

ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE



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post-war areas Utrecht, 2011/2012

analyse : architectural & techical
subject : Stoop - Neerlandai - Prozee
area : Utrecht/South/Hoograven

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: municipality Utrecht, Bettina van Santen
: owner factory, Yvonne Prozee



ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | location



Hoograven:

The site of Neerlandia is located in the district Hoograven; it forms together with the district Tolsteeg the southern branch of Utrecht. The southern part of Hoograven is bounded by the highway A12 and in the north it is neighboring the residential area of Tolsteeg.

The Prozee site is part of the strip of industrial buildings along the canal. Due to city expansion, the residential areas developed in H&T started to occupy also parts of the industrial strip. Companies are gradually leaving the old buildings moving to new locations with better access and higher attractivity. Moreover, their moving is enforced by law, which doesn't allow certain industrial activities to take place near the living quarters.

Borders: The Vaarste Rijn to the West; to the Noorth - meester J.M.M. Hamersplantsoen - that was once also a industrial area - forms the northern border; to the East it is neighboring a residential area - 2 story houses build in the 20's; in the south there is Stichting Kringloop Centrum Utrecht - an industrial building that partly occupies the terrain and a large unbuilt area next to the water front.

The main car access to neighborhood accessible is via 't Goylaan (which makes the connection to Utrecht Ring and further on with A12) and the Briljantlaan which makes the connection to the city center.

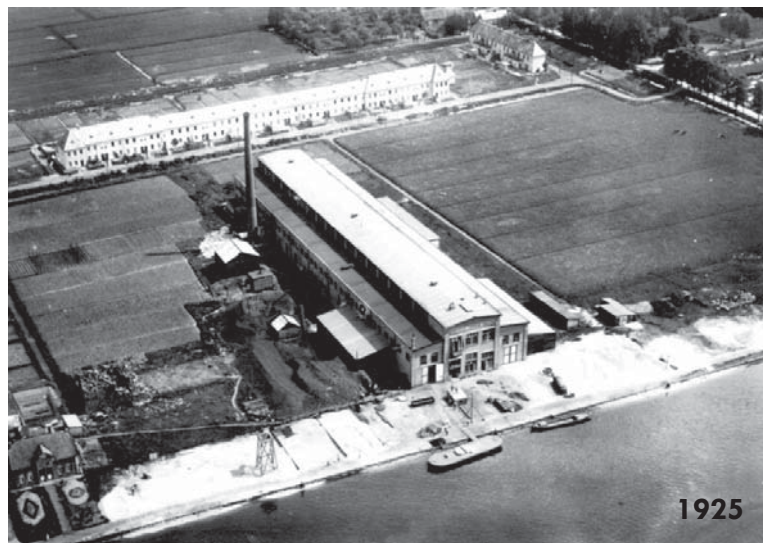
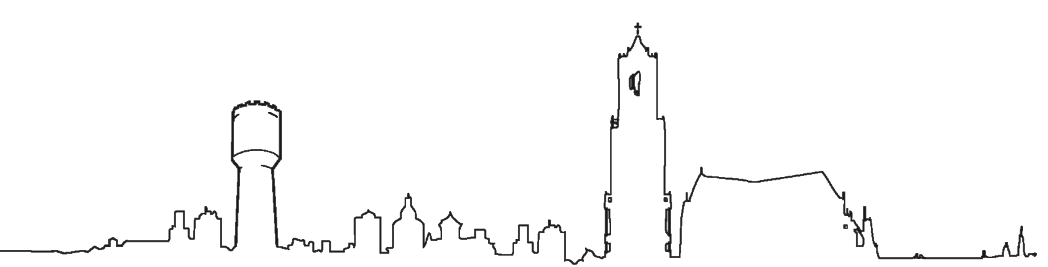
The location is owned by the Prozee family, but it is in process of transfer (sold) to Utrecht municipality. A small strip, located north of the site - meester J.M.M. Hamersplantsoen - is already owned by the municipality.

distance between

| | | |
|-----------|-----------|---------|
| centre/cs | : car | 6 min. |
| | : bus | 8 min. |
| | : cycling | 12 min. |
| | : walking | 44 min. |

| | | |
|---------|-------|--------|
| highway | : car | 3 min. |
|---------|-------|--------|

source: text beeldkwalitetisplan prozee <http://utrecht.nl>
images own work (RH)



1925



2009



1938



1973



2011

History of Neerlandia:

The large factory building of the former Neerlandia is part of the historic industrial landscape of the Vaartse Rijn.

Vaartse Rijn was dug in the 12th century and generated an increasing economic activity in this area of Utrecht.

The oldest allotments were probably created in relation to the Vaartse Rijn; they appear as large plots perpendicular to the Canal line. This applies to the entire strip on the Vaartse Rijn.

The construction of the factory started in 1917 at the crossing of the Vaartse Rijn and the Merwedekanaal. It was designed by the architect W. Duyff for the NV. Chemical plant of Dr. F.C. Stoop. The production consisted mainly of gunpowder and fertilizer.

Because gunpowder production was a hazardous activity, it had to move from the location. Moreover, due to the economical crisis of 1932, Stoop was forced to permanently cease its activity. In 1936 it went bankrupt and in 1937 N.V. Draadindustrie Neerlandia moved in the building. The factory produced barbed wire and other iron wire products.

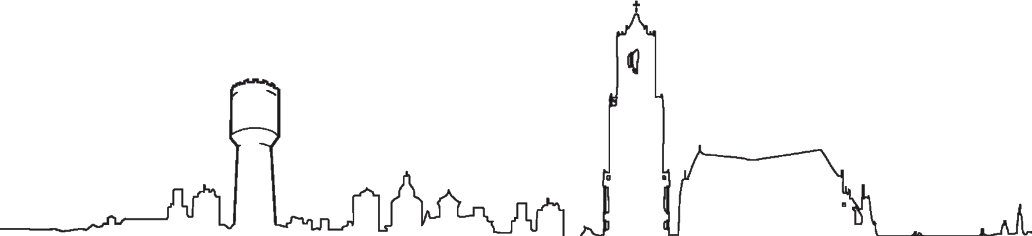
At the start of the company, Neerlandia brought experienced personnel from a bankrupt bolt factory in south of the Netherlands. As the production needed more space, the factory expanded the same year it was bought - in 1937, two new halls were built, which incorporated the chimney.

The two director houses at the site entrance in 1949 were designed by the son of architect W. Duyff. Despite the difficult years after World War II, Neerlandia reached 400 employees in the sixties and a significant production. Yet the business was coming to an end, presumably because of the outdated machines and barrier to exports. It is not clear when the activity stopped, but in 1973 the rag trader Prozee took over the factory buildings.

A short while later the factory had to move from the residential area because of fire hazard. The company decides to switch to trading scrap metal. Today, this is still its official activity.

Over the following years there was no maintenance, partly because of financial inability to make the building fireproof. The buildings were partly leased to the foundation de Arm which uses them as ateliers for furniture refurbishing.

source: bestmingsplan prozeeterrein hoograven <http://utrecht.nl> (RH)



Regional Evolution

small ndustry existed in Utrecht, located at the canals.

significant improvement in the infrastructure 1843 construction of railway between Utrecht and Amsterdam. transportation by water and rail.

The number of workers increases outside Utrecht. expansion of the city of Utrecht is required.

1892: Construction Merwedekanaal, with deep water and fewer turns, plays an important role for establishment of factorys around here.



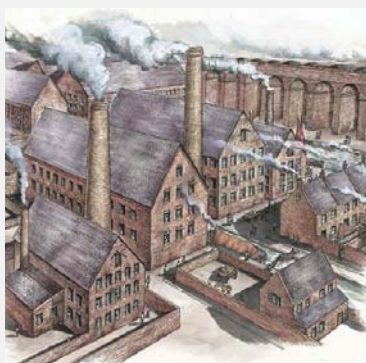
1800

1850

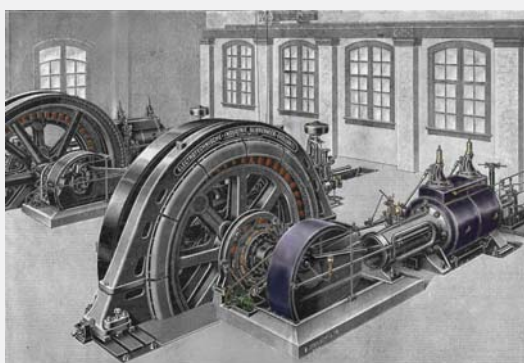
1900

Global Context Evolution

The origin of the factory building is in England. In the 18th century, the textile industry moved from manual labor to mechanized mass production in the large "textile mills" operated by water power.



A key change towards the end of this century was the replacement of waterpower by steampower and wood constructions by iron and metal construction. As England was the starting place of the Industrial Revolution, its became the exporter of the industrial building.



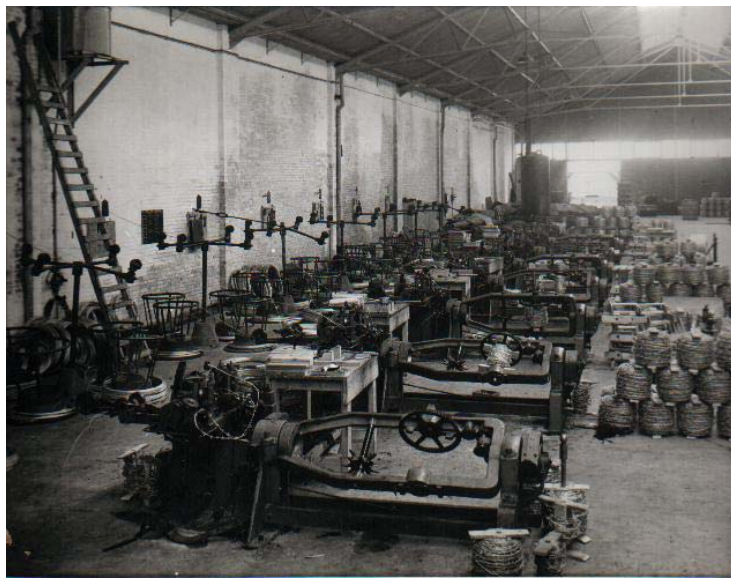
The introduction of the factory system developed in the first half of the 19 century in the Netherlands very slowly and in a limited number of fields. In 1850 - 1870 the introduction of the factory is also very slow. Yet it is an important period because of significant developments. Wooden structures are replaced by cast iron and a big improvement by introducing the steam engine. Around the year 1900 there is an increasing need for high and wide halls. The introduction of the **basilica** style.



1800

1850

1900



Prozee Factory Evolution

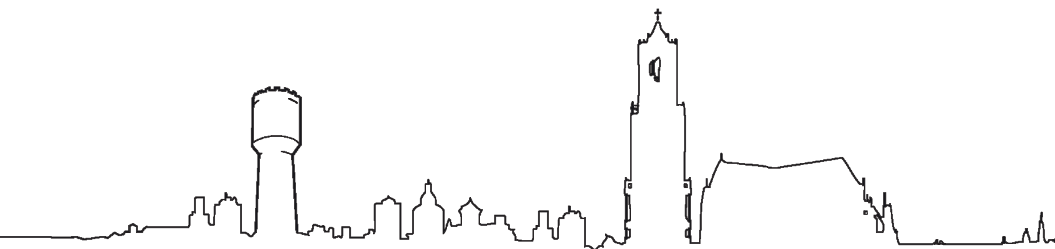
1892 official establishment of the Chemical Factory F.C. Stoop

STOOP

impression, similar plant superfosfaatfabriek A'dam



ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | timeline



many new industries along the canals, due to the first world war there is much work. After this war there was a lot of unemployment.

1920 new neighborhoods under construction, including Hoograven

WWII - activity increase - production for Germany

1952: Construction of A'dam Rijnkanaal, which reduced the importance of Merwede

because the oil crisis a lot of factories along the canal went bankrupt.

new business in distant neighborhoods, factories along the canals are empty and some are demolished.



1900

1914-1918 WWI impact on Dutch industry varied: the Twente cotton industry had to stop there production because the lack of imported raw materials. On the other hand Tilburg's wool industry produced at full speed.

The effect of the blocked imports was positive, since many imported products are domestically manufactured. Especially the **chemical** industry, this gave an extra boost.

1930-1936 the industry productivity drops due to the economic crisis

1950

1940-1945 WWII Slow recovery after this war. Lot of damage on infrastructure

Around **1950**, the reconstruction and economic recovery. A period of industrial growth that begins in 1963 will continue. In the years 1953-1963 industrial employment grew annually by more than 2 %

70 / 80 , huge relapse in the industrial employment. With other causes besides the high wage levels, further mechanization and automation, the relocation of labor-intensive industries to low wage countries, the unprecedented rapid rise in energy costs since the 1973 oil crisis

2000

From 1985 until today, the site and buildings have been left in a relative abandoned state. As they remained residual spaces, unused to their potential, the concern for the redevelopment of these areas started.

2011



1914 the director of the factory gave orders to build a new factory at the junction of the Vaartse Rijn Merwedekanaal. The design comes from architect W. Duyff

1932 the crisis hit the Dutch economy between 1930 and 1936. The company went bankrupt.

Despite the crisis the metal industry developed and broadened unabated.

metal industry grows

in **1937** established Neerlandia wire industry in the factory building.

NEERLANDIA

1938 extensions of factory through large halls.

1940 the Germans took over the factory. Director dismissed.

1945 after the war the Germans took the machines. Former director retook the position.

1971 Neerlandia bankrupt

Bankruptcy causes:

- port strike in U.S. EastCoast
- Imports Increase 10%
- 90% was traded to the U.S.
- Outdated machines resulted in bad quality products which were often returned.

The exact reason for their departure remains unknown, but what is clear is that the company is left in a hurry. Archive, interior and equipment are left behind.

In **1973** the factory was bought by the rag dealer prozee.

PROZEE

In **1974** considerable roof damage from storms

Over the years, The factory adapted more and more to meet the required fire safety standards.

These adjustments were so costly that demolition and new building was a better solution.

Prozee couldn't afford investments and kept the building for scrap metal trade - relatively good business since there are no regulations regarding this business.

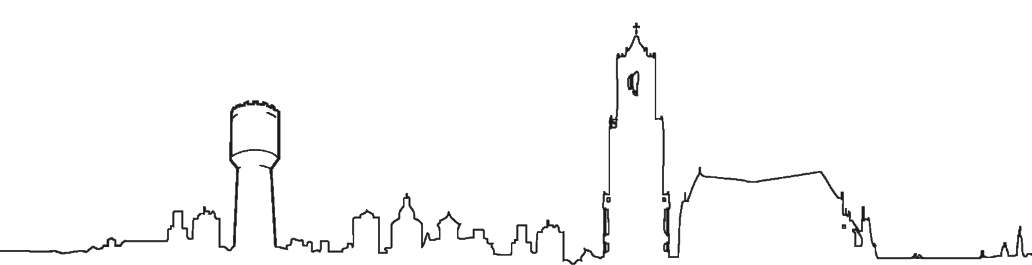
In **2002**, the last of the four brothers who were owners of Prozee passed away.

The daughters of Ate Prozee subsequently took over the company.

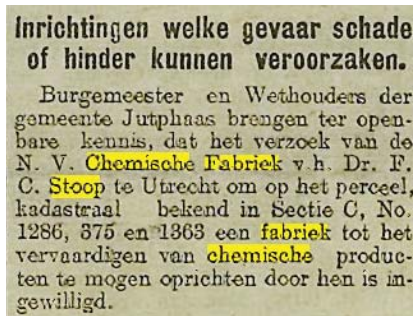
In **2012**, Prozee permently leave the site after 40 years of precence.

The factory is now waiting for redevelopment. Several plans are ready for use

source: oude fabrieksgebouwen NL, Zuid Utrechtse wijken (RH)



1915



1915



1933

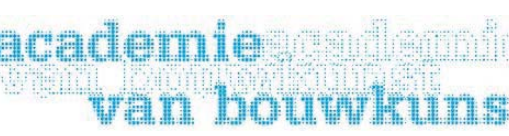
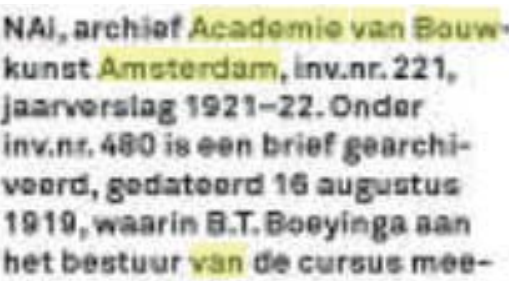
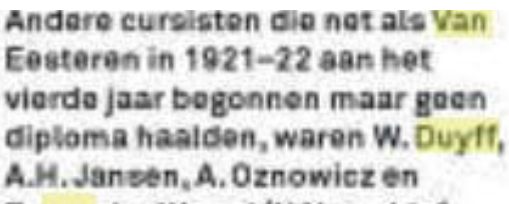


1937



1938

Archive NAI, note W. Duyff



Architect:

designer of the Neerlandia:

| | |
|--------|---|
| Person | : Willem Duyff |
| Born | : Amsterdam 1897 |
| Active | : 1917 – 1956 |
| Study | : Academie van Bouwkunst Amsterdam (1921-1922) |

One hundred and three years ago – to be precise, on Monday October 5th 1908 – the course in Secondary and Higher Architectural Training began with fifty students. A three-year evening course, organised by the association Architectura et Amicitia, met the capital's need for a solid professional training course in the field of architecture. Big names like Berlage, Cuypers, Kromhout and Kalf were not only involved in the setting up of the course, but also assumed responsibility for part of the syllabus as tutors.

The explosive growth of Amsterdam after the second half of the nineteenth century had led to an unprecedented growth of building activity and the emergence of a serious shortage of qualified personnel. The course was explicitly intended for students who were already engaged in practice such men as Willem Duyff and van Eesteren. They sat together in the academic year and fellt both for their diploma in het fourt year.

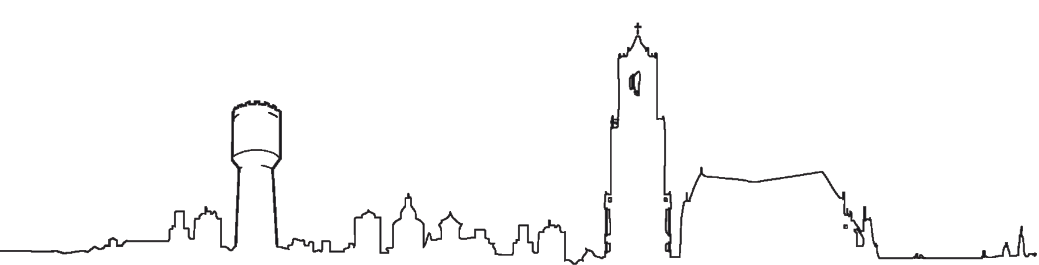
see archive NAI

William Duyff started early with his work as an architect, probably his father was already active in this sector and could therefore start early with design tasks. However, little is known about the work of William Duyff, his son is much more familiar. Architect W. Duyff Jr. has designed many buildings in Utrecht, mainly houses and stores in thirty years.

see archive newspaper Utrecht

source: text Bettina van Santen, employee municipality Utrecht
article archive Utrecht (RH)

ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | architectural style



Basilica type :

The basilica style was originally used for Roman public buildings (2nd century BC) then used for religious (Christian) buildings. A basilica was a large rectangular hall that was usually divided into three parts, namely, a central nave and two apsis. The nave is higher than the apsis, and has a line of large windows, called “clerestory”.

The nave of the basilica was flanked on both sides by straight interior walls supported by pillars. The apsis generally have a low pitched gable roof.

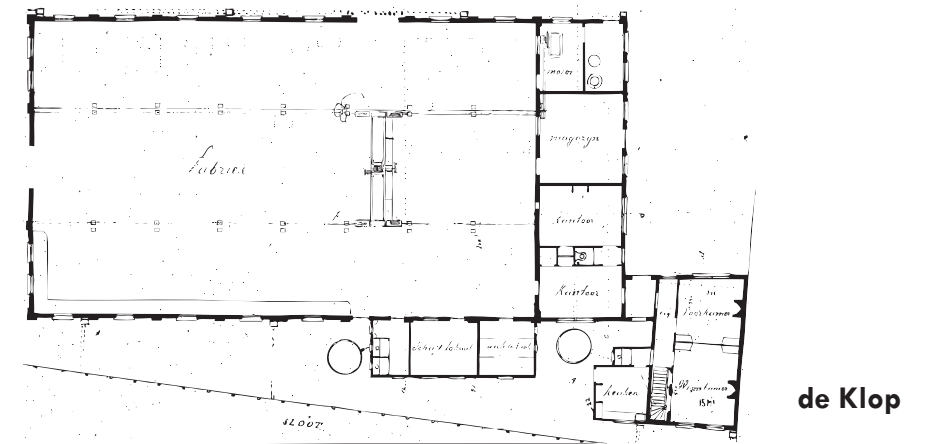
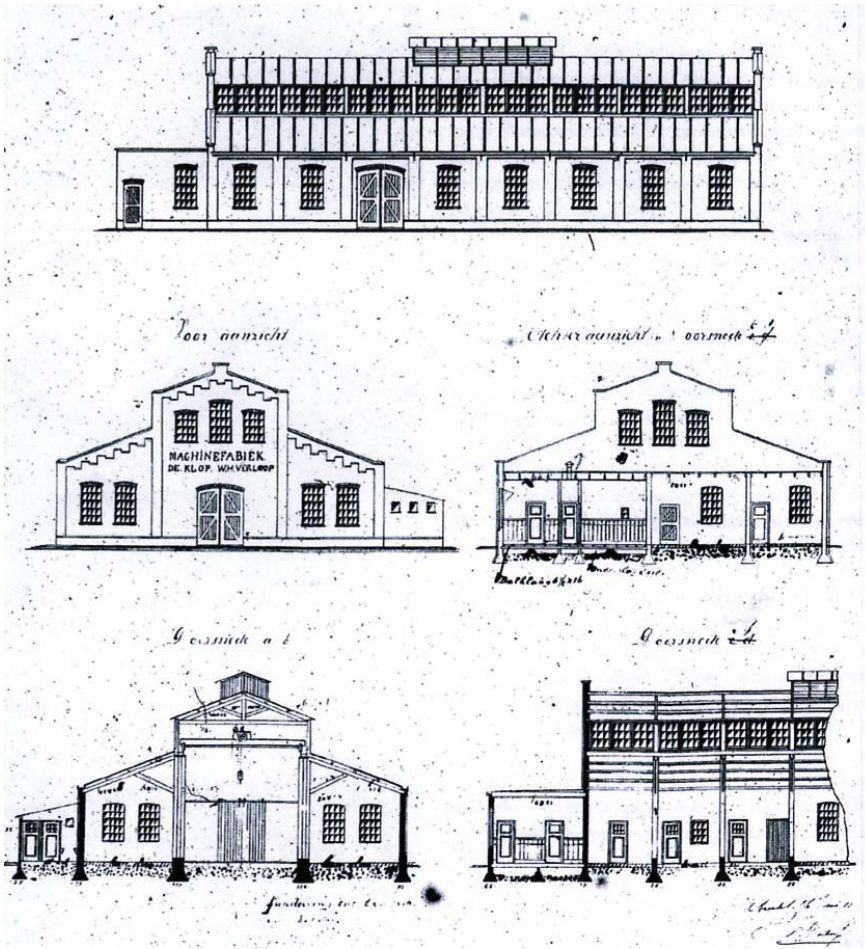
The factory has the basilica structure, which was typical to such metal factories in the early 20th century. That meant a raised central nave with skylights, under a gable, flanked by two aisles under pent roofs.

The line of windows on the top part of the central nave was important in providing light in the interior as the windows of the apsis were not sufficient.

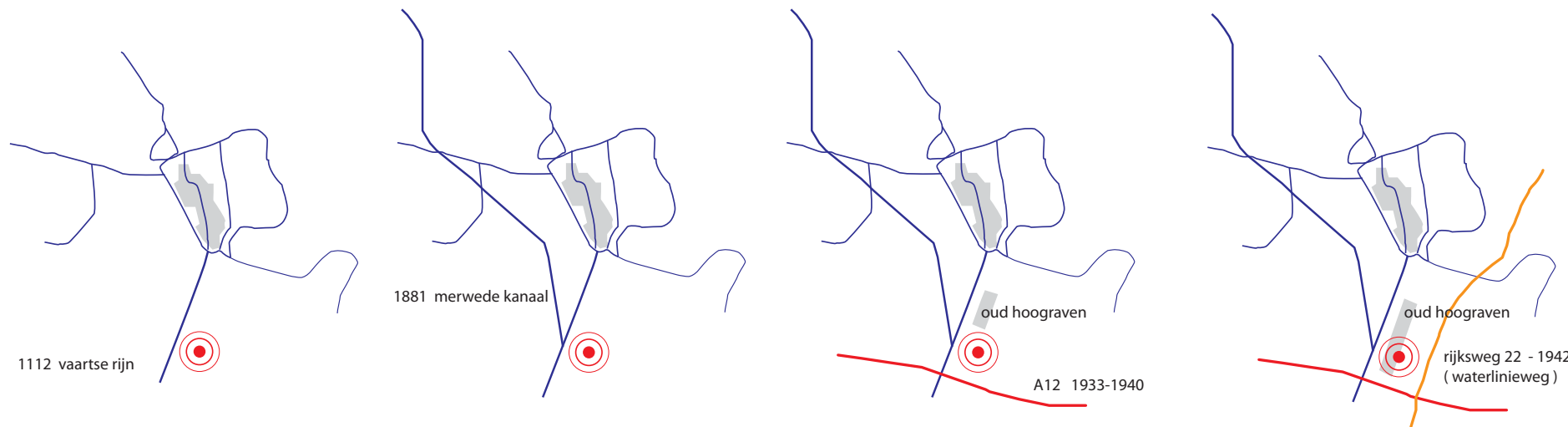
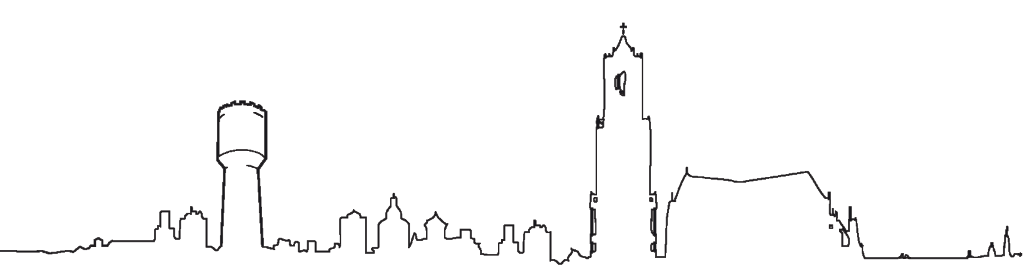
The lateral facades are entirely masonry with decorative brickwork articulated by pilasters with sets of two windows inbetween. The basilica facade is emphasized by the use of decorative masonry pilasters. On the main facades the structure is emphasized (offset from the masonry line) thus the division typical to basilica style is more visible: central nave and side apsis.

Along the Vaartse Rijn, there used to be other factory buildings that were built in basilica style: a steam machine factory “de Klop” dating back to 1913 and van Heuzen lingeriefabrieken N.V. In 2001, the municipality of Utrecht wanted to include “de Klop” on the heritage list. The owner did not agree with this proposal as reusing the building would cost too much. In July 2006, the building was demolished.

As these buildings have been demolished, the basilica style of Neerlandia stands today as unique architectural style characteristic to the early 20th century industrial buildings in the South Utrecht area.



source: text Heruneman, van Santen, van Vliet - De Utrechtse wijken, Utrecht, 2005
maps HKTH, P.Sprangers
photo HKTH, P.Sprangers (RH)



Along the banks of the canal there was all kinds of industrial buildings. the underlying area remained undeveloped until the year 1945.

The construction of Merwede ensured that Vaartse Rijn was less used as transportation route. Ship traffic increased and the accessibility to factories along the Vaartse Rijn was limited.

The route between The Hague and Oudenriijn was constructed in the years 1933-1940 and is the oldest highway in the Netherlands. This highway improved the accessibility of Utrecht.

Waterlinieweg was originally built in 1942 under the name of Highway 22. Waterlinieweg is a municipal road and highway number has been lost. The road is part of the ring of Utrecht, the speed is reduced to 70 km / h.



Oud Hoograven :

In the polder Hoograven, the municipality of Jutphaas built in the late 30's a residential area parallel to the Vaartse Rijn. Oud Hoograven has a structure of long avenues and closed blocks.



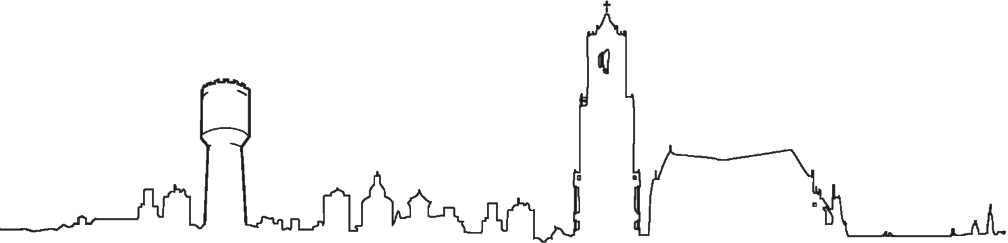
Nieuw Hoograven :

Due to the enormous housing shortage after the war Utrecht was searching to cultivate new territory. After annexation of the polder Hoograven, that took place at 1954, Utrecht built a new neighborhood of single-family homes , low flats and green.

84% of all the houses belonged to the social rented sector. The new piece of Utrecht extended to the Ringweg in the east and to the tunnel of the Oude Liesbosweg in the south.

Nieuw Hoograven is configured as "stamp structures" bound together by green spaces - parks and green stripe along ditches. The Utrecht architect Gerrit Rietveld was involved in the urban plan for this neighborhood that is organized according to the stamp principle and the idea of zoning.

source: images & sketches own work (RH)
photo <http://www.hetutrechtsarchief.nl>



1879



1902



1912



1948



Area development before 1970's :

Up until 1881, when Merwede Kanaal was built, along Vaartse Rijn there was only small industry(mills) scattered along the water line.

The plots were perpendicular to the Vaartse Rijn and were mainly configured as long narrow strips. The configuration of the plot was more narrow by the second half of the 19th century and reached its current configuration in the time Neerlandia started the industrial activity. As visible in img.1, which was taken in 1924 when Stoop was active, the plot was more narrow. The extra stripe of land was probably incorporated to the general plot when Neerlandia moved in.

A row of houses is built in the 20's, east of the factory, parallel to the Canal. They are shortly demolished due to structural failure. (img.1)

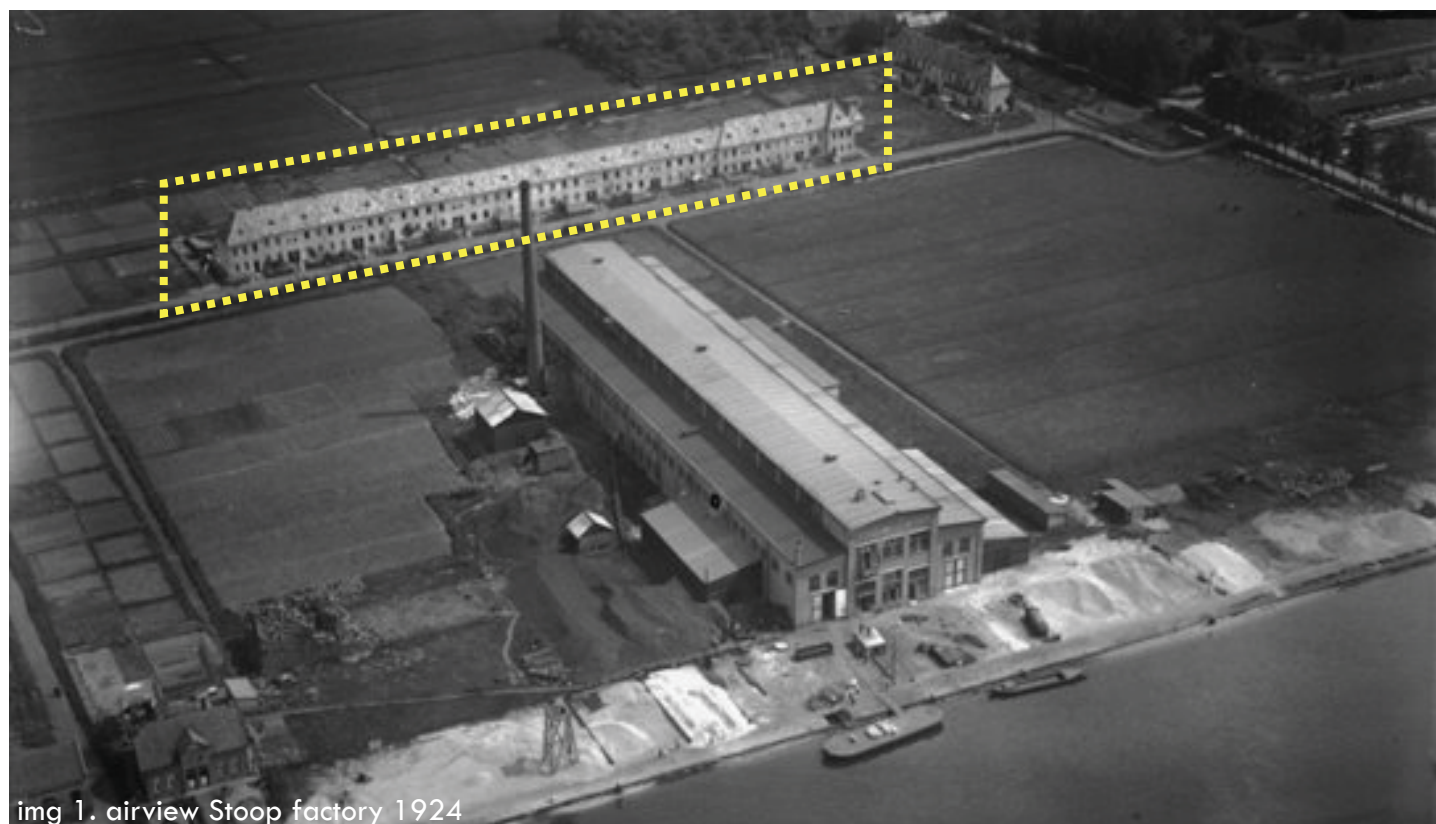
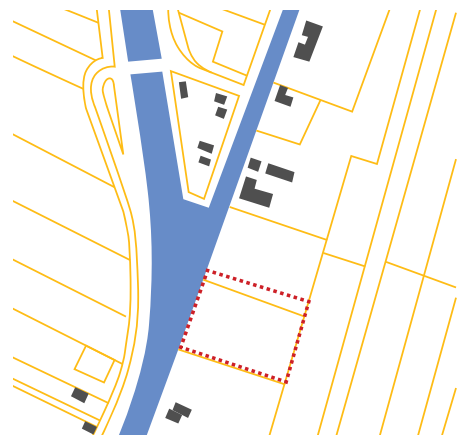
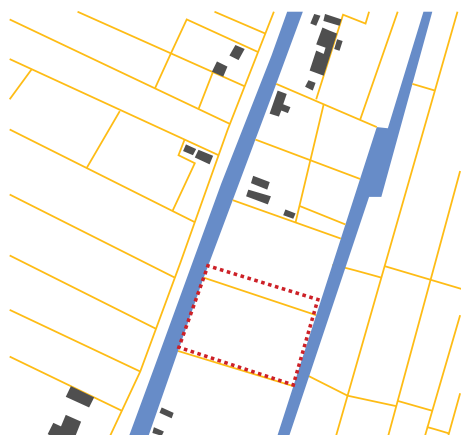
A more significant development of the area can be seen in the 40's:

- considerable expansion of the industrial activity along Vaarse Rijn - large industrial complexes appear; along Merwede Canal industry is still scarce and low in scale.

- major infrastructure developments that give a better connectivity of the area with the city center and with neighbor cities

- a housing area is built parallel to Vaartse Rijn, on the east side of Neerlandia (A)

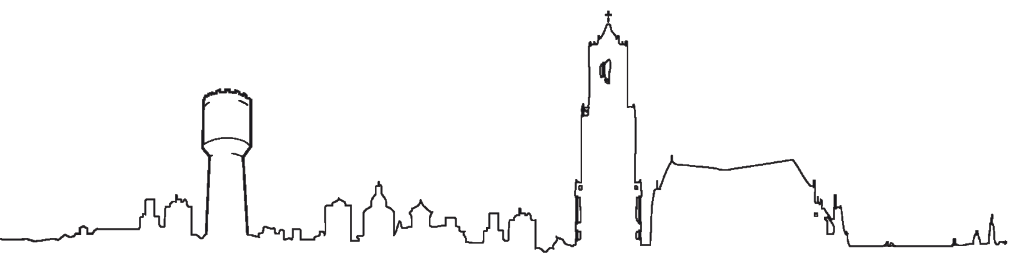
- a row of houses is built on the original plot of the factory therefore the access and visibility to the factory becomes quite concealed; in 1949 the director's house is built. (B)



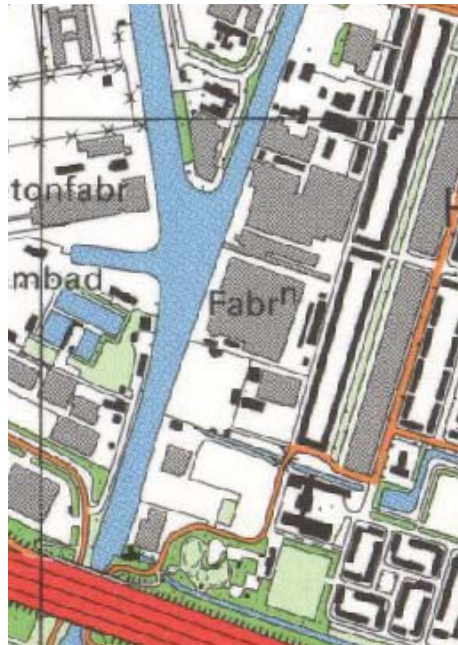
img 1. airview Stoop factory 1924



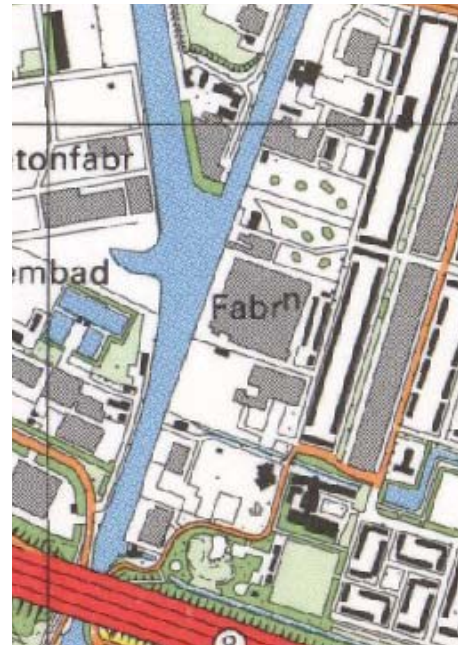
source: historical maps - watwaswaar.nl
photos - hetutrechtarchief.nl



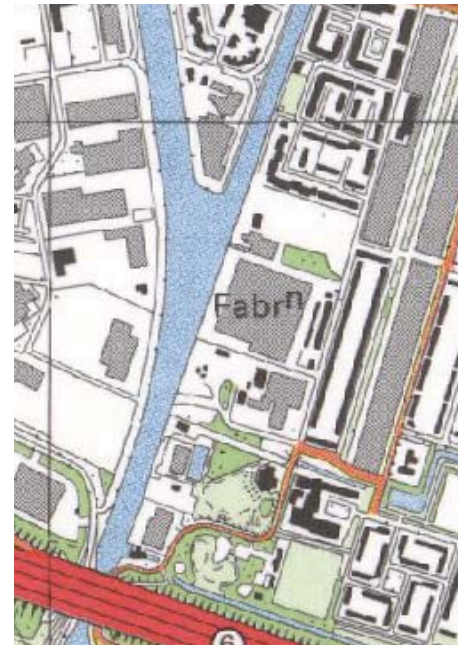
1981



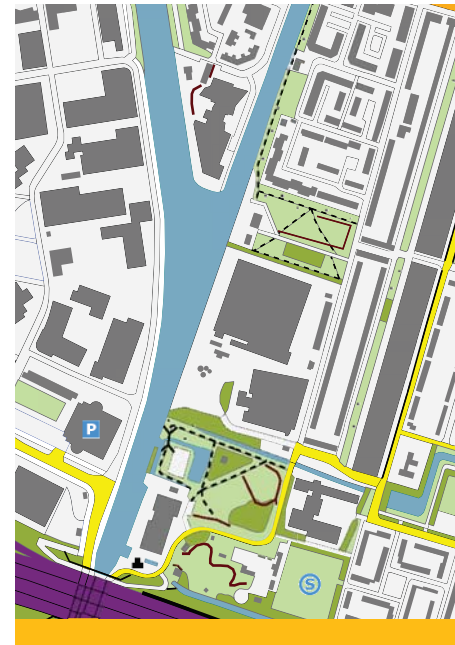
1988



1992



2011



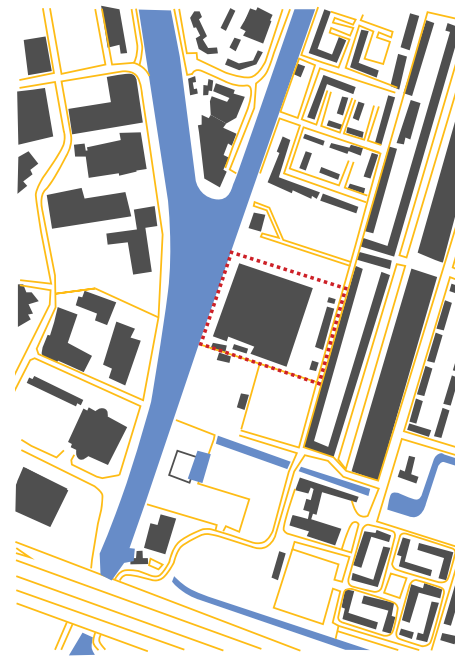
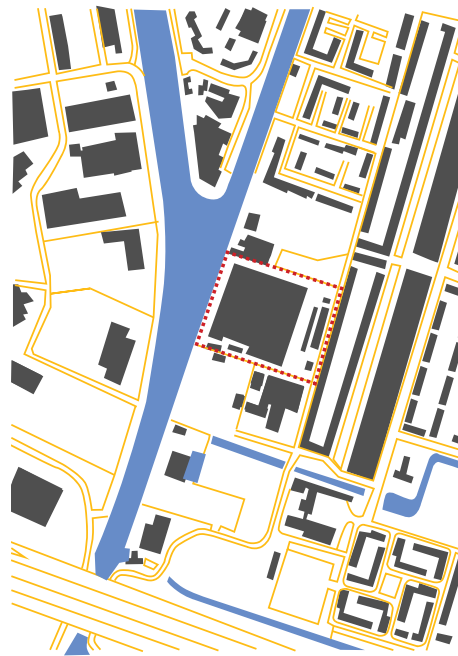
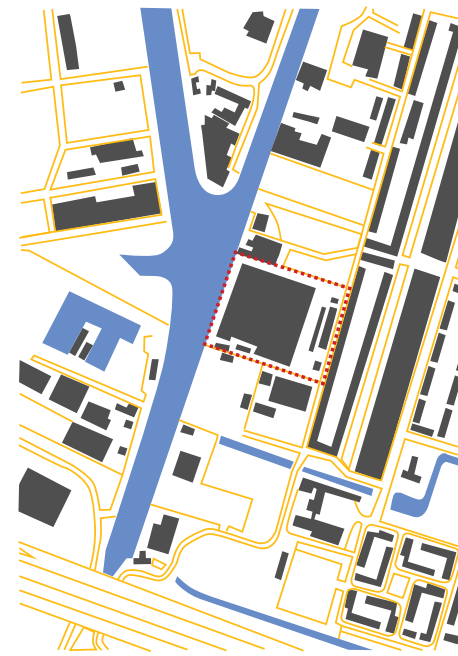
Area development after 1970's :

The biggest changes in the area occur after late 70's:

The West bank of Vaartse Rijn and Merwede was occupied by large industrial complexes; there are occasional water connections from the canal to the inland to serve the industry (probably they mainly access for product shipping)

While the west bank starts to be occupied more and more by industry, on the east side the industrial sites start to disappear. They are replaced by green spaces (probably public at the beginning) and later on some of them are built residential areas.

It is thus an obvious expansion of the city center to the periphery which manifests itself in developments of residential areas on former industrial sites and in the same time the new industry is pushed further from city center, in areas unbuilt or not programmed yet for residential development



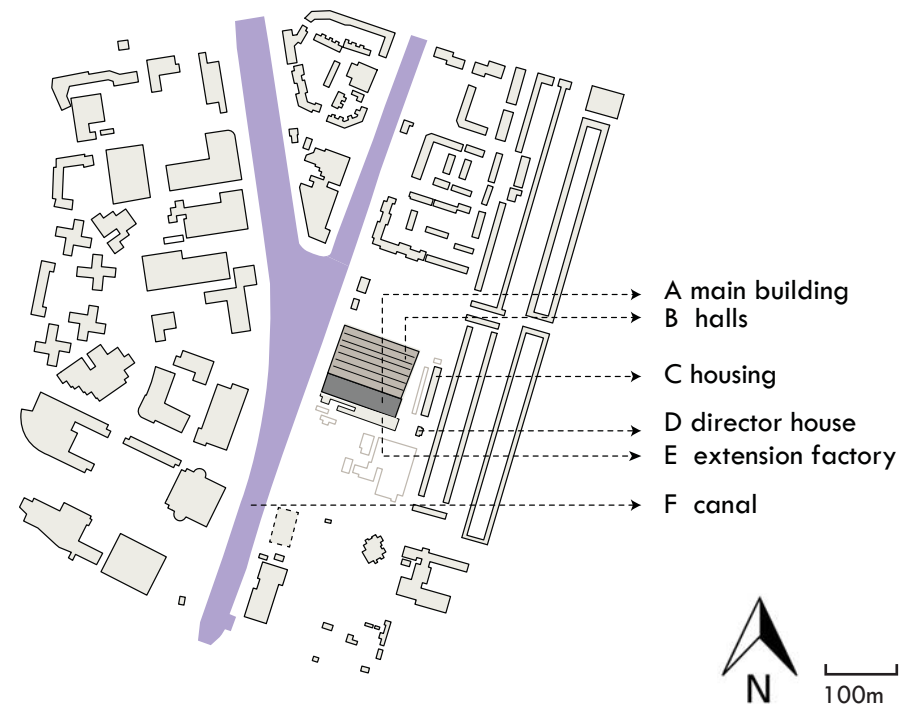
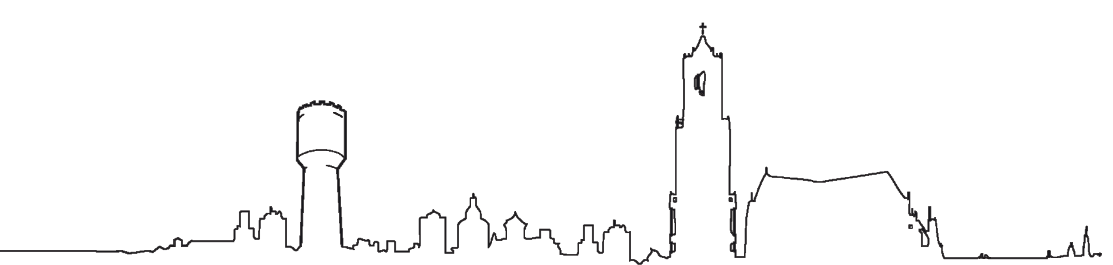
There are no major infrastructure developments after 1970's because the functional occupation (industry) did not demand such and a large part of the residential area had already been built before in a compact formula.

The site of Prozee was more enclosed by neighbour buildings by late 70's. Later on, as the industrial buildings were demolished it became a compact mass neighboured only partially by an industrial building to the south and almost fully by a row of houses to the east.

Until late 1970's the site was bordered by other industrial buildings. As later on these were demolished, Prozee remains today among the few industrial sites along East bank of Vaartse Rijn. Its presence is emphasized by the large plot occupation (ca. 80%, 12.000 sqm).



source: historical maps - watwaswaar.nl
photos - hetutrechtarchief.nl
image caption: Google Earth



source: map own work - illustrator (RH)
photo <http://www.bingmap.com>



A. main building

In 1917 Stoop chemical factory was built. At first it comprised of only one long basilical type hall and a chimney. The design of the factory was made by architect W. Duyff.

The factory has the basilica structure, which was typical to such metal factories in the early 20th century. That meant a raised central nave with skylights, under a gable, flanked by two aisles under pent roofs.

The nave of the basilica was flanked on both sides by straight interior walls supported by pillars. The apsis generally have a low pitched gable roof.

B. halls

The halls occupy most of the plot and are aligned parallel to the main building and perpendicular to Vaartse Rijn.

The halls have been built later than the main building in order to meet the storage and production necessities of Neerlandia.

Evolution:

In 1936, the space was already occupied by Neerlandia which started building new long halls, parallel to the main building. The chimney had been incorporated in one of the halls adjacent to the main one.

1938 - Neerlandia expands on the plot towards the north side with a new hall parallel to the existing ones but detached.

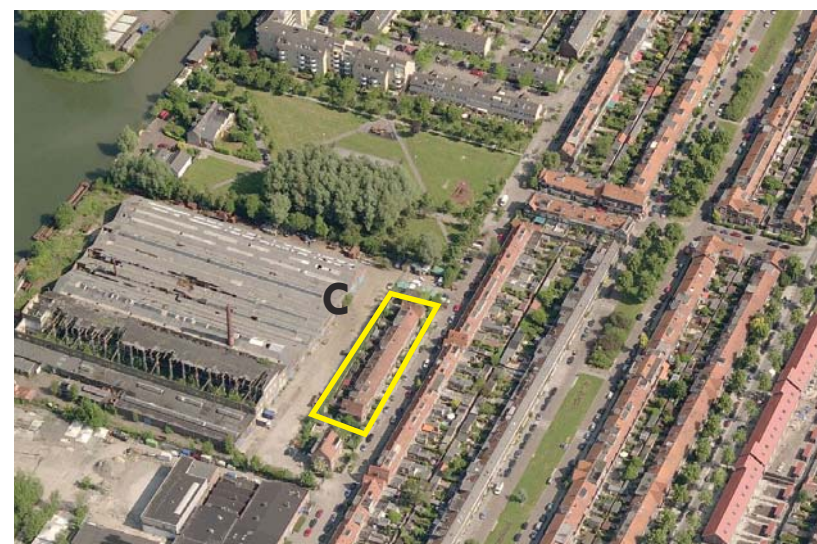
1950 - two more halls had been build on northside of the plot. The ensemble got its compact form that it still has today.

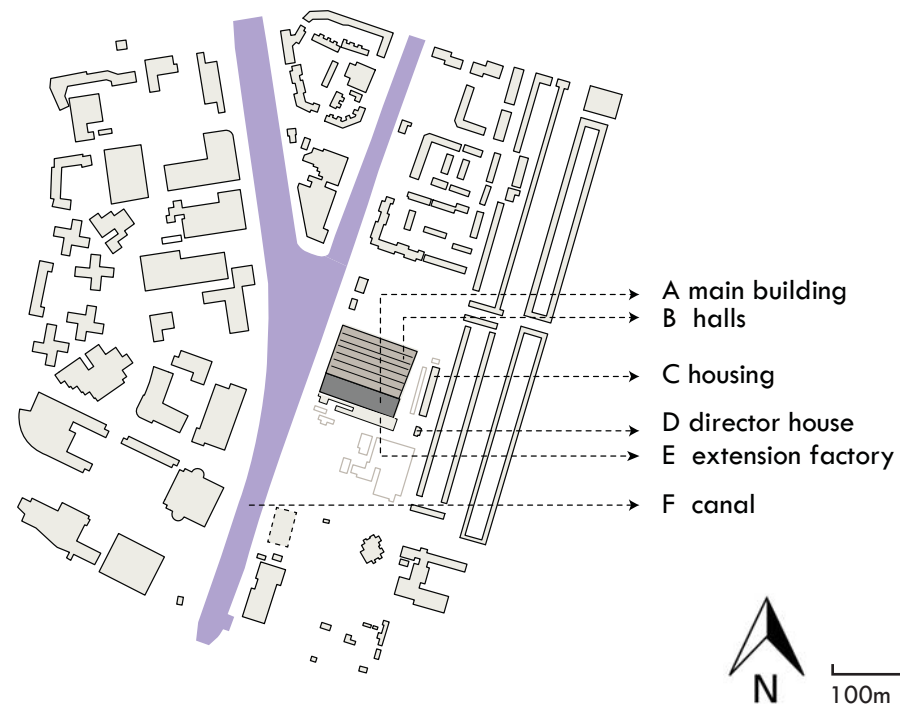
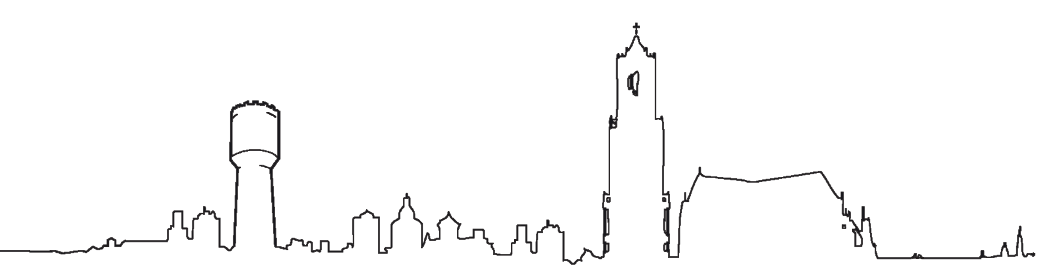


C. housing

1935 A row of houses is built perpendicular to the halls direction, on the east side, concealing the building from the main road.

The houses and the industrial complex are separated by a ca. 3 meter green wall which was created as a protecting barrier (visual, noise, dust, etc)





source: map own work - illustrator (RH)
photo <http://www.bingmap.com>



D. director house

1949. The director's house is built in the continuation of the existing row of houses by the architect W. Duyff jr. (D)

The building is located to the current access point to the complex and communicates with the interior yard. It is aligned to the row of houses but it is separated from them by a private garden.

E. extension factory

By 1925, on the north side there were already built several annex buildings used for the machinery. They have been demolished when Neerlandia took over the complex and built a new hall that included the chimney.

Also, on the south side there was built an annex over the full length of the building, for storage purposes. This extension is a mix of various volumes resembling a patchwork of sloped and flat roofs, small block volumes and long halls. (E)

Because the volumes are attached in parallel one to another, and together to the south hall of the main building, the main source of light comes from the skylights placed on the roofs.

F. canal (merwedekanaal and vaartse rij)

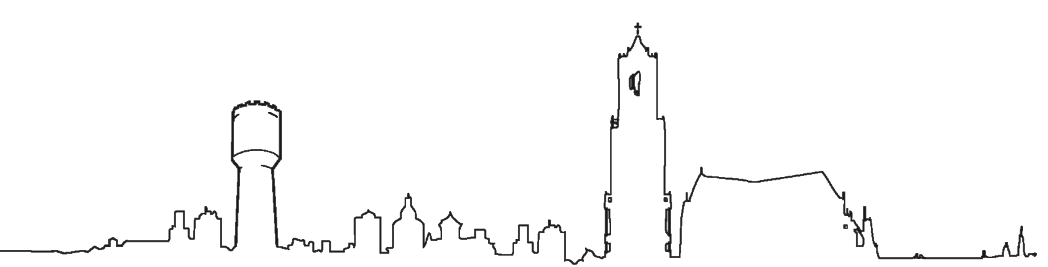
To maintain the international trading competitiveness, the vaartse rij was dug. This canal connected the city with the Lek and the southern waterways. These waterways were a part of the Keulse Vaart, a water structure connecting Amsterdam with Keulen.

By digging the Merwedekanaal in 1881 the cities Utrecht en Jutpaas expected that the industry would expand further more. In the beginning this hope fulfill, but after the first worldwar the industry began to develop rapidly.

The area of the Merwede canal was originally mostly agricultural with an open landscape and a few farms (fruit gardening). After digging the Merwede canal the area along the canal was quickly industrialized, mostly on the city-side of the canal. In the twentieth century also on the west-side of the canal factories were built. The zone behind this industry-zone stayed farmland and empty til the post-war periode.



ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | building development



Building development:

In 1900 the plot was unbuilt

In 1917 Stoop chemical factory was built. At first it comprised of only one long basilical style hall and a chimney.

By 1925, on the north side there were already built some annex small buildings used as a technical rooms. Also, on the south there was built an annex on the full length of the building, for storage purposes.

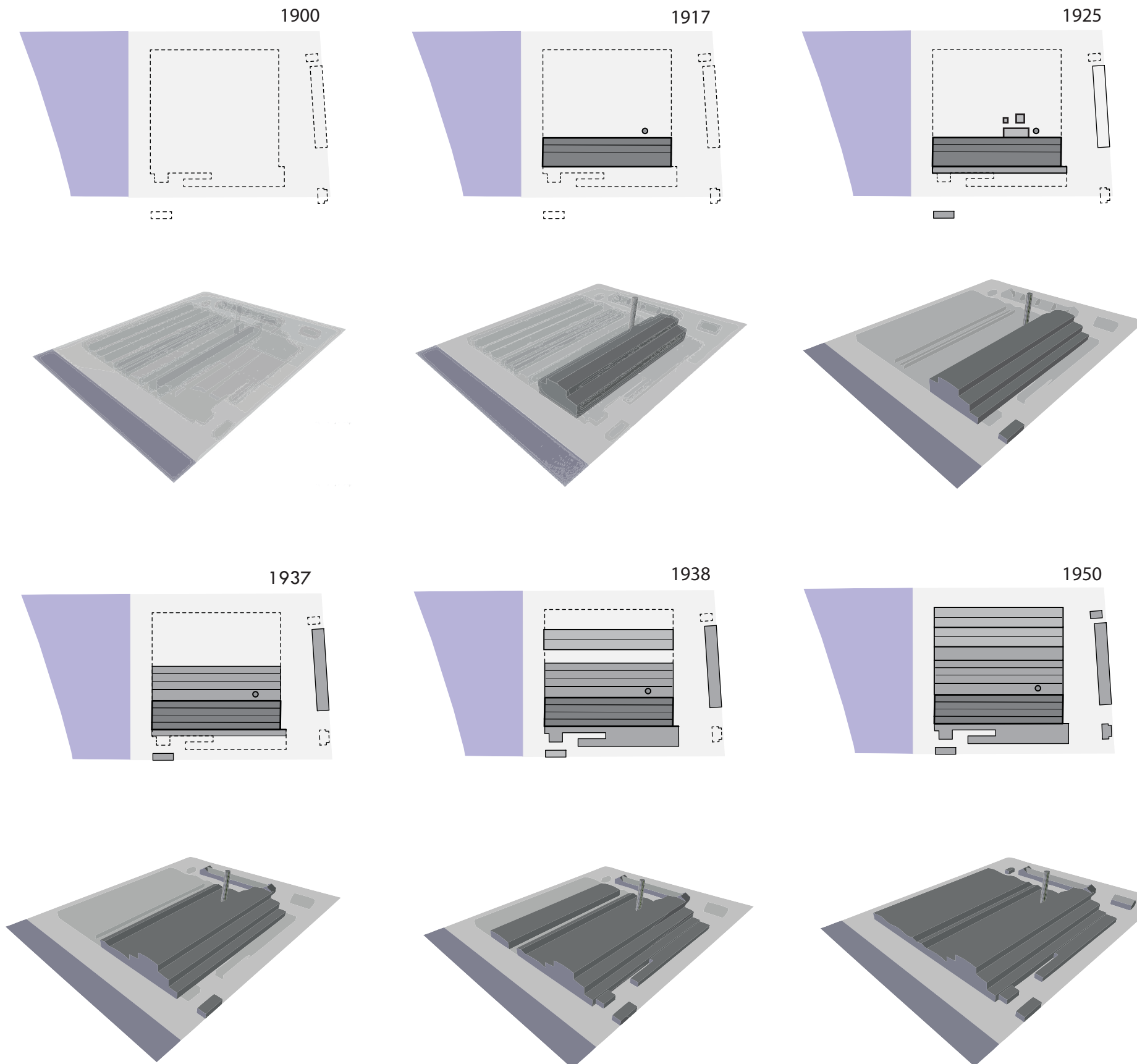
In 1937, the space was already occupied by Neerlandia which started building new long halls, parallel to the main building. The chimney had been incorporated in one of the halls adjacent to the main one.

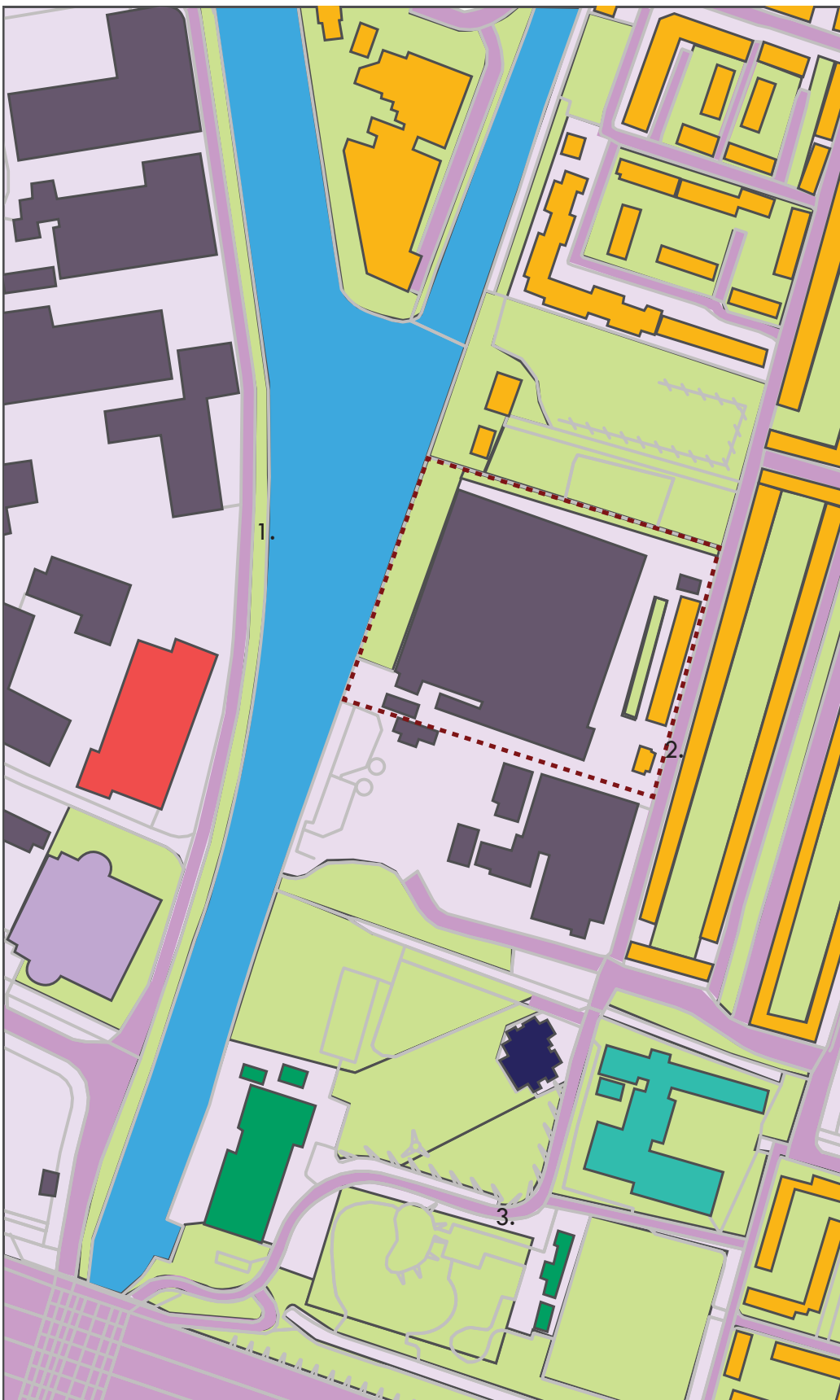
A row of houses is built perpendicular to the halls direction, on the east side, concealing the building from the main road.

1938 - Neerlandia continues to expand on the plot towards the north side with a new hall parallel to the existing ones but detached.

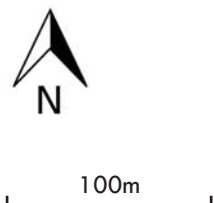
1950 - two more halls had been build on the plot, making the whole ensemble complete. The director's house is built in line with the row of houses.

source: illustrations based on aerial maps of 1925, 1936, 1938, 1950
source: Stephan Serphatie, Zeep architecten (RH)





- Legend
- site area
 - streets
 - parking/unbuilt area
 - water
 - green space
 - residential
 - office
 - education
 - health
 - sports
 - industrial



Functional distribution :

As shown in the previous maps (historical evolution) the residential areas are expanding towards the industrial zones, pushing them further from the center. Instead of the industrial areas, there are now buildings of individual or collective housing or large green spaces.

The west side of the canal is almost entirely occupied by buildings for light industry, office buildings and parking spaces. The green surfaces are very scarce - the main green area is the green stripe of the canal bank. (1)

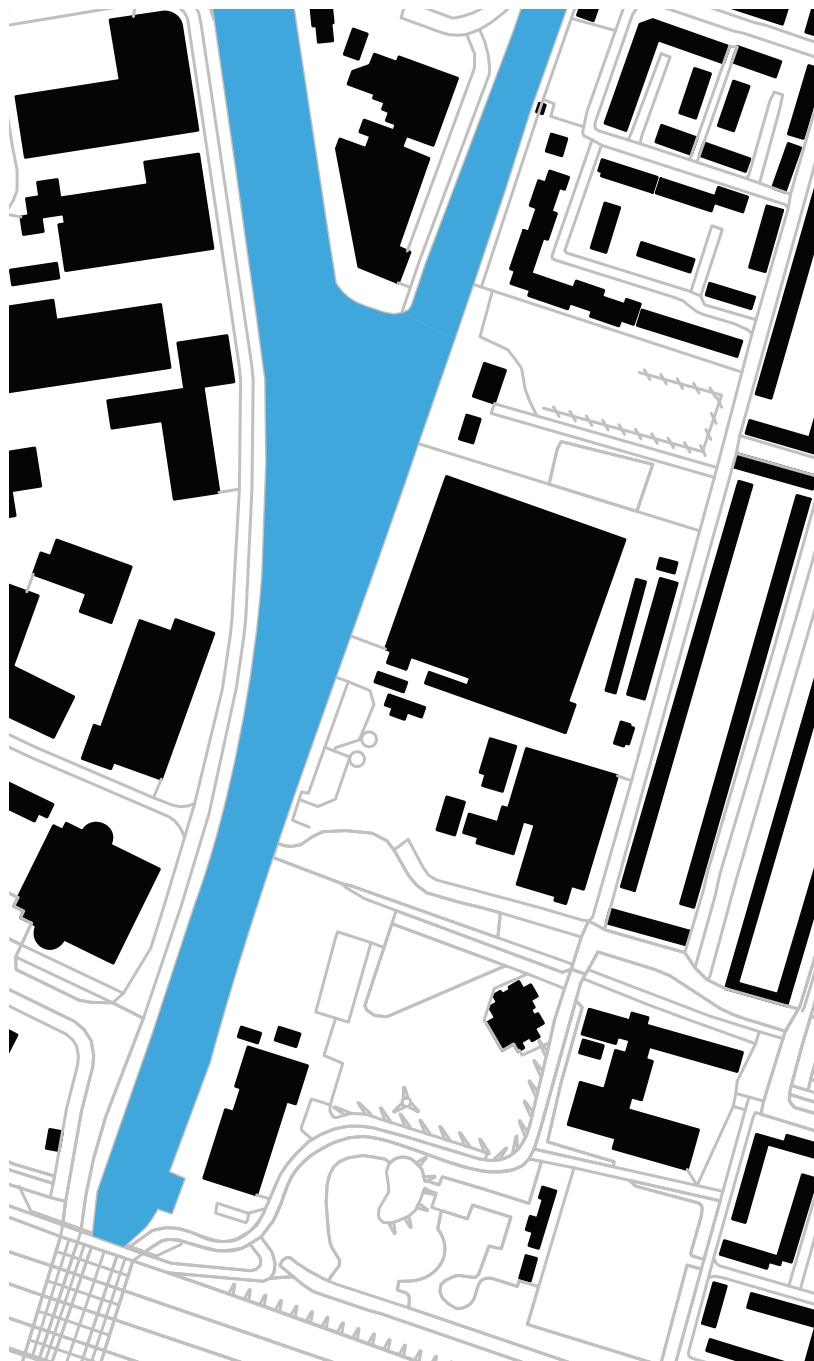
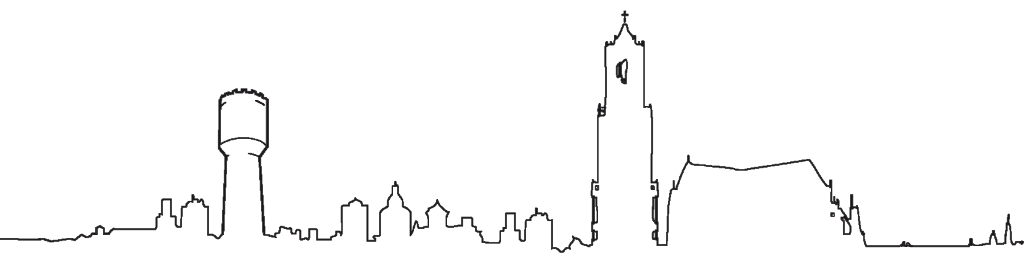
The Prozee complex, together with the neighbouring industrial building are the only industrial sites left in this area and became an undesirable functional proximity to the residential area. (2)

There is a large green coverage, mainly to the south of the area where sports and leisure areas are clustered together creating a large green mass (3)

Appart for the current function of Prozee and its industrial neighbour to the south, the area is proper for residential area:

- has connex activities (education, leisure, sports and healthcare)
- no intense car traffic
- large green spaces
- water proximity (sports or leisure)
- quiet area

source: Google Earth caption, october 2011.



Built/unbuilt :

The built mass disposal shows a larger concentration on the west side of Vaartse Rijn; industrial complexes create large patches of built areas. On the east side of Vaartse Rijn the biggest density per plot size is on the Prozee site where the site is occupied ca. 80%. A medium density is in the residential areas and very little built is in the south where there are most green spaces.(2,3)

The unbuilt areas to the north and south of Prozee have previously been occupied by industrial buildings. As they have been demolished, the space has either been transformed in open public space - meester J.M.M. Hamerplantsoen (1), Lieschbos ruins (2) or still stand as unbuilt areas waiting to be developed (4).

Green spaces

The green spaces are mostly situated to the south side of the area, on east of Vaartse Rijn, where there is a concentration of sports and leisure areas as well as the green "belt" that borders the high-way.

On the west side of Vaartse Rijn, due to the high ground occupation by the (mainly) industrial areas - offices, facilities and parking - the green space surfaces are very scarce - mostly on the canal bank and around the newer parking building in the south.

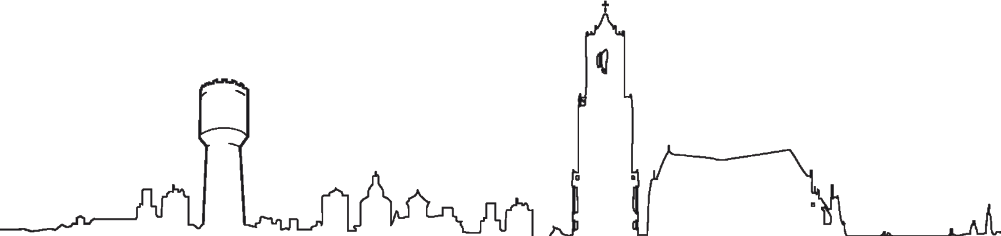
Legend:

- plot line
- buildings
- water
- private green space
- semi-private green space (sports areas)
- public green space

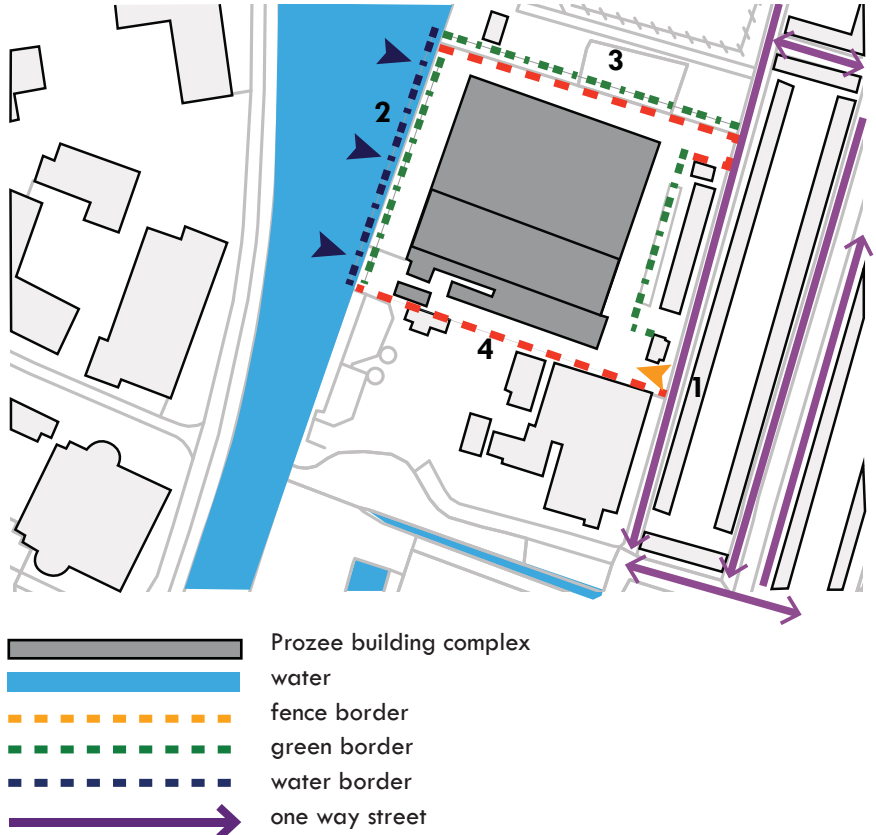


Source: www.bing.com/maps, airview caption, october 2011.





Building height



Building Height :

The area has generally a low rise - mainly one (high) story industrial buildings and individual 2 story houses.
The highest buildings are the new residential houses (A), the healthcare facility south-east of the factory (B) and a parking building on Merwede bank (C).

Border relations

The site has most of the perimeter obstructed to vizibility or access.
1. The only access is on land, from a narrow one way street. (img. 1)
2. The water access which was formerly the most important access to the site (part of the production process - loading and unloading materials and products) is no longer used. Along the canal line, on the site's bank there is a mass of spontaneous vegetation that blocks the view to the building as well as access to it (img.2,3)
3. On the north side the connection to the park is obstructed by a fence line and a line of tall vegetation
4. On south the connection to the previous industrial site (now partly unbuilt area) is closed by a tall fence and partially obstructed by vegetation.
5. The row of houses in front of the factory is separated from it by a green wall (ca. 3 meters). Although it is a functional element (protects against noise and air pollution) it is a barrier that obstructs visual or physical connection.

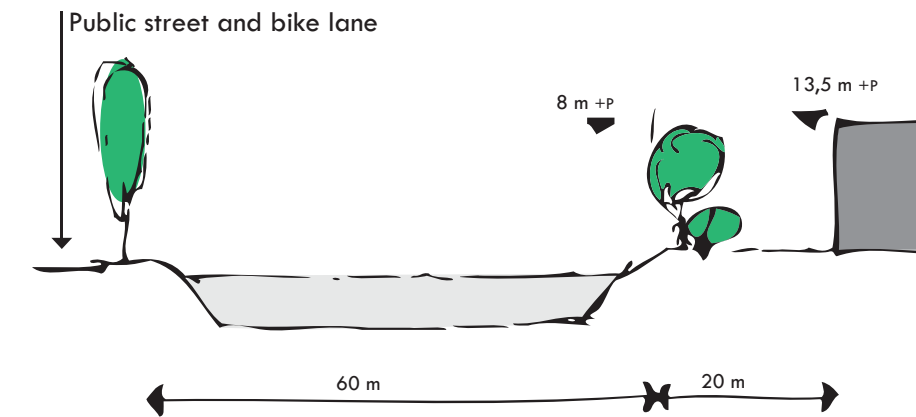
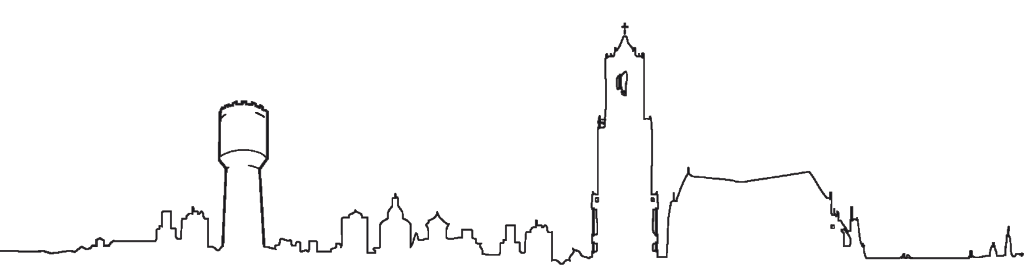
Bird's eye view to the site
- spontaneous (tall) vegetation on the bank
- fence line and scarce vegetation on the south
- green wall between the row of houses and the factory

Panoramic view - canal side:
- spontaneous vegetation on the bank - makes the bank unusable.

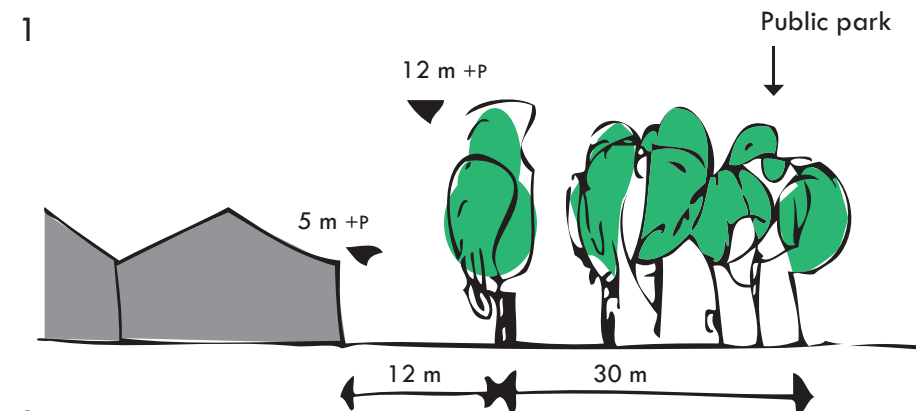
Panoramic view - from canal direction to the building:
- spontaneous vegetation on the bank - makes the bank unusable.
- fence and vegetation make the border to the south
- tall vegetation makes a border to the north

source: own photos taken on site, september 2011; Google Earth caption, october 2011.

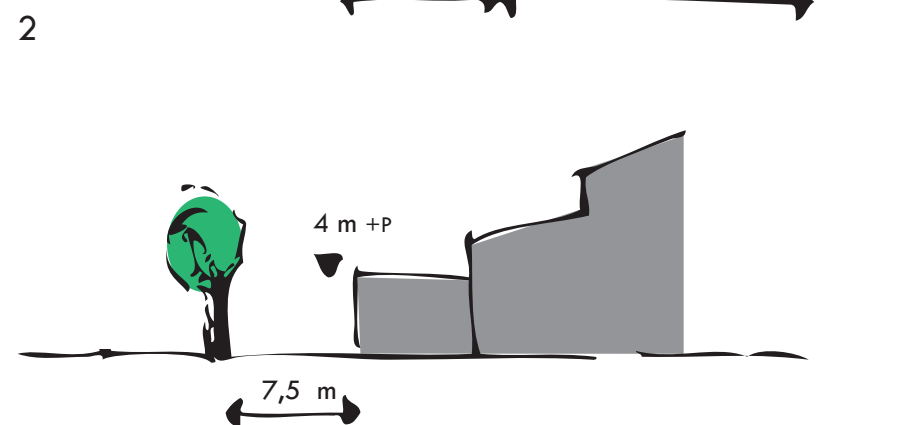
ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | morphology



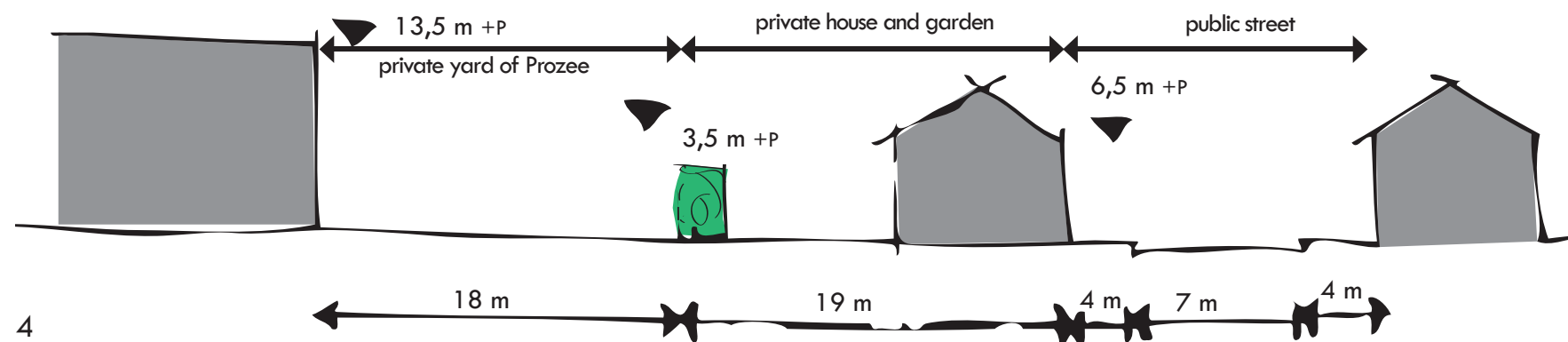
View towards Prozee from the west bank of Vaartse Rijn



View towards Prozee from meester J.M.M. Hamersplantsoen

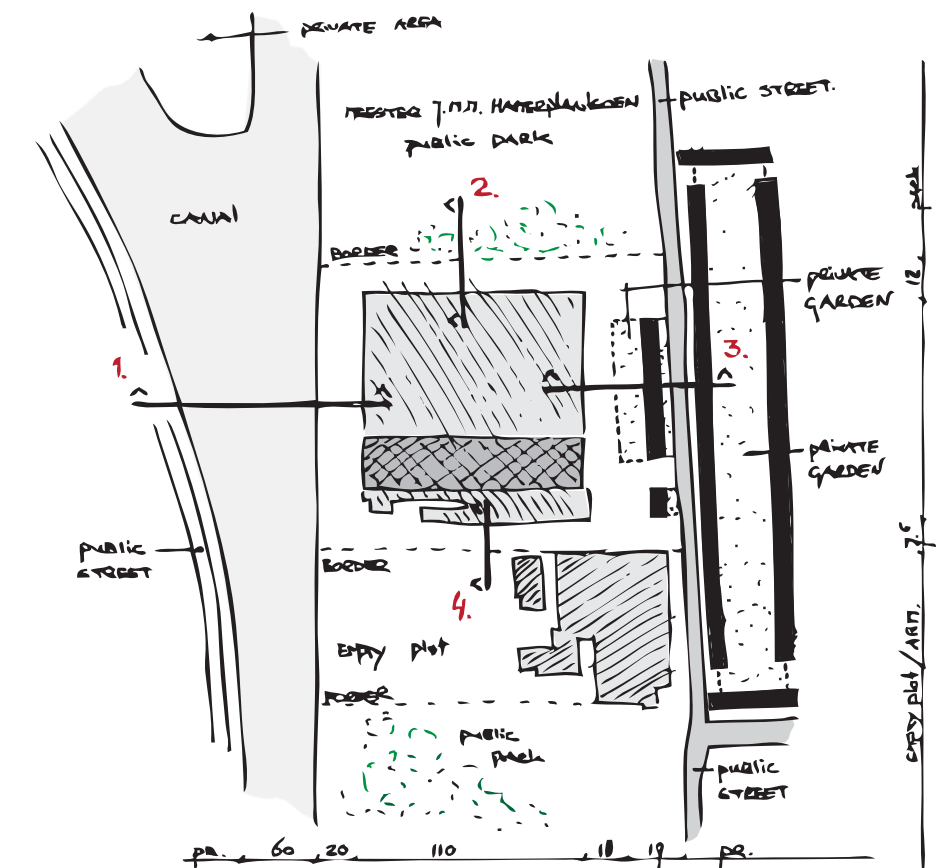


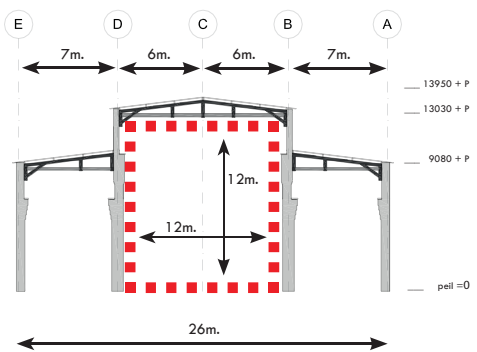
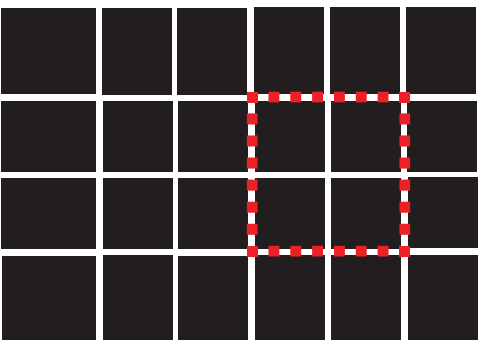
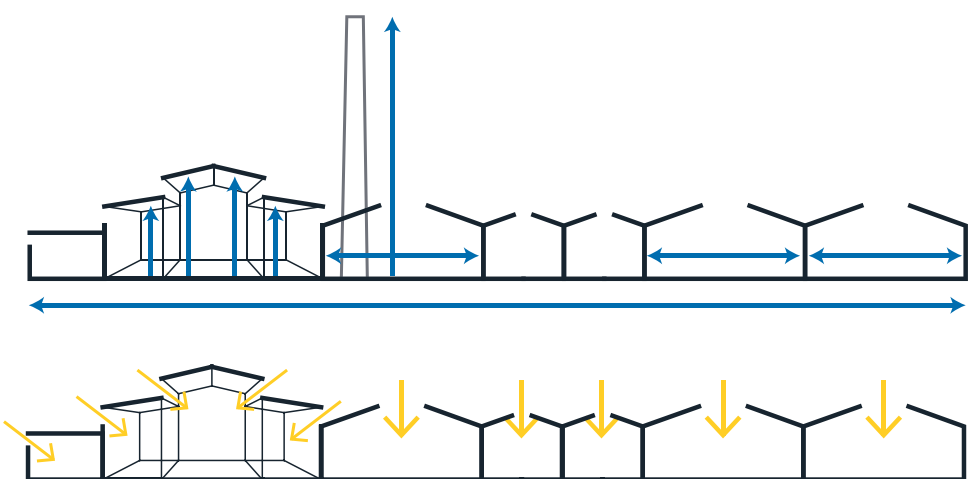
South side of the building, circulation between building and fence line



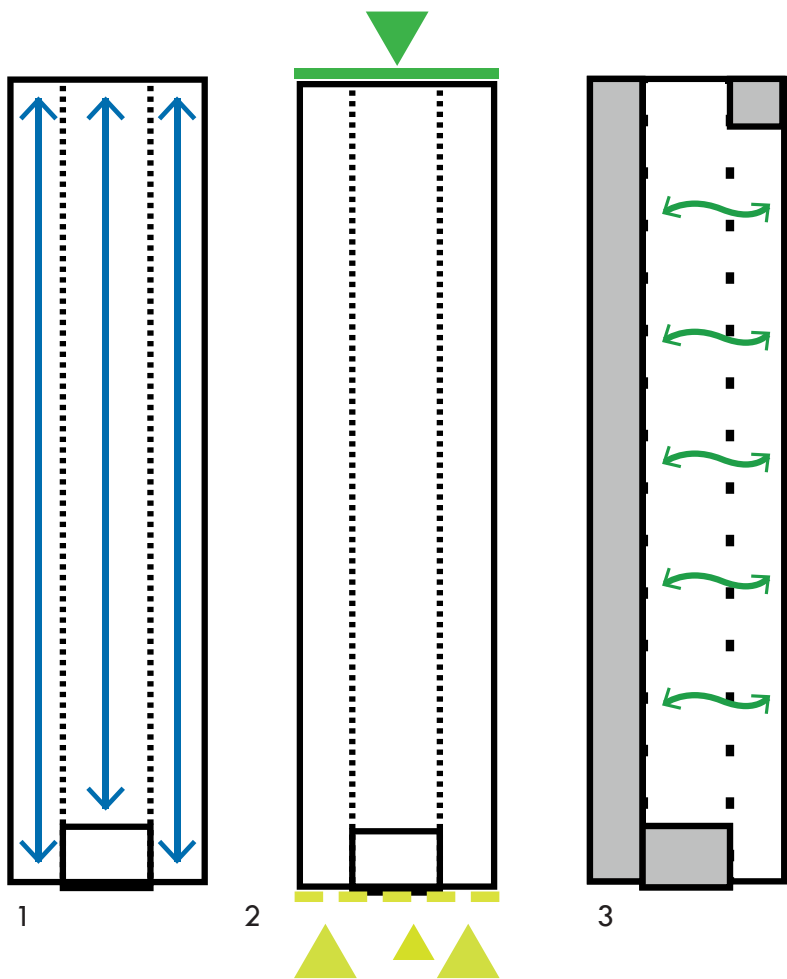
Dimensions - reference to plot borders

1. view from the canal is obstructed by a line of spontaneous vegetation on the bank which was formerly used for industrial activity (loading and unloading of materials and products - between buildings and the boats).
2. Space between the south annex building and the fence is narrow; the impression of a tight space is accentuated by the relatively tall spontaneous vegetation that grew along the fence; the tall mass of trees in the park (meester J.M.M. Hamersplantsoen) also obstructs the view to the building.
3. South part of the plot - space between halls and fence is relatively large but seems narrow because of the tall vegetation.
4. View from the street to the factory is obstructed by the row of houses; a green wall blocks the view from the houses back yards to the factory; large space between the factory building and the green wall; street has narrow profile - can't be enlarged.

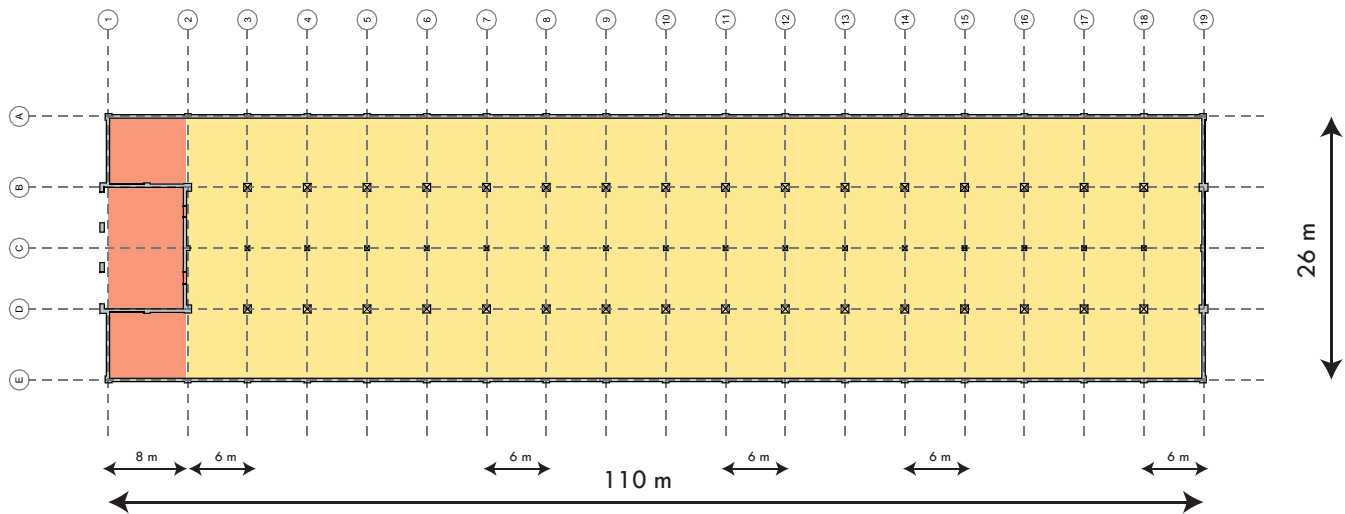
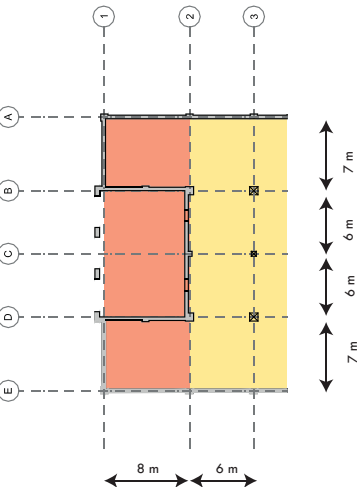




Actual configuration of the main building:



1. three longitudinal spaces - main nave and the apsis
2. dark green - current access in the building; light green - previous access in the building, now closed
3. north apse is closed by a wall, the south apse is open to the central nave



Typology & dimensions:

There are a series of distinctive types of buildings:

- the main hall - basilical style
- the annex halls with sloped roof
- the annex building with a flat roof
- the chimney - dominant vertical element

Main hall:

Longitudinal development (110mx26m), divided in three volumes: main nave and two apsis.

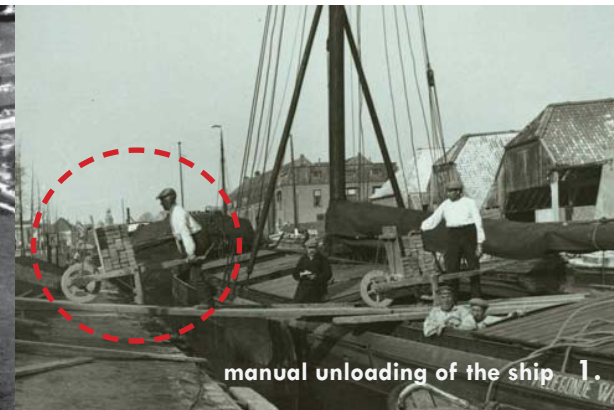
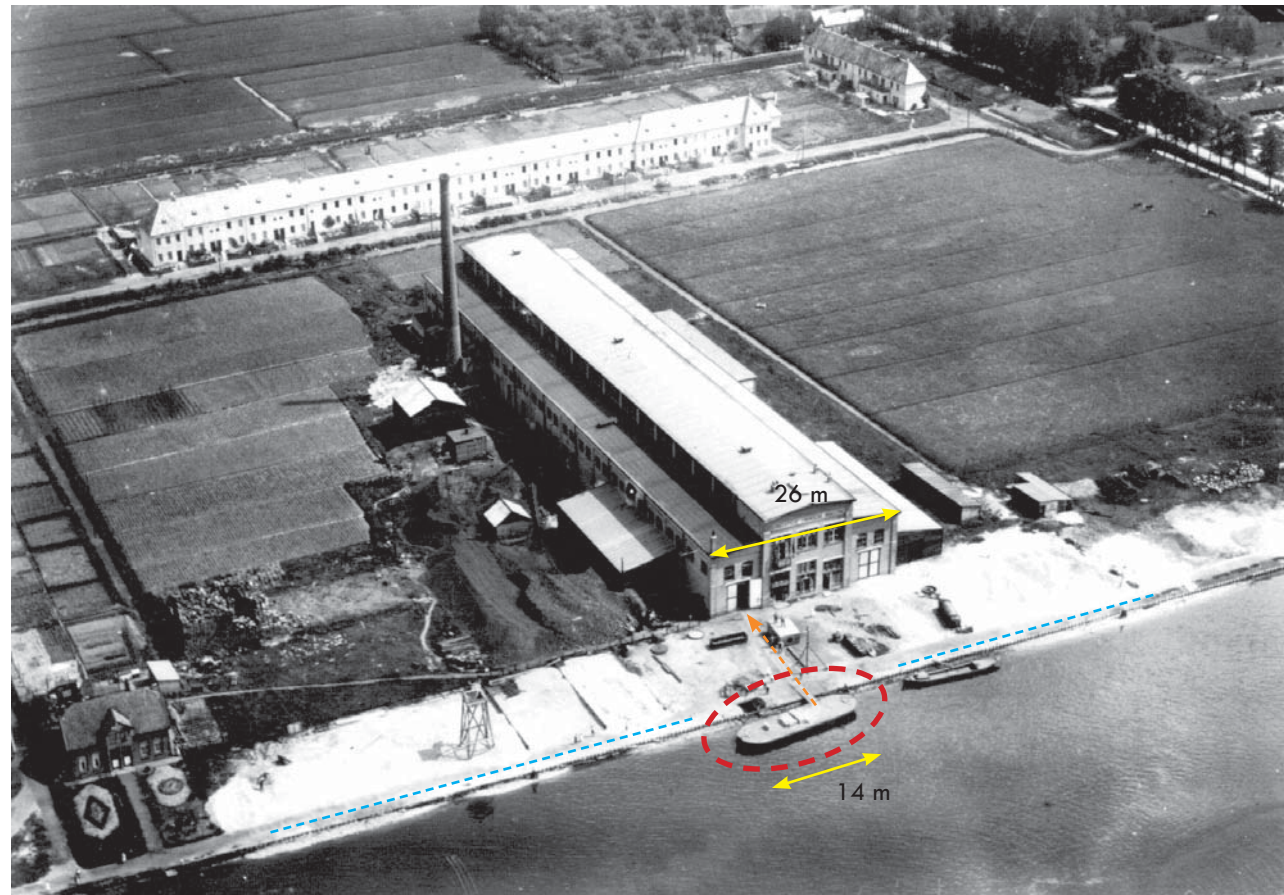
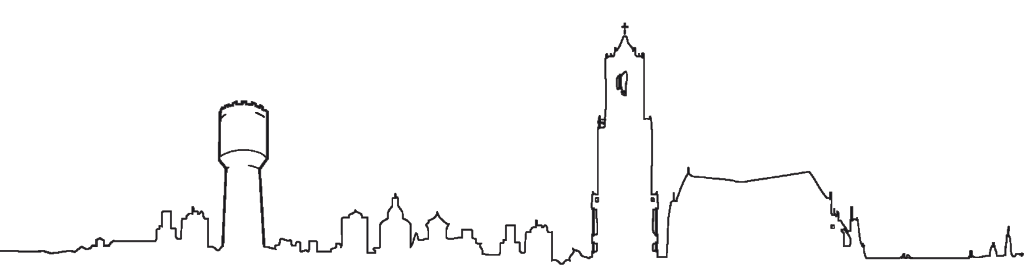
The main access was originally to the water front - access to the apsis and to the office part of the building. Today those access points have been closed and the main entrance is on the opposite side, through the central nave.

The north wall of the central nave is mainly closed, the south row of central pillars leave a connection between the central nave and the south apsis.

The hall has been designed in identical 6x7 meters modules. The central nave is designed on square modules of 6x6 meter.

The basilical style allows interior illumination from two sides, on two levels, giving the interior space a better illumination compared to the other halls which receive light only from a light canopy placed along the central beam. Also, the basilical style allows better ventilation of the interior space.

ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | use of the bank



Stoop period :

In the stoop period, the commodities were supplied through the channel. When the ship has been moored, a ramp was built and the bags were unloaded from the boat by manpower ore with some help of the wheelbarrow, as shows on photo (1).

The ships had at the time a length of about 14 meters and were docked at the newly built wharf. The wharf consisted of a number of piles were driven deep into the quay which makes a solid bank. On the photo you can see a example of a similar bank (2) In short, the entire unloading process was done by manpower.

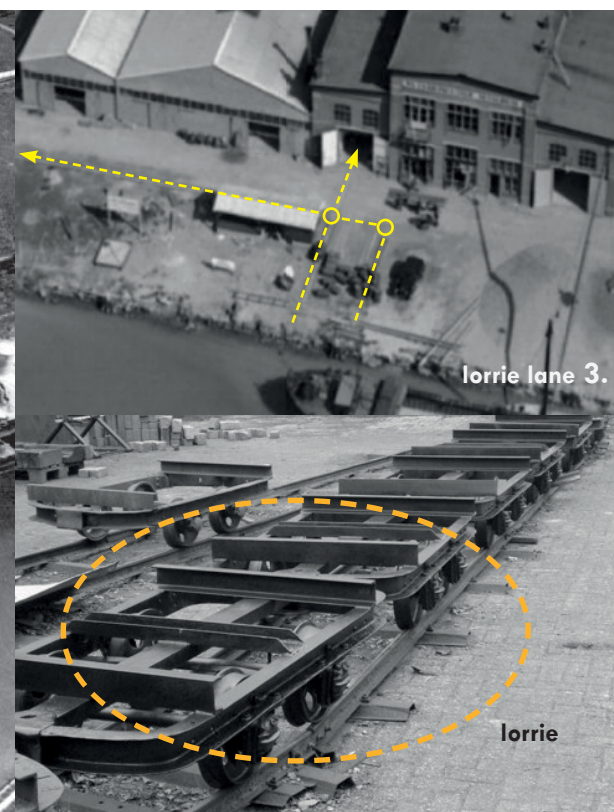
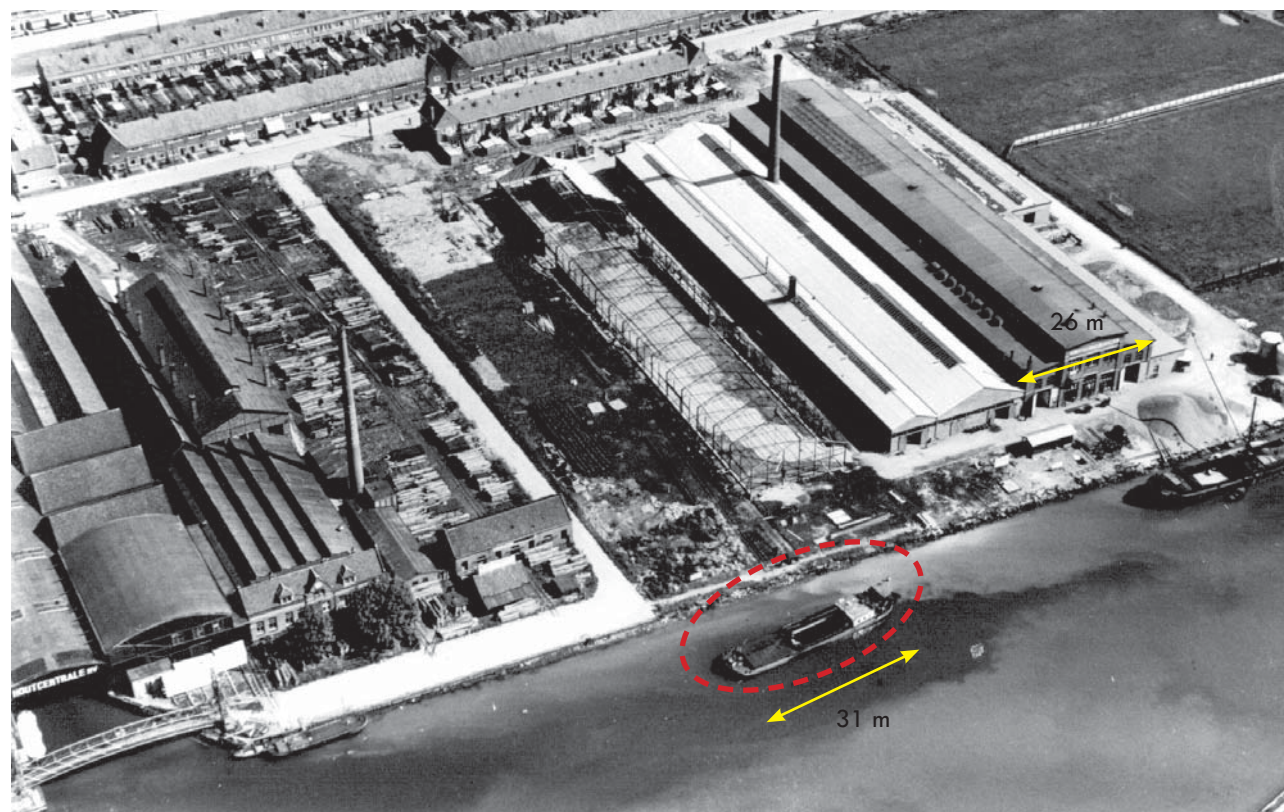


source: photo <http://www.hetutrechtsarchief.nl>

Neerlandia period :

In the Neerlandia period, the commodities were also supplied through the channel. When the ship has been moored, the steel wire rolling were unloaded of the ship with some help of a small crane ore a forklift.

Ships are getting bigger and bigger and carry heavier loads. The ships had sometimes a lenght of more then 30 meters. The length of the quay was therefore increasingly important that ships had enough room to dock. When the product were on the bank, the further transported took place by a lorrie lane (3). This way of transport was a quickly and efficiently way to get the product on its destination. Once arrived in the building, the further transport took place by crane tracks (4).



source: photo <http://www.hetutrechtsarchief.nl> + HKTH Peter Sprangers



Prozee period :

In the prozee period the transportation goes only by land because the change in trade and the improvements of the infrastructure in combination with the faster and cheaper transport by truck .

This change marked the end of the use of the bank. Remnants of the use of the bank are still visible in the form of rusted diggers, magnetic grippers and storage containers, as shown in photo (1).

By organic growth, the wharf transformed into a green zone along the canal but in reality this is a piece of history that is covered by vegetation.

source: photo own pictures
photo <http://www.2hep.nl/home>

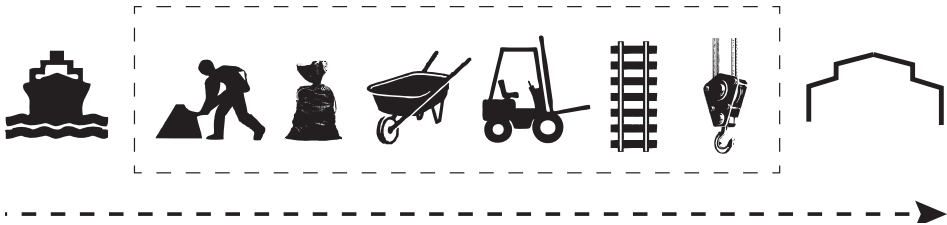


Conclusion:

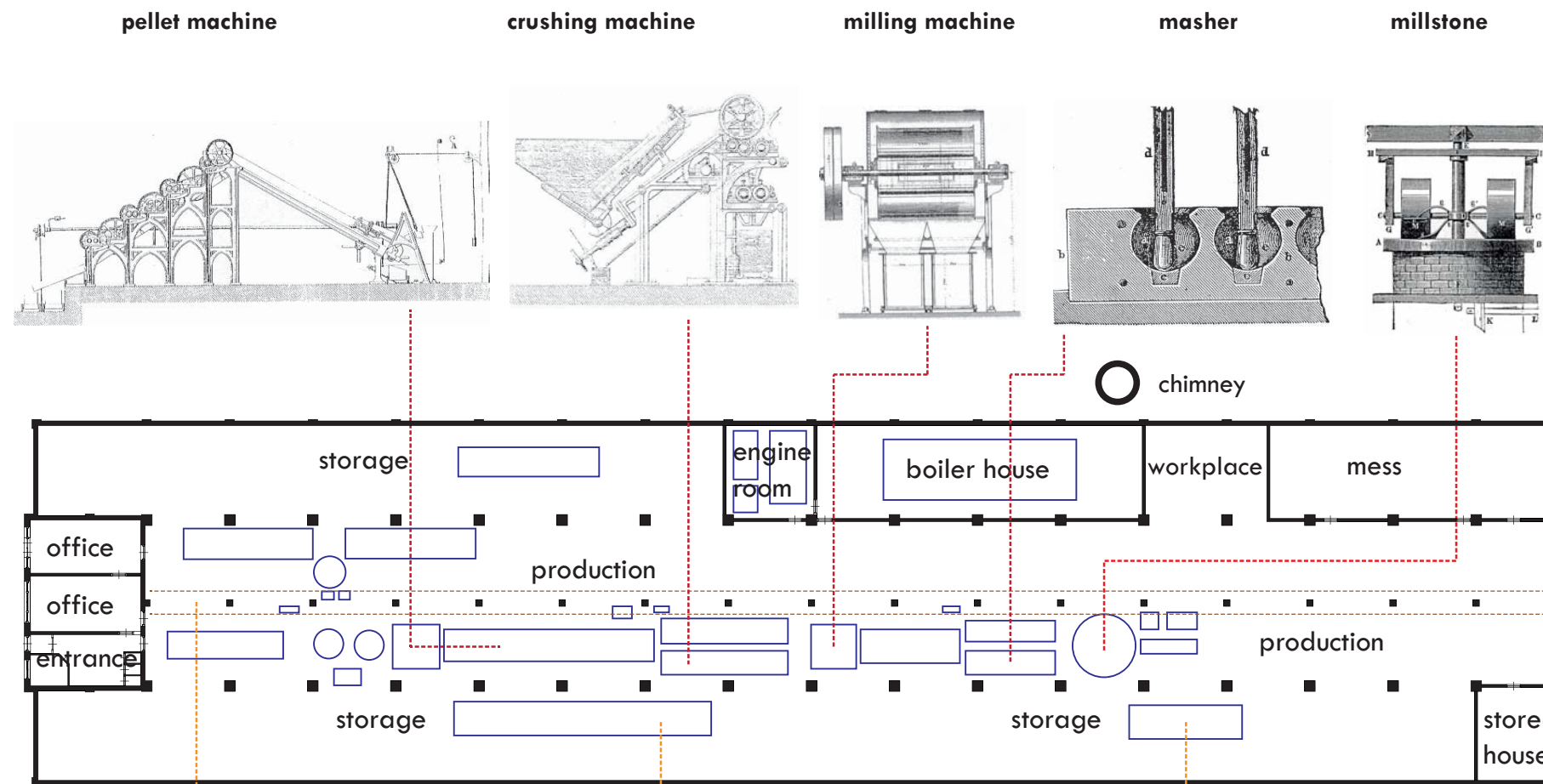
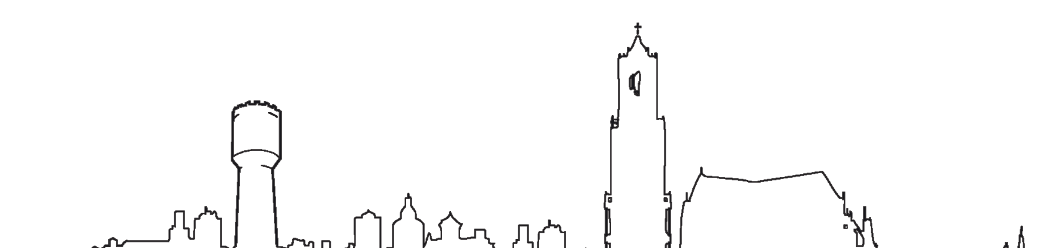
The (now invisible) dock area, was in the past a significant presence along the canal. This piece of the plot is the most visible part from the other side of the canal, despite that the view would be obstructed by the growth of spontaneous vegetation.

HafenCity Hamburg is a good example which shows how the history of a place is translated in a public area. The industrial atmosphere of the bank is recreated in a new way by opening its space and instalations to the public.

By giving attention to some certain elements is directly readable what once took place here (2).



ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | production process

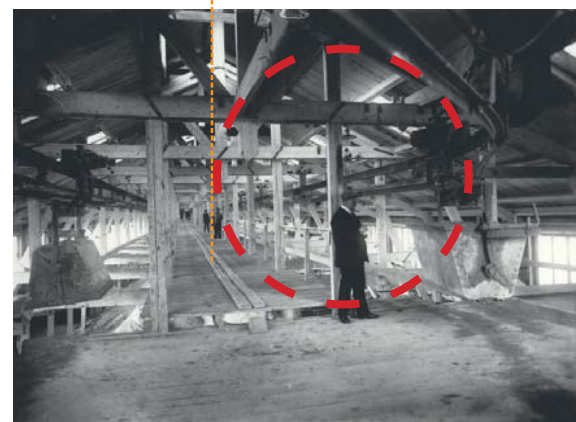


Production process of Stoop (1914 - 1932)

The three ingredients are taken to various mills, to be reduced to a fine powder through successive grindings. The different materials are then conveyed to the mixing-house, where they are weighed out to their respective proportions. The charcoal is distributed in a valley, and the sulfur and saltpeter are then sifted, though imperfectly, by hand. The following process is in the powder-mill where the mixture is ground between the millstones, and thoroughly incorporated in a wet state. The production process is so dangerous that the makers are prohibited from grinding more than 42 pounds. In the same house at once, all the machinery bearings are made of copper, so heat must be generated by friction. The trituration time ranges from one to six hours depending on the intended quality of the powder. The powder, pulverized and completely clogged by the liquid and the pressure, leaves the mill in small chunks, called mill-cake. This mill-cake is then divided between the copper plates in layers of about 3 inches thick, and is subjected to immense pressure, using either a capstan screw or a hydraulic motor.

The next act is graining, a process to which gunpowder owes its rate of inflammation and the resulting explosive power. This is done by forcing mill cake through minute holes in a circular parchment sieve, held by the mechanism in a rapid revolution. The granules thus formed are of very different sizes, and since the powder should be homogeneous, it is necessary for them to be sorted into different sizes. This is done through a series of seven different degrees of fineness.

The latter processes are drying, glazing, and the release of the substance. The first takes place by heating the powder to a point sufficient to drive off moisture, the second, by the friction of the grains together in a rotating cylinder, the third by the centrifugal force caused by the powder when rotated around with great speed in a wire mesh cylinder.



reference/SFA/bridge

This chemical plant is similar to the Stoop factory. In the middle of the plant is a bridge, means for controlling the production. This bridge is only accessible from the office. On the picture you see a manager controlling the plant.



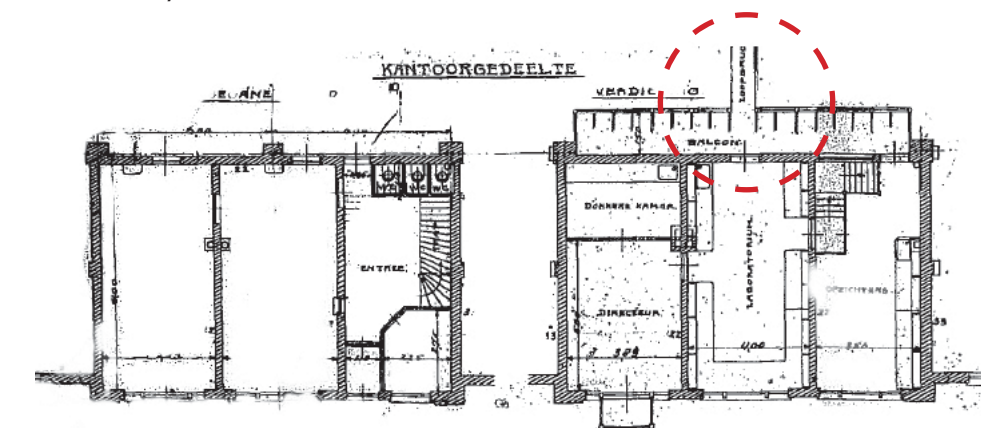
reference/SFA/storage

the photo shows how the various materials are stored. bags of 50 to 100 kilo were at that time the most common storage method. The finished gunpowder was stored in barrels.



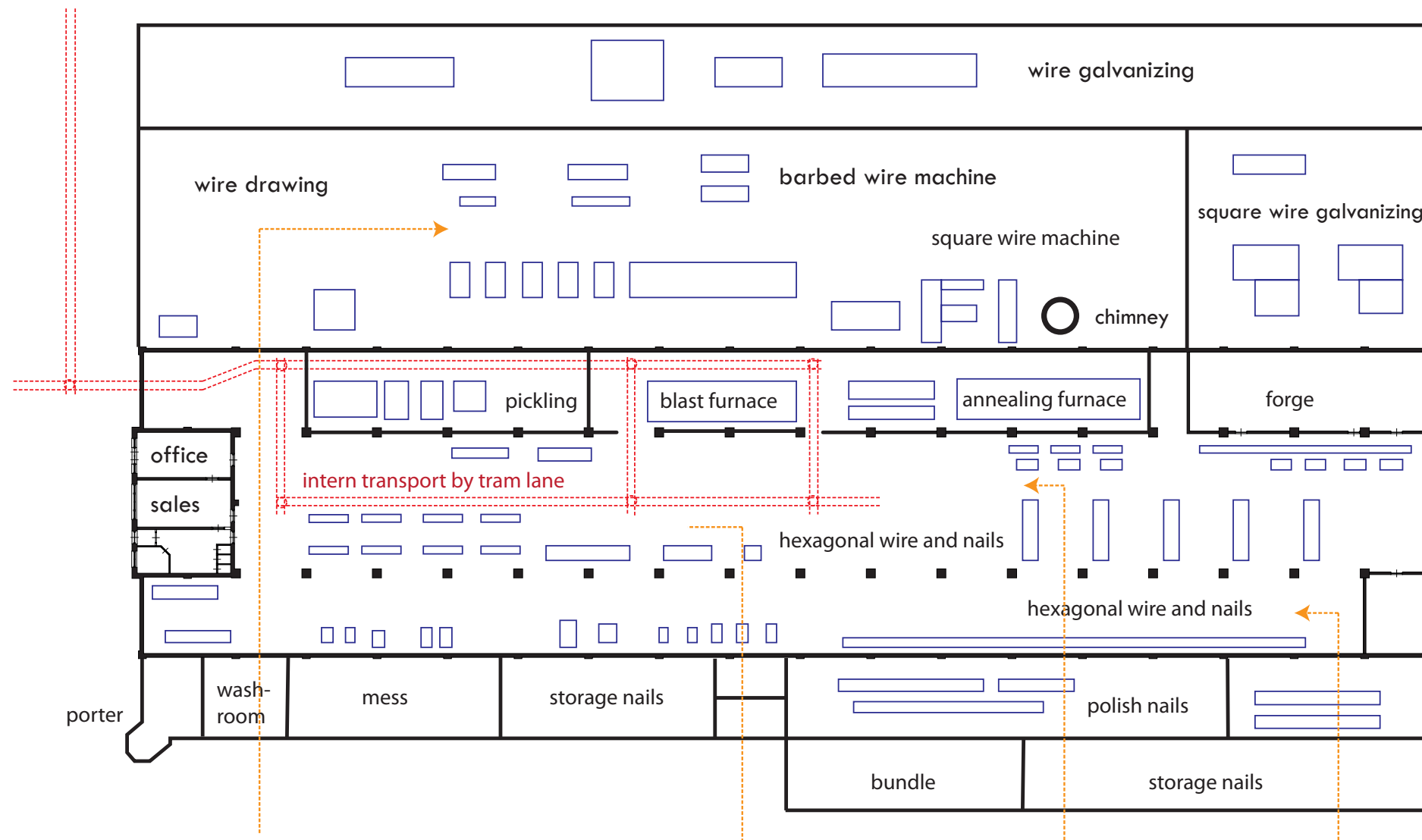
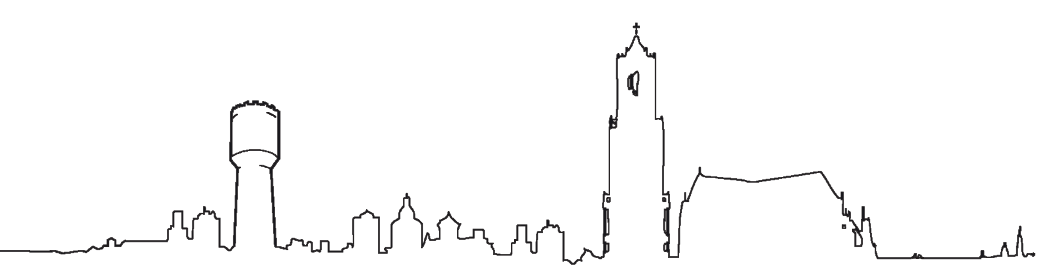
reference/SFA/storage

this picture shows how the raw material of a large quantity was divided into smaller amounts of material.



This is the modern system, a system with great personal risk at any stage, because the fine dust that is scattered through the atmosphere in the factories can be ignited by the slightest spark.

source: text <http://www.ethesis.net>
map archive Utrecht, own arrangement
photo <http://www.stadsarchief.amsterdam.nl> (RH)



Production process of Neerlandia (1937 - 1971)

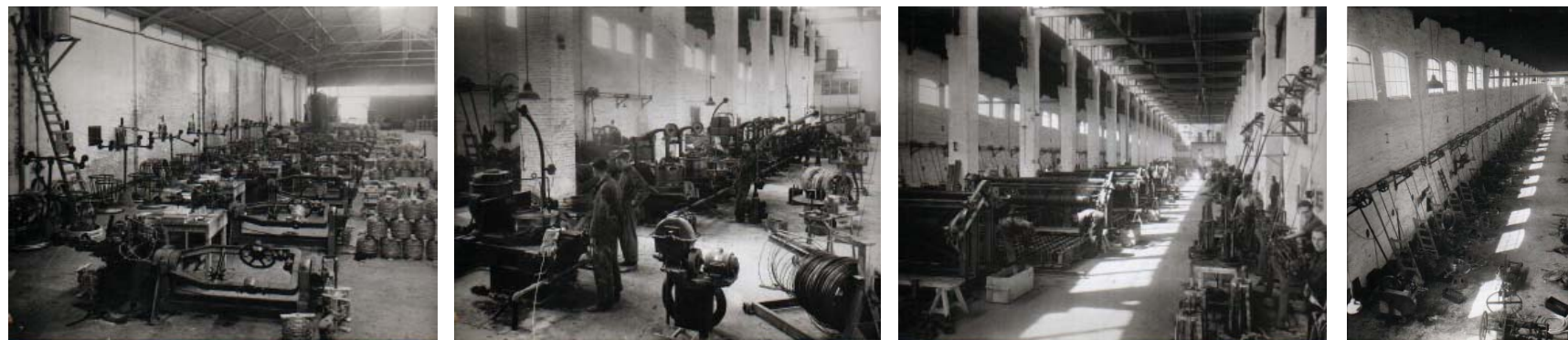
The plant was intended to create nails and wire. The raw wire coils were delivered and unloaded on the quay from a cargo boat on the Vaartse Rijn.

Afterwards the roles were driven to the pickling by tram. Here the wires were released from iron oxide by immersion in a tub of sulfuric acid. After pickling, they removed the sulfuric acid under high pressure water. For further processing the thread was "dry" made by immersion in a hot limebath.

Once the wire was prepared, it was taken to the production department to be measured. The custom-drawn wire goes to final product processing. This could be wire, barbed wire, different types of mesh that ultimately have been galvanized.

The company had two galvanizing plants using zinc, lead and tin. With the custom drawn wire they made nails with a nailing machine. Then the nails were polished, sorted, and finally the nails were stored in crates, ready for shipping.

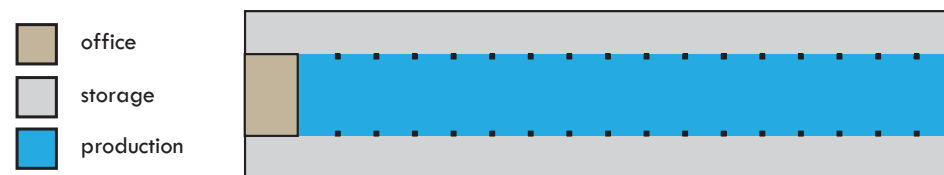
The interior was painted white (walls and pillars) probably in order to protect the masonry from direct exposure to the activities (which might superficially damage them) and to give more light (indirectly, by reflection)



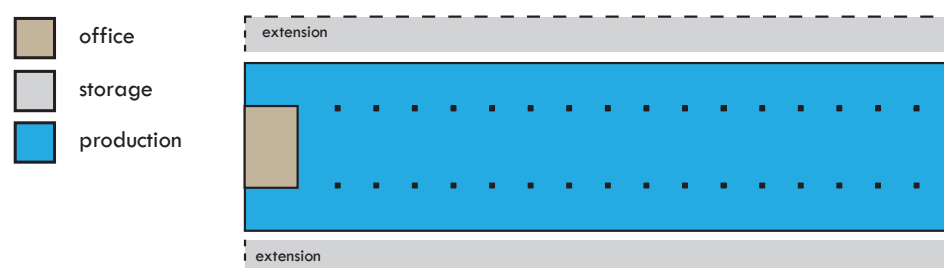
Neerlandia production

The above picture shows how the nail factory looked when it was still active. Long lines with different types of machines that were powered by an electric motor. Internal transport took place by a tram lane, later it was taken over by a crane. This crane is in the above photos not there but is probably placed in later years.

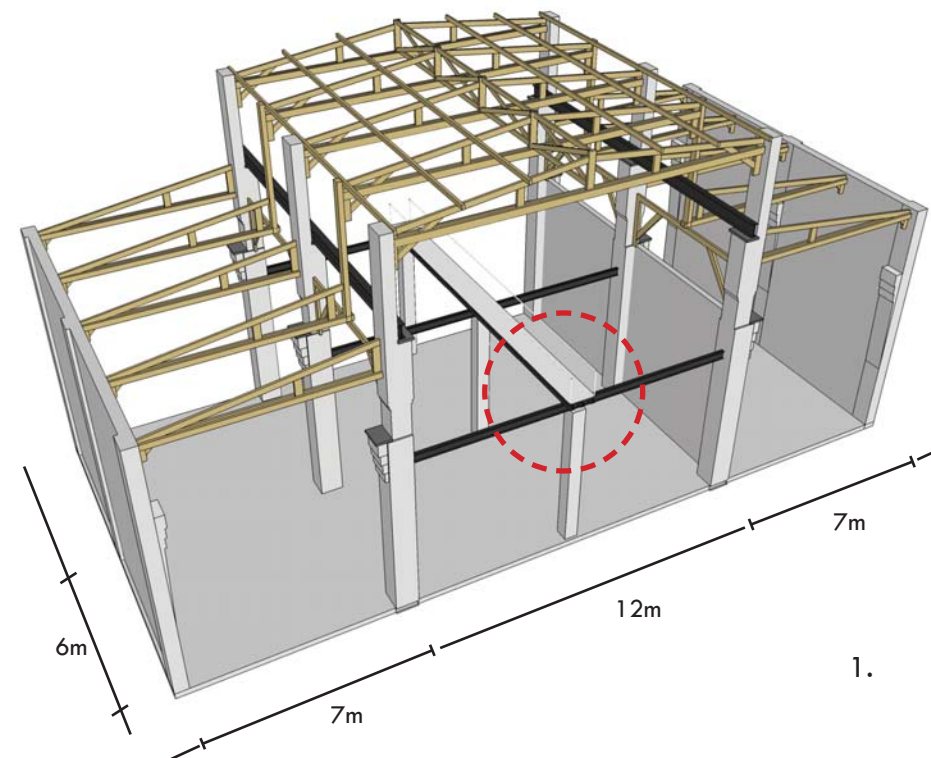
ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | structural change



Only the middle part is used for production, the aisles are used for storage and other positions.



The entire building is used for manufacturing, storage has now moved to adjoining halls.



Stoop period :

In the Stoop period the hall was built with a relatively minimal wooden truss, a walkway in the middle (1). and piers for placing a cranelane.

In the design the features were already included so it was easy to add some installations. However, only the original drawings indicate that, it is not certain if they were followed exactly in the building - there is no additional documentation to support that. The design was based on the technical improvements of some similar factory such as the Superfosfaat factory Amsterdam.

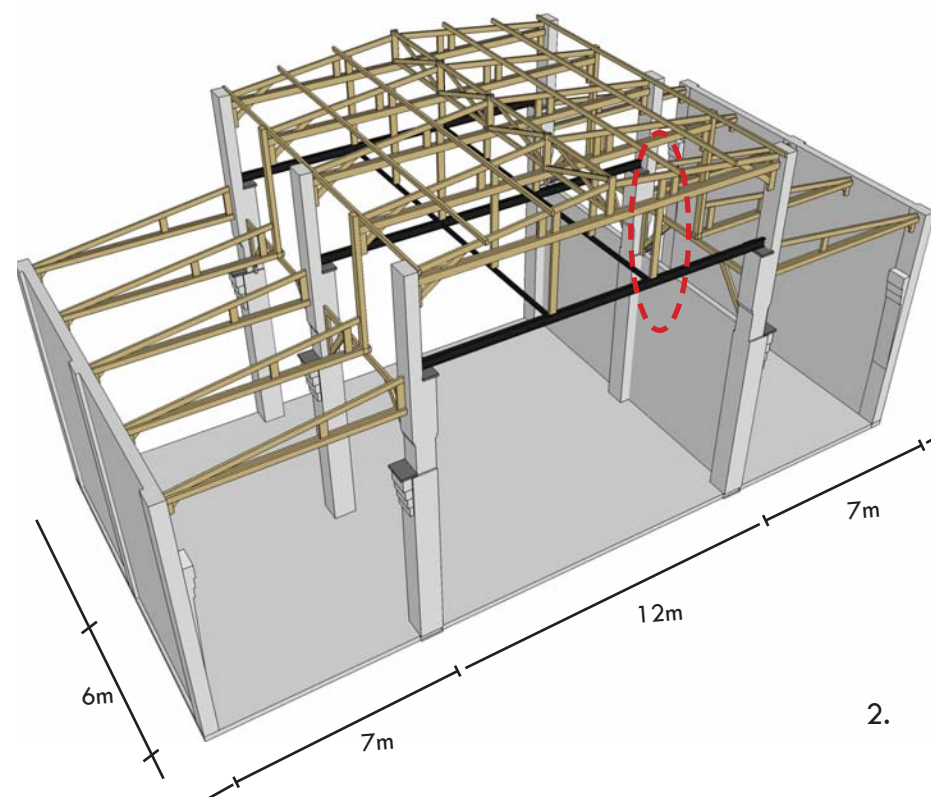
Neerlandia period :

In the Neerlandia period, the walkway was not needed so this part of the construction was demolished. This is again an assumption, as there is no actual documented or physical proof to show that the walkway ever existed - they are only present in the original drawings

The wooden truss was very minimal, so the construction was improved by placing steel beams. The wooden truss got some additions which the forces were transferred to the beam, see image (2).

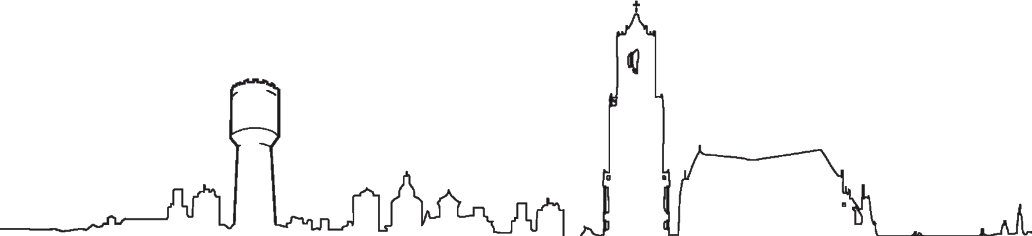
In the same period were used more additions, like tie rods and steel connection plates. The use of steel had something to do with the production. During the Stoop period, they worked with a chemical process which could affect steel, so the structure is made of wood.

Neerlandia was not dealing with this chemical process, hence the addition of steel to improve the structure was a most obvious choice.



source: images & sketches own work
photo, HKTH Peter Sprangers (RH)
info SFA - <http://beeldbank.amsterdam.nl/>

ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | physical diagnosis



West Facade:

The west facade was originally the main facade of the building, as the main access was from the water front, therefore the access for raw material, products and the office area was on this side.

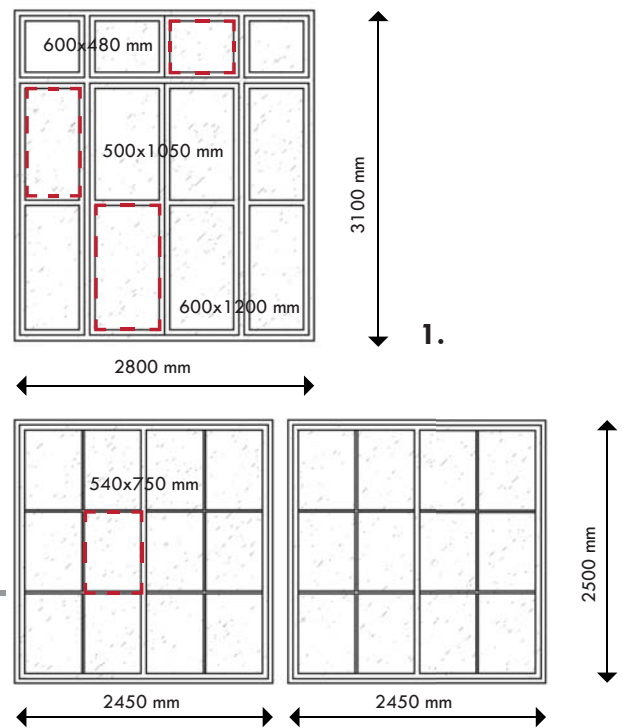
Today, this side is not used for access - the windows and doors had been closed (5) leaving no physical trace of the window design or elements. The lintels are mostly intact (some decay of the plaster and concrete) as well as the decorative yellow brick (6)

The remaining text on the top side of the central nave still bares the mark of Neerlandia (4) - the original was holding the title for Stoop factory (see original situation)

The facade doesn't show significant structural damage; however some installations have been placed on it - electrical panels, ventilation fan drilled in the facade (4,6) and there are some accidental plaster marks on it.

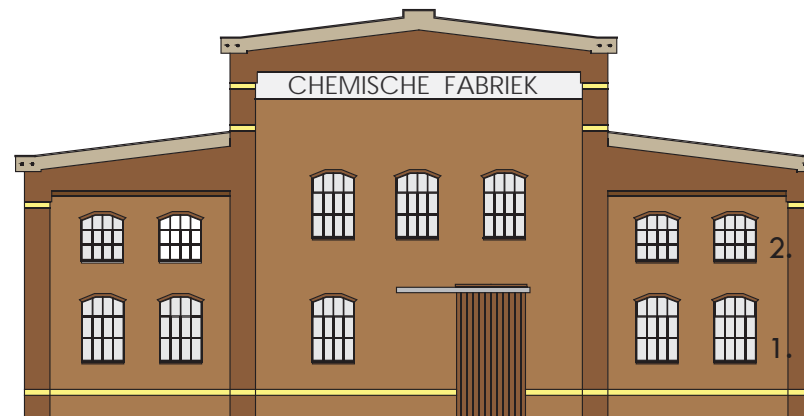
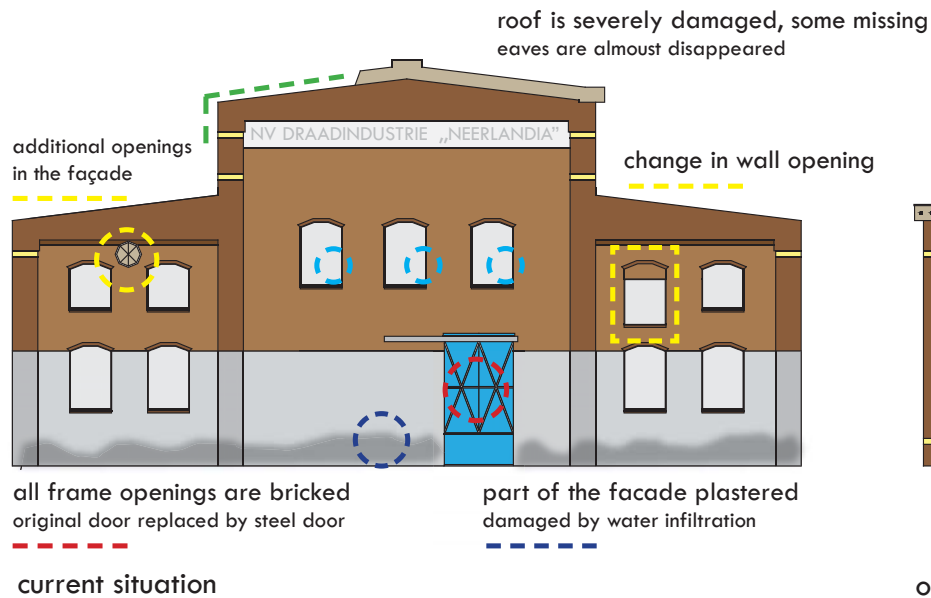
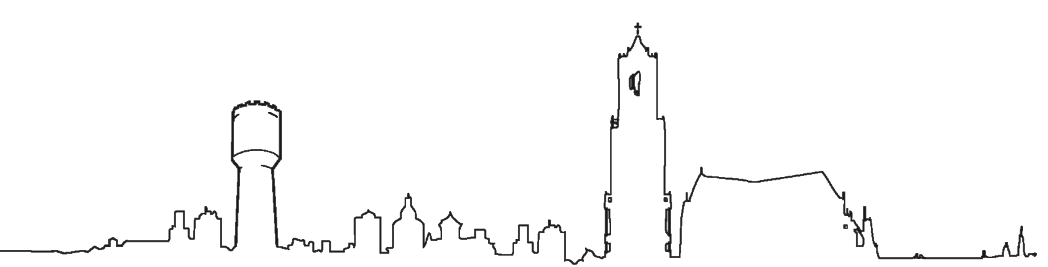
wooden frames

Most of the wooden frames on the south side of the building disappeared, except one (2). The wooden window frames on the north facade are still there but in a bad condition; rotten styles, glazing disappeared (3)



source: own photographs taken on site, september 2011.

ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | physical diagnosis



East Facade:

The East facade holds today the main access to the building.

The lower part of the facade had been plastered and shows moisture marks (water infiltration) at the base.

There are installation marks - ventilation fan (5) and the windows have been closed. (3,5) Also the text sign bares the mark of Neerlandia.

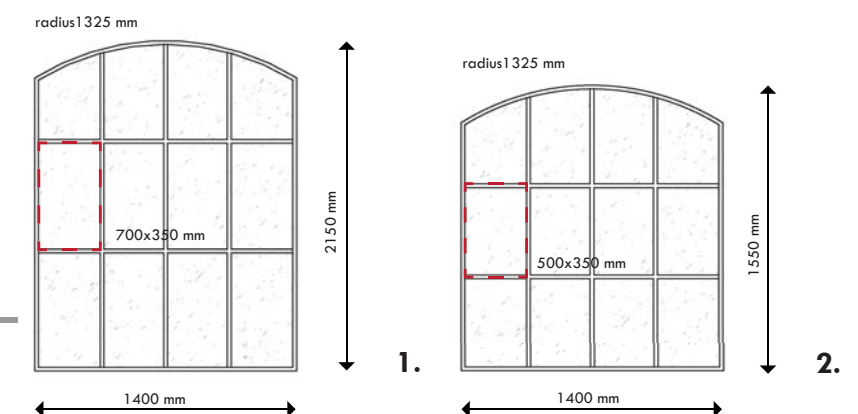
The roofline of the central nave is damaged towards the south side. (5)

One of the window openings has been changed from the original version - it has been enlarged and the top part bricked. (5)

cast iron frames

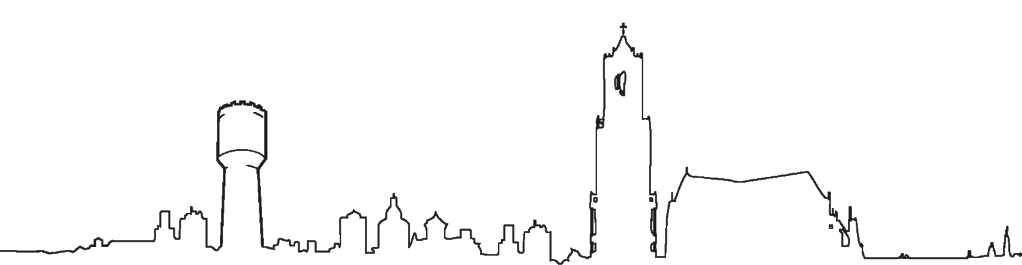
The cast iron frames on the two front facades are dissapeared, the openings are bricked ore closed with wooden plates, as you can see on photo (3).

the other cast iron frames at the north and south facade are still there but there are strongly corroded. The tipping area of the frame are missing in some parts even as the glass (2).



source: own photographs taken on site, september 2011.
own illustrations

source: photos, www.flicker.com, september 2011 (RH)



current situation



South Facade:

The South facade shows the most structural damage, due to lack of maintenance, which resulted in exposure (to water, wind, change of temperature) and in the end damaged the construction. The upper part of the facade - central nave part - is almost entirely missing; there are almost no windows left, only bricked pillars with fragments of the wood structure from the south apsis.

The facade of the south apsis is leaning towards the inside due to lack of transversal structural elements. Its lower part had also been plastered, probably from Stoop time, when the south extension was built.

source: own photographs taken on site, september 2011 (RH)

original situation - 1917

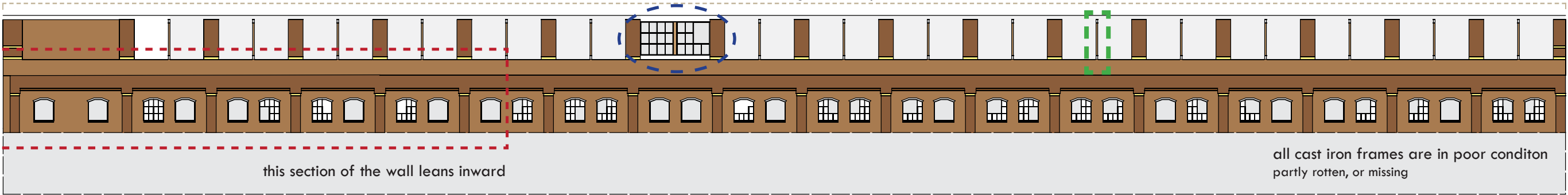


current situation

roof is severely damaged, most part is missing
eaves are almost disappeared

all wooden frames are gone, except one

underlying wooden structure is visible by the disappearance of the frames



this section of the wall leans inward

all cast iron frames are in poor condition
partly rotten, or missing

the side wall is along its entire length to a height of 2.5 meters hidden behind an expansion



north facade - lower part - current situation



north facade - upper part - current situation

Norht Facade:

The lower part of the facade was plastered when Neerlandia took over the building and started the extensions which were directly annexed to the building wall. The original openings had been closed (bricked) and others had been changed.(1)

The top row of windows (central nave) are severely damaged but still bare physical proof of the design.(2)

source: left - own photograph taken on site, september 2011.
right - www.flicker.com, september 2011 (RH)

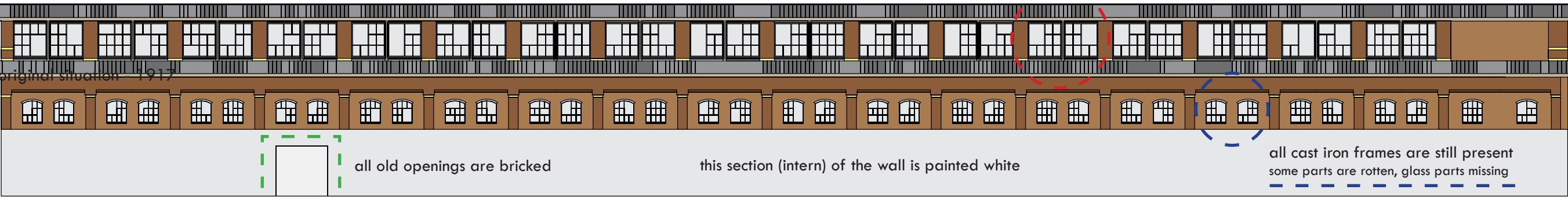
original situation - 1917



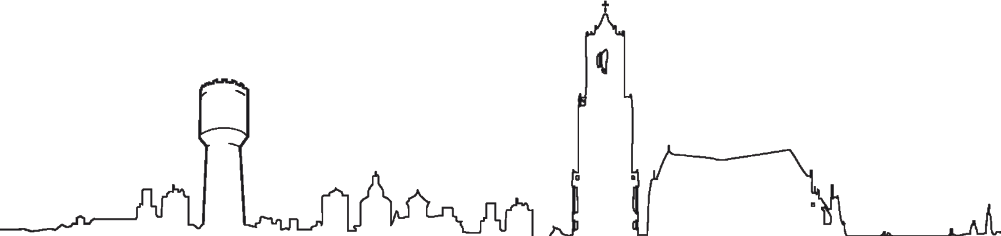
current situation

roof is severely damaged, some parts missing
eaves are almost disappeared

all wooden frames are still there
but in a poor condition, some glass parts missing



the side wall is along its entire length to a height of 2.5 meters hidden behind an expansion



1



Interior:

The wall of the central apsis doesn't show major traces of structural damage (1) The few cracks that are visible maybe caused by: instalation weight and un-strengthened openings in the wall (3) Also the mid-floor in the north apsis that is anchored by metal beams to the central apsis wall may be cause of structural failure (3)

Due to water infiltrations or direct exposure to rain biological groth and calcium deposits developed on the wall's surface (1,2,3)

The metal beams from the north apsis and their connection to the walls do not show high structural damage. However, the brick infill of the floor is damaged all along the north apsis wall. (3)

The I profile beams that form the roof structure of the building extension (south) are visible on the south apsis wall and are exposed to external factors, therefore they are rusted. Their exposure also determines a cold bridge in the annex building (4)

source: own photos taken on site, september 2011 (OS)

2

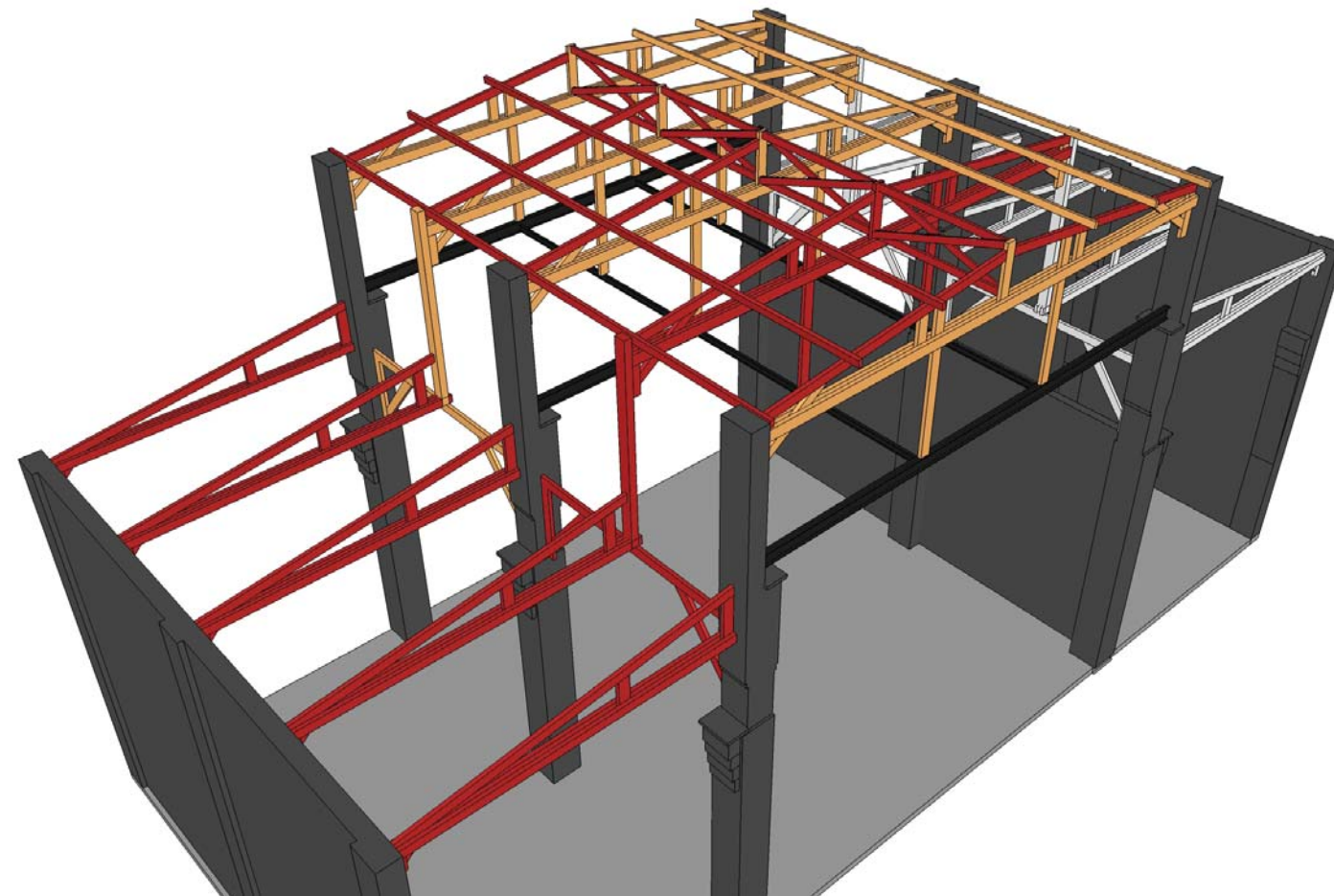
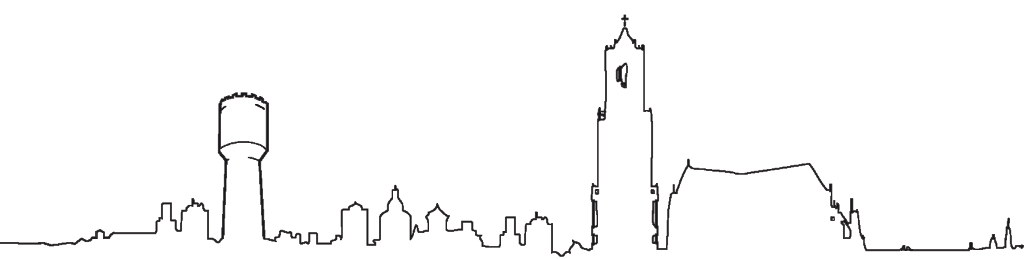


3



4





LEGEND:

relatively good condition

bad condition

not existing

Structure:

The wooden structure of the central nave suffered high damage due to exposure to external factors and lack of maintenance:

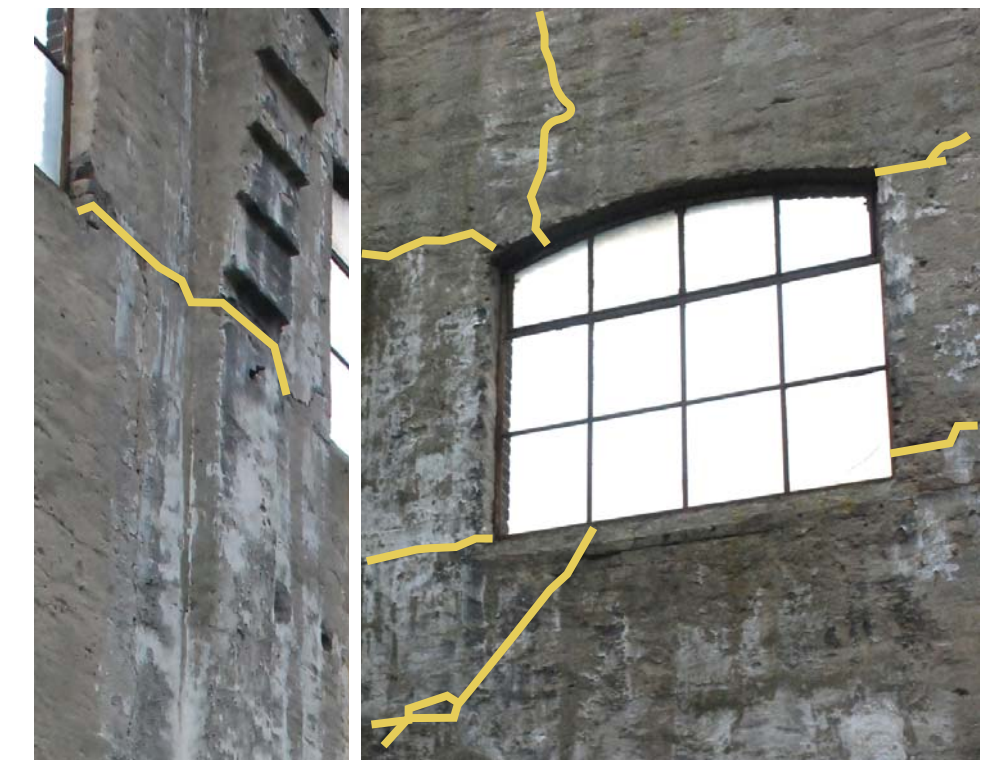
The diagonal struts that strengthen the main trusses on the longitudinal side of the nave are almost completely gone.

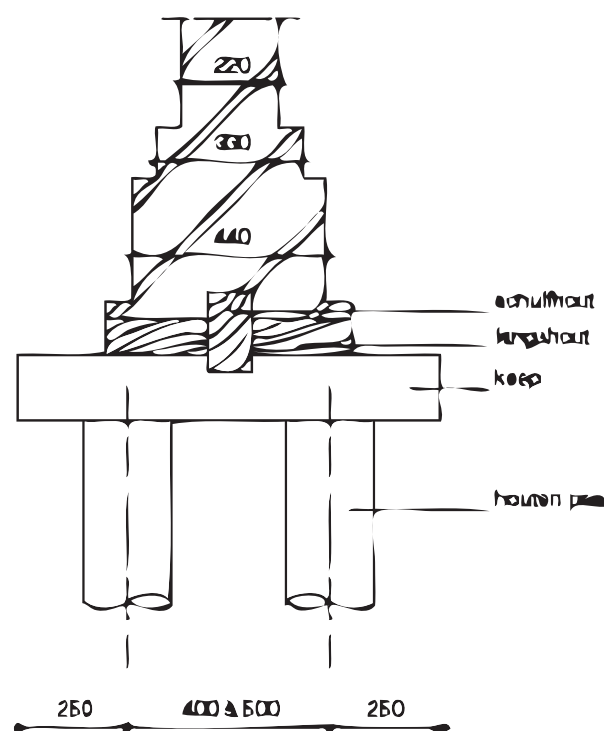
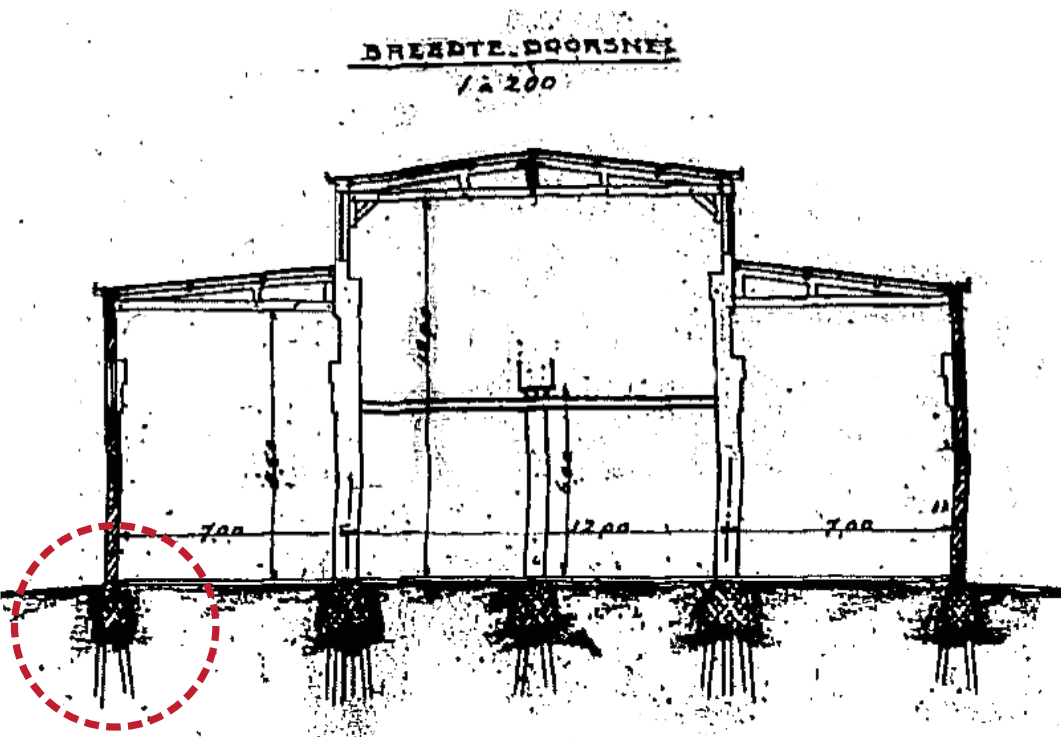
The truss edges are mostly damaged on the south side - due to the earlier destruction of the roof which now is almost completely gone on the south side. The trusses that do not rest on the central pillars are mostly gone, especially in the area where the roof has been completely damaged. The reason is most probably the failure of the whole wooden truss system that connects the central and the lateral trusses.

There are no trusses left on the south apsis; most of the purlins that rested on the central truss have disappeared; the struts between the south row of central pillars are heavily damaged or completely gone.

Structural cracks are visible around most of the windows of the south apsis - the lack of transversal structural connection made the wall of the south facade unstable and naturally cracks occurred around the openings.

source: own photos taken on site, september 2011 (OS)





Foundation:

Nowadays, the wooden post with a brick foundation is not longer applied beause the introduction of the precast concrete piles, but in the past it was the way of grounding in the polder areas.

The most common methods of wooden piles foundation are the Amsterdamse and Rotterdamse method. For both methods is required that the level of construction must be below the grounwater level. This because of the decay of the wooden piles, if they are above the groundwater level the piles would be rotten. To preserve quality, shape and size they used European softwood.

A example of the Amsterdamse method is visible at the sketch on the left. The piles were built in such a way that te free space between the piles was no less than 200 mm. Thats why the center to center distance is approximately 400 mm.

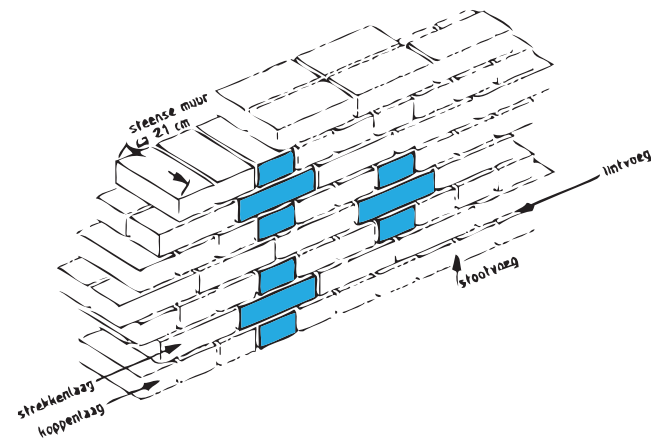
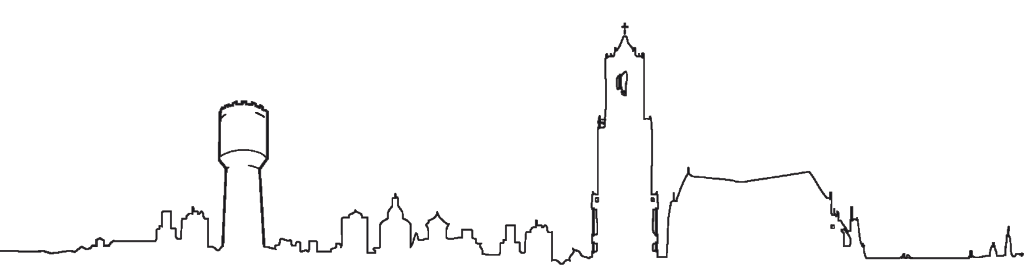
The visible layer of the groundfloor is concrete. There is however no information on the thickness or the full layers of the floor.

photo existing concrete floor

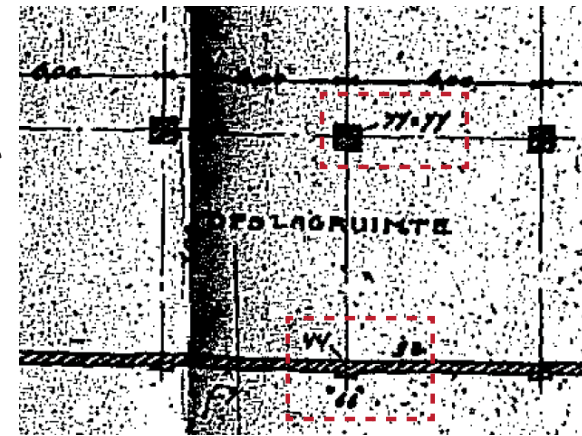


construction foundation as compared to the factory

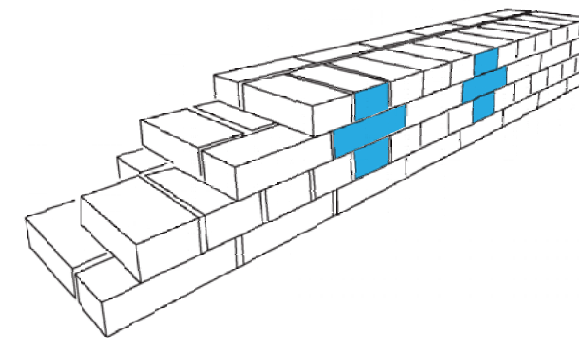
SOURCE: text Jellema, deel 2 - onderbouw, p 69
map archive Utrecht, own arrangement
photo archive Utrecht <http://www.hetutrechtsarchief.nl> (RH)



brick wall 210 mm (1,0) inside wall factory



ground plan Neerlandia



brick wall 330 mm (1,5) outside wall factory

Cross bond brickwork

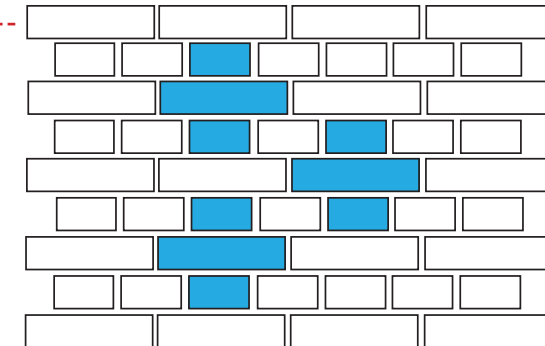
History has shown that the use of type of brickwork is essential for the stiffness of the masonry. Besides this structural feature has also an aesthetic role in the relationship. The type of brickwork, bricks pointing and the color directly influences the appearance of the building.

In the past mostly stone walls (21 cm thick) were used. In such walls the length and heads were visible in a tight pattern.

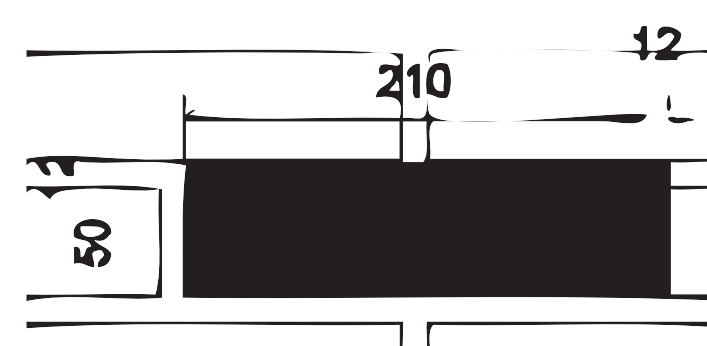
In higher buildings with a heavier load there was often used the 1.5 stone wall - same situation in the outside wall of the Neerlandia factory. This creates a wall thickness of 330 mm. The inside walls of the factory are made of a stone masonry walls of 220 mm.



photo facade



cross bond brickwork

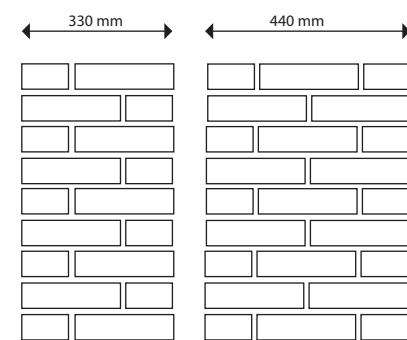


dimensions - waalmaat - 210 x 100 x 50 mm

columns & piers

The columns are even as the facade made of a cross bond brickwork. The measurement are 770 x 770 mm. In the drawing the columns are drawn like massive columns, possibly the brick columns are filled up inside with crushed rubble or by second choice bricks.

The piers are situated on the same pattern as the columns. The dimensions of the piers are 440 x 660 mm. This amounts to a visible thickening on the outside facade of 110 mm. (440-330=110mm)



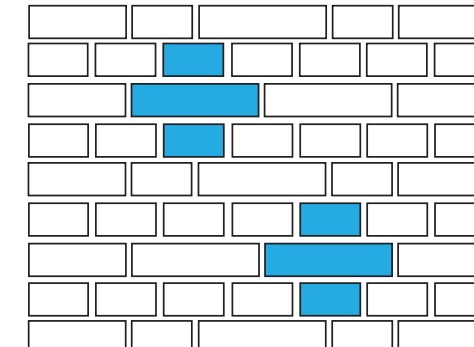
section outside wall + piers



photo piers (steunberen)



6x head brick = 660 mm



view brickwork columns

The width of the piers are 660 mm. visible in the photograph as 6xhead. (6x100) + (5x12) = 660 mm



buttresses



columns

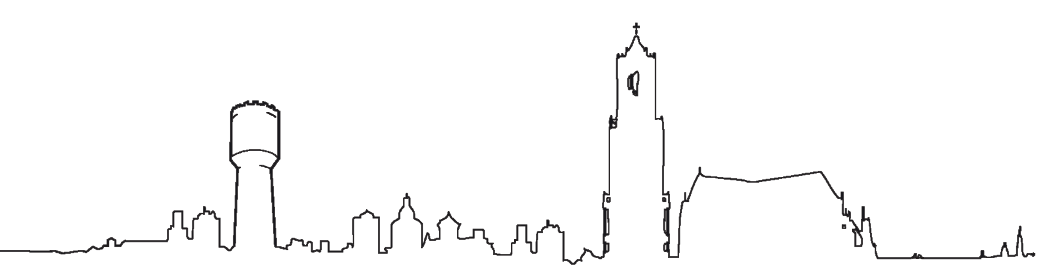


columns included in wall



7x head brick = (7x100 + 6x12) 770 mm

source: own photographs taken on site, september 2011.
own illustrations (RH)

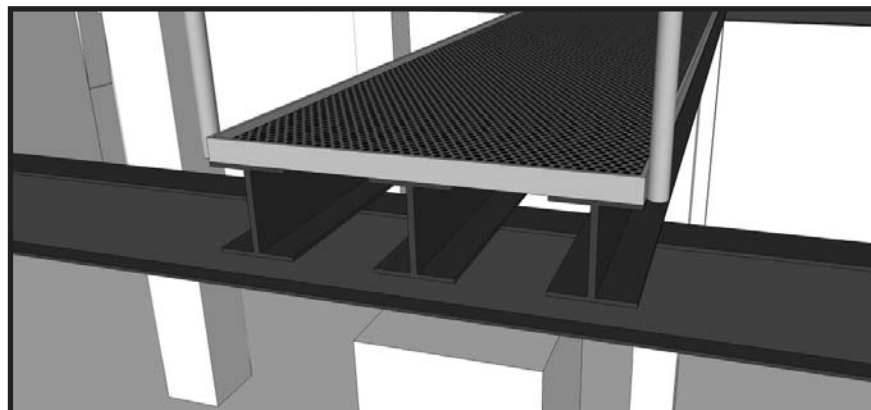
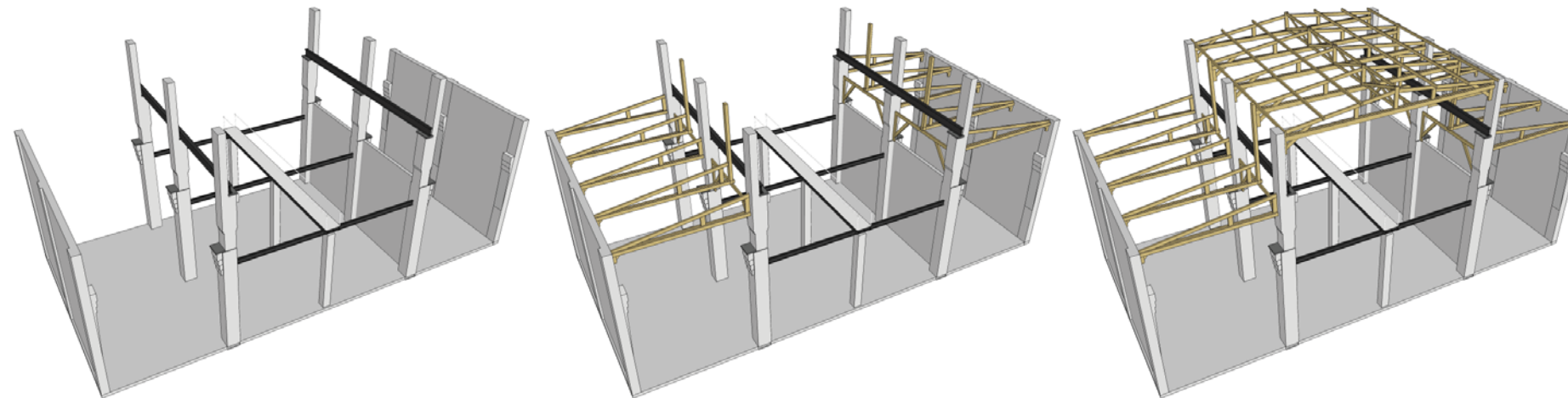


Construction Stoop period :

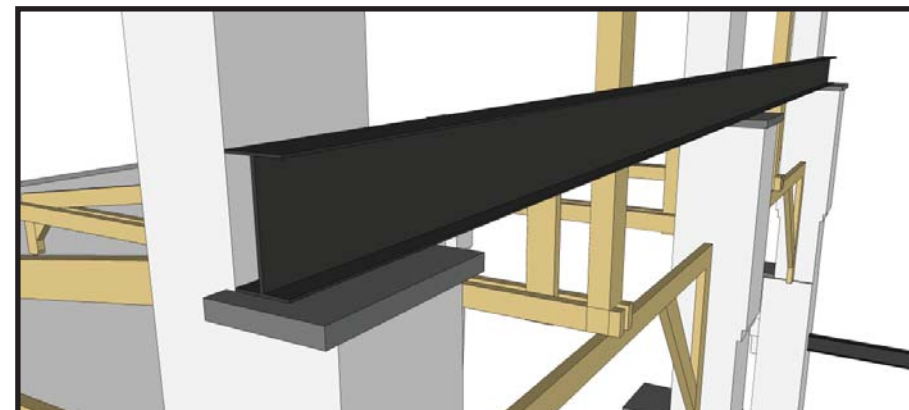
The original Stoop plans for the building show a different design of the structure. There was a middle row of pillars, between the central pillars, that was holding the structure for a platform going on the full length of the hall. This middle row was connected with metal beams to the central rows forming together the load bearing structure of the platform. This platform was used to supervise the production and machinery by the personel in charge.

There are no documents to prove that it was actually built this way and it was later on changed by Neerlandia. Comparing the production process with simmilar factories, it is most likely that it was built as planned.

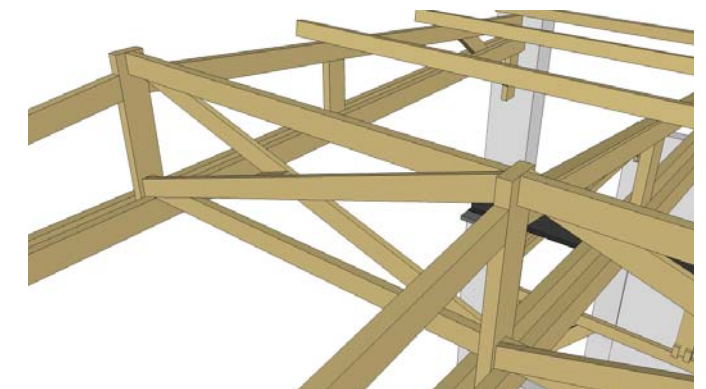
However, there are no marks of steel structural elements being cut off/ removed which can be seen in other situations - therefore, judging by the physical evidence it is probable that this central array of pillars and platform was never built.



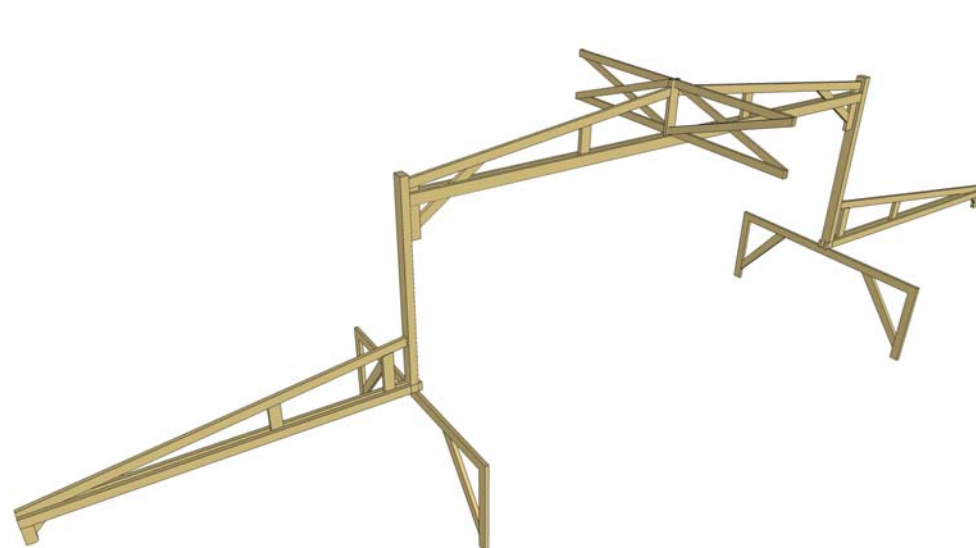
bridge structure made of I profile steel beams - 3 beams resting on a transversal steel beam.



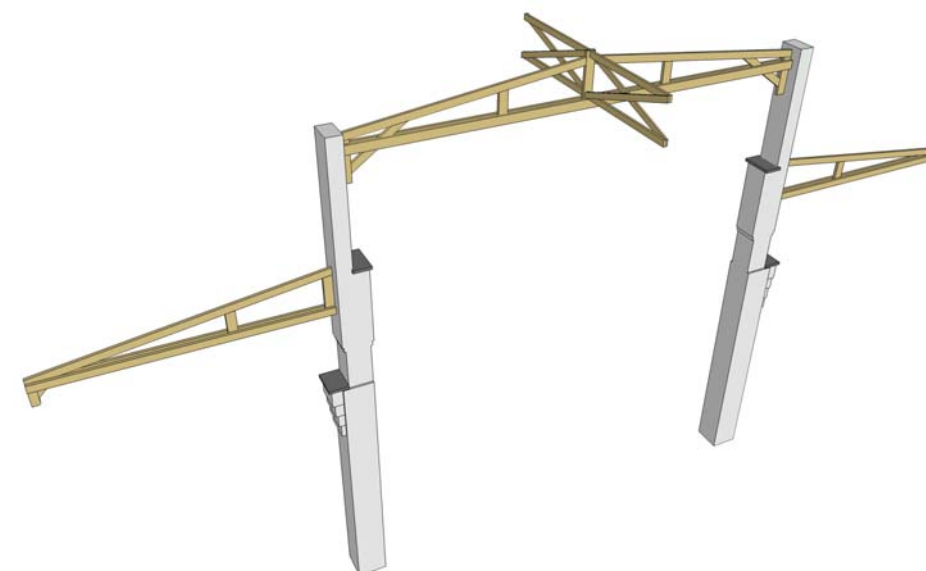
steel beam resting on the central pillars - probably used as crane lane



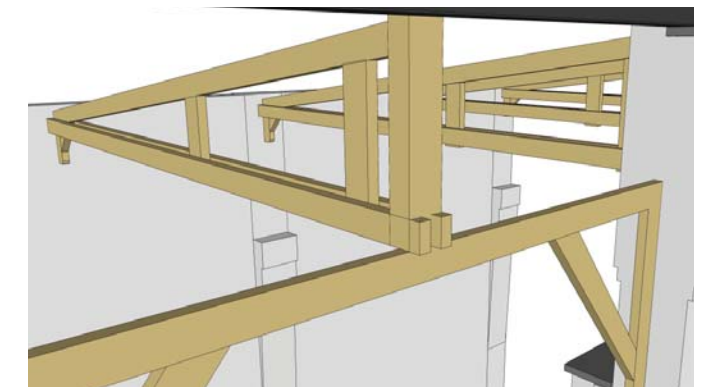
Crossbars that make a longitudinal connection between the central trusses



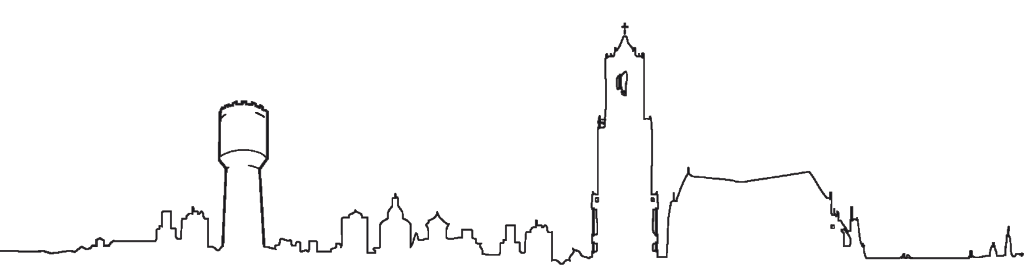
full wooden truss system (main nave and apsis are directly connected)



wooden truss systems - main nave and apsis are not directly connected, they rest individually on the central pillars.



Wood truss of the apsis resting on the prop that rests on two central pillars

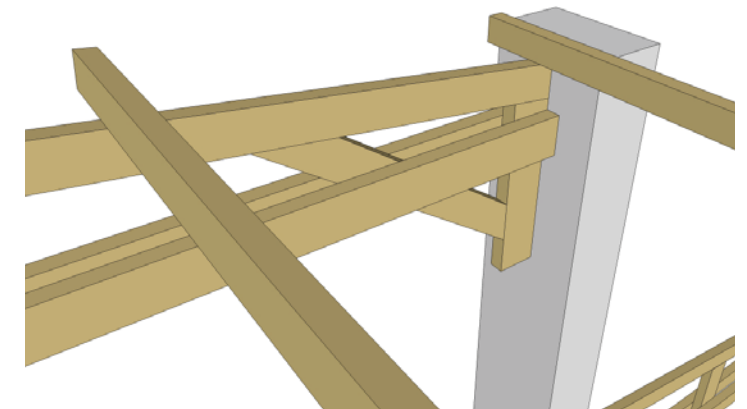
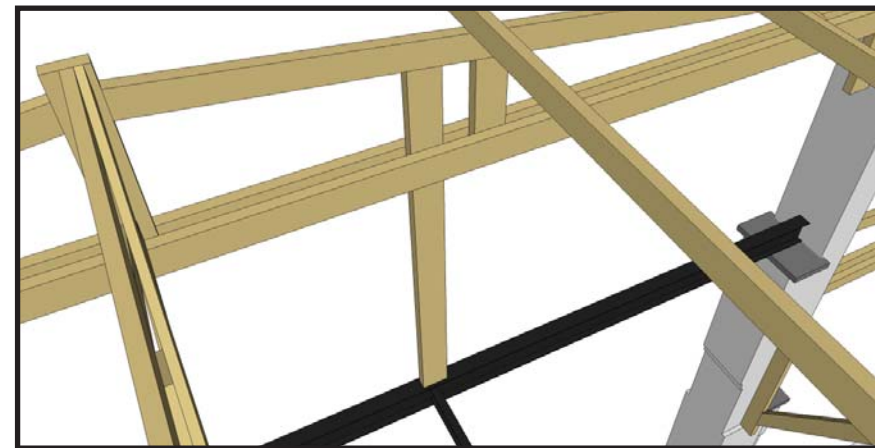
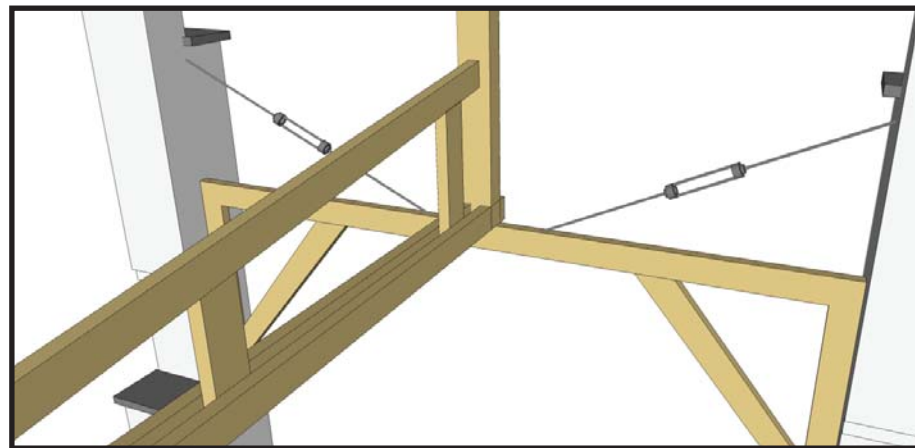
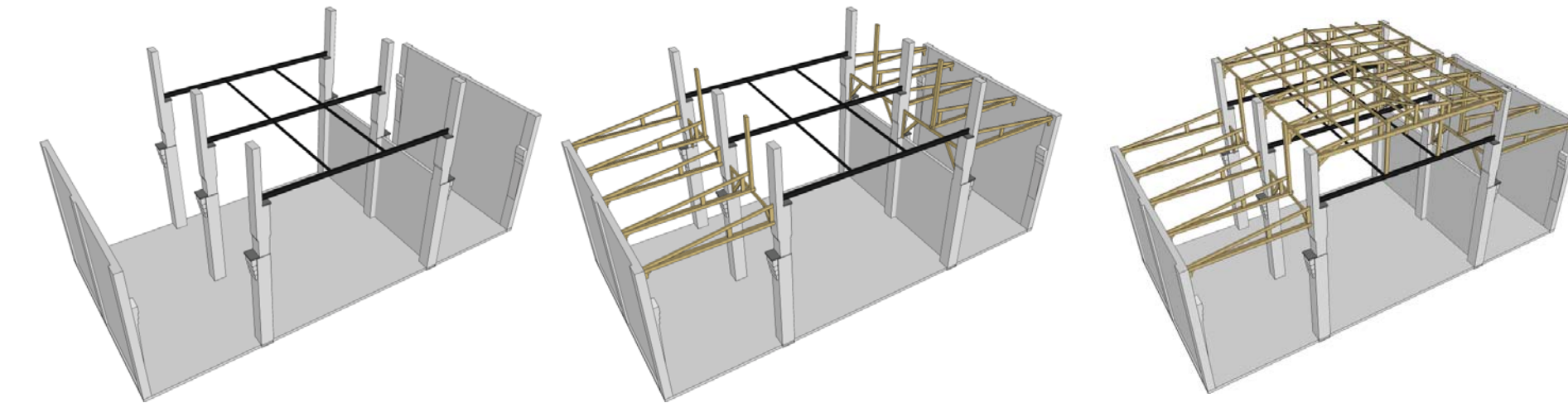


Construction Neerlandia period :

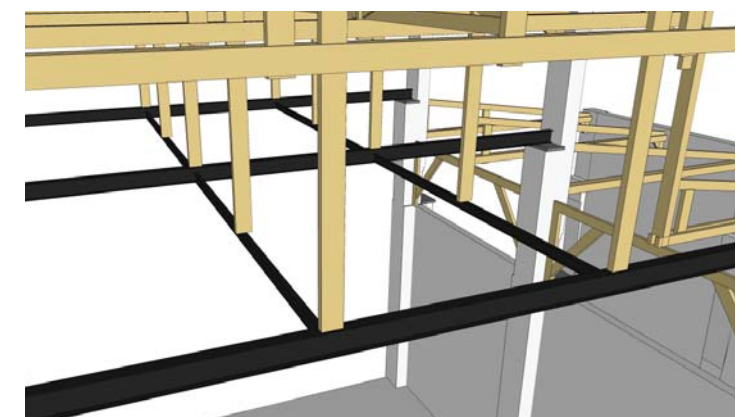
The actual situation, was also available in the Neerlandia time - there is photographic documentation to support it. The large metal beams that were originally arrayed (in the Stoop project) on the longitudinal direction are now placed transversally. It is not sure if the original beams were repositioned or the beams (as they are now) have been placed like that from the beginning. These beams are strengthened by two smaller metal beams that run parallel with the central pillar row.

Also, the wooden truss presents additional elements to the original design - two props that rest on the transversal metal beam. It is highly probable that this structural solution was adopted even from the beginning because of the underdimensioned roof structure.

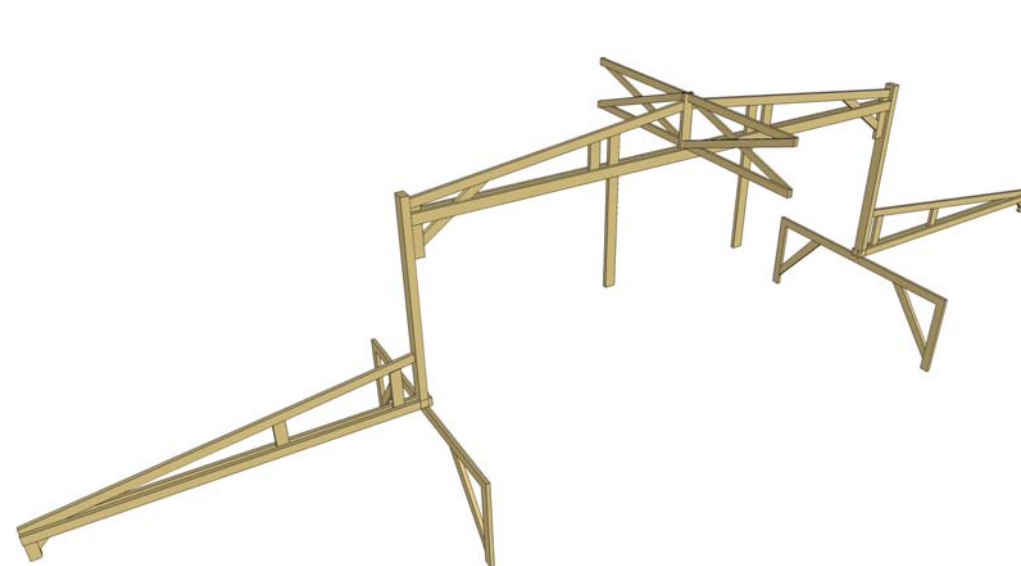
The iron tie rods that connect the wooden struts with the central pillars. It is highly probable that these metal rods were added in Neerlandia times because during the Stoop period, due to the chemical environment, this kind of structural element would've been avoided - thus the structural system is wooden.



Resting point of central truss on pillar



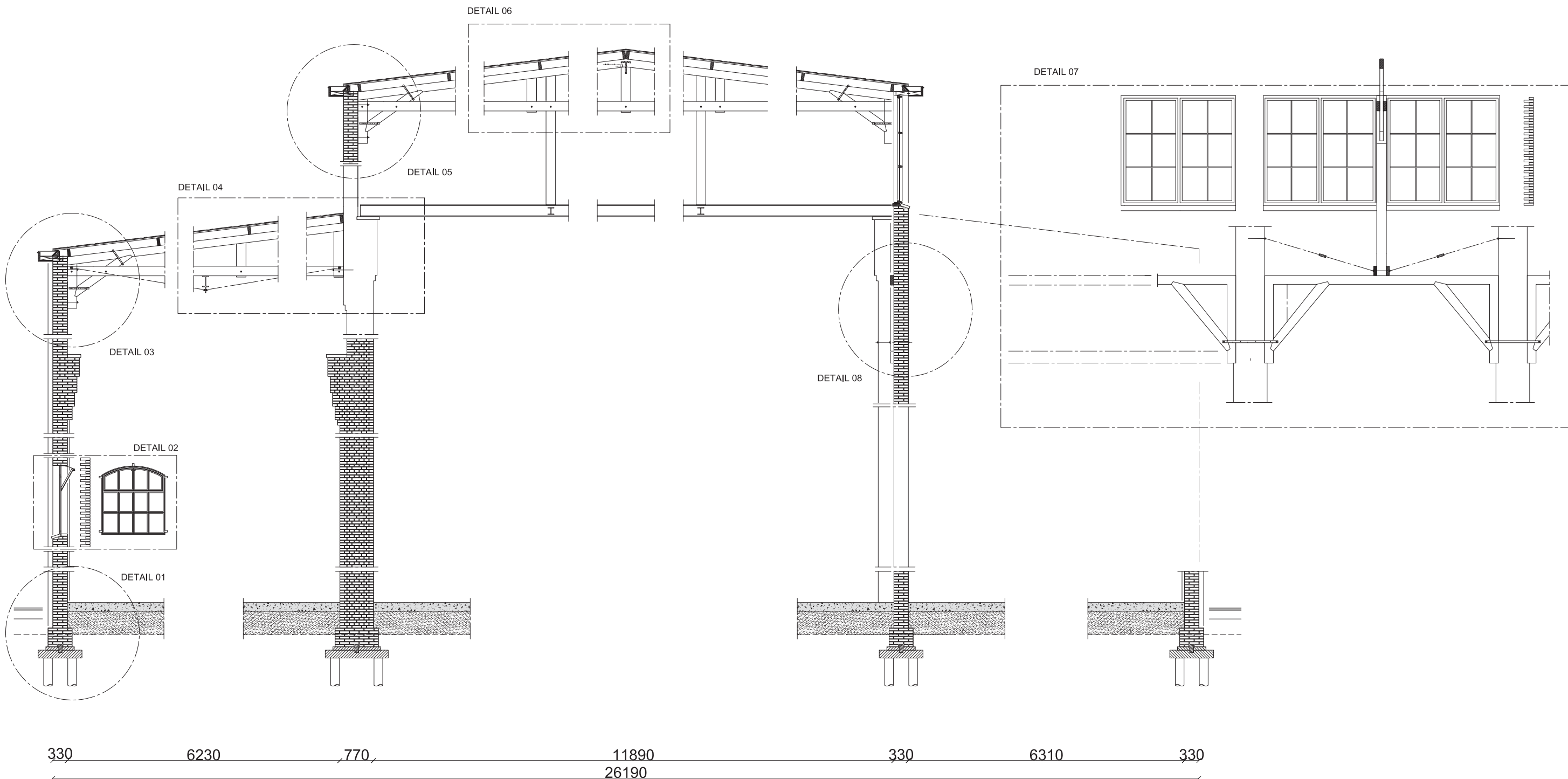
Resting point of central truss on pillar



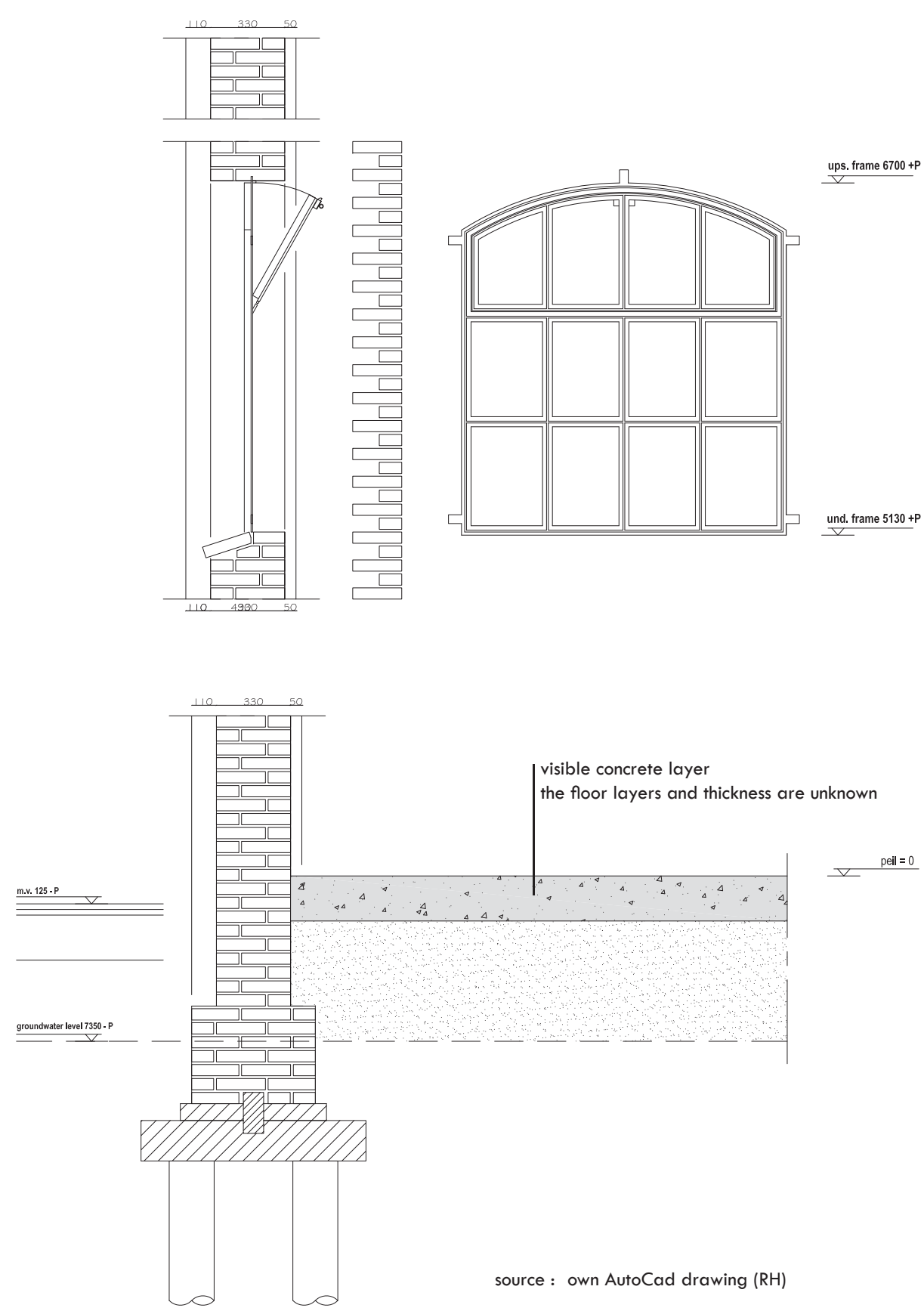
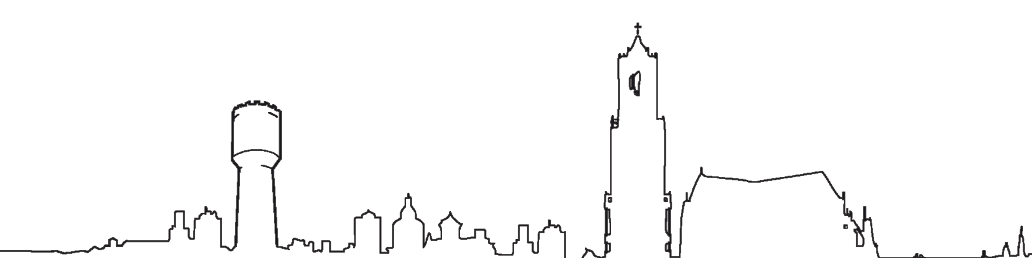
full wooden truss system (main nave and apsis are directly connected)



wooden truss systems - main nave and apsis are not directly connected, they rest individually on the central pillars.

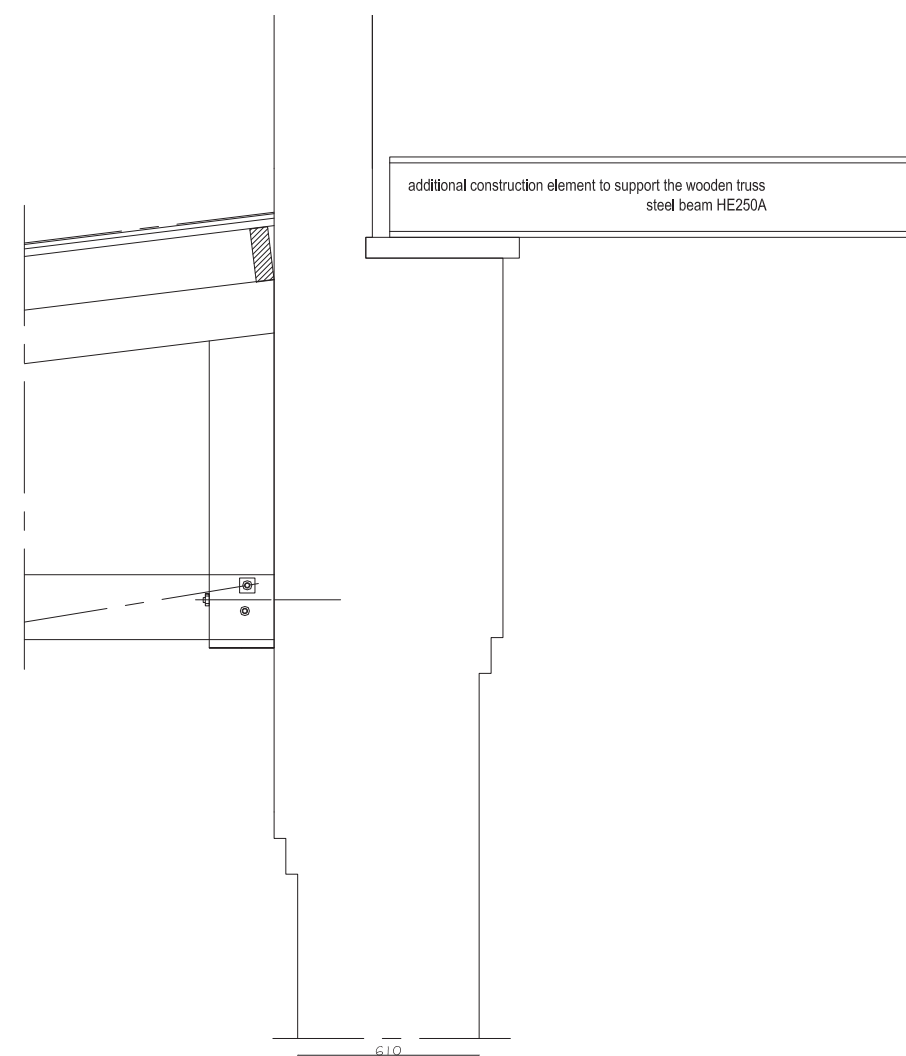
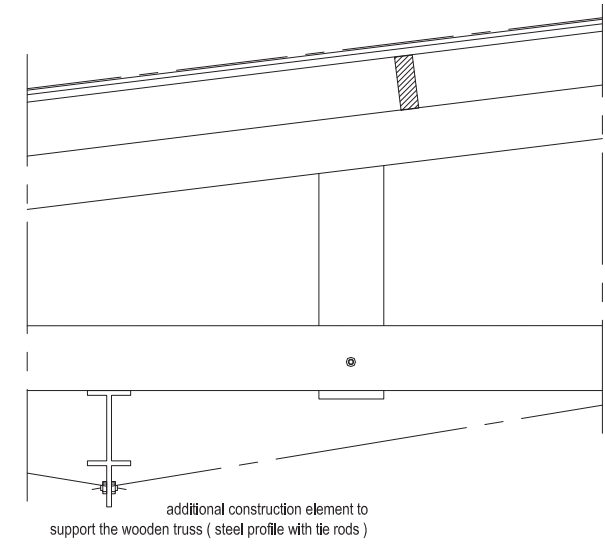
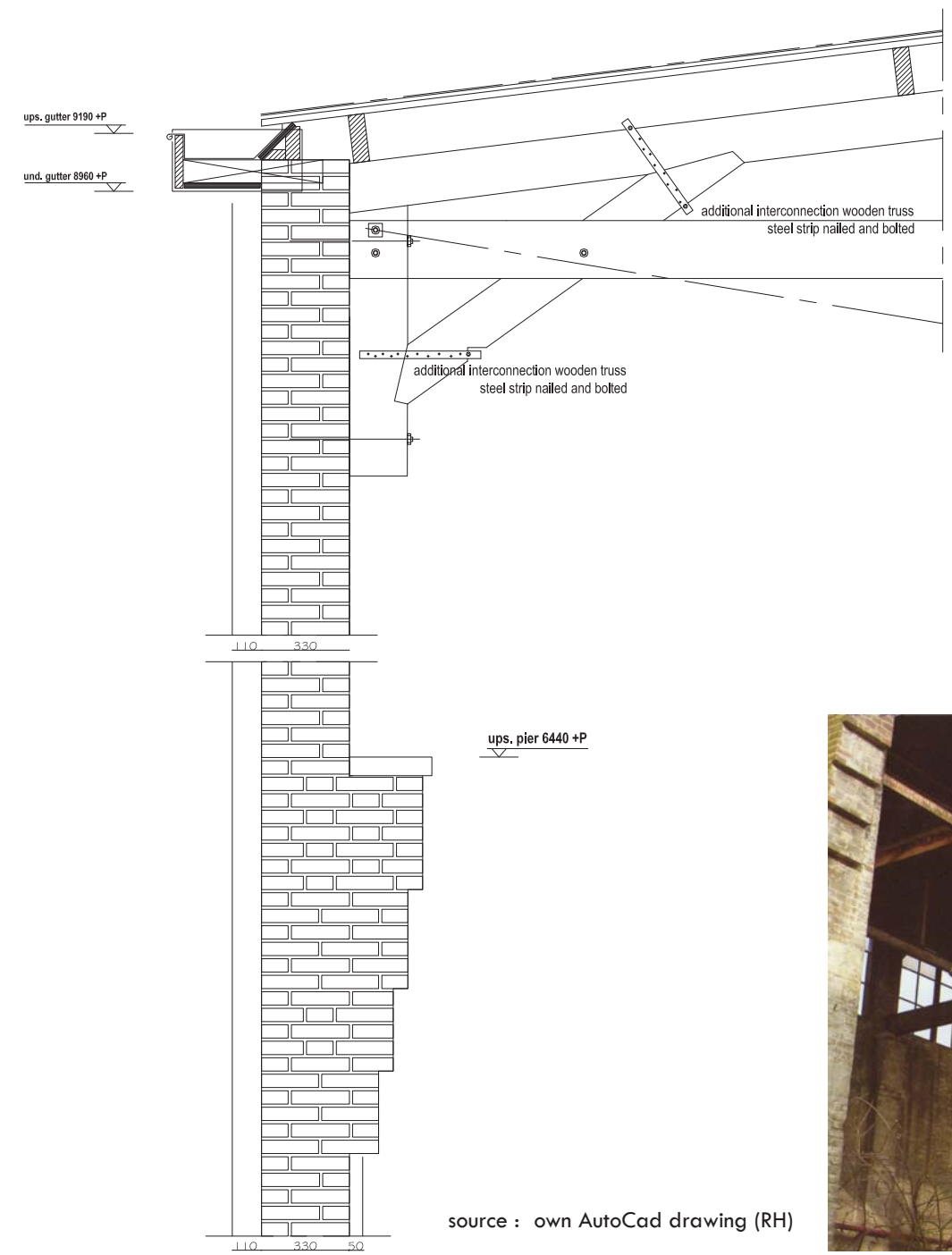


source : own AutoCad drawing (RH)

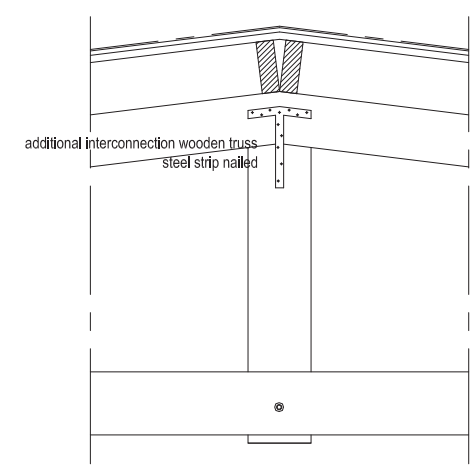
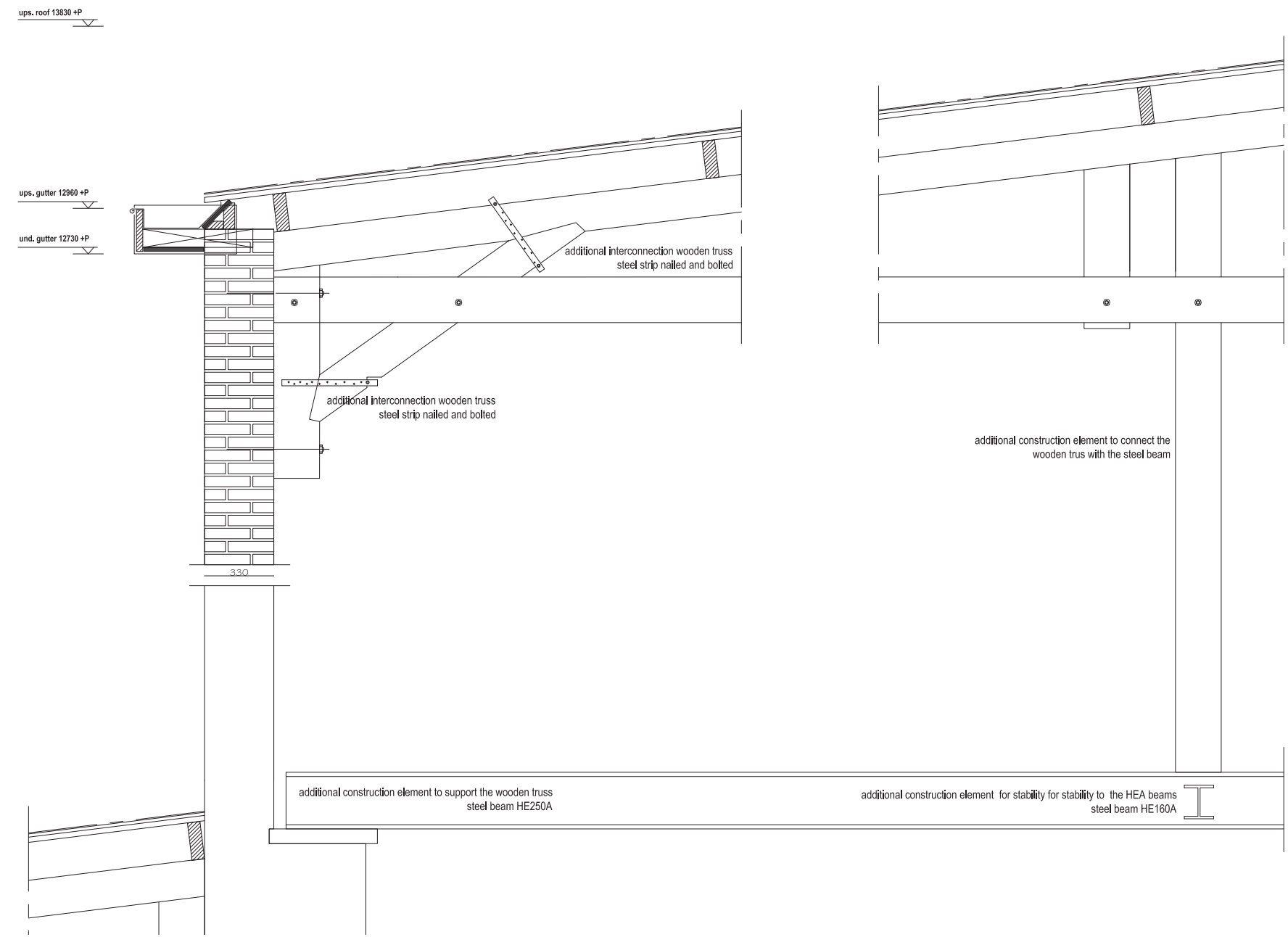
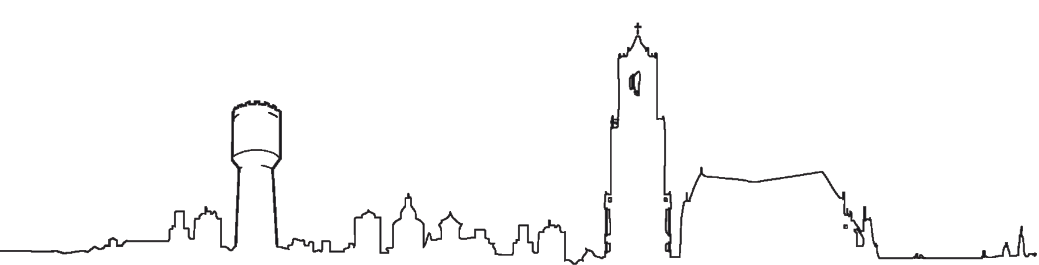


source : own AutoCad drawing (RH)



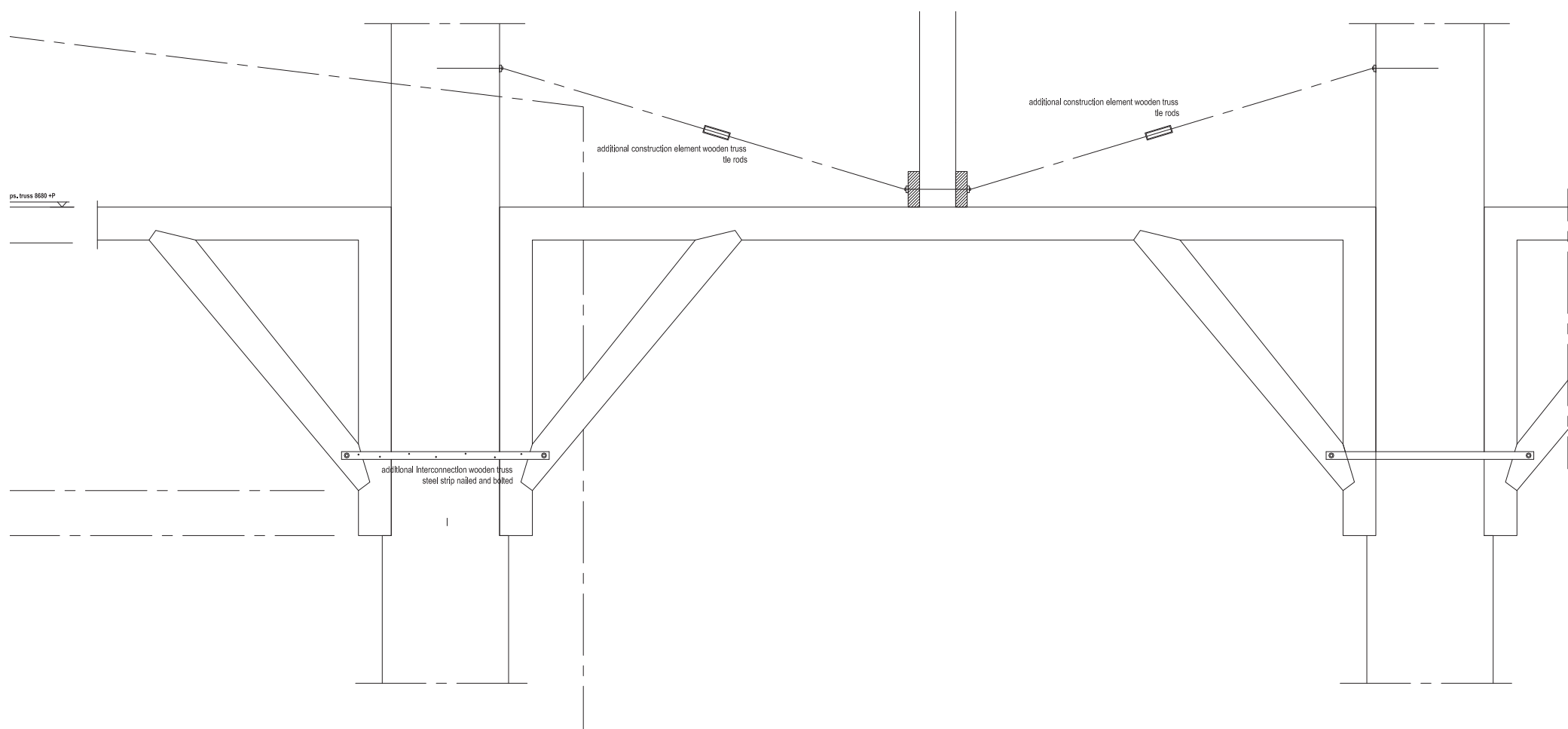
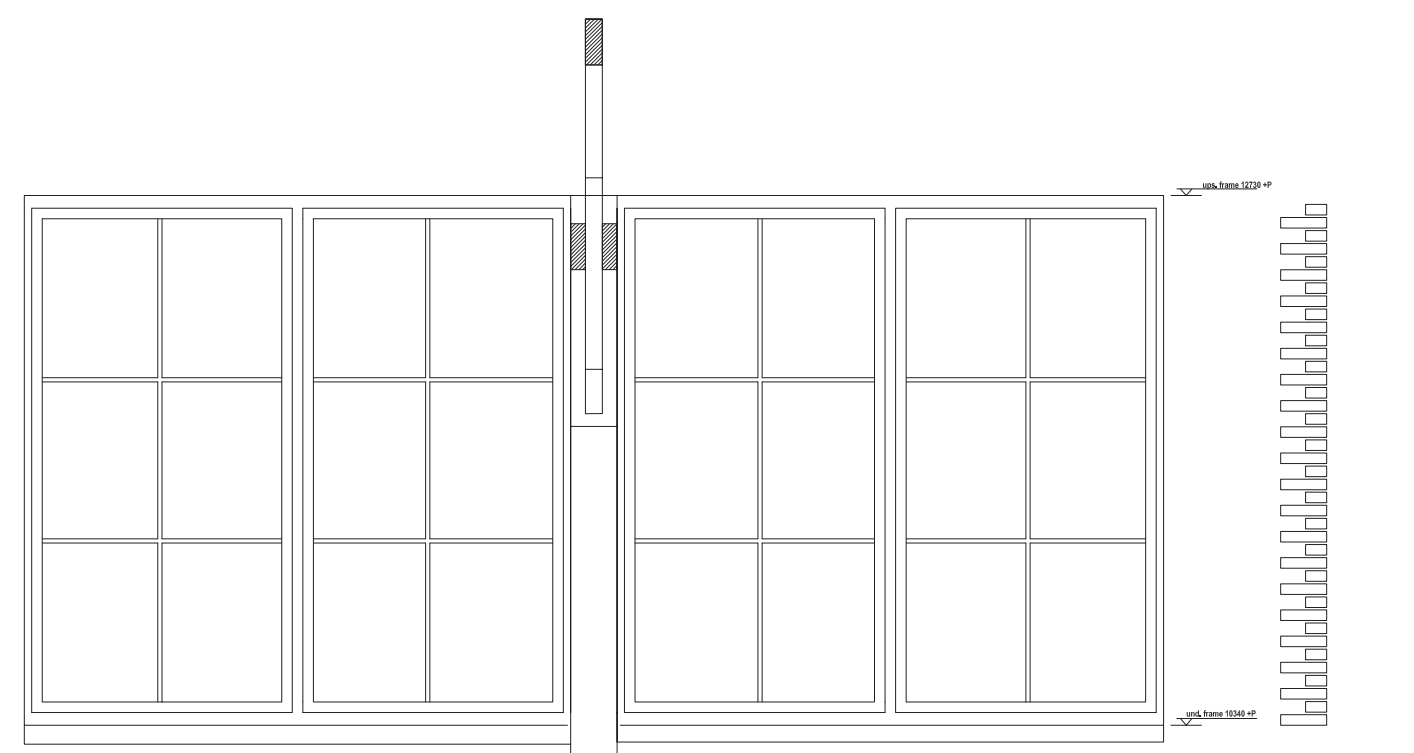


source : own AutoCad drawing (RH)

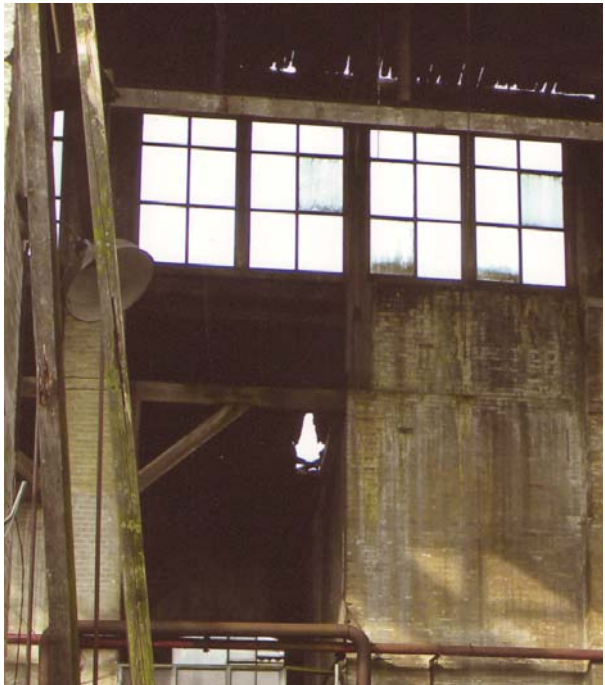
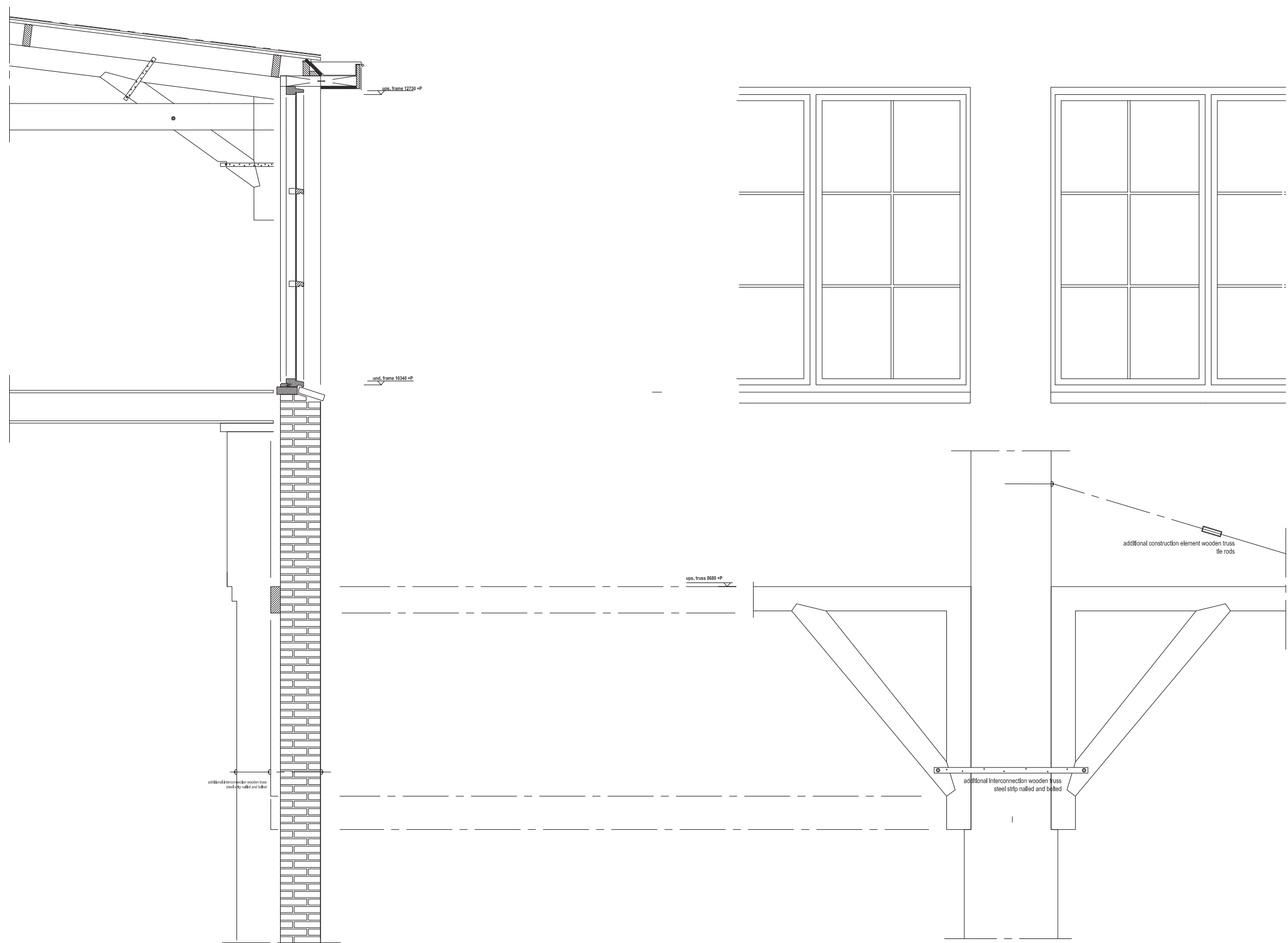
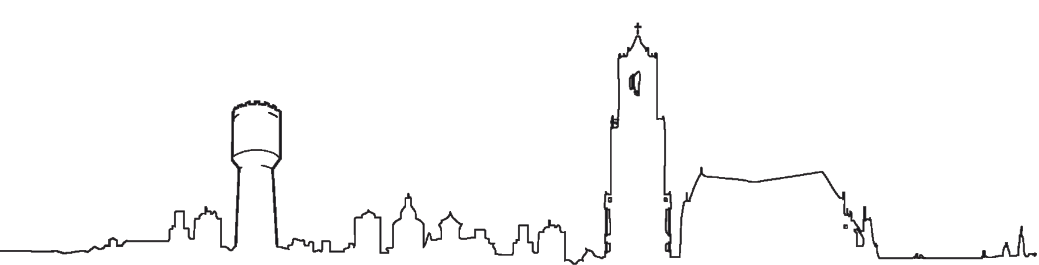


source : own AutoCad drawing (RH)

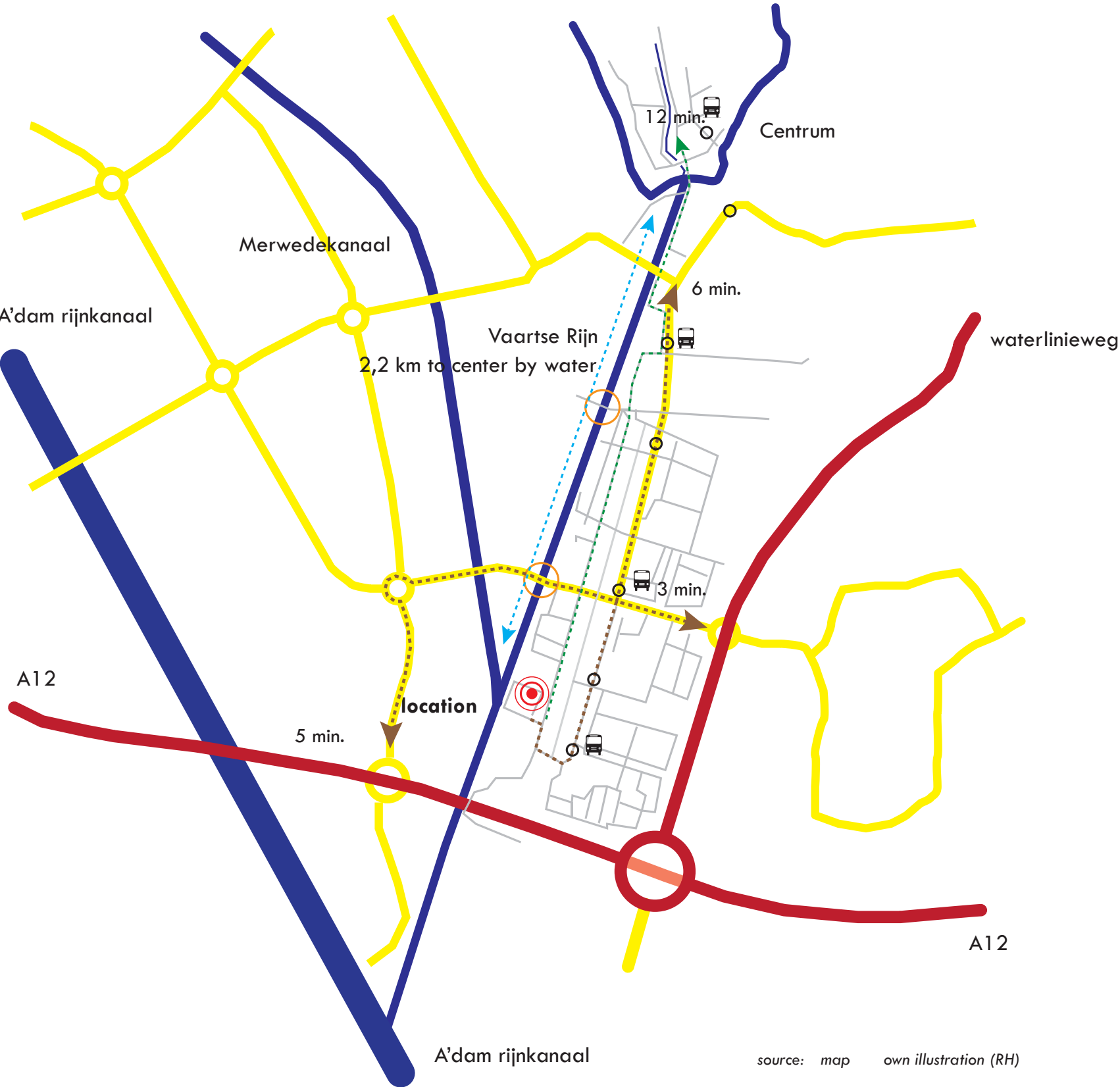




source : own AutoCad drawing (RH)



source : own AutoCad drawing (RH)



Location :

The site is part of the strip of historical industrial buildings along Vaartse Rijn. Due to city expansion, these areas became part of the (extended) center of Utrecht. Due to good connectivity to the old city center, thus proximity of other historical areas, there opens up a large field of development possibilities in relation to them.

The site is easily accessible by bicycle, public transport and by car

| | | | | | |
|-----------|-----------|---------|----------------------------|--------|-------|
| centre/cs | : car | 6 min. | highway | : car | 3min. |
| | : bus | 8 min. | | | |
| | : cycling | 12 min. | distance location - center | | |
| | | | by water | 2,2 km | |

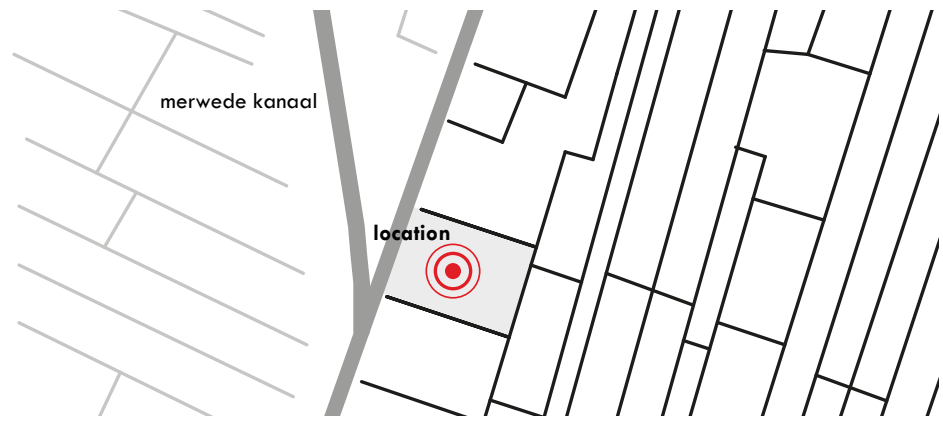
Therefore, the historical background, the accessibility and the position in relation to the old city center give the site a high potential for future developments.

Orientation :

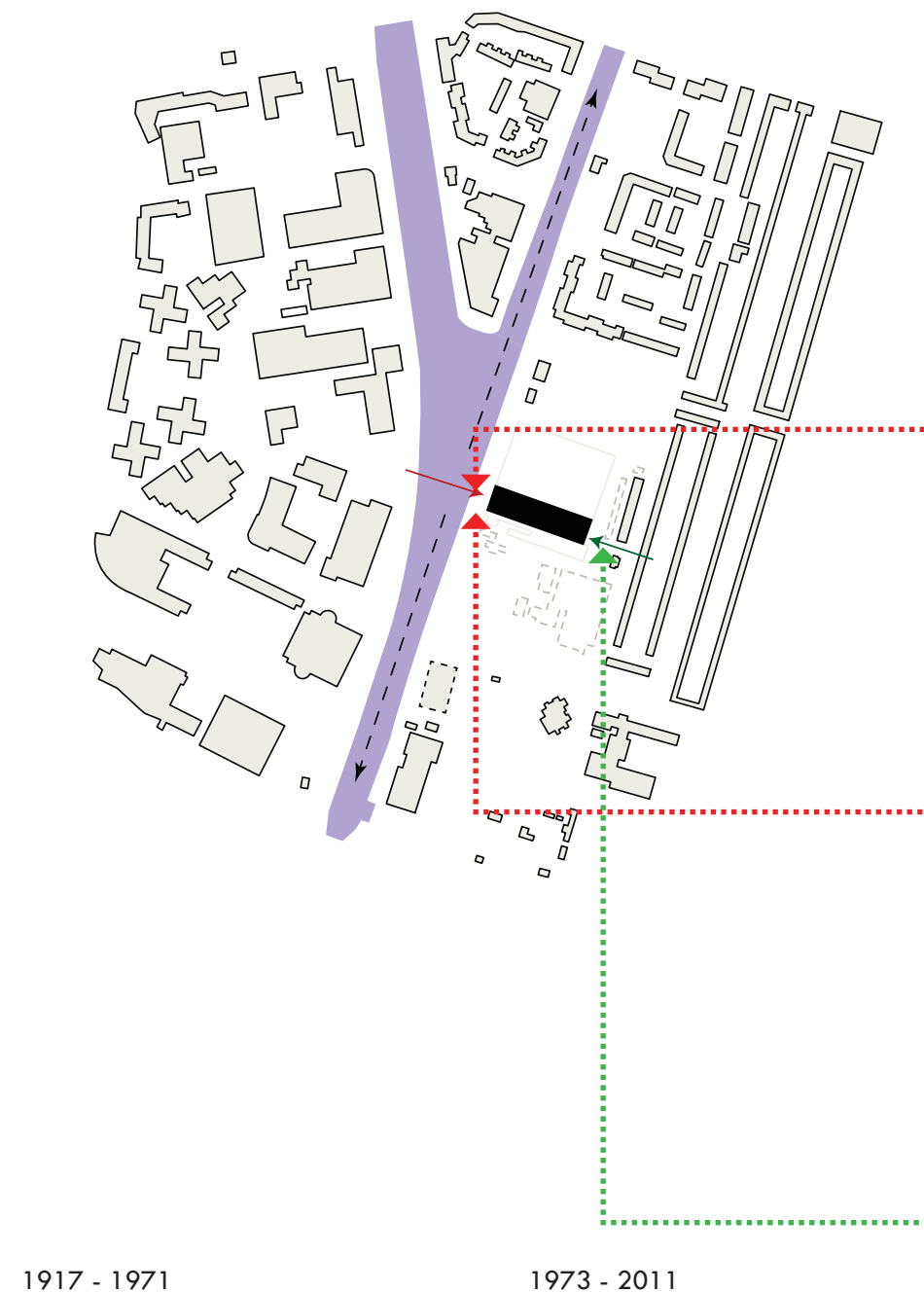
The large factory building of the former Neerlandia is part of the historic industrial landscape of the Vaartse Rijn. The features of the oldest allotments are in direct relation to their original relation with the water way.

- along the bank there were industrial buildings which had main access from water; this is a result of their activity - materials and goods were shipped from and to these sites on water. Therefore, the land connection had originally been secondary, or no present at all.

- the importance of the water way (for the industrial) determined also the configuration of the plots - stripes perpendicular to the canal. This characteristic of the former industrial use of the area applied to the entire strip on the Vaartse Rijn. Despite the fact that newer building developments on the bank have not taken into account this feature, keeping and emphasizing this characteristic of the plot orientation would support the historically strong relation between the water way and the buildings along the bank..

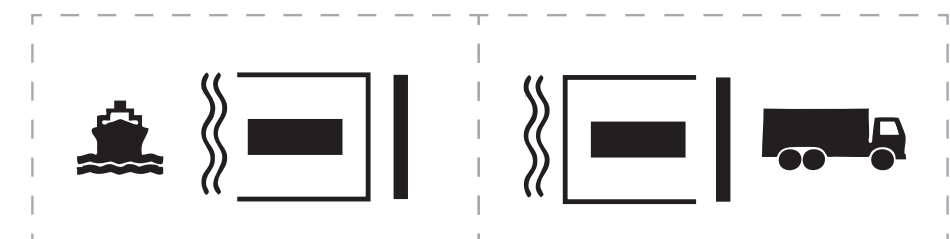


water highway freeway roads busstop bridge

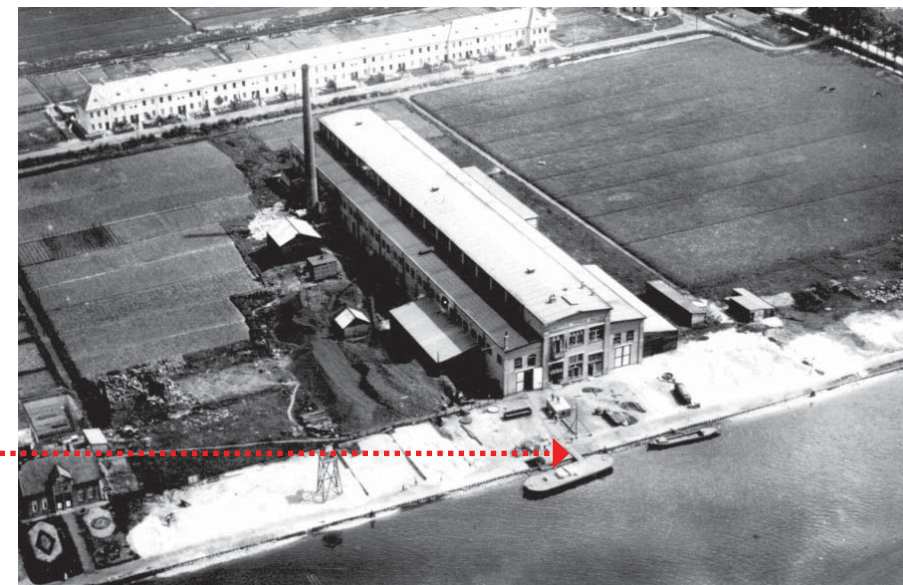


1917 - 1971

1973 - 2011



after 1973 the water connection was no longer used. Instead the land access became important - the loading and unloading that used to be done on the bank moved to the yard on the East side of the building.



Use of the bank during Stoop (photo:1925)



Use of the bank during Neerlandia (photo:1937)



Outside activity moved after 1971 to the yard on the East side (photo: 2006)

Historical value :

While most of the former industrial sites have been transformed and their buildings demolished, the former Neerlandia factory still stands as an evidence of the industrial activities which have been characteristic to this area from the end of the 19th century until 1980's. As it is among the few remaining buildings on the bank of Vaartse Rijn, its role as a historical mark of industrial activity may be even stronger.

The industrial activities of this site were related to important historical events. During WWI Stoop was producing explosives and during WWII Neerlandia - when it was taken over by Germans - was producing barbed wire.

Bank value :

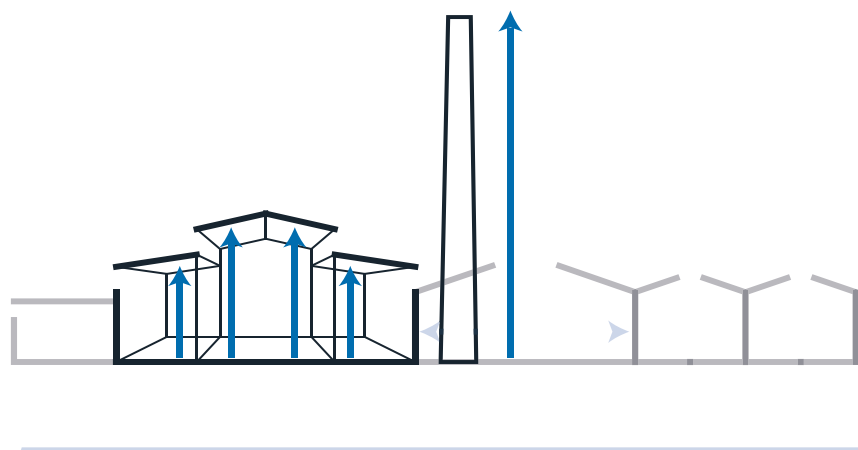
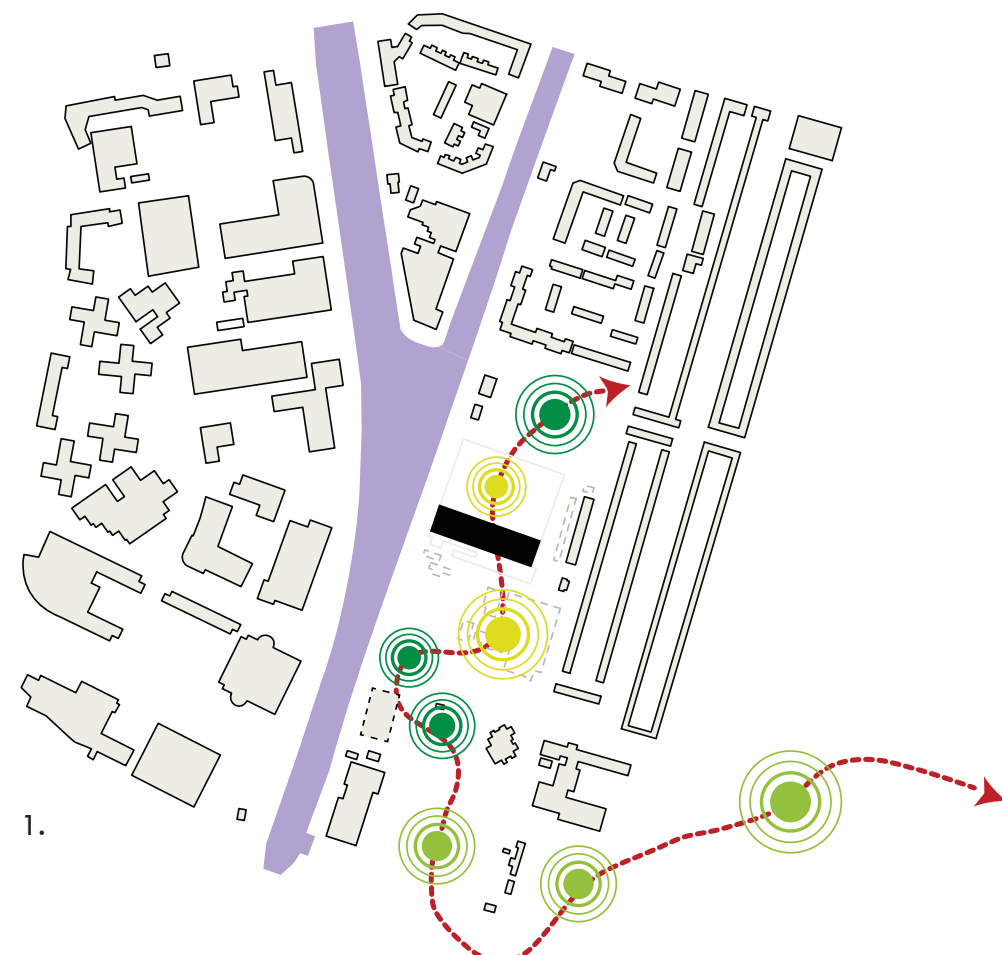
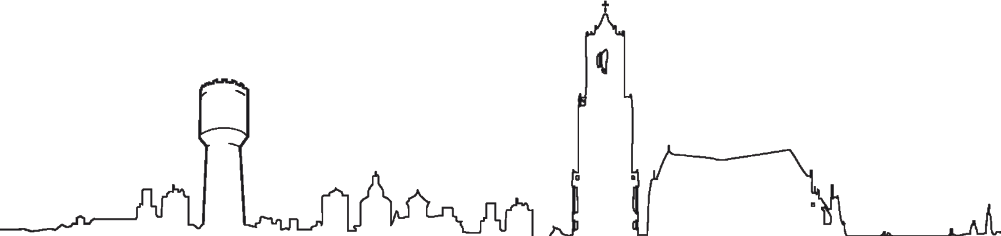
During the activity of Stoop and Neerlandia (1917-1971) the bank played an important functional role in the production process. Ships were unloading (raw) materials and were loading back products from the factory. Therefore, the bank was an active and indispensable area. Its importance also resulted in the functional organization of the building: the offices and their main access were placed to the bank side. Also its importance is reflected on the treatment of the west facade - as it was the main facade and this resulted in a special treatment - richer decoration and placement of the factory name on the top part of the central nave.

The archive photos of the bank, taken during the activities of both Stoop and Neerlandia, show that the bank didn't have a particular pavement. According to the needs, some parts had concrete platforms (next to the building, more suitable for storage preparing, packing and stacking materials and products; platforms for installations), others were plain ground.

When Prozee took over the factory, the water access was no longer necessary and the access moved to the opposite side. As land access became the only one used, the concrete paved yard on the east side became main outside space for the industrial activities.

Despite the fact that it is no longer used for industrial activities, its presence is a morphological characteristic of the industrial history Vaartse Rijn. Although its original function cannot be retained, its presence can be preserved as a mark of the past activities and its functionality can be translated to meet new activities and needs - for instance it can be open to public. Pedestrian routes have already been created along the canal; what was previously accessible only for the industry is now open for public - the entire bank of Vaartse Rijn, on this area of South Utrecht is step by step becoming accessible to public. The bank that corresponds to (former) Neerlandia can be part of the public space and further connected to the building - thus making the relation between the building and the water important. In short, the bank can be an element to support the (re)integration of the site in the current urban fabric.

source: images & sketches own work (RH)
photo: www.hetutrechtsarchief.nl



Area value :

Green system

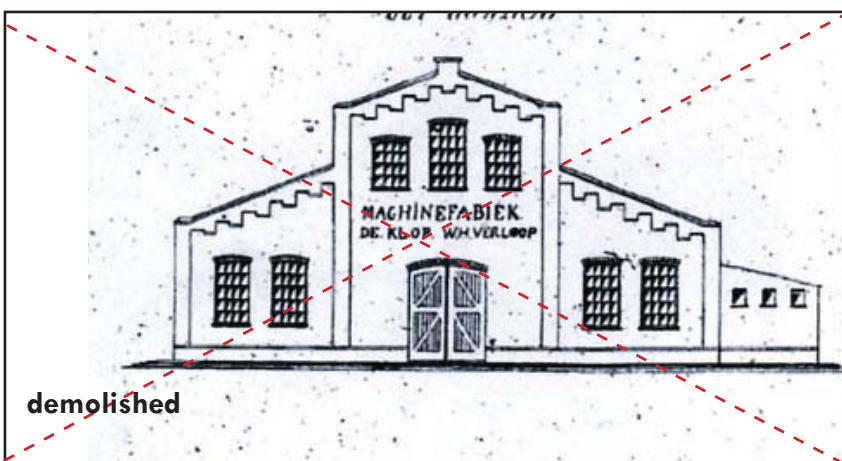
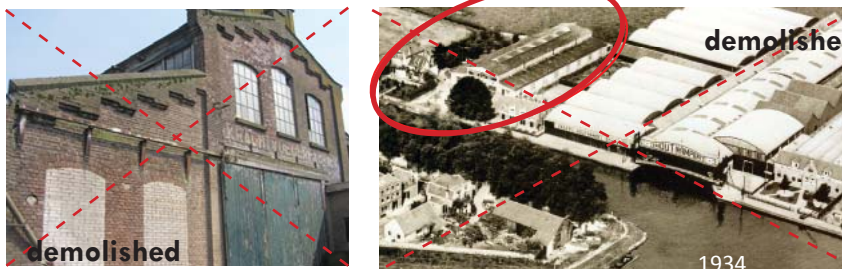
There is a consistent number of green spaces in the area - parks, sports areas, green stripes along canals. They are not properly connected inbetween them but they are rather scatered close to each other.

This situation comes from the way these areas came to become green spaces. Along the canal there were previously only industrial buildings. As the industrial activities gradually stopped, the buildings had been demolished and the spaces were transformed in public parks. This is the case of meester J.J.M. Hammerplantsoen on North side of Prozee and the ruins area of former Lieschbos factory, to the South. The existing sports areas have been created in the place of a former park which layed on previously unbuilt area. Other green structures have been designed along with the residential areas from the 70's.

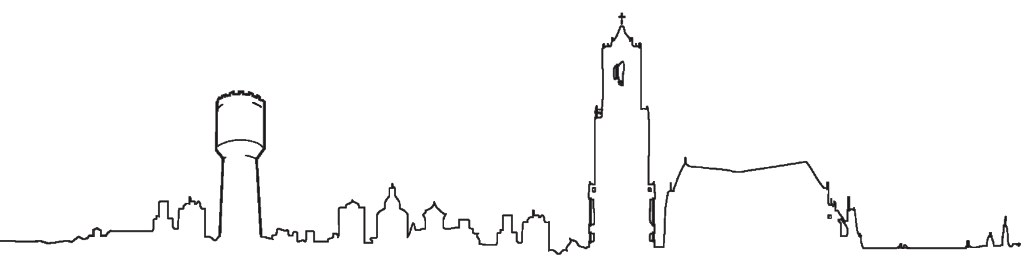
All these green spaces, created in different ways and times are not properly connected with each other. However they have the potential of becoming a well bound green structure that would strengthen the functional and spatial cohesion of the area.

Landmarks

Chimney - Because of the scale of the complex, the chimney acts as a landmark for this area (2). From the district, the chimney is a recognizable and iconic element to the neighborhood.



Facade and silhouette - Regarding the type of industrial buildings Neerlandia is not unique in its kind, but unique in the area of Vaartse Rijn. Most remnants of industrial activity near the canal have disappeared, thus Neerlandia stands as one of the last remaining large-scale constructions.



Building value (main building):

Considering the architectural values of the complex there are several features which can be evaluated:

- the spatial values
- architectural and structural design elements
- materialization and decoration

There is a vertical repetition created by the central pillars and a horizontal one by the metal structure that connects them like a grid. Together, these elements form a spatial grid which gives the whole space a three dimensional complexity. (1, 3)

The structure is based on simple principles but realized in a complexity of elements and materials. The roof of the apse is carried by wooden trusses that lay on brick pillars - which are free standing on one side and incorporated in brick walls on the other. The central wooden trusses lay on the central pillars as well as on iron I profile beams which connect the pillars. (2, 3) The connection between the pillars is strenghtened by wooden struts and iron tie rods. (4, 8) The elements of the wooden trusses are connected between them by carved fittings and iron bolts. (8)

The value of the structural system stands in the variety of materials and the openness of the whole system - the viewer can see and undestand easily the structural principles that make the building stand.

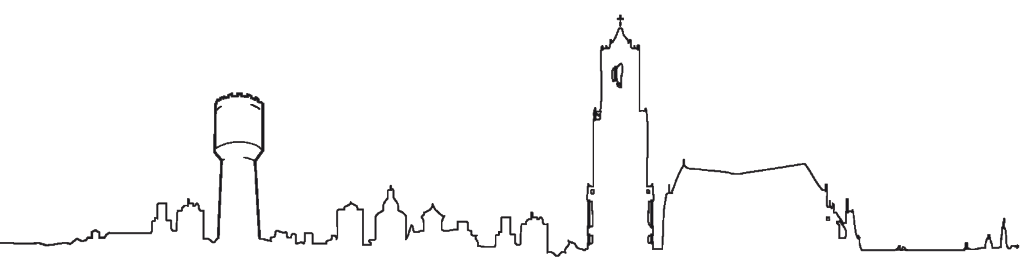
There are a series of instalation elements still present in the building: pipe lines, engines, electric panels, industrial lamps, etc. They cannot be reused (are in a bad state, and outdated), however their presence adds to the industrial atmosphere of the place - they are marks of the industrial processes that took place in the past. (5)

Decorative yellow brick is used in some parts of the facade to mark levels or structural elements. (6)

The windows are emphasized by the brick arches; there is a double horrizontal line created by offset layers of brick which make a visual link between, thus emphasizing the yokes. (6,7)

source: own photos taken on site, september 2011 (OS)





1



4

5



2



6



3



7

Building value (extensions) :

1. The most valuable part of the halls adjacent to the main building is the structure system - light metal truss. However it is not particularly distinctive as the truss system in the main building (described in the previous chapter).

The masonry is plastered and there is no value of the rendering nor of the treatment of the openings.

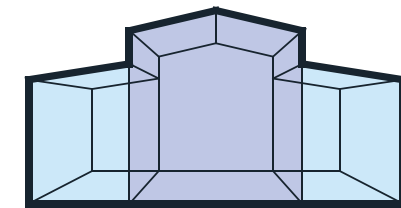
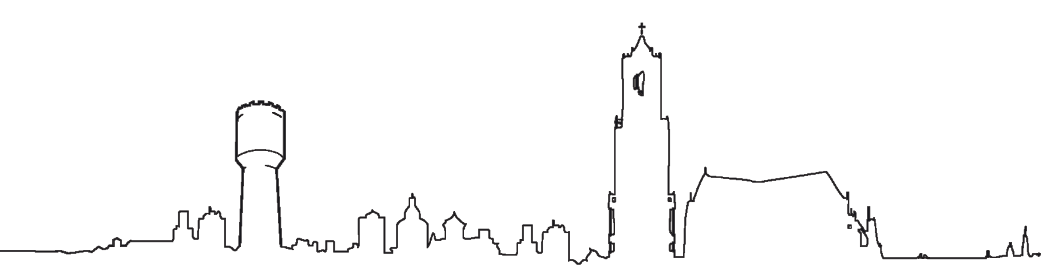
2, 3. The halls' facades do not present any valuable architectural elements; they have no particular morphology, materialization, decoration, etc.

4, 5. there are some installation elements still left outside, but they are dispersed and fragmented.

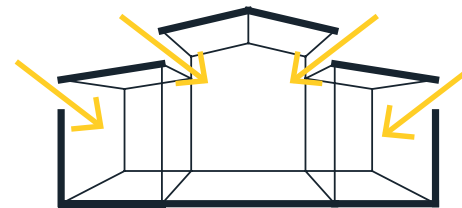
6. The director's house is restored and fully functional. Has also historical value due to its relation with the whole assembly.

7. The building extensions to the south do not have some distinctive architectural values, however, the volumes are a bit more diverse.

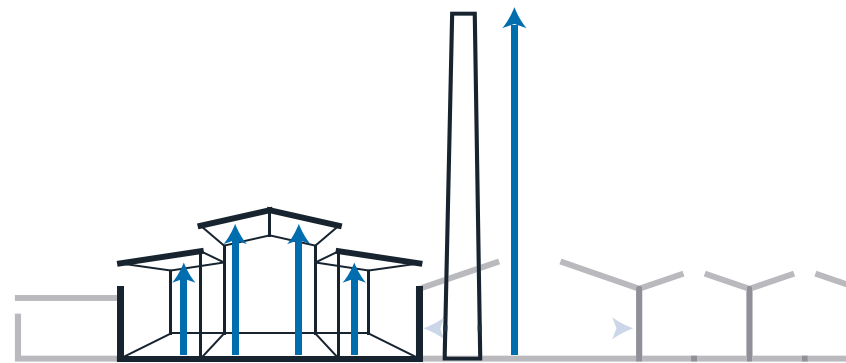
source: own photos taken on site (1,2,3,4,5,7), september 2011
maps.google.com, street caption (6), september 2011 (OS)



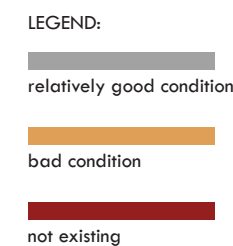
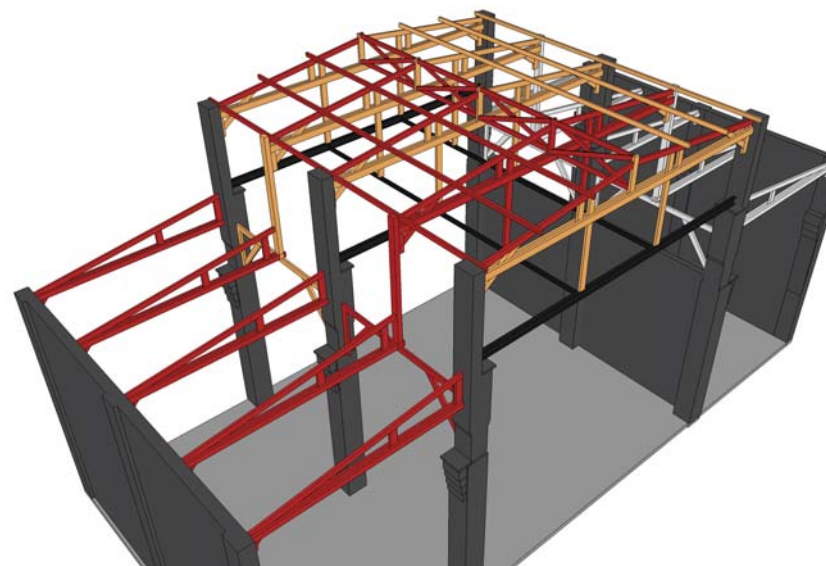
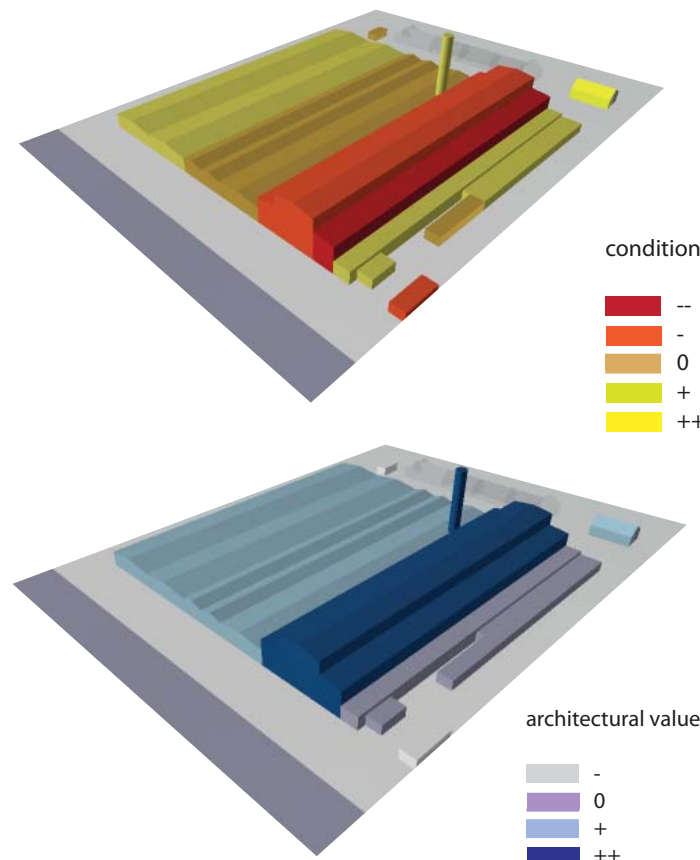
spatial hierarchy



multi directional illumination



spatial directions



Building value

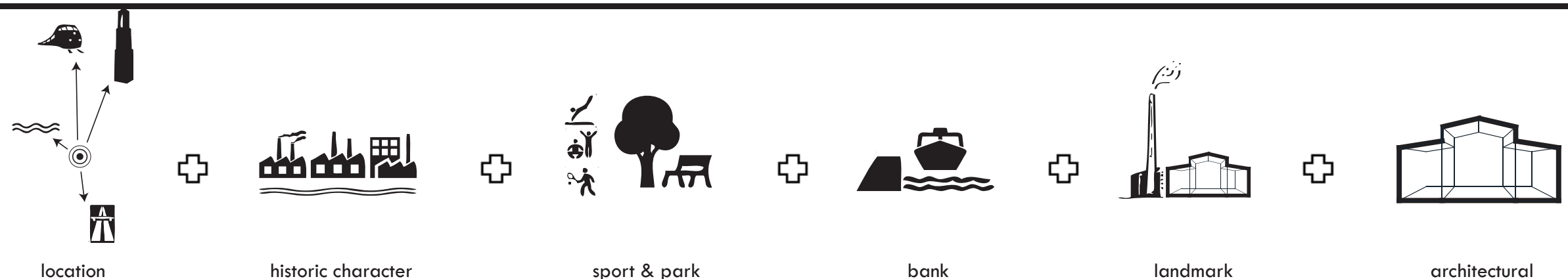
The typology of the buildings is also an aspect that determines their value. The use of basilica style in the design of the main building was determined by its functionality (see previous chapters about production processes) - the shape, dimensions, spatial division, the way natural light goes into the building create the architectural expression of the industrial activities which took place within. Adding the fact that this building style remains unique in the area, the building becomes an icon of the industrial past of Vaartse Rijn.

The halls adjacent to the main building do not have the morphological particularities that would strongly relate them to specific industrial periods and activities. Simple long halls, with open space interior, light metal trusses that support the double slopped roof structure and skylights "cut" in the roof surface are still being built today. Not even the materials and the construction technology is very different nowadays. These halls are not valuable buildings to be kept and they can be demolished without considerable loss to the authenticity and the history of the place.

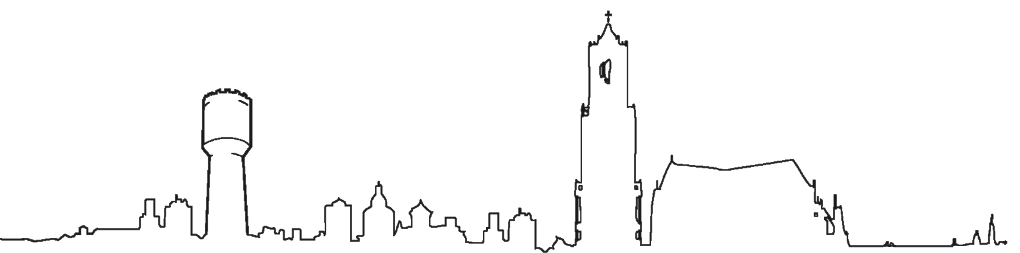
As presented before, the particularity of the structural system stands in the readability of simple principles and the complexity of elements and materials put to use. The structural design and the technology used to create it bring value to the building. However, these elements are also the ones that are in the poorest physical condition - the roof wooden structure is entirely missing on the south apse and in an advanced state of decay on the central nave and north apse.

The relation between architectural value and physical state can be analysed on the scale of the entire site. As the diagrams show, the most valuable buildings are also the ones in the poorest physical condition. Restoration becomes thus more challenging as it demands high efforts in terms of reconstruction as well as in economic terms (expenses and feasibility).

OVERVIEW



ARCHITECTURAL ANALYSIS | STOOP - NEERLANDIA - PROZEE | future projects

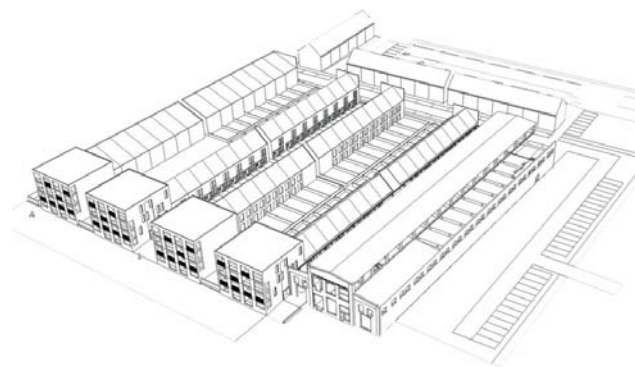


Zeep Architecten & Lithos , 2010
proposed and approved by municipal

Where previously the Neerlandia was producing nails and wire will be soon eighty houses and fifty apartments. The most beautiful place in the district, along the canal in the middle of the thirties houses of the neighborhood Hoograven.



Townhouses, court-houses, maisonettes and spacious modern lofts are mixed here, just as the neighborhood is a combination of the nearby town and the spacious layout of Hoograven. The old factory facade is interwoven with modern architecture, industrial solid and beautiful details.



Thus Neerlandia own neighborhood within the district. With a waterfront terrace and narrow streets between the brand new hofwoningen. The town houses overlook the park, the apartments have wonderful sunny balconies. Each type has its own charm, but they all have one thing in common: the special experience of living in Neerlandia.

source: zeep-architecten.nl
daad.nl
hylkebroekema.nl
bureau030.nl

Daad Architecten & Lithos, 2008
suggestion

The most part of the factory will be demolished. The facades and the office building are the only parts that will be retained. In the front of the building is space for catering facility and premises. The program for the rest of the building consist consist of dwellings and apartment.

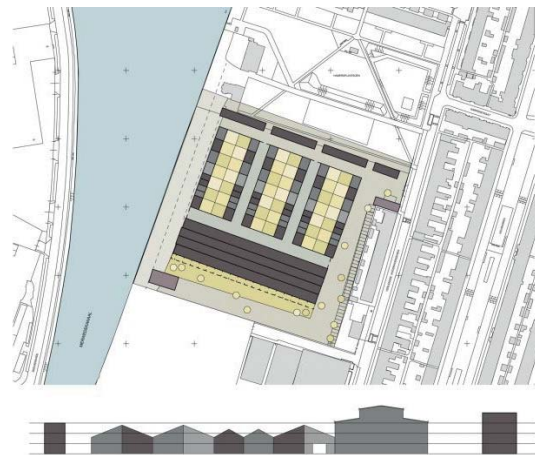
In a first study of DAAD is being investigated how the plots can be used to get the best respond to the characteristics of the existing factories. In urban conditions was subsequently established to the buildings strips perpendicular to the water sites.

The combination of the strip plots and apartment building on the water a dense environment for the existing houses. Therefore, the design of these homes include more space for the entrance of the houses.

The use of steel frames is a link to the old industrial character of the place.

The apartments are connected by walkways. This allows them to be developed separately from the terraced houses.

For the factory are several layout variants proposed where the existing structures and the contours of the building as possible preserved.



Broekema projecten, 2008
studyproject

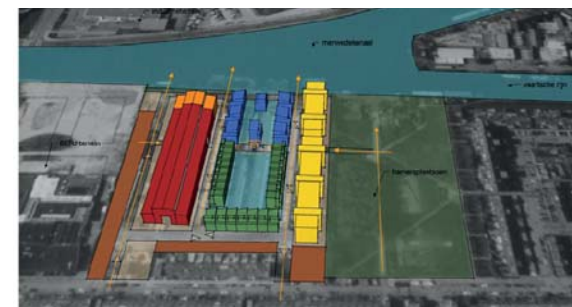
To give the neighbourhood a new impuls there is chosen for a expansion as a marina. The marina will become a new entrance of the area Hoograven. A new park is not the solution for this residential area because the accesibility is not that well

With this new port you can develop a new kind of function because you attract with this marina a another kind op people, that have other requirements.



Buro 030, 2005
studyproject

This project is about the possibility of redeveloping the site prozee which is situated within the district Hoograven. From different studies we have to put together a program of requirements that would have led to the redevelopment of the old factory and also for different target properties can be developed. These different properties are indicated by colors.



Opinion:

Zeep Architecten&Lithos

Positive elements:

- the original plot and building layout was kept - narrow stripes perpendicular to Vaartse Rijn - gives authenticity; the ensemble is opened to the water front - s the original complex was; the general layout is kept compact - economic efficient and resembles the original morphology; the height line on the water front is homogenic - taken from the height of the main building; the buildings have a lower rise towards the inland thus they adapt to the height of the existing houses.

Negative elements:

- the north apsis is demolished although it is the most intact part of the building. Only the west and east facades are kept but the lack of substance diminishes the original integrity of the building; the chimney is demolished/relocated - not authentic.

Daad Architecten & Lithos

Positive elements:

- less compact development - despite the lack of authenticity (original disposition of the plots is parallel to the building) this formula emphasizes the main building better by creating more space around it; all the facades of the building are clear and valued - not built attached to them

Negative elements:

- the new plots are built in perpendicular stripes to the Canal, which is opposite to the original layout of the ensemble; the main building is not very clearly bound within the whole design

The general attitude is to create an enclosed area with its own personality - the connection to the park is closed by a row of buildings disposed parallel to it and a row of trees closes the view from the road. This can be interpreted as a positive element if we consider the fact that this ensemble was always separate by the rest of the urban fabric. On the other hand, it is not participating to the general schematic and has no good connectivity to the surroundings.

Broekema

Positive elements:

- daring project - creates an additional landmark that determines reciprocally highlighting between old and new; gives importance to the water element by prolonging the Canal with a dock; general open space which highlights the buildings and make the whole area more accessible physically and visually.

Negative elements:

- slices the main building thus diminishing the most prominent feature - longitudinal disposition.

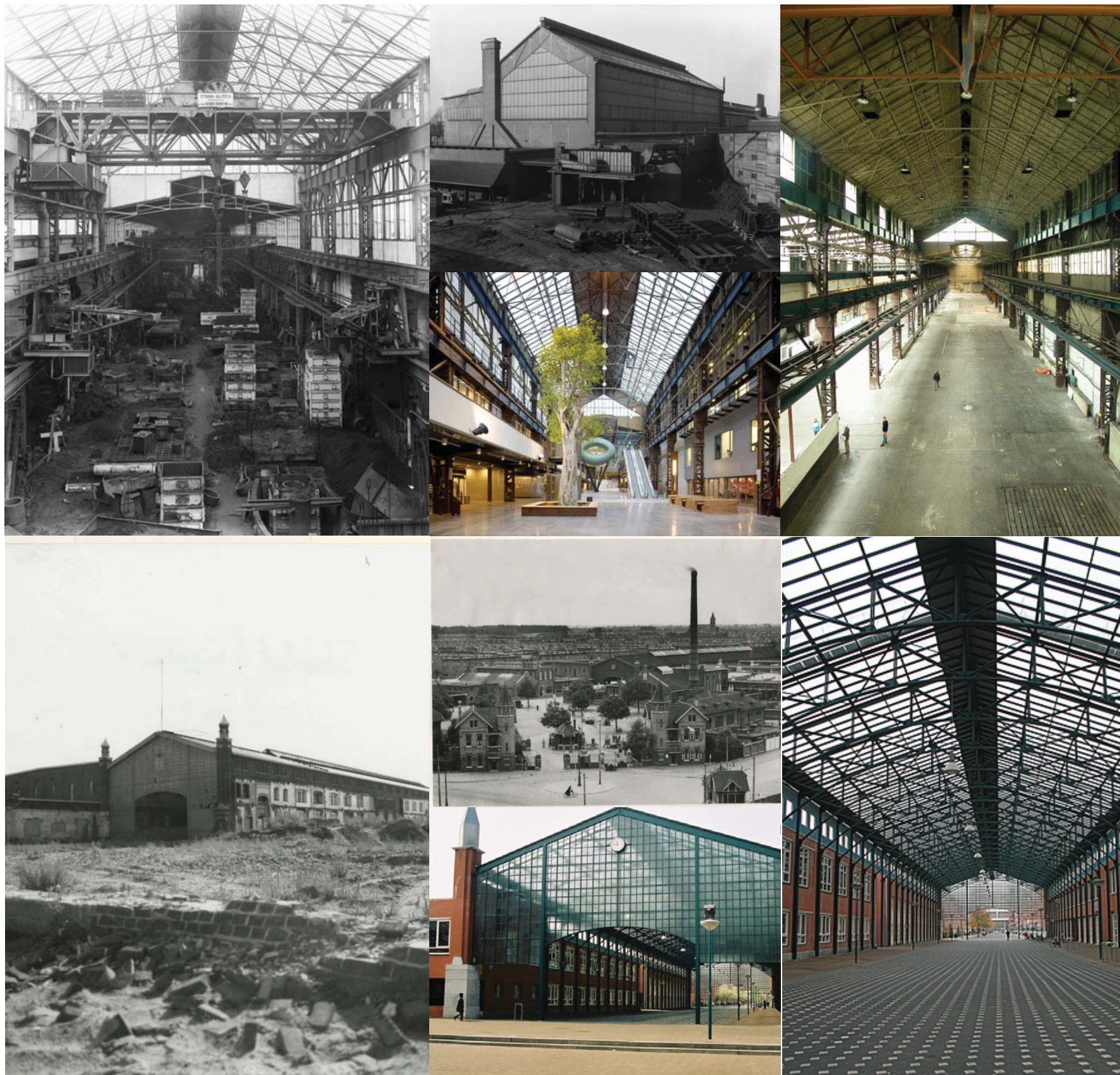
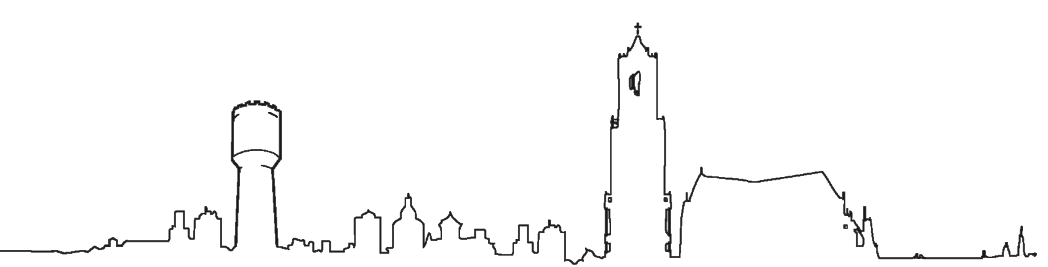
Buro 030

Positive elements:

- there are no new elements attached to main building, therefore it is well highlighted; the ensemble morphology respects the original direction perpendicular to Vaartse Rijn.

Negative elements:

- little connectivity to the surroundings; the ensemble is divided in three little connected parts: the main hall, the row of individual houses and the collective housing row.



ROC Twente, Hengelo (Top)

Around the huge, former iron foundry on the Stork-land in Hengelo, the new ROC of Twente was built. The foundry consisted two adjacent halls that were built in 1902 and 1928. These halls are perfectly integrated into the new ROC school. The industrial heritage has such a beautiful, new destination and nevertheless the memory of the machine factory Stork is still remained.

Of the old factory buildings remained the central hall. On either side was new construction of three and five stories high. The school became convinced that the old foundry should not be packed with teaching functions. They want to keep the allure of the 150 meter long hall. Chosen for the concept of a Community College, the American model, the new building was because more than one school only. The building was open to the neighborhood, district, actually for the whole city.

The historic building houses several modern features. Besides education, the ROC space for public functions, including hospitality, childcare and shopping. Are also regular exhibitions, concerts and events held and the former Stork give daily some guided tours. We have to maintain the history, including all stories and emotion.

source: text <http://www.bureaufriz.nl>
photo <http://www.guldenfeniks.nl>

Housing slachthuisterrein, The Hague (Down)

This site of a former abattoir now contains housing and commercial premises to an urban plan by Aldo Rossi. Along the busy main road rises a 500 metre long megastructure, a tall monumental street elevation acting as a screen to the low-rise development in the district beyond.

The main feature of this district built under the supervision of Studio di Architettura is the Galleria, a street sheltered by an original 19th-century steel roof and flanked by, among other things, a district council office and a school.

source: text *Archis* 1992-11; *Blauwe Kamer* 2000-2; *Bauwelt* 1992 p. 2418
photo <http://www.haagsebeeldbank.nl>

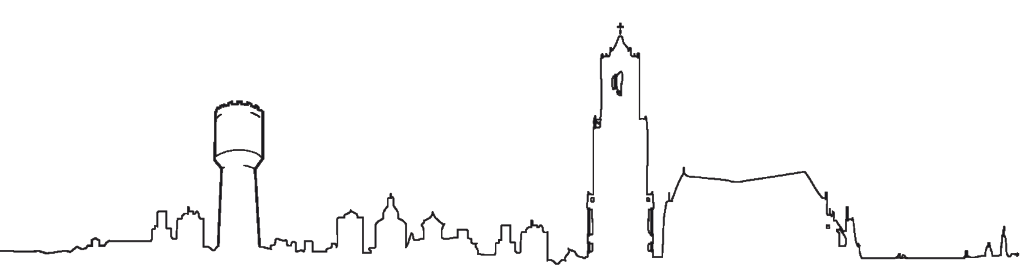
Opinions

Both projects highlight two major elements that create the space quality:

- the interior spatiality - large open space that recall the original atmosphere in the building; thus it gives authenticity to the spatial experience
- the structural elements - because the space is not partitioned, the structure is visible and gives rhythm to the inside space

ROC Twente project keeps more of the original atmosphere by keeping the hall space as an interior space and by keeping some installation elements

The project in The Hague gives an interesting urban experience by making the inside of the hall a public street. However it lacks authenticity of the original space which had the facades closed, thus giving a different light and atmosphere inside.



internet documents

Stedenbouwkundig programma van eisen - Prozee
terrein, gemeente Utrecht stadsontwikkeling, september 2010

Routekaart, Gek op het Merwedekanaal,
Passie voorUtrecht

De oude kaart van Nederland – leegstand en herbestemming in Utrecht,
Rijksadviseur voor cultureel erfgoed, februari 2008, Utrecht

Fabrieken. Industrieel erfgoed in de gemeente Utrecht,
M. van de Heuvel

Vaart in de Vaartse Rijn, cultuurhistorische rapport,
W. Houtstra, juli 2006

Beeldkwaliteitplan Prozee, SAB Arnhem B.V. in
opdracht van Lithos en gemeente Utrecht, april 2010

Wandelroute Rotsoord, 500 jaar aan uw voeten,
stichting HKTH

websites - period october 2011

<http://www.utrecht.nl>
<http://www.hetutrechtsarchief.nl>
<http://www.hkth.nl>
<http://www.lithosbouw.nl>
<http://www.merwedezicht.nl>
<http://www.utrechtneerlandia.nl>
<http://www.oudekaartnederland.nl>
<http://www.ethesis.net>

archive

newspaper articles about Architect W. Duyff
archive Utrecht, Bettina van Santen

pictures Neerlandia, Vicon, van Heuzen, chemical factories
archive HKTH, Peter Sprangers

drawings of the Neerlandia, main building & expansions
archive Utrecht, own

drwaing of the Klop, facades & grondplan
archive Utrecht, own

production proces Neerlandia
archive HKTH, Peter Sprangers

books

Oude fabrieksgebouwen in Nederland, P. Nijhof, 1991

De toekomst van het industrieel verleden, H. de Boer & R. Grondel, 1995

Oude fabrieken - nieuwe functies, Nijpels, 1995

De Utrechtse wijken, M.Heurneman, B. van Santen, K van Vliet, 2006

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