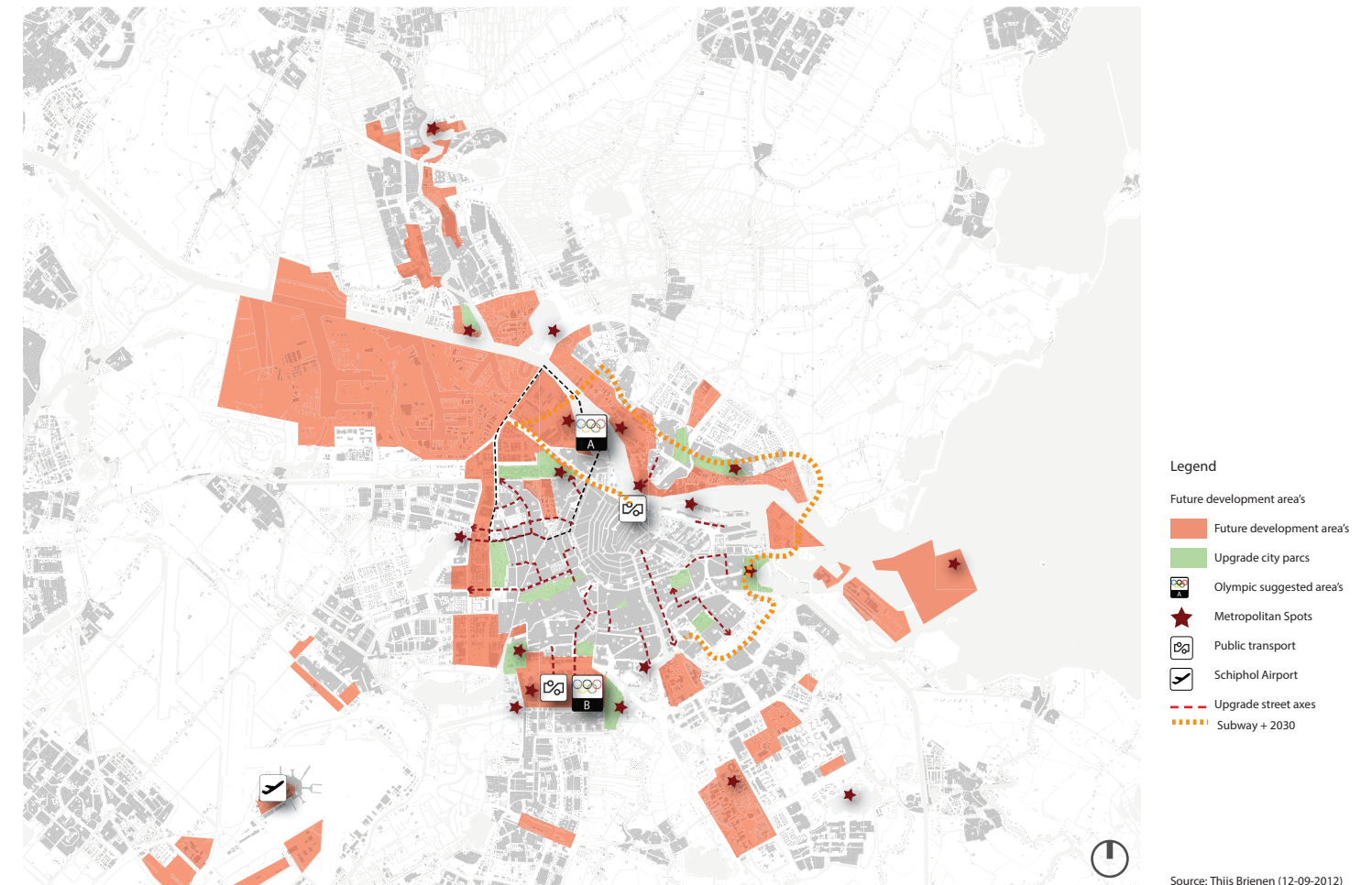
Urban analysis



Source; made by B. van Vliet

Building periods

In the image above you see an overview of the different buildings and their building period. The expansion plans of Kalff, plan West and the AUP can be identified in this image. The North part is the industrial part with larger plots than in the south part of Amsterdam West. Which is the housing area.



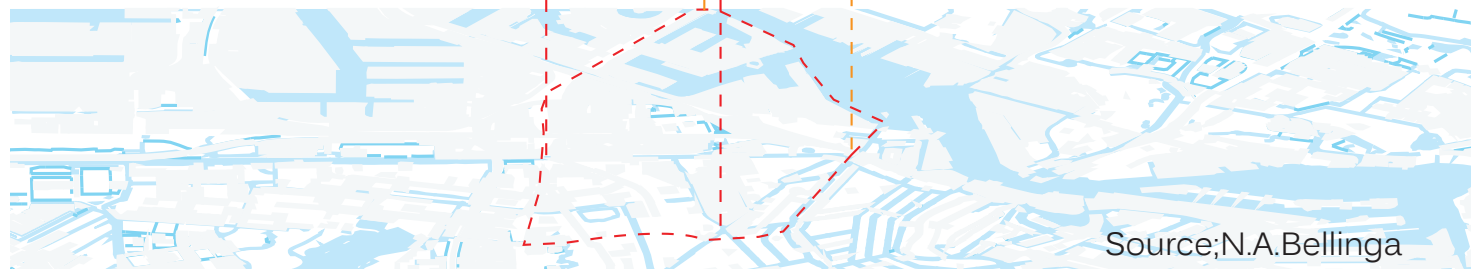
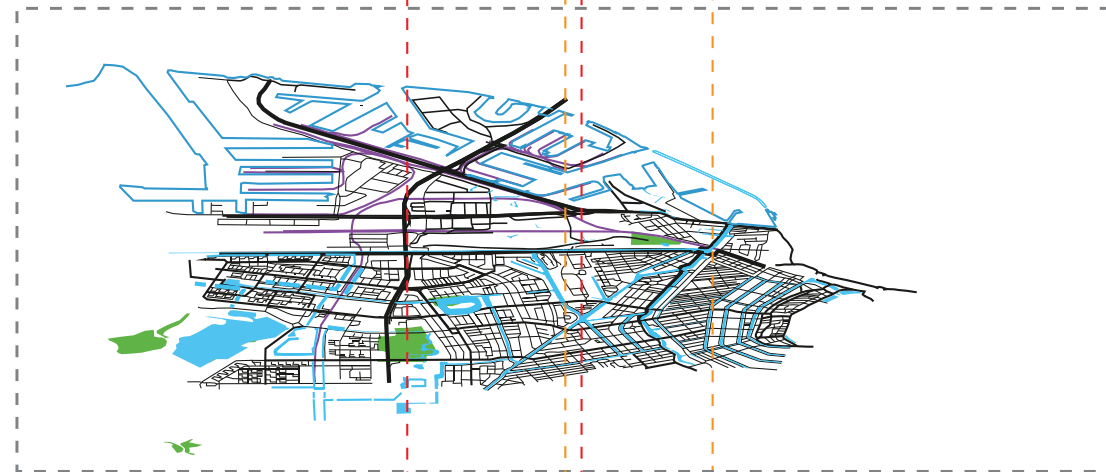
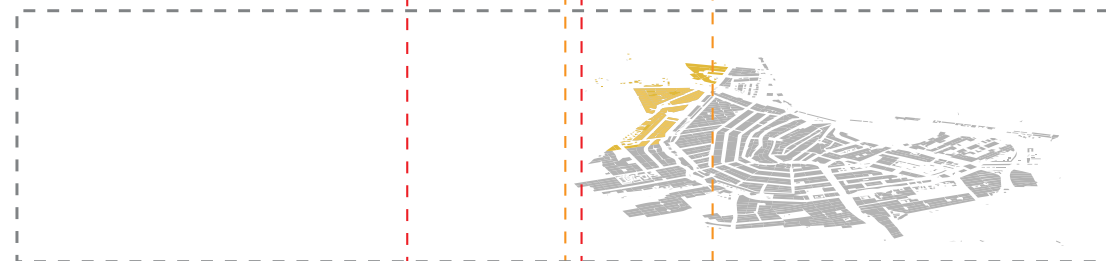
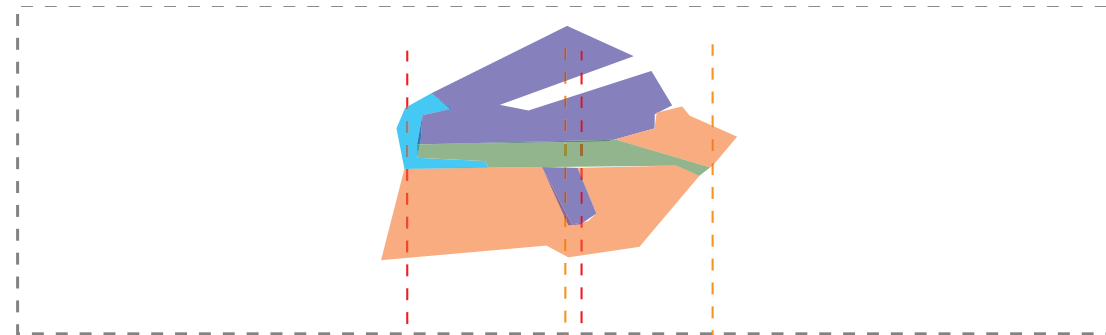
Source: Thijs Brien (12-09-2012)

Source; made by T. Brien

Future

There are future plans made by the municipality for combining different functions in the research area. This will create a well-combined work- and living area in the northern western part of our research area. I think that with the implantation of that plan there will be a more natural transition between the residential areas, the industrial area and the green zones. This transformation will be planned for 2020-2030 and are connected with the ideas for the Olympic games of 2028. (Image above)

Urban analysis



Source;N.A.Bellinga

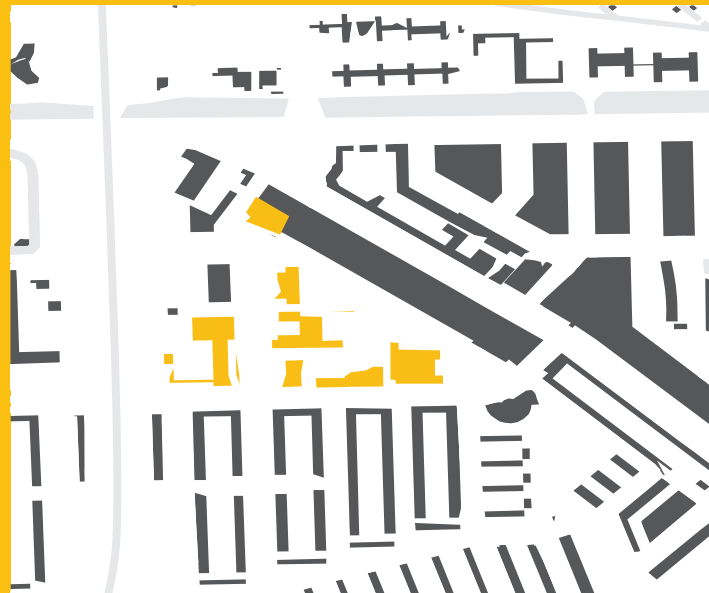
Conclusion

When we look at the different parts of the analysis treated in this report we see that the history of the researched area is still visible in the urban structure of today. By the growth of the harbour at the northern part of the area and the expanding of the city in the eastern part, there are two different kind of functions that came together; housing and the harbours. These two functions were divided by the water- and green structure formed by the Brettenzone. On a later stage there was a railway built from functional point of view directly alongside the Brettenzone, what divided the residential area from the industrial area.

When we look at the research question the answer can be stated as follows; the causes of diversity in the western part of Amsterdam is caused by the two kinds of growing movements, one of the **industrialization/growing** of the harbour and one of the **expanding city**. Where these two movements came together, it caused a **mix of functions** in the area. This up growth started in 1877 and is still transforming the area of today by the influence of the current economic situation (decrease of industrial functions and offices) and the growing number of Amsterdam citizens (increase of living areas). Functional scars in the under-laying urban structure are still present; like the Haarlemmervaart for the transport to Haarlem, the dike for security against the water and mining of the area contributed to the diversity.

Value assessment

For the future Amsterdam has a positive value. The different expansion plans and the different building styles that developed in Amsterdam are still present when you walk trough the district. For the generations to come, this area is of educational value. They can easily learn how a city grew from a small trade village to a big international city.



Source; made by N.A.Bellinga

Introduction

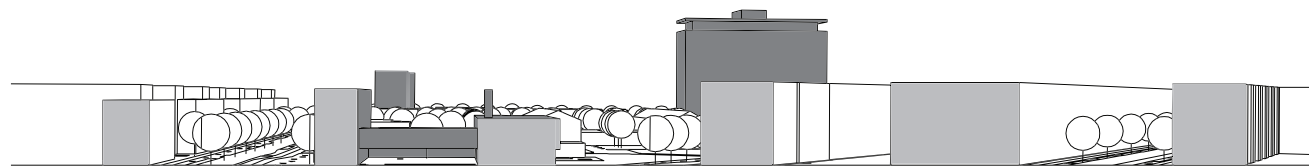
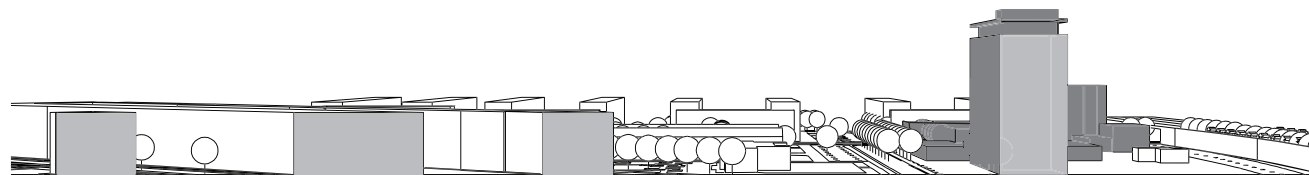
For a more whole view on the building and his context, it was necessary to make a analysis of Bos and Lommer and especially the scholendriehoek. On the left you see a image, the orange buildings are the ensemble of the scholendriehoek. Building that are built between 1950-1964. Most with the function of school. One other function in the area is the Zaanstadbuilding. An office building standing with his back to the triangle. On page 12 the analysis of this building starts.



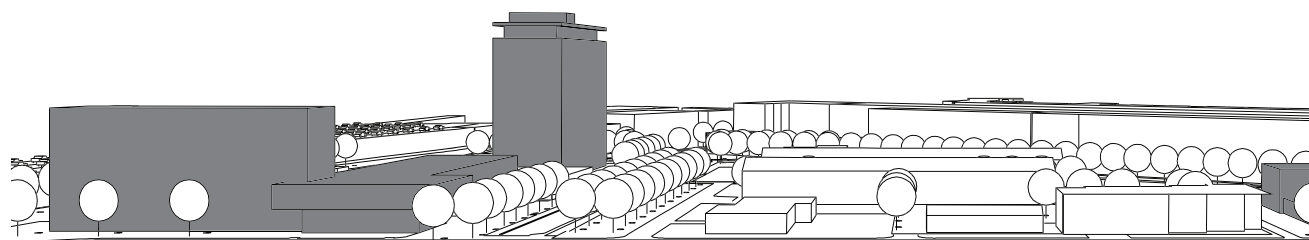
Plot comparison

Source: N.A.Bellinga and maps.tudelft.nl/index.php

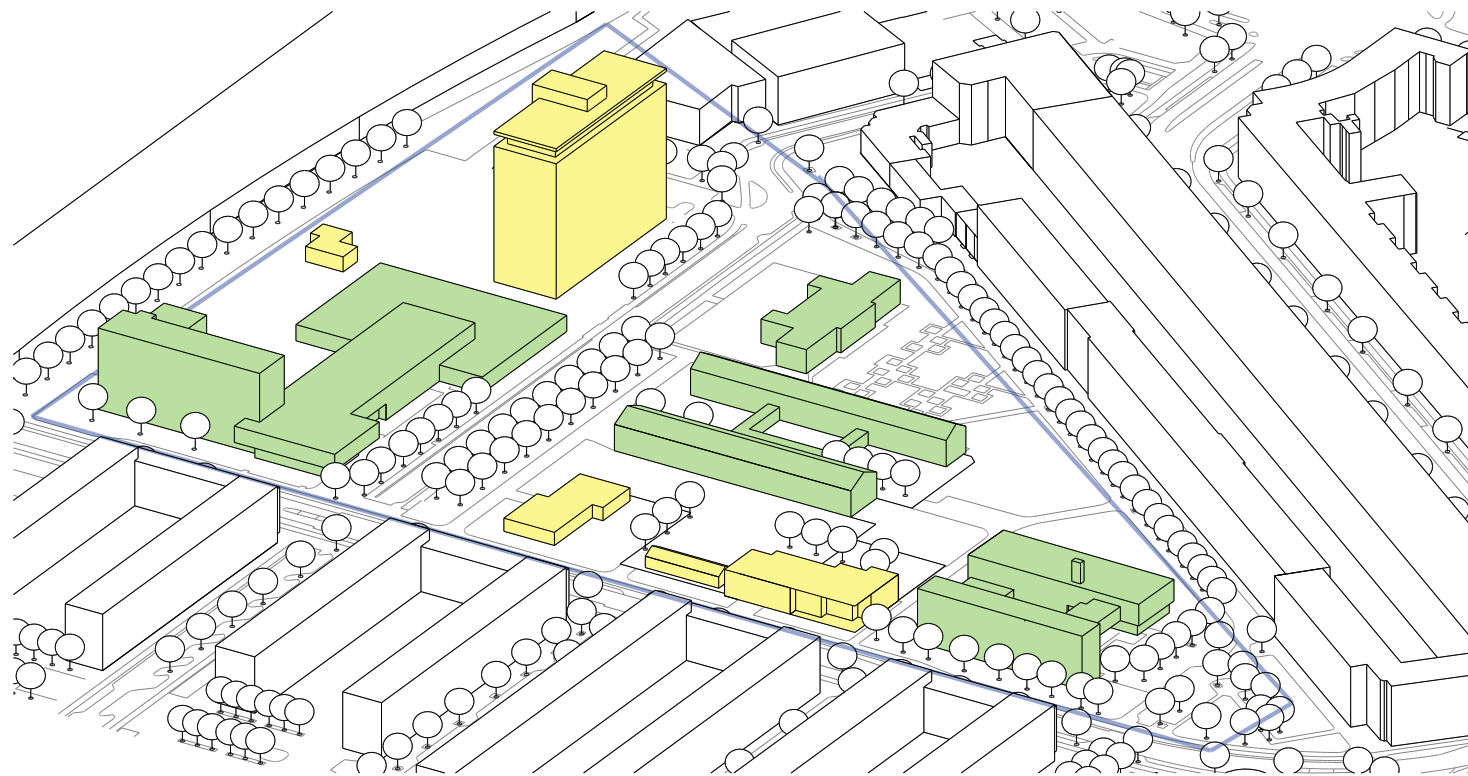
The scholendriehoek (triangle of schools) is a group of buildings in a green area at Bos en Lommer. Bos and Lommer is a district of the city Amsterdam. And is to divide in smaller districts. The scholendriehoek is than part of the Gulden Winckelbuurt. After the growth of the harbor there was more need for housing for the workers. The municipality built a lot of row housing and half opened housing blocks, based on the functionality and the idea of spacious housing floated with daylight and fresh air. The scholendriehoek is an area that was left by its users in the last decade. The area is bordered by the Sara Burgerhartstraat, the Wiltzanghlaan and the Highway A10. The Krelis Louwenstraat is going across the triangle. The name of the triangle came from the shape of the area. After the baby boom, there was a huge need for schools. From the functionalist ideas, that stated that functions should be separated, the scholendriehoek was filled with an educational function. Four kind of schools with four different organization plans. Primary schools (Prinses Beatrix and Multatuli school), ULO (Daniel goedkoop school)and UTS (Hendrick de keijzerschool). One different building was the Zaanstad officebuilding (also called elsevierbuilding) To get more feeling of the area, you see in the image above a plot comparison with the plot of the faculty of Architecture at Delft. The faculty has the same dimension of the scholendriehoek.



Sections of the context
Source: N.A. Bellinga



Architectural analysis



Source; made by N.A.Bellinga

The scholendriehoek is clearly an area in itself. There is not a direct connection with the surrounding buildings. Because it takes a different function than the direct context, there arise strict boundaries between the different function zones. The qualities of the area are the open and green characteristics, which has established itself in the neighborhood. Because it is public, it gives the scholendriehoek a social function. The people, who live around the scholendriehoek, make use of the green zone, trees, shrubs and grass, as a meeting place. In the years 50-60s, the same function was clustered in this district. The scholendriehoek, the name speaks for itself, it consists mostly of schools. Schools, each with a different education typology. All these different schools were functioning in their own way at the time. The problem is that today there is only one school in use for educational purposes. Gradually there were schools vacant, and the office building in the north part of the scholendriehoek, is also vacant today. Some buildings are now being used by foundations and other small businesses. However, all this is done temporarily to ensure that it is not completely empty. Many plans have already passed the municipality and the developers for developing the area. Only the Hendrick de Keyser school has a temporary function that works.

The vacancy of the schools can be explained by the fact that there are less children, compared to the period of construction. Last years the schools have chosen to merge with each other and have chosen for new buildings. The school also did not meet the high demands which are asked by the government. Because the area contains various functions and vacancy it is no longer in line with the bigger urban picture.

Value assessment on Bos and Lommer scale

The scholendriehoek has on cultural-historical and urban level, a positive influence. From the years 50-60's, the neighborhood was built up from the idea of separating the functions. This separation is at neighborhood and district level visible. The scholendriehoek ensemble includes the educational function while the surrounding buildings focused on housing.

Furthermore, at the urban level the phasing of districts is noticeable. De scholendriehoek is an area enclosed by two different building periods and therefore two different districts, Landlust and Bos & Lommer. The triangle is part of the district Bos & Lommer and is also part of the neighborhood ideas of this district: the separation of functions.

At district level, the area was important for the society, since during the sixties schools were needed. After the second world war there was a baby boom and all those children who grew up needed education. In the surrounding areas they were in need of education. It was therefore necessary that schools were built during that time.

When we look at the qualities that give value to the scholendriehoek we can point out two qualities that emerge. The first is the quality of construction. On building scale, we can see four different typologies for making schools. The clustering of schools with different typologies gives this area a unique position on architectural level.

Another strong existing quality is the green area. We find green grass plots, trees and shrubs. The green is one of the few pieces of greenery in the district and therefore has value to the residents in a social way. The green is mainly open to the public. Because it is publicly available it serves as a social meeting point for the neighborhood.

When we look to the existing buildings the Zaanstad building gets an indifferent value, it has no connection with the surrounding buildings in scale and functionality. Although it is related with the district because of the direction and the shape of the building, a long volume situated from the north to the south.

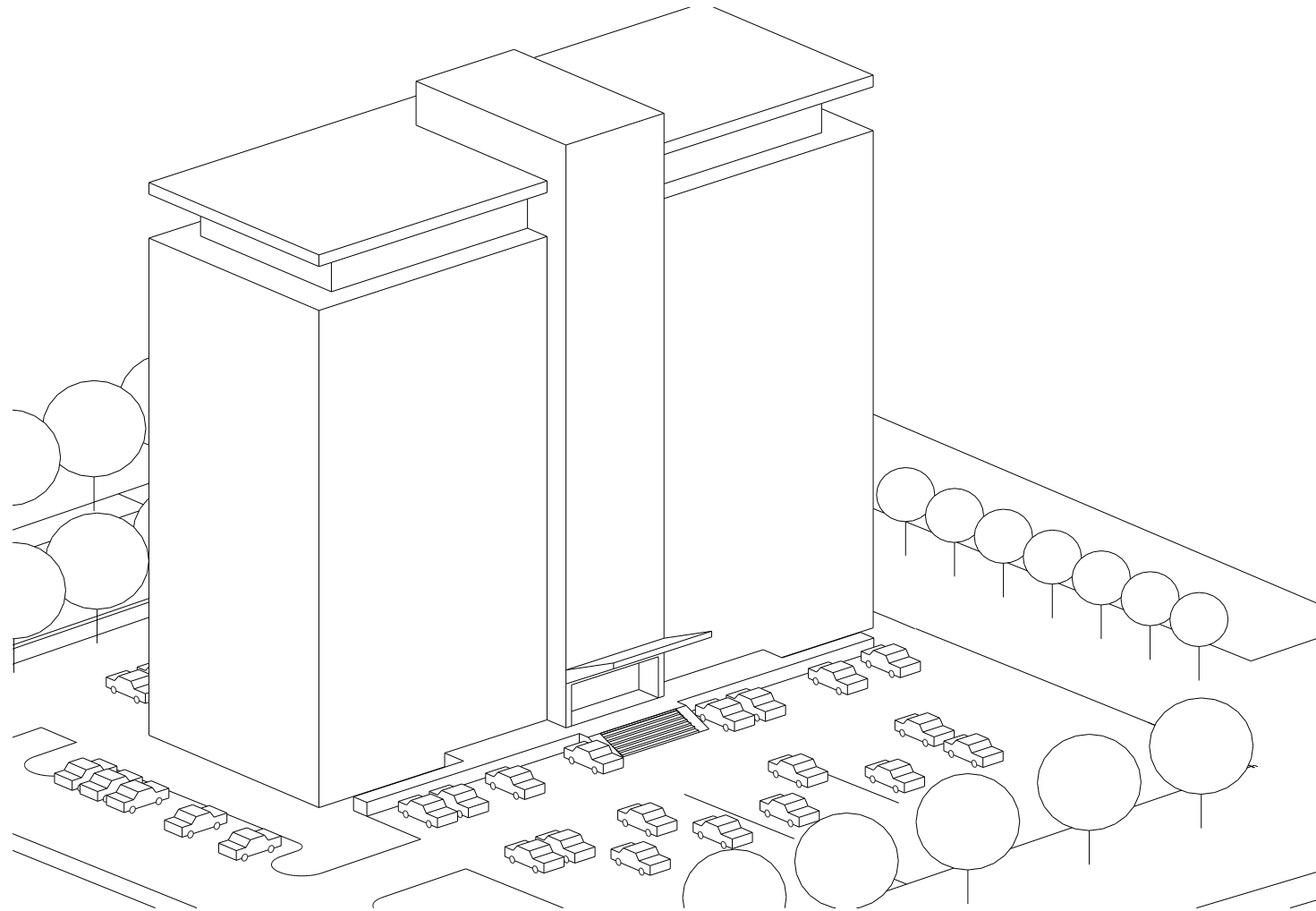
The Hendrick de Keyerschool and the Daniel Goedkoopschool get a positive value, because of the former educational ideas combined with their composition and internal organization. These buildings get their own separate value on construction, composition and structure.

The Multatuli school and the Prinses Beatrixschool receive a positive value, due to their position in the area and the different ways in floor plan design compared to the other schools in the area. The concierge dwelling, the Kinderster and the Groeiparadijs are buildings which are added in a later stage to the area. The Total value for this area is positive!



Source; made by T.Reivers

Architectural analysis



Source; made by N.A.Bellinga

In the North-West part of the scholendriehoek, we find the Elsevierbuilding. A big office building orientated to the A10. In the manner of writing the building is in use by anti-squatting people who are living at the 4th till the 12th floor. The basement and the first 3 floors are used by a foundation called 'connect initiatieven'. This foundation tries to help people with different nationalities to integrate in the Dutch society. They also give the children of the neighborhood the possibilities to learn how to deal with crime in their neighborhood and how to tackle it. At this moment, the temporary function of the building is a community center for West. The exact date that Elsevier left the building is not known. Though, we are sure that after the departure of Elsevier there is nothing changed on the installations and the floor plans. The current owner is Rochdale, an investor in real estate. The building has a GFA of 10.800 m².



Information

Source: Archief NAI

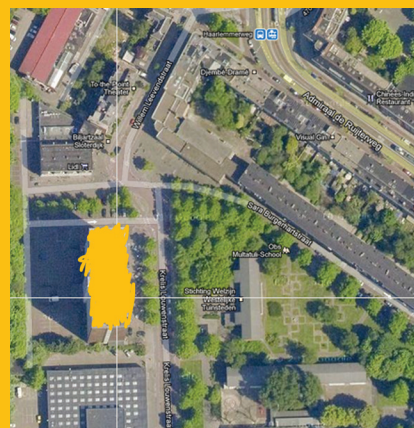
When this building was designed they named it the 'Zaans stad kantoortflat'. Today, it is known as the Elsevierbuilding. When we look at the drawings we see that it was designed for the Rotterdamse Bank. The initiator for the building was D. Eggink. The investors were Blaauwgoed N.V. and the foundation Pensioenfonds de Koninklijke Shell. The fund of these two companies was called Blaauwfonds. The development is done by N.V. Combinatiebouw and the building is built by Amsterdam Ballast Maatschappij.



Architect

Source: Archief NAI

The architects that were selected to design this building were W.M. Dudok and his partner R.M.H. Magnee. Both were employees of the municipality of Hilversum. Later they started with a architecture firm called Dudok en Magnee. They started this firm to get detached from the municipality to get more design freedom in their designs for housing in Hilversum. This couple designed a few buildings in Amsterdam; a famous building is the Havengebouw at the IJ.



Location

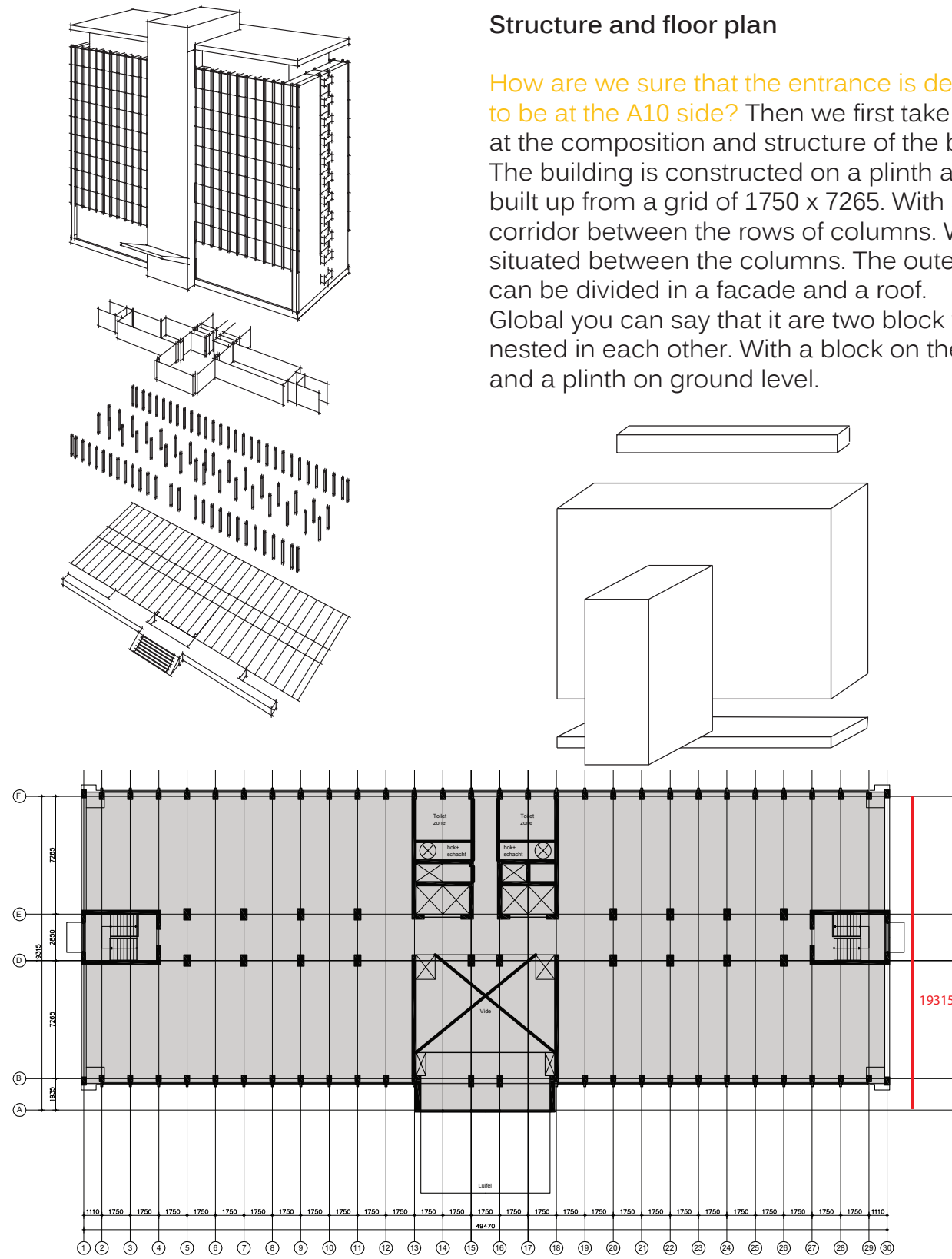
Source: Maps.google.nl

The building is situated in the northern part of Bos en Lommer. This district is a part of Amsterdam West. On the north side we find the Sara Burgharststreet, the east way is the Krelis Louwensweg and on the south side of the plot you find the Hendrik the Keyser school. The entrance of the building is situated on the west side next to the A10. The research question that came up from this given information is; Why is the building with its entrance turned to the A10 and with its back to the Scholendriehoek?

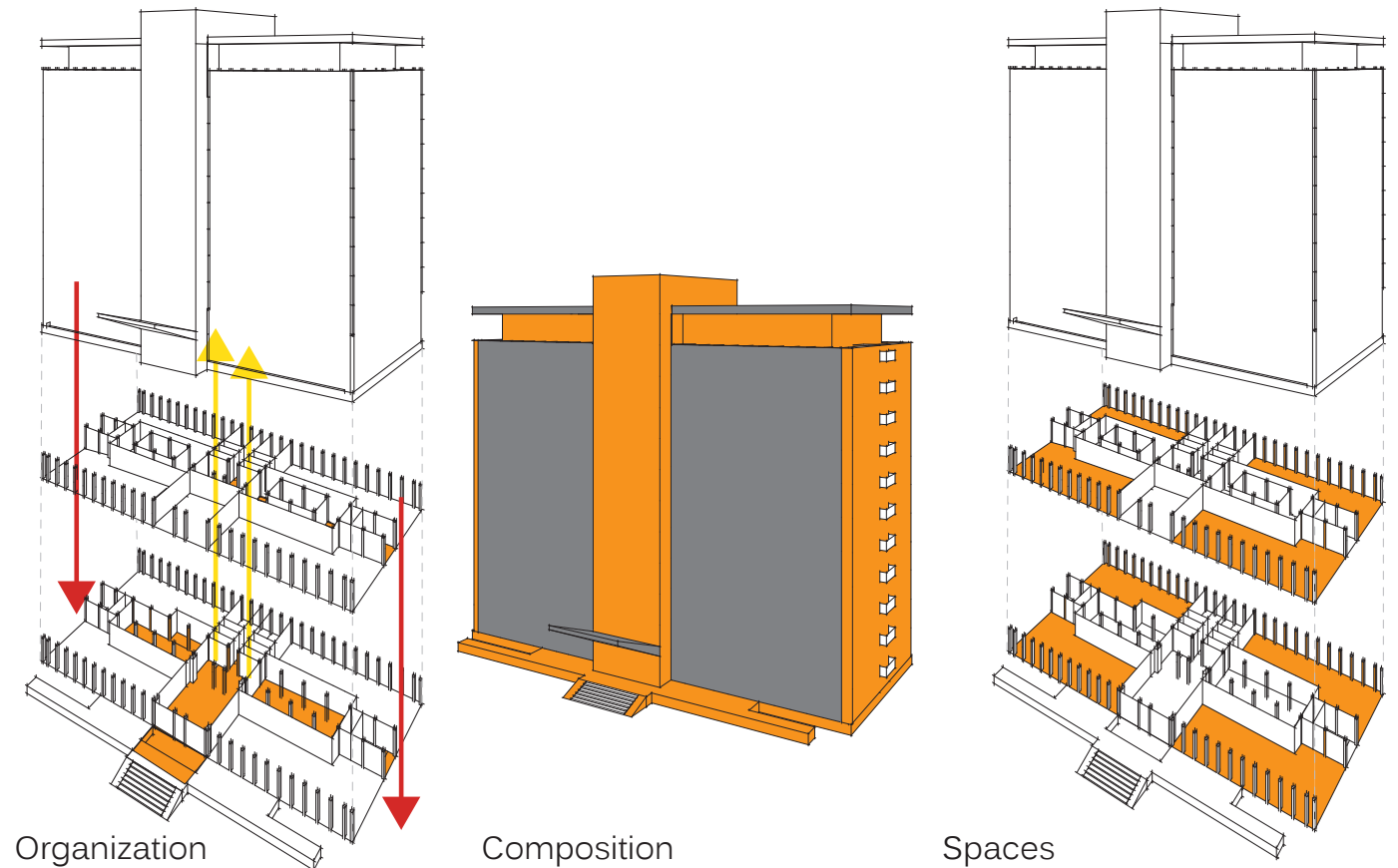
Architectural analysis

Structure and floor plan

How are we sure that the entrance is designed to be at the A10 side? Then we first take a look at the composition and structure of the building. The building is constructed on a plinth and built up from a grid of 1750 x 7265. With a small corridor between the rows of columns. Walls are situated between the columns. The outer skin can be divided in a facade and a roof. Global you can say that it are two block which nested in each other. With a block on the top and a plinth on ground level.



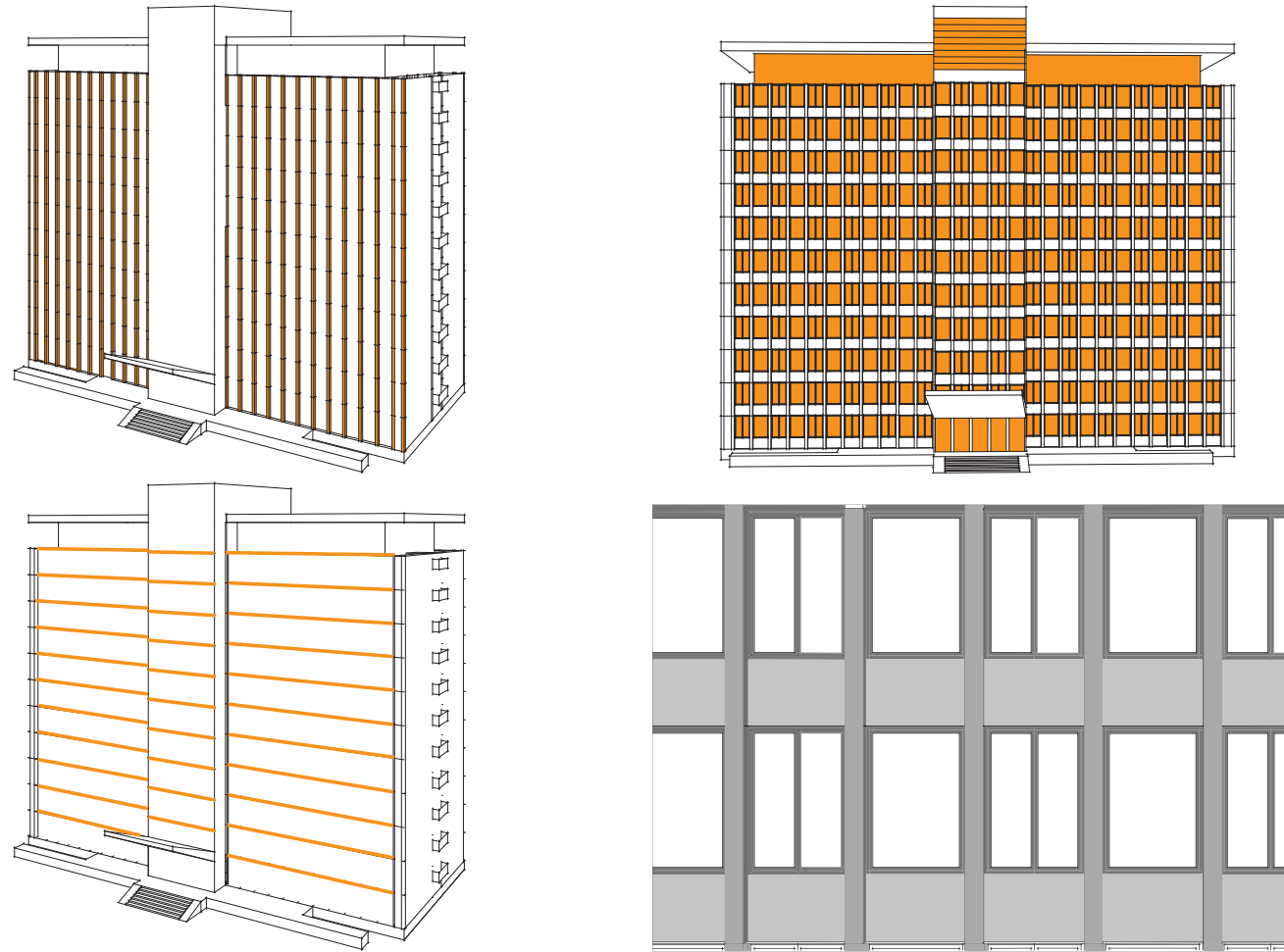
Source: N.A. Bellinga



Source: N.A. Bellinga

The type of the building is a clearly office building. When we look at the different spaces in the building we can subdivide them in office space, service space and movement areas. The movement areas are situated in the middle of the building and are excluded from daylight. The office space is situated next to the whole west and south facades. They make use of optimal daylight ingress. The service spaces are in the middle of the East facade. Here are shafts for installations, the elevators and the toilets. The organization type is form a central type. The routing for the visitors and employees is all trough the elevator shafts. On the north- and south side there are fire escapes which also can be used to move up or down through the building. Per floor level there is a movement between the north to the south and vice versa. The corridors go from fire escape to fire escape and give the entrance to the different offices. The different functions which are situated in this building are the entrance part in the middle of the building in a slice which is inserted through the building. On all the floors, except the top of the building, we find the office floors. On the top there is a canteen situated for the employees. The office floors are clamped by two brown outer walls. When we look at the composition of this building we can divide it in a volume which is clamped by two walls and placed on a plinth. Through the center of this volume there is another volume placed, which is covered with a plent and suggests the entrance of the building. On top we see a crown with a panorama level. The style of Dudok is very personal, he had his own style and used different influences of different styles. Specific elements which are typical Dudok and come back in other buildings are the plinth, pent, floating roof and the composition with different volumes. At this building he designed from functionalism.

Architectural analysis



Source: N.A. Bellinga

Facades

The rhythm in the building came from the partition of the windows. There are two different types of windows, the first one is divided of one window frame. The second is made by two frames. The size is always the same. Between two columns you find are always the same type of frames. The types are interspersed with each other.

The articulation in this building came from the plinth, the pent, the floating roof en the slice in the middle. This gives the building more characteristics on the east side, we see only the plinth and the floating roof.

The facade has two striking directions. The main structure is in vertical way. And reference to the grid on the inside of the building. The secondary direction is horizontal and is given by the use of different materials. The secondary direction with his elements is laying back in the building, this gives the vertical direction more strengthening.

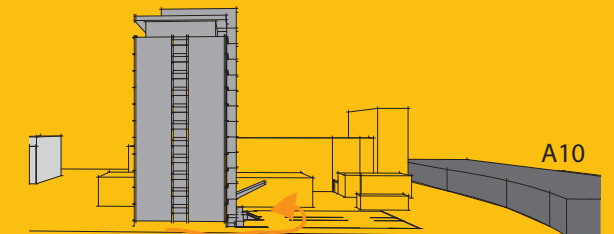
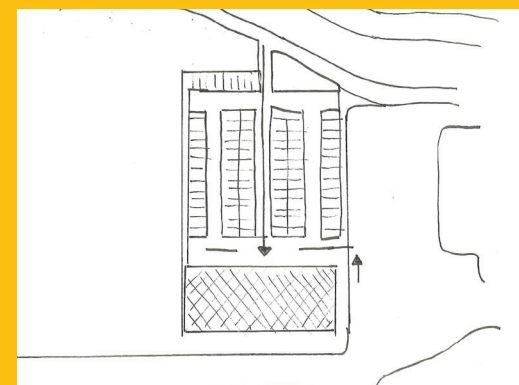
The different materials which are used in the facade are the glass parts which gives a kind of transparency. But by the use of a lot of concrete for the sheetings in the secondary direction part, the building is not very transparency. The restaurant on the top of the building is for the most part materialized with glass. The clamping walls are build of reinforced concrete and covered with brown bricks. This is also in the plinth the situation, the only difference is the black brick. The building has a closed character to the outside.



History 1959 situation view from the current A10
Source: Beeldbank A'dam & N.A.Bellinga



Context Current
Source: N.A. Bellinga & photo of T.Reivers



When we look at old drawings of the Hendrik the Keyser building we see that there was a confection factory on the current plot of the office building. By an exception of the plan of Bos and Lommer it was possible to build an office building. What they wanted before is unknown. On the picture of 1959 you see that the A10 was on ground level. In this time Dudok and Magnee started with the designing of an office building. In old drawings we see that they first wanted the entrance at the Scholendriehoek. But they decided to make the entrance to the A10, Einsteinweg. In 1958 there was decided that the Coentunnel would be added to the A10. In 1962 they started with the construction of the tunnel. At 1966 they finished the construction. However, in 1975 the current height of the A10 was finished. We do not know, if Dudok and Magnee knew about the interventions in height of the Einsteinweg. It is clear that the building was build with the way of thinking of the government of that time, they would bring Amsterdam to a larger city scale. The office building was meant to be part of whole Amsterdam and not a particular part of Bos and Lommer. That is the reason why that the building is facing towards the A10; the new highway was more important then the Bos and Lommer area.

Architectural analysis



GAK building 1960
Source: Beeldbank Amsterdam



Havengebouw
Source: Beeldbank Amsterdam



To make a good insight of the time and the architect, I made a comparison with the GAK building and the Havengebouw.

The GAK building is a building built in the same district as the Zaanstad building, Amsterdam West on the A10. The architect of the building is Ben Merkelbach. An architect of the trend Het Nieuwe Bouwen. He was the municipality architect of Amsterdam. This building was the largest office building at that time period. And the cooling by a groundwatersystem was very progressive for its time. Till 2003 it was in use as an office building. Now the owner, AM, transformed it in different studio's for students. Around the building there is enough space for parking, as in the case by the Zaanstad building. The plot of the GAK building is also different from the direction of the plots of Bos and Lommer. When we look at the architecture of the facade we see agreements. First the horizontal direction in the facade, derived from the partition in the closed and unclosed parts. In the middle a volume sliced the stretched building.

The Havengebouw is a building on the IJ and designed by W.M. Dudok and R.M.H. Magnee, the same architects as the Zaanstad building. This building is built at 1951-1965. This is in the same time period as the Zaanstad building. When we look at the facade we see that there is a same structure in directions. The main direction is vertical, the secondary direction is horizontal and comes from the different materials in the skin.



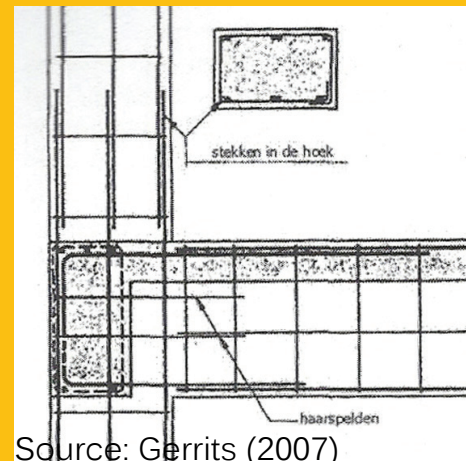
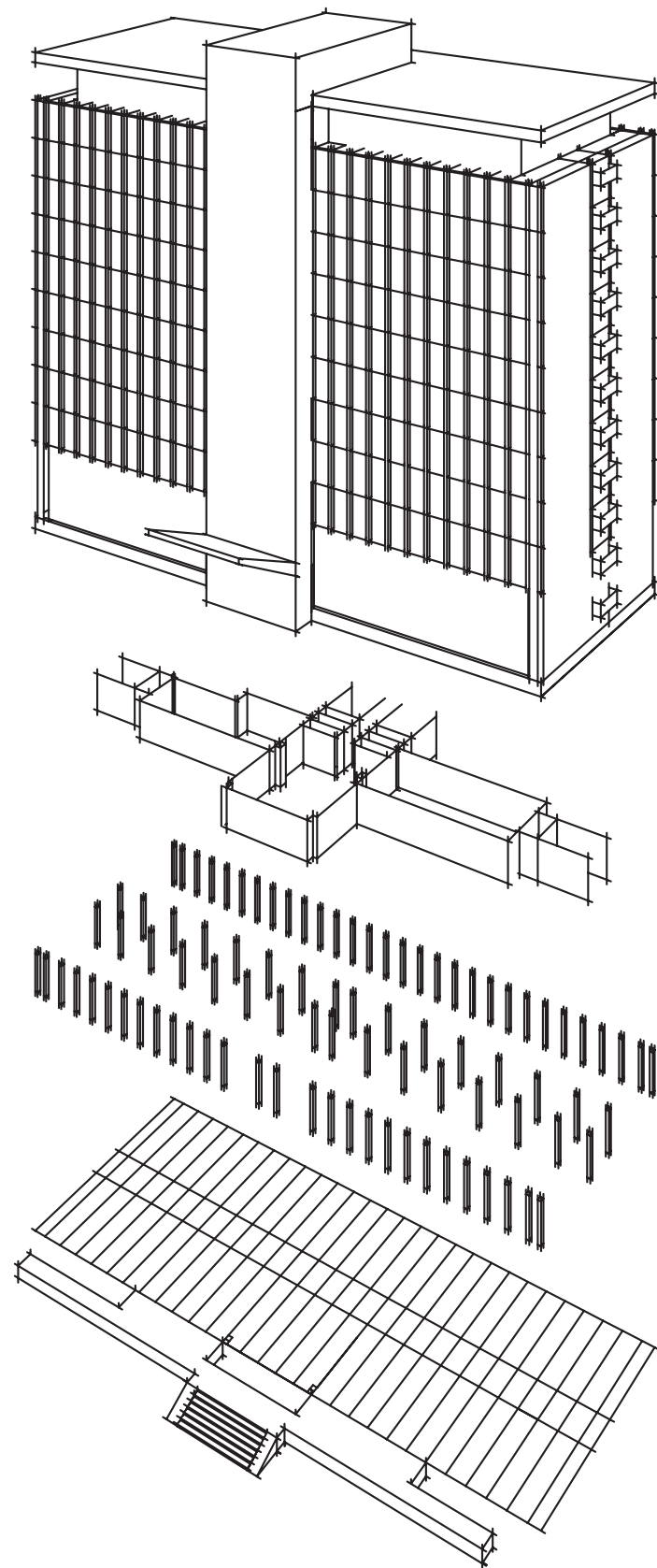
Source; T.Reivers

Conclusion

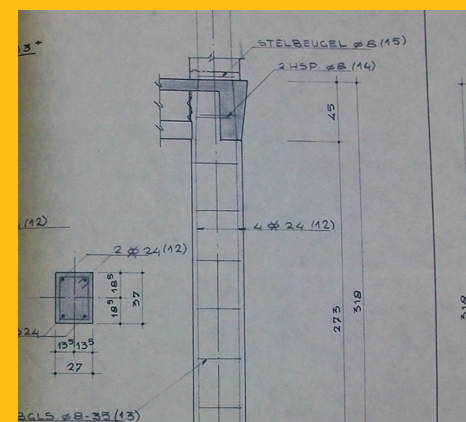
When we overlook the whole situation, the Zaanstad building is built on the scale of Amsterdam and is not an Icon of his period. Because it is build on the scale of Amsterdam the Building has no historical value for the area. But the building is in a good condition, that means that by a minimum of renovation this building could be used as an office building or for another function. Integration of new installations is easy to do. The total value will be indifferent.

Value assessment

When we overlook the whole situation, the Zaanstad building is built on the scale of Amsterdam and is not an Icon of his period. Because it is build on the scale of Amsterdam the Building has no historical value for the area. But the building is in a good condition, that means that by a minimum of renovation this building could be used as an office building or for another function. Integration of new installations is easy to do. The total value will be indifferent.



Source: Gerrits (2007)

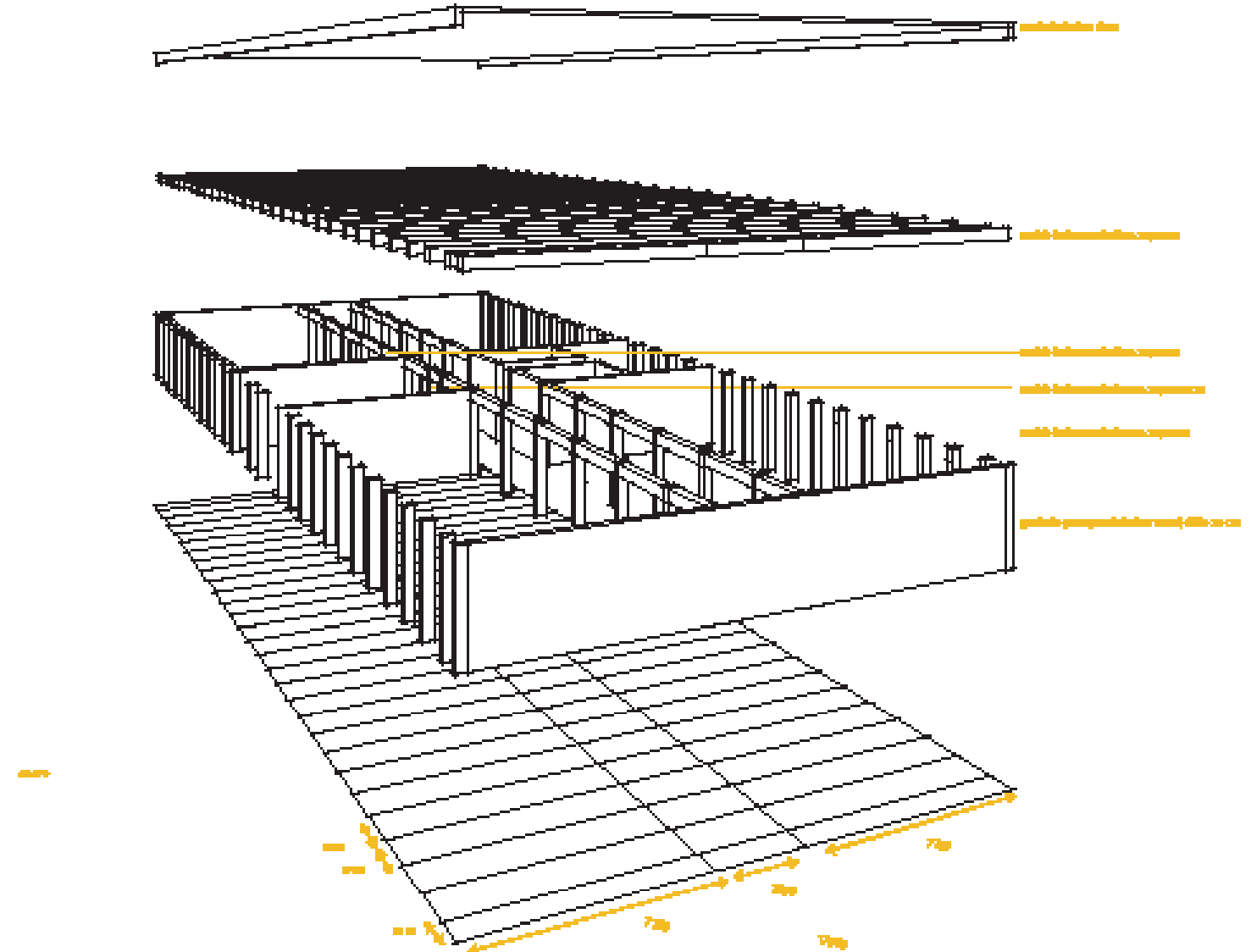


Source: archive stadsdeel west



Source: N.A.Bellinga

Principle details



In this part of the report you find the building technology analysis of the Zaanstad office building. To take a view of the technology, you can make a better value assessment when you know if there are historical details. Details or construction principles which are useful for the future.

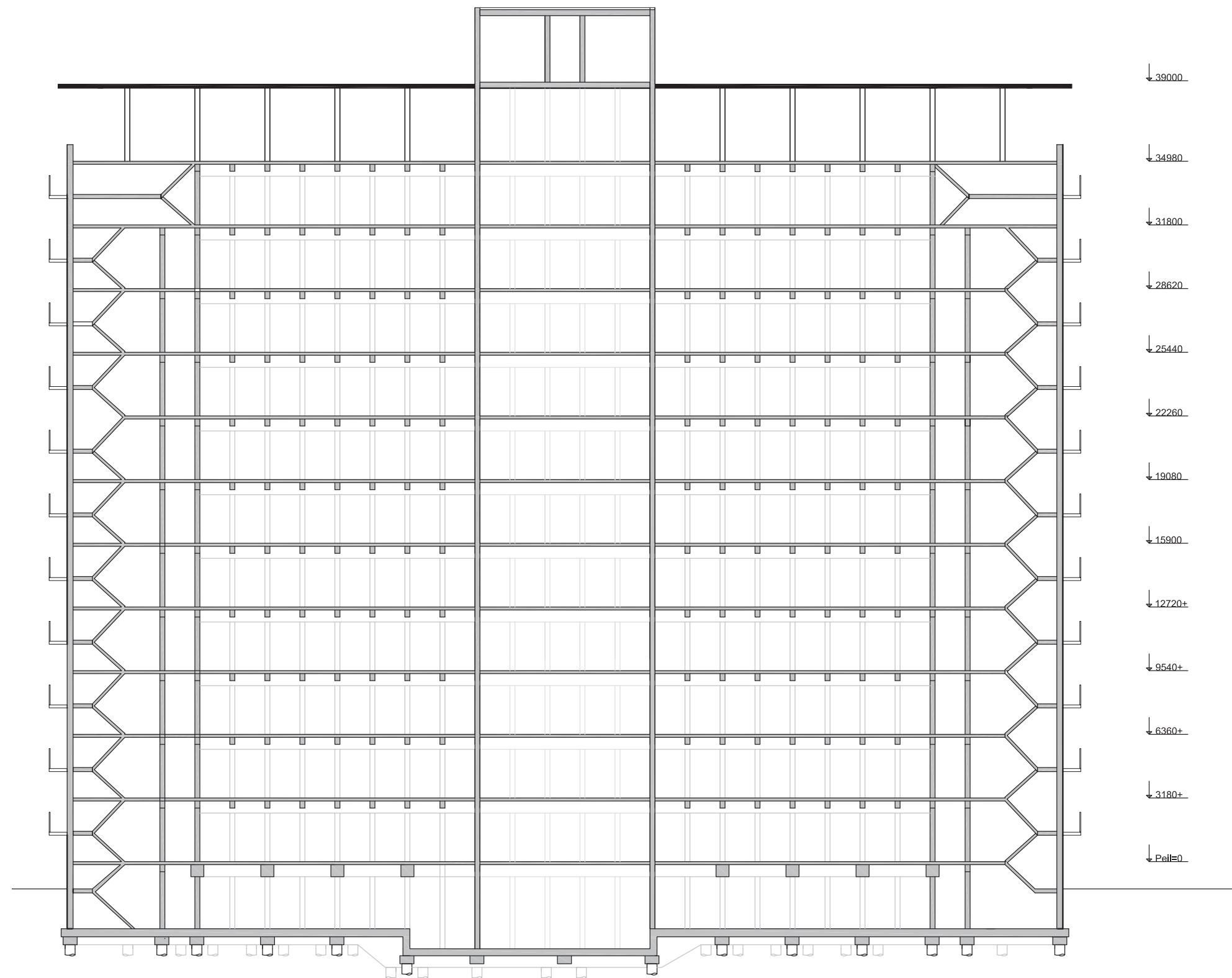
Structure

The building is constructed on a plinth with a grid of 1750mm x 7265mm. In the center we find a small corridor with a width of 2850mm. On both ends of the building there are two bearing walls, made of 200mm thick reinforced concrete. The building is made of prefabricated elements. The concrete floors and the two bearing walls on both ends are the only poured concrete elements.

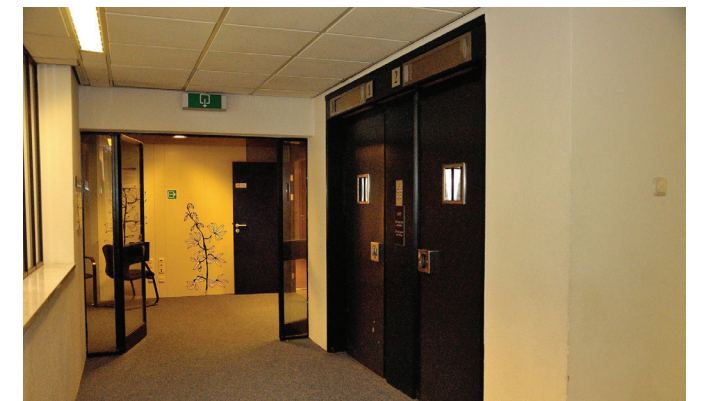
At the three images on the left you see the principle of the connection between the column and the beam. The image above is a principle of how the reinforcements each other connect. And how the concrete forms floor is over it.

Building technology analysis

Longitudinal section principle



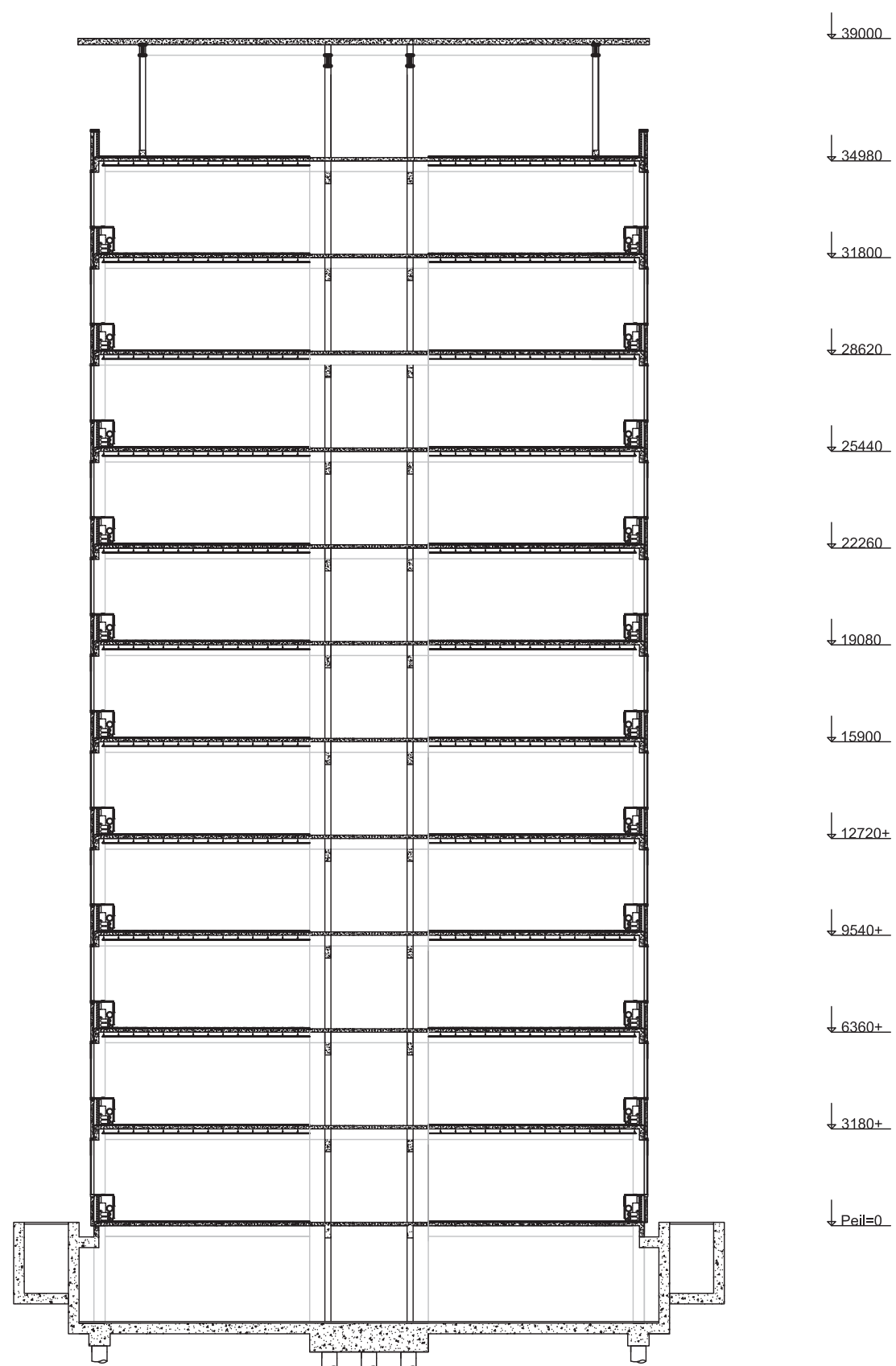
Source: N.A.Bellinga



Source: L.Schoneveld

Building technology analysis

cross-section



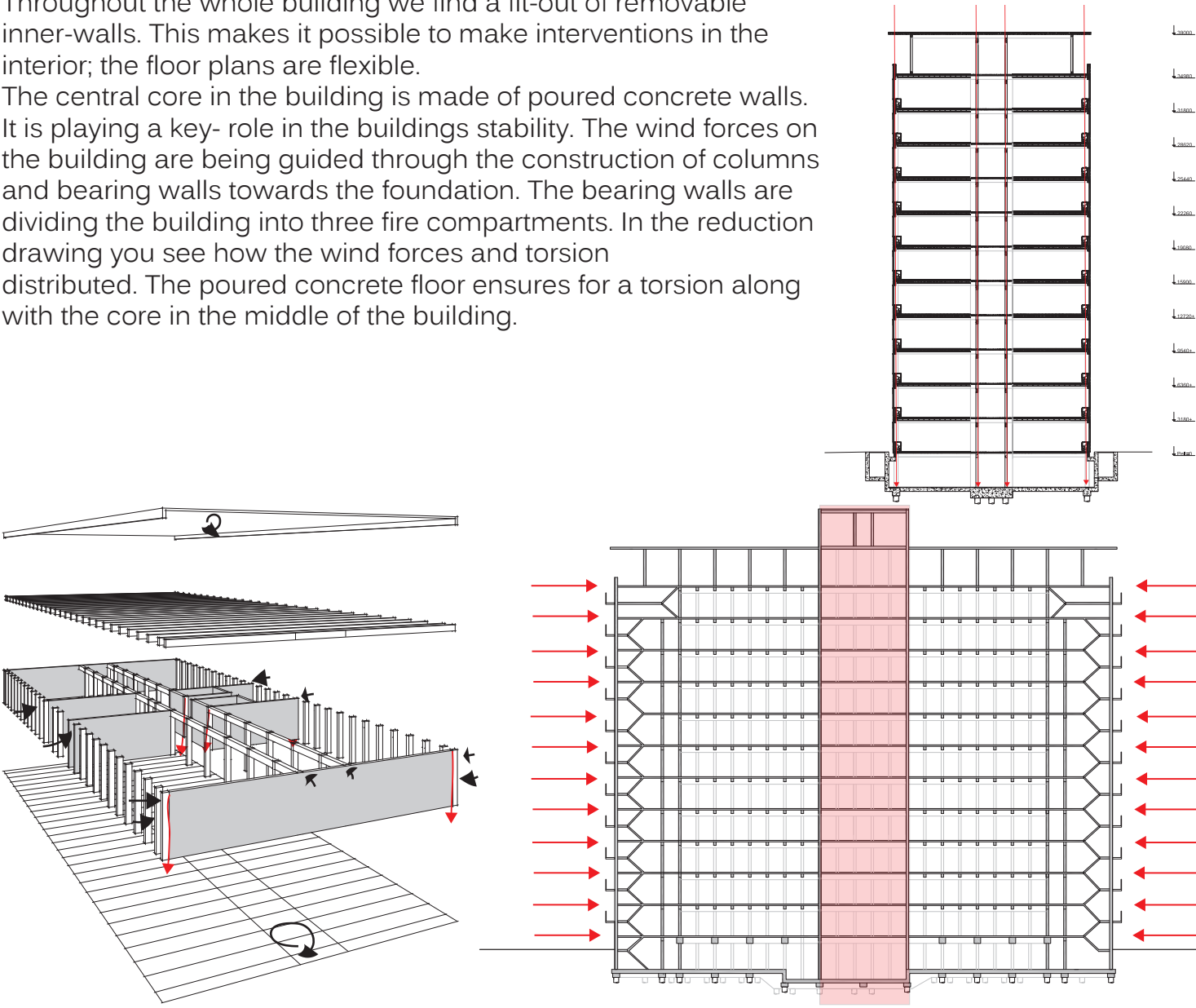
Construction

The top of the building is a construction of steel elements. The roof, made of 'bims' concrete hollow-core slabs and insulation, is carried by a steel beam (IPE22). This steel beam is supported by steel columns which are leading the forces towards the concrete bearing structure. The overhanging part of the roof is covered with enamelled steel plates.

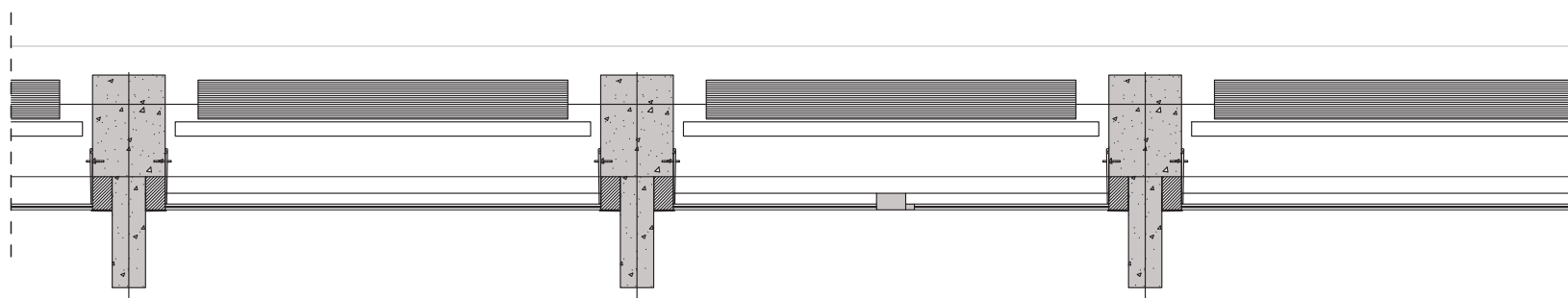
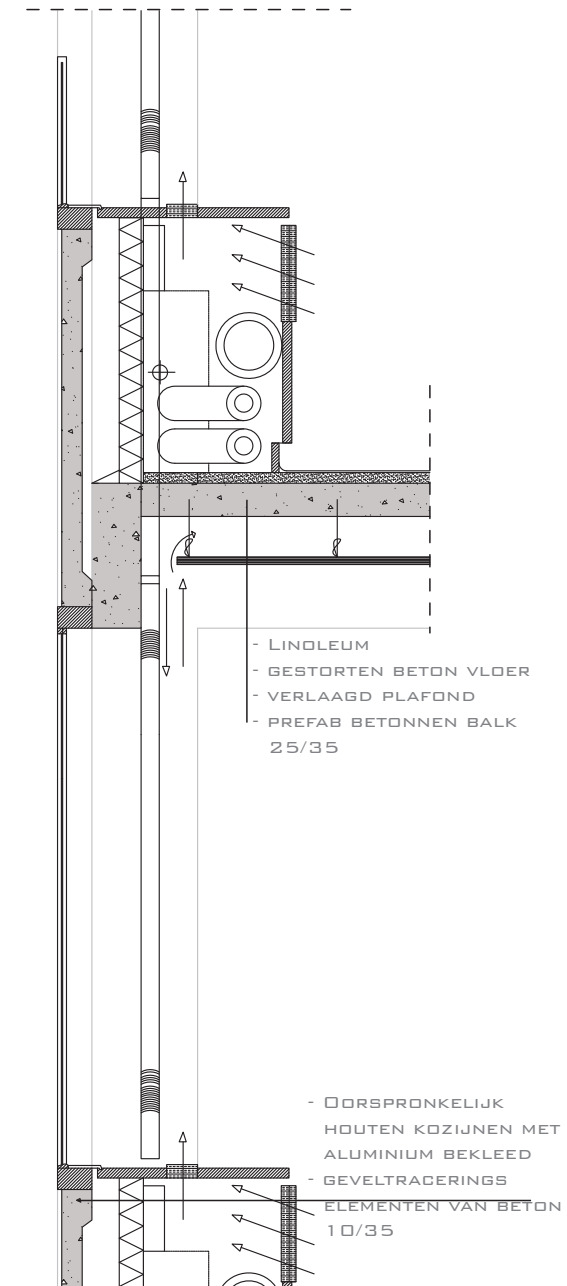
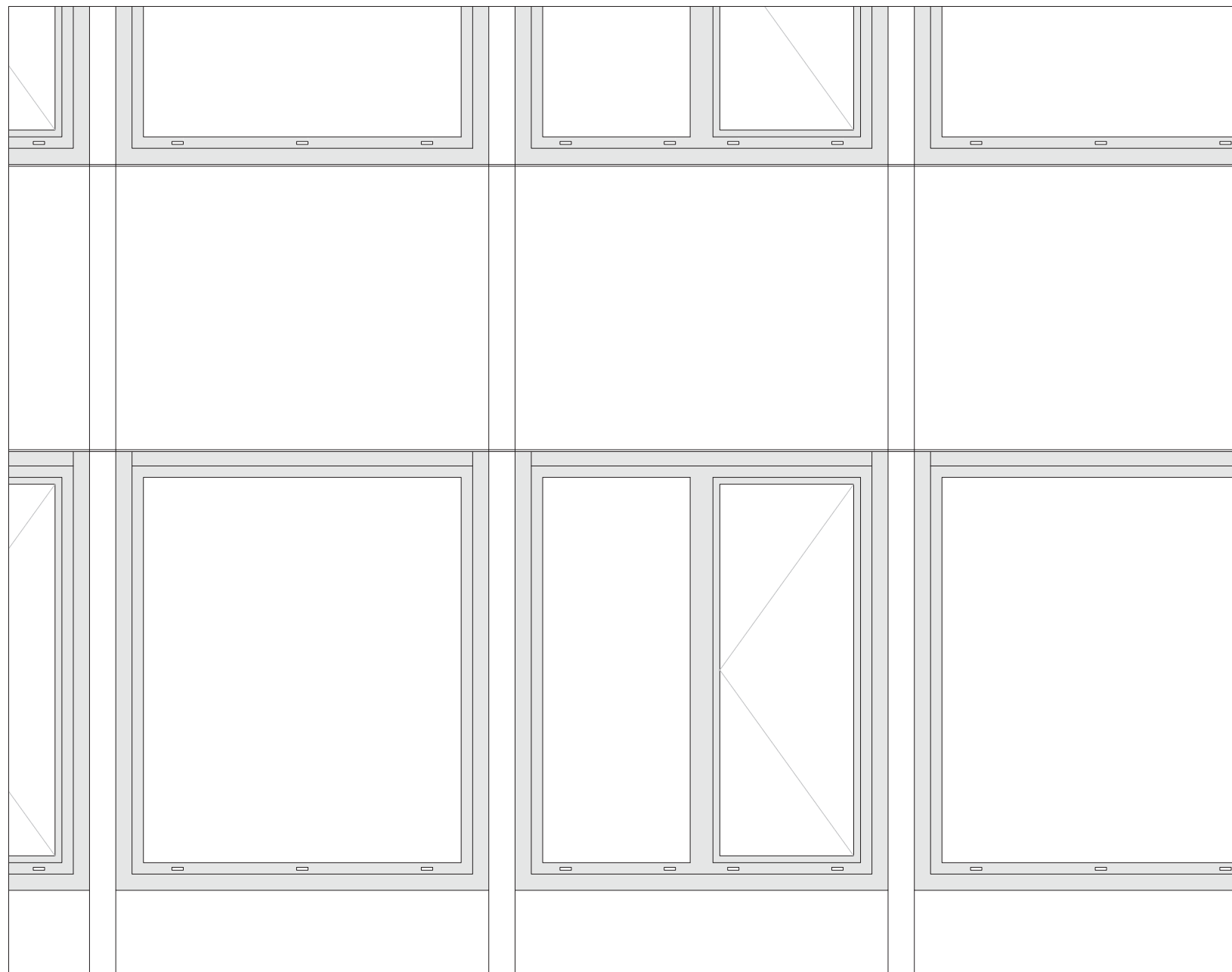
The ground floor till the 10th floor are constructed in the same building method. The prefab concrete columns in the facade are dimensioned 250/350mm. In the corridor in the center of the building we find prefab columns with a dimension of 250/550mm. The floor is a 300mm thick poured concrete slab that is leaning on prefab beams dimensioned 250/350mm. In the year 1984/1985 the building was renovated. Then, all the columns where covered en the prefab beams where hidden behind a lowered ceiling.

Throughout the whole building we find a fit-out of removable inner-walls. This makes it possible to make interventions in the interior; the floor plans are flexible.

The central core in the building is made of poured concrete walls. It is playing a key- role in the buildings stability. The wind forces on the building are being guided through the construction of columns and bearing walls towards the foundation. The bearing walls are dividing the building into three fire compartments. In the reduction drawing you see how the wind forces and torsion distributed. The poured concrete floor ensures for a torsion along with the core in the middle of the building.

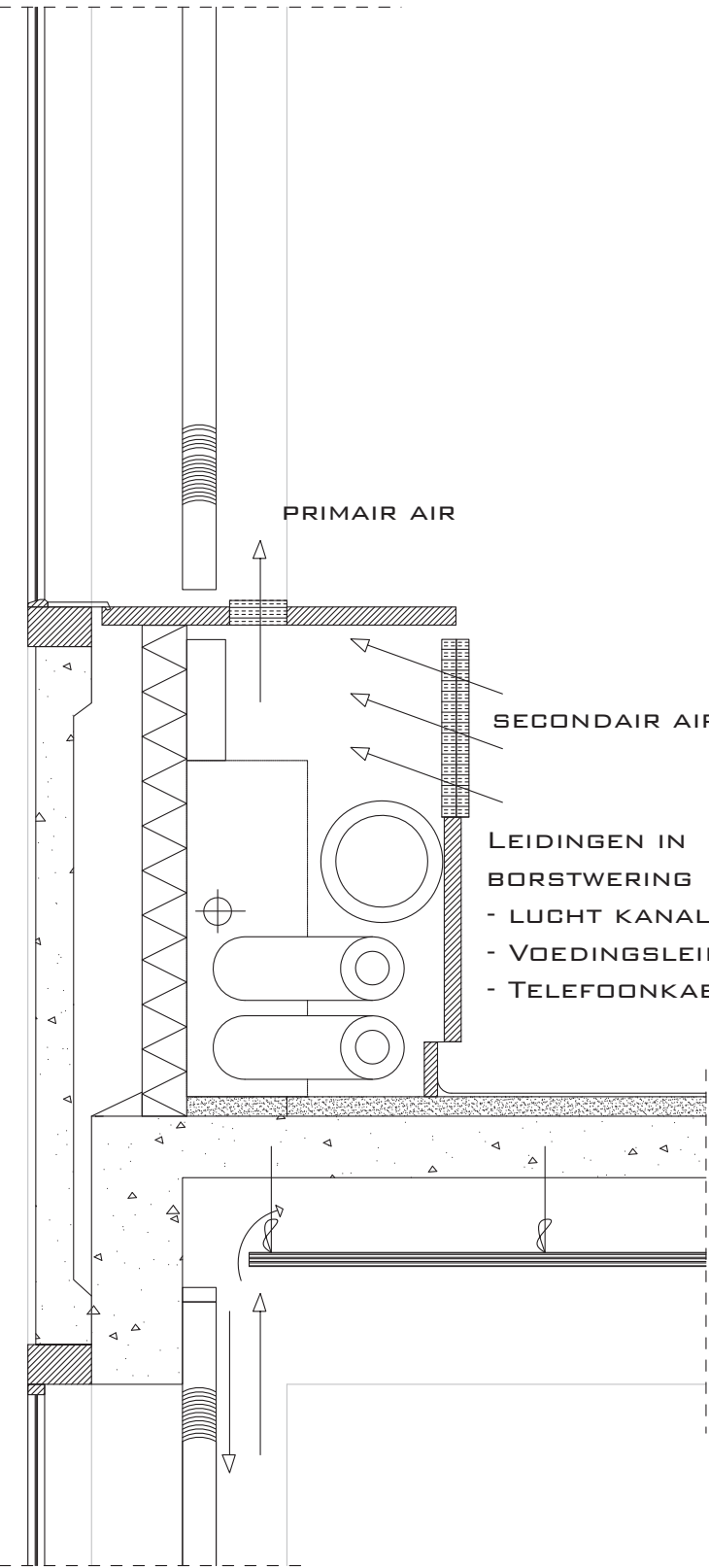


Building technology analysis

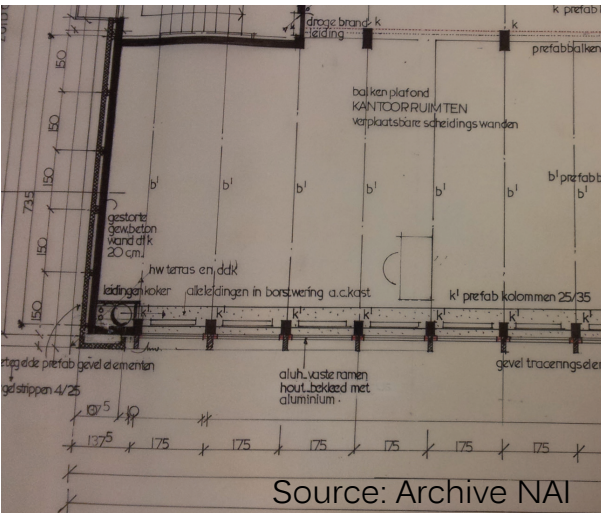


Principle details

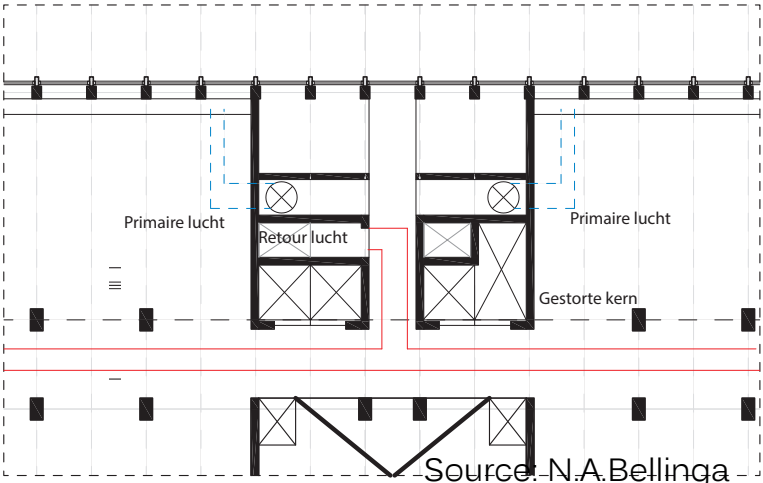
Comparison of original drawings of the building and the ones from the year 1984/1985 are showing what the impact of the renovation was. We can see that the original window frames, made of wood covered with aluminum, were replaced by new aluminum window frames. Exact details of this building or not founded.



Source: N.A.Bellinga



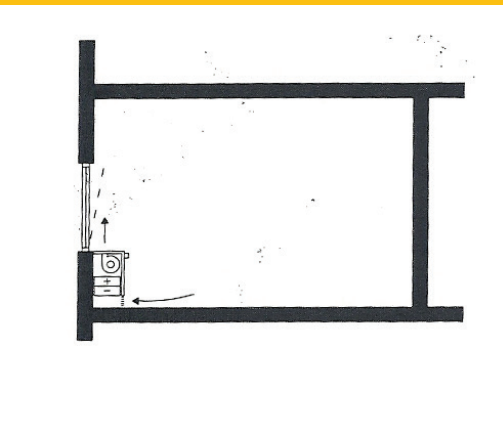
Source: Archive NAI



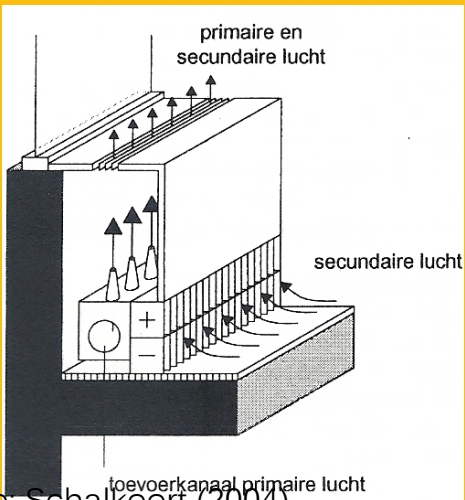
Source: N.A.Bellinga

Installations

In the first plans for the Zaanstad office building they already thought about the installation concept and how to get enough fresh air in the office spaces. In the 60's they already introduced an air conditioning system. The drawings shown here are explaining how the system is functioning. Primair air is blown in through the ventilation grid underneath the windows. The secondair air is sucked away above the windows through the lowered ceiling and on the floor. By the shafts in the central core of the building the air is transported through ventilation pipes towards the basement and the rooftop. We call this principle inductance systems. In the image on bottom of the left, there is a principle drawing of how the shafts run to the building. In the four far corners of the building (image on the top on the left) we find smaller shafts. These shafts distribute the electricity cables and telephone lines; today it is also used for data cables. In the current situation the old air conditioning of the 60's is removed. The building has been renovated with a new lowered ceiling that is spanning from inner wall to inner wall. Behind this lowered ceiling new air conditioning units are placed. On the picture shown below you can see the lowered ceiling with the new shafts. It is unsure of the systems are functioning properly, since it is not in use for a long time. Only some floors are in use by anti-theft inhabitants. Although, the main structure of the building is still present.



Source: Schalkoort (2004)



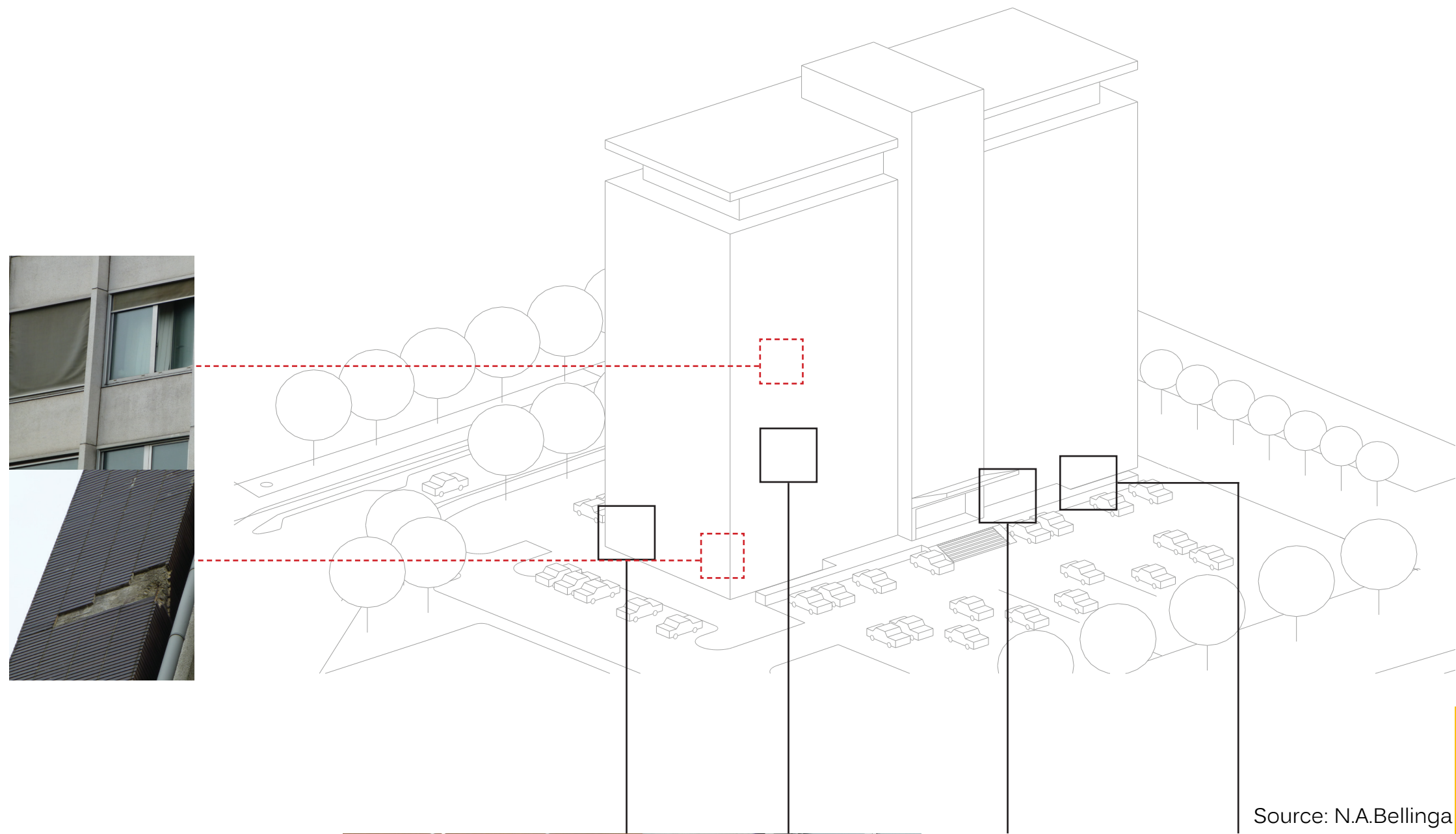
Source: Schalkoort (2004)



Source: T.Schoneveld

Building technology analysis

Damage



Materials and damages

On the left page you will find an overview of the materials that are used in the Zaanstad office building. The outer walls are made of poured concrete that are covered with brown tiles. In the current situation these tiles are heavily damaged. Because of bad maintenance and frost damage the joints and tiles where cracked and some have fallen off.

The entrance to the basement and the plinth off the building are covered with black natural stone. These stone tiles are in good condition. At a first glance, this part of the building is in good shape. The facades are constructed of prefab concrete elements; in the current situation there are aluminium window frames. On the outside of the window there is window shading, that is guided by aluminium U-shaped profiles. The facade is in good shape, although the dirty and broken sun shading makes it looks shabby. The shed above the entrance is made of plastic covered with blue cladding material. This part is in good shape.

Value assessment

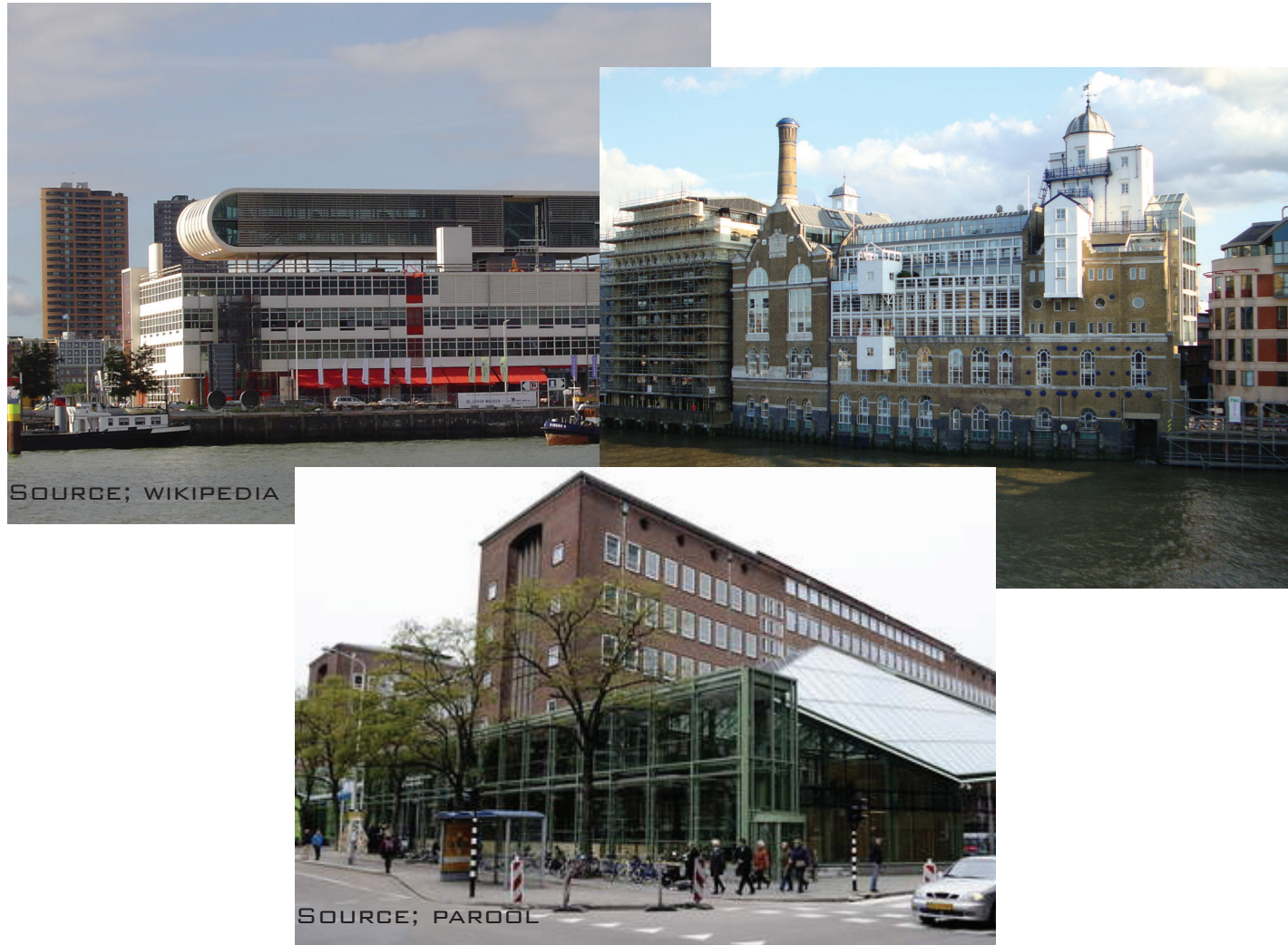
In general, the building has an indifferent value. De general condition of the building is poor. In the surrounding Amsterdam area we find a lot of historical prefab concrete (office) buildings what makes the historical value of the building less significant. In terms of the climate installation, we see a futuristic type of installation for the 60's. The good positioning of shafts and lowered ceilings make the building very flexible, which is attractive for making a new fit-out or change the function of the building.

Materials



Source: N.A.Bellinga

Position and research question

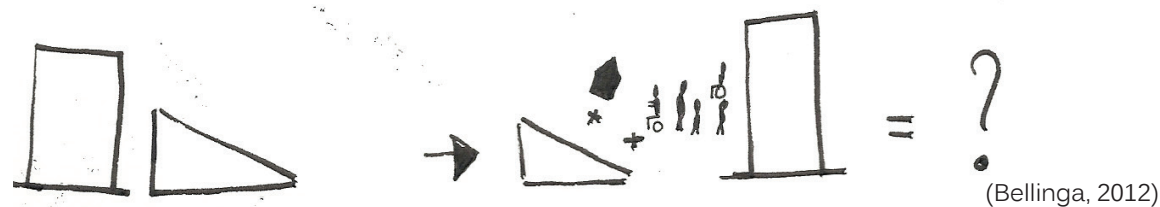


Position

My position in a redesign proposal is to conserve the functioning parts in its context. By giving old buildings a new program which can improve the functionality of the building (e.g. giving it a new twist by adding parts), you can bring the building back to life.

Through highlighting the qualities you can make the expression of the building stronger.

I will continue my graduation project with the scholendriehoek and my focus of reuse will be on the Daniel Goedkoop school. I will try to make one ensemble of the Scholendriehoek by chose one strong theme which can connect the buildings with each other. I make use of the existing buildings and the educational function which works.



Research question

The research question I ask myself and where I want to start my research and design studies is stated as follows;

How can the scholendriehoek, situated in the district Bos en Lommer in Amsterdam, be transformed into an educational and accommodating place for physically handicapped children who are in a rehabilitation process?

Subquestions that followed out of this research question are;

Questions on topic level

- What is a rehabilitation center?
- What are the requirements for a rehabilitation center?
- What are the different typologies for rehabilitation centers?
- What are the (general) requirements for disabled children in a rehabilitation process?

Questions on Scholendriehoek and urban context level

- What is the meaning of the scholendriehoek for Amsterdam, Amsterdam West, Bos en Lommer, and the adjacent context?
- What is the relationship between a hospital and a rehabilitation center?
- How can the different buildings of the scholendriehoek work together to create one ensemble?
- How can we integrate the Multatuli school, with its functioning program, in this kind of rehabilitation center?
- What is necessary to redevelop the Daniel goedkoopschool into a rehabilitation center?
- Which qualities of the Daniel Goedkoopschool are important for his architectural composition? And how can I improve that?

Next steps

By redevelopment of the scholendriehoek I hope to create coherence between the different buildings, but also create an interface between the varied urban areas around the scholendriehoek. By researching the scholendriehoek at first and by making an urban concept I can search for the current strengths of the area. But also to research the weaknesses. By making a strong concept there can be formed a coherence in the area.

The Daniel goedkoopschool will be redeveloped into the main building and be the link between the society and the rehabilitation center. When designing this part of the scholendriehoek, you have to take into account the urban planning, architecture and building technology. All these scales have to work together to make a good design with the specific requirements of the target group; handicapped children. I want to make an ambitious but realistic design.

In the beginning of the 20th century they started thinking about organized rehabilitation. But since then it was not easy to integrate these programs in primary parts of our society: family, schools, living areas. (Voordt, 1983)

This is why I see this as an opportunity to redevelop the scholendriehoek and ensure that handicapped and not handicapped people can come together in this unique triangle of education.

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Archief stadsdeel west
archief stadsdeel west amsterdam, Bos en Lommerplein 250, 1055EK Amsterdam