

Analysis Green Head of the Cape South



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Photograph by Chenna Tabelaing

Introduction

General introduction

This report holds the analysis of part of the Hembrug terrain in Zaandam. The research (conducted by Bram Hulshof, Chenna Tabeling and Junyi Zuo) will deal with the following disciplines: Architecture, Building Technology and Cultural Value.

In order to keep the report compact, only the conclusions of the research are shown. An appendix holding the entire research is attached to this report and can be looked at alongside reading the report.

This report is structured from the large scale of the Hembrug terrain and the ensemble to the smaller scale of the buildings.

After the introductions a first chapter will discuss the Hembrug site and zoom in to the ensemble (which will be introduced on page X). A chronological development of the ensemble in relation to the direct vicinity is provided next to some architectural characteristics. This first chapter will be concluded by individual 'essences' of the ensemble. Secondly the buildings on our ensemble will be discussed. While the four buildings on our ensemble differ in terms of function, construction date, typology and materialisation, it

was decided to discuss each building in an individual chapter. Each of the chapters will provide the reader with an overview of the specific building followed by conclusions/summaries for each of the disciplines (architecture, building technology and cultural value). Each chapter will be concluded with an conclusion regarding the research questions.

After each of the buildings has been discussed, in a last chapter effort is made to zoom out again and give an overall answer to the research questions.

Research question:

In order to structure the research the following group research question was posed:

What is the relation between the ensemble (Green Head of the Cape South) and the whole Hembrug site?

By answering this question a deeper understanding of the meaning and role of the ensemble and the individual buildings in relation to the whole Hembrug terrain will be created.

Together with this group question individual questions (subquestions to the main question) are dealt with which will be introduced in the following pages.

Sources:

The author of all images and illustrations will be mentioned next to the image/illustration. Photographs, unless specifically stated otherwise, are made by either Bram Hulshof, Chenna Tabeling or Junyi Zuo.

In the attachment a reference list can be found with the literature used for the research.



Introduction

Remarks on valuation method

To keep the report compact a conclusion is distilled from the cultural value analysis in the form of an essence per building. Among others, drawings with interventions to the buildings, the value matrixes and drawings with levels of significance are attached in the appendix. (The chrono-mapping of the ensemble though is part of the main report as it forms a good introduction of the ensemble.)

The valuation method of Marieke Kuipers (Kuipers & de Jonge, 2017) has been used in this report. In this section we briefly state how this method is used and incorporated in our report.

First step: chrono-mapping

In the first chapter the historical development of the ensemble will be explained with the help of phasing maps resulting in a timeline as a summary. Relevant developments of the individual buildings will be mentioned within this first chapter. The chapters on each of the buildings will delve deeper into the history and developments of the individual buildings also showing the interventions. Buildings 430 (the Factory) and 421 (the Wash House) are discussed more thoroughly while less information about building 512

(the Romney hut) and building 382 (the Shelter) was available and access to these buildings was not granted to us.

Second step: value mapping

For each building a valuation matrix has been made in order to identify and classify specific features of the individual buildings in relation to architecture, construction and socio-cultural history. The value matrix from Kuipers is used with the addition of one value: architectural value. Most of the buildings on our ensemble did not have lots of values which were mentioned in the matrix by Kuipers (commemorative value/rarity value/relative art value). Therefore architectural (spatial) values became more apparent and therefore these values were added into the matrix by the creation of this extra category. Other than that the matrix by Kuipers turned out to be very helpful in structuring and also identifying values.

Third step: Mapping Levels of Significance

The values have been identified with the group but the qualitative interpretation of these values was made individually while each of the group members put emphasis on slightly different aspects. At the end of each building chapter

each person presents the value matrix with the colour code (red for high value, orange for positive value and green for low value). Drawings of the facades/plans/etc. are also coloured accordingly in order to show the relationship between the differences in values within the specific drawing.

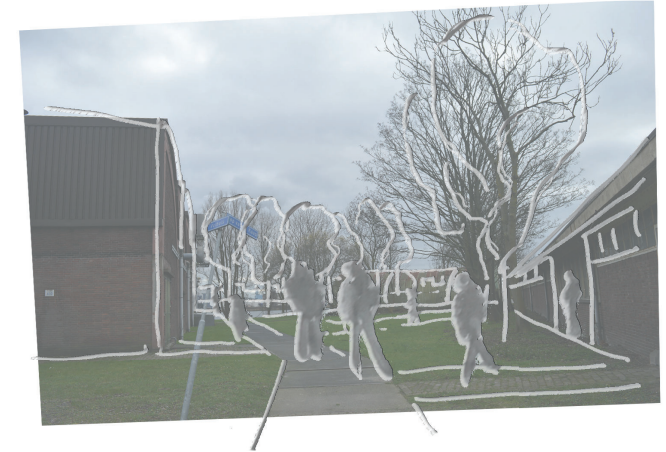
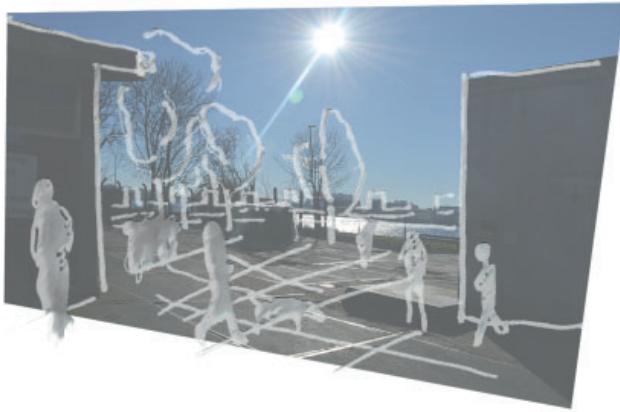
Fourth step: defining dilemma's

Each building chapter is concluded with an individual 'essence of the building'. A conclusion regarding the cultural values is presented together with the identification of possible dilemma's and potentials in the future.



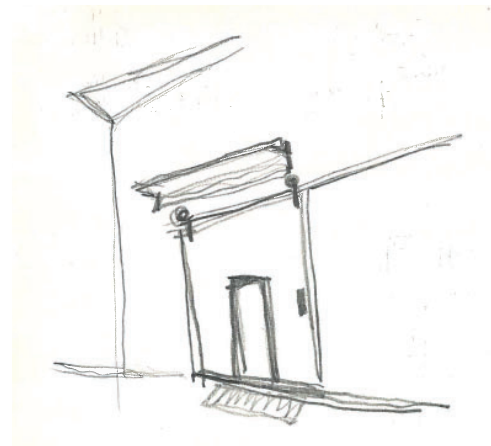
Introduction

Chenna Tabeling



The first time visiting Hembrug I got obsessed with all these industrial sliding doors. I saw them as 'portals' to unlock the buildings in order to give them a new purpose. After making many photos of all the different doors on the site. I was cycling in the alley between the Wash House (421) and the ladder. For some reason this space felt very intimate to me and I also really like the doors of this building (ofcourse).

When I walked around the Wash House I entered another public space. This area as wel felt very closed. When walking a little bit further the view to the water opened itself and I got mesmerized by the steam vaporizing from the big pipe on the other side of the canal. Then I turned to the Factory (430) and I noticed the shading of the trees drawing their outlines on the building.



Door obsession



First thoughts on the ensemble

Research question:

Functions to me give purpose to buildings and how they are constructed and designed from the inside and outside.

This is why I wanted to research what the former functions of the buildings were, what changed over time in how the building was used and how the purpose changed. And also what the broader connection within the Hembrug area of these buildings was? On which the following research question evolved:

- What was and/or were the former function(s) of the buildings(aspects)? and; Why did the buildings layout changed over time?
- Were these changes related to a broader context?

Introduction

Bram Hulshof

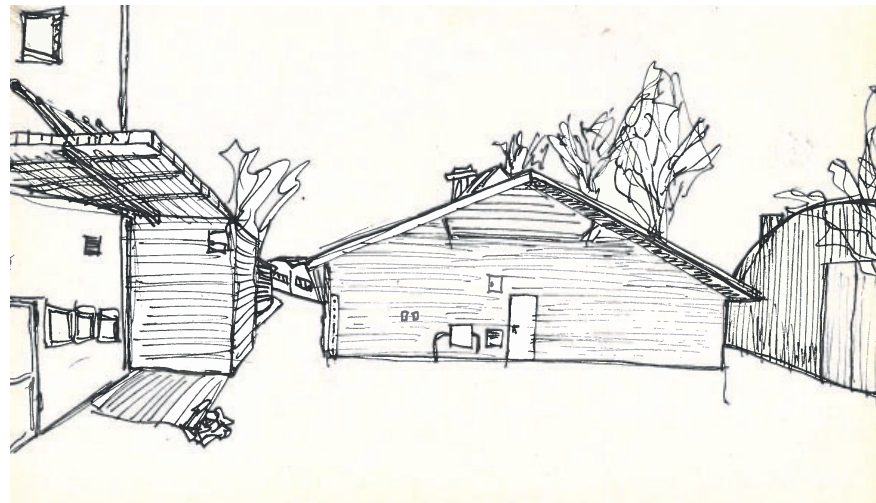
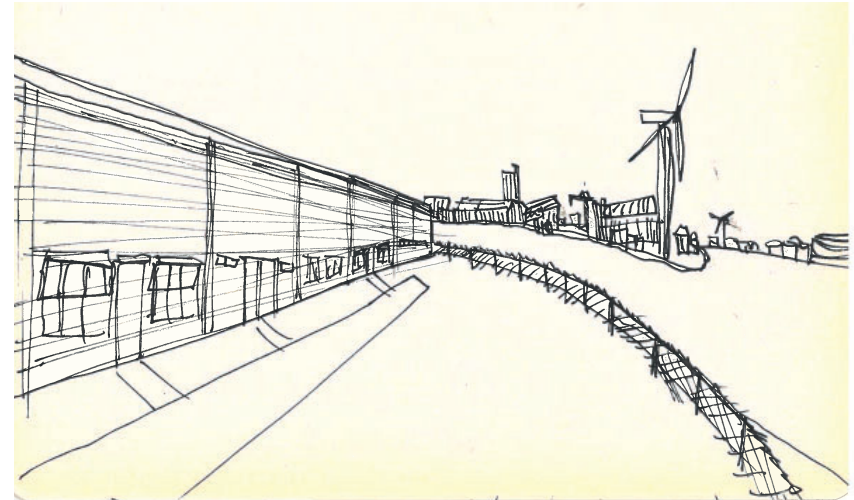
For me the Head of the Cape defines itself by being an isolated and relaxed corner of the Hembrug terrain.

Although located on tip of the terrain, in direct connection to the surroundings, the character of the site remains quite introvert. The buidings help to define human scale public spaces alternated by bigger spaces and far viewlines. The site not only is the shifting point from one grid of the terrain to the other, it is also the communicating tip of the site towards the outside world (though mostly visual).

There are several reasons why I choose this ensemble for the graduation studio but the most important reason is the feeling I got at the site.

When visiting the Hembrug terrain I kept getting back to the ensemble to sit and enjoy the greenery and the views.

The Hembrug site can be looked at as an ending system towards the armpit of the North Sea Canal and side Canal G. This ensemble therefore could be looked at as the 'last part' of the terrain. However, I believe that it could also be the connector of the Hembrug site to the outside world.



Source: images by Bram Hulshof

Personal research question

Within the analysis I focussed on the following (twofold) research question:

What interventions were made to the buildings and why?

By answering this question I hope to get a better understanding of the buildings in their current appearance. In this way opportunities might be found for new interventions or (disappeared) values can be brought back to strengthen (bring back) the buildings initial meanings. With answering the research question a better understanding of the essences of the buildings might be established as well.

Introduction

Junyi Zuo

The Head of Cape is located at the end of the peninsula, which is surrounded by water on both sides. Since the grid of both sides meet in the Green Head, the buildings in the ensemble were set in different direction, which define different public spaces.

When following the alley to enter the site, the sight-line changes from a narrow to open view. The large open space between the Factory and the Wash house opens up towards the water. The four buildings in the ensemble show a big diversity on shape, scale and material.

An interesting thing to discover is how the ensemble is organized as such an isolated corner and what its relation is to the rest of the Hembrug terrain.

Research Question

What kind of design approaches are used in head of the cape to define the space and what is its response to the specific location at the corner of the Hembrug area and the meeting of the different grids?





Hembrug & Ensemble

Hembrug

Introduction

Around 1865 the construction of the North Sea Canal was intended to create a main sailing route from the North Sea to the IJ in Amsterdam.

Several polders were created and sold in order to finance the construction of the North Sea Canal. This is how a many industries settled along the North Sea Canal.

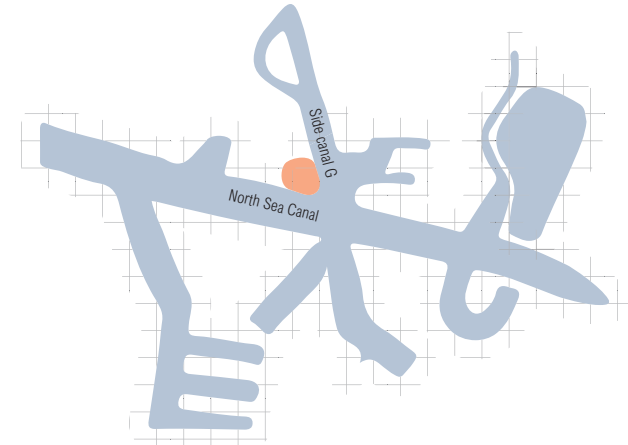
The Hembrug as a site for the Artillery Establishments was servant to the Defense of Amsterdam, since the site was situated in the middle of the defense line.



Defense line of Amsterdam

Legend

- Hembrug area
- Defense line (water)
- Industry along water



Developments around the North Sea Canal

Legend

- Hembrug area
- Water along hembrug
- Industry along water

Ensemble

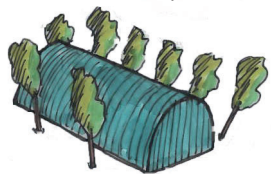
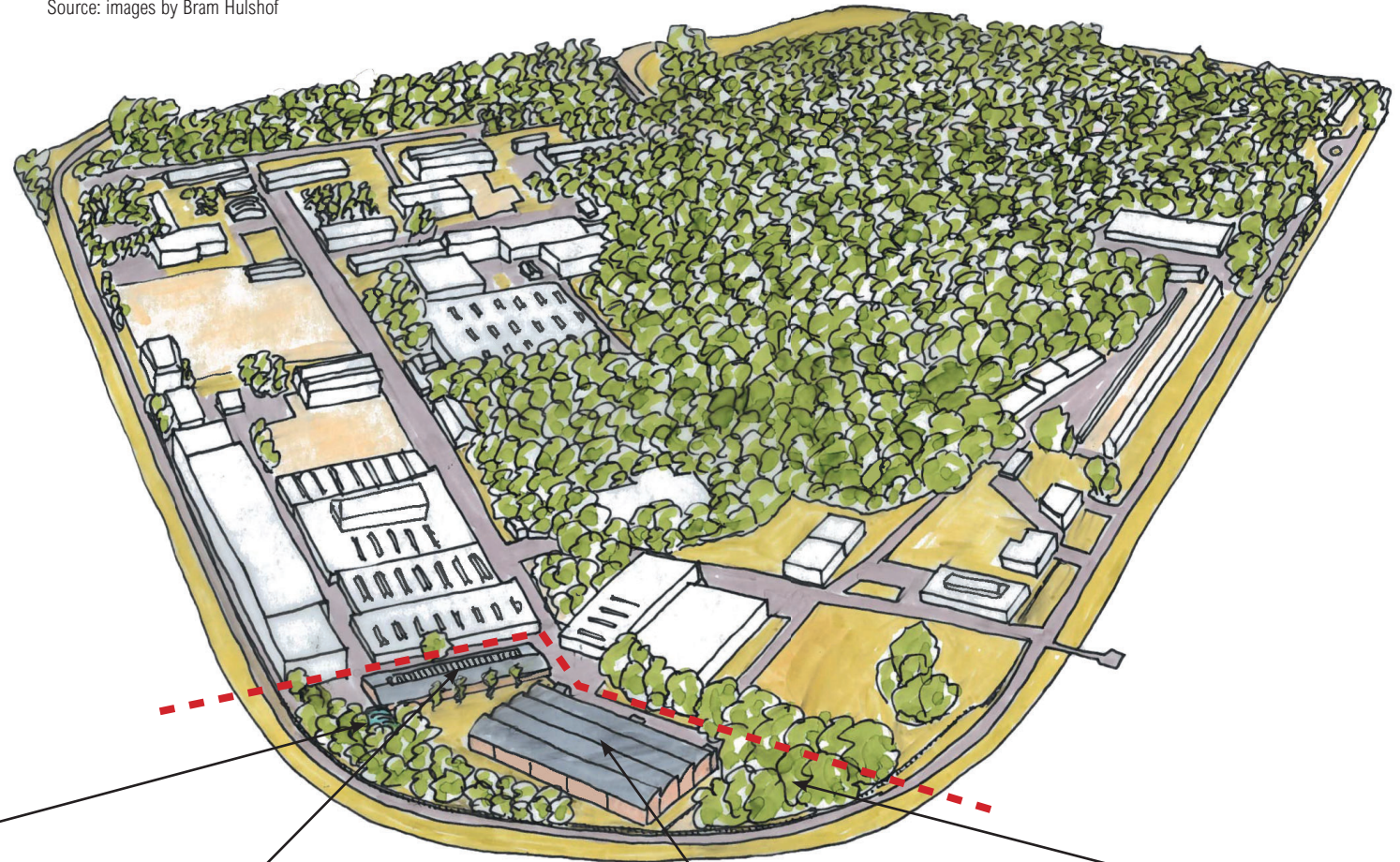
Introduction

In this report the word 'ensemble' will be used multiple times. When this word is mentioned it refers to a site located on the south east side of the Hembrug terrain. The name given to this ensemble is Green Cape of the Head South. The word 'cape' refers to the fact that this ensemble lies at the tip of the terrain completely surrounded by water. It's green character was also implemented in the name of this ensemble.

The red dotted line highlights the borders of the site (as defined by the tutors) although during the analysis this boarder was blurred in order to analyse the site in the bigger context.

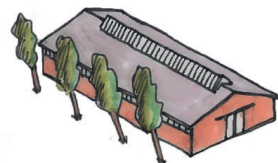
We identify four different buildings on our ensemble with different building numbers. To make it easier each building has been given an appropriate name.

Source: images by Bram Hulshof



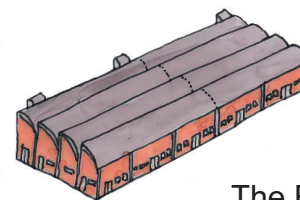
512

The Romney hut



421

The Wash House



430

The Factory



382

The Shelter

Hembrug

Set up 1924

In order to understand how the Green Head of the Cape South relates to the Hembrug area the setup of the site is explained briefly. The maps shows the setup of the Artillery Establishments (AE) after they completely moved from Delft to the Hembrug area.



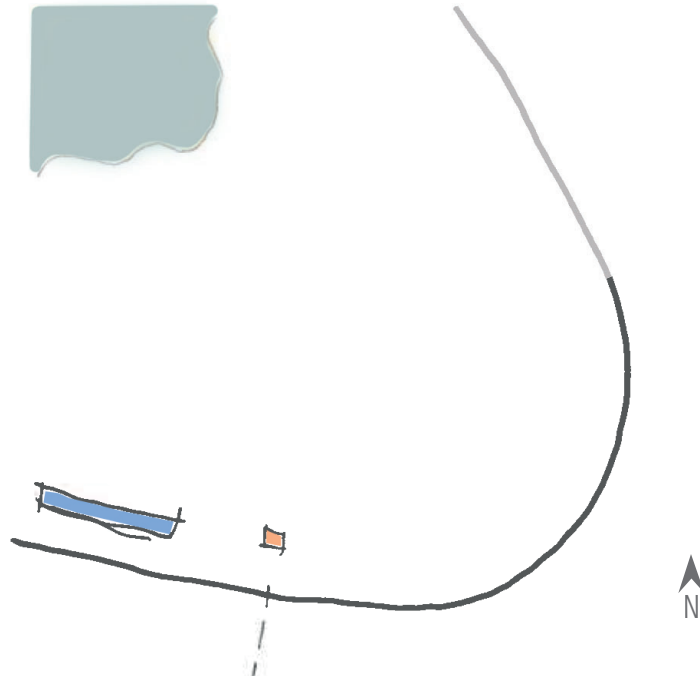
The site was split up into multiple factory areas. There was the weapon factory, the cartridge factory, the ammunition factory and pyrotechnics. Each building had its own purpose and worked out one step of the process. The buildings were organized from the waterfront, where the representative functions (offices) would be, to more inland where the production buildings and storages were placed. All the buildings were freestanding due to the fact that if an explosion or fire happened in a building it would not cause a chain reaction onto another building. The more threatening buildings (most placed in the forest) were surrounded by earthen embankments, greenery and ditches in order to prevent breakthroughs.

This image shows that the Green Head of the Cape South, wasn't a part of the production process of the AE. It was actually for a long time fenced off to the Hembrug area and served the General Services of Rijkswaterstaat for the Defense line of Amsterdam. This will be explained in the phasing.

Ensemble

Phasing 1895 / 1901

1895



The Defense line of Amsterdam had multiple locations with weapon and ammunition factories. The first factories were located in Delft around 1679. The factories were responsible for the development, production, maintenance, testing of weapons, equipment and ammunition for the Dutch army.

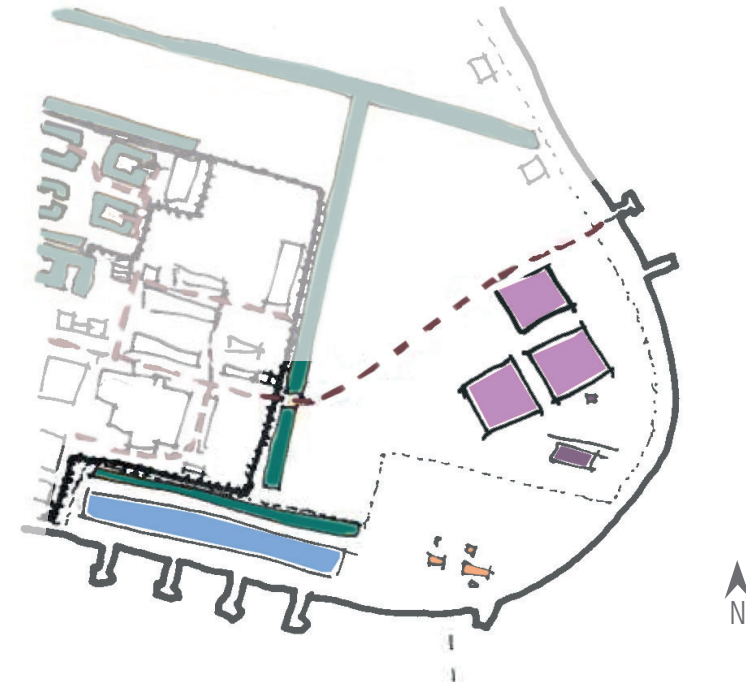
In 1895 the Hembrug site was mostly empty. In 1889 the location on Delft outgrew itself when the AE decided

Meurs, 2010

to purchase a new rifle for the Dutch army, the M95. The AE had to build a new factory, since a different kind of pattern was required for this new rifle. This accelerated the decision of the AE to move to the Hembrug site, which was located within the Defense line.

The coal shed was built for the marine as a support to the Power Plant Hembrug, which was located on the other side of the North Sea Canal. The Ferry Guard

1901



houses were there to make the crossing to the Power Plant.

Around 1890 a part of the Hembrug area next to 'de Hem' was used as a dredging depot for the Rijkswaterstaat during the construction of the North Sea Canal. This peat was stored in the sheds on the Hembrug area, which served the Defense line of Amsterdam.

The map of 1901 shows clearly that

Legend

■ Green / water structure	■ Ferry Guards
- - Small track	■ Coal shed
 Fences	■ General services
- - Military ground (north)	■ Peat sheds

the Green Head was fenced off, with fences and water/green structure, from the production process of the Artillery Establishments. A small track transported the goods from the production process of the AE towards the Side Canal G for further transportation by water. Also more Ferry Guard houses have established, in assumption with the coming of the Trotylfactory on the other side of the North Sea Canal.

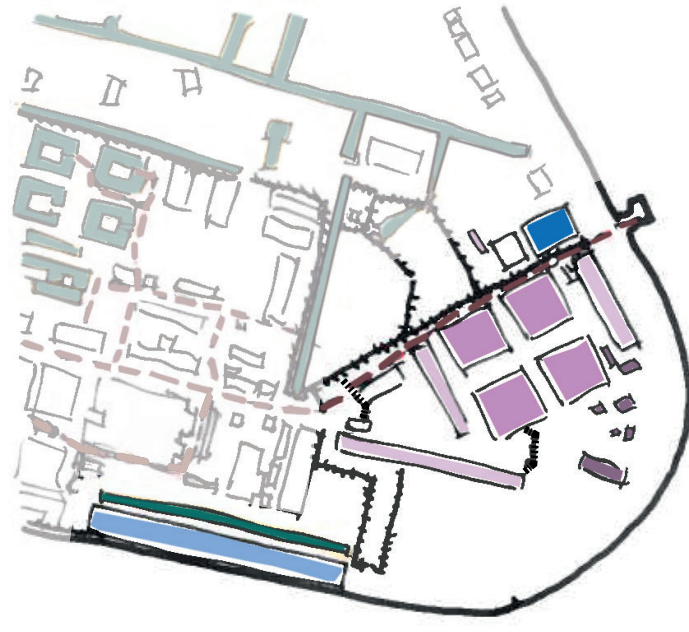
Ensemble

Phasing 1924 / 1941

Legend

- Green / water structure
- Monitoring buildings
- Small track
- Fences
- Storage building
- Production building
- Coal shed
- Main Command Post
- Shelters

1924



In 1924 the moving from Delft to Hembrug was completed. Due to the World War I, the amount of buildings established had grown a lot.

The Green Head was still serving the general services and the Defense line of Amsterdam. The guard houses have disappeared, in assumption that this had something to do with the closure of the trotylfactory.

1941



The coal shed and a storage building have next to their function as 'building' also the purpose of fencing off the factories of the AE.

In 1941 the Hembrug area is at its peak point. With the coming of the World War II, the AE grew even more and shelters had established around the Green Head, placed on the military ground; in assumption by following of the rounding of the waterfront they were able to place

more shelters on the head (see line on map 1901). The main command post of the air defense, building 382, had established in between these shelters.

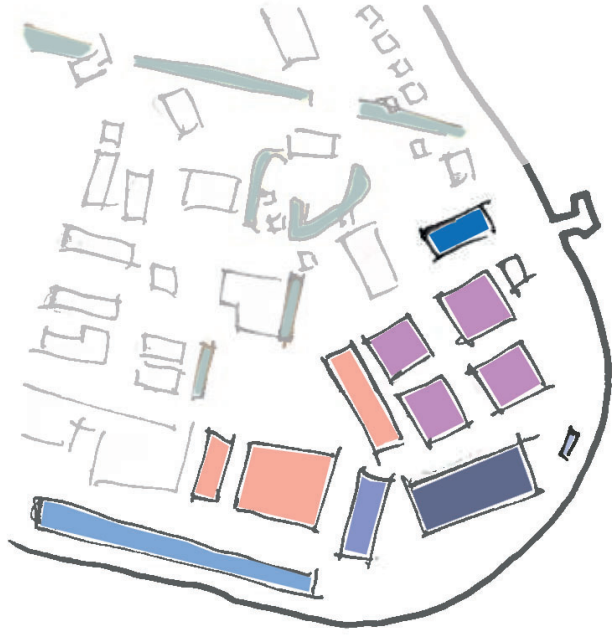
During the German Occupation the Netherlands focussed on the production of civil products instead of weapons, in order to prevent that the Germans would use their gear for the war. The demand for the agricultural sector was also high at that time and was produced

at the Hembrug area. No information is gathered among the fencing during this time.

Ensemble

Phasing 1966 / 1996

1966



Since the demand of the weapon industry decreased after the World War II, the AE continued with the production civil goods. In 1952, building 421 (the Wash House) is built as a storage of machinery.

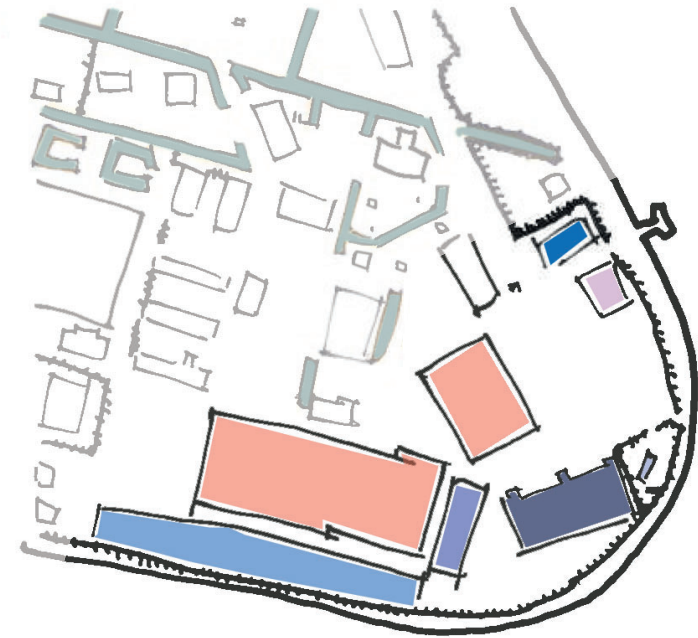
In 1949 the North-Atlantic agreement (NATO) was set up. In which is written that if one of the parties involved in this agreement is attacked, that this is an attack on all. In order to provide this help the US Facilities Assistance

Meurs, 2010
NAVO, 1949

Program was set up, in order to facilitate the U.S. Government with .50 ammunition. In order to do so, the AE built two new buildings: 429 and 430. In 1955 the coal shed (429) was rebuilt as a cartidgefactory and building 430 was built for the assembling of ammunition. These buildings were in possession of the Dutch Government, but the machinery was owned by the U.S. Government.

In 1966 all the buildings which are

1996



nowadays still available have been established on the Green Head. In assumption building 430 (with the danger of explosion) was not built in the forest, since there wasn't any space. It followed the rounding of the waterfront.

Unfortunately the AE wasn't able to keep the production profitable. This caused the terrain to split in 1973 into two independent companies: 'Eurometaal' and 'NV machinetoollndustry Hembrug'. A lot of buildings were demolished

Legend

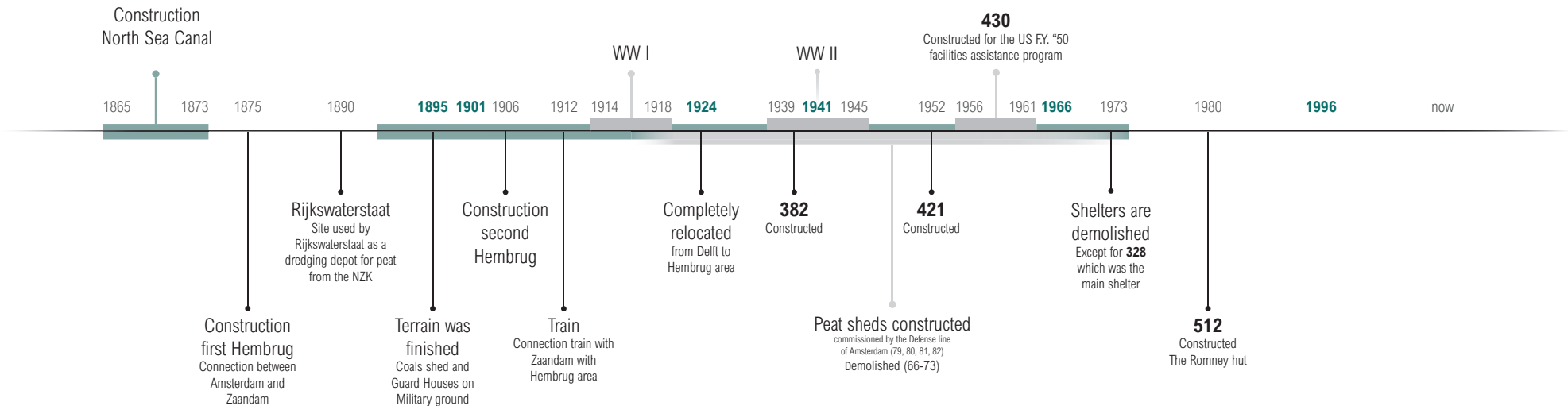
■ Green / water structure	■ Monitoring buildings
 Fences	■ US facilities
■ Storage building	■ Main Command Post
■ Production building	■ The Wash House
	■ The Factory

and tangled together since the area got reorganized. Which affected the structure of the terrain.

The setup of 1996 is the most similar to the setup of Hembrug area nowadays. The peat sheds have been demolished. And the fences have been moved to the waterfront. In assumption the Green Head got included with the AE site, when building 430 and 429 got a closer relation to the production process of the AE. In 2003 the terrain closed.

Ensemble

Timeline



The Artillery Establishments grew out their location in Delft when they decided to purchase a new rifle for the dutch army for which they needed a new factory.

The construction of the North Sea Canal brought opportunities to the areas along this canal. Polders were sold in order to finance the construction of the canal. The Artillery Establishments which had to be relocated found the Hembrug area, an area inside the Defense line Artillerie Inrichtingen Hembrug, 2015

of Amsterdam, which worked out very well since now the production of ammunition, weapons etc. was lain inside the Defense line. The AE was completely relocated in 1924.

The first Hembrug was built with the coming of the trainline. It laid the connection between Zaandam en Amsterdam. With the increase of the shipping traffic, the canal needed to be widened, with caused the first Hembrug to be replaced by a new one. The second

Hembrug. After the construction of the second Hembrug, the trainline was also connecting the Hembrug area.

The Green Head of the Cape South for a long time was not included in the production process of the Artillery Establishments, since the ground was in possession of the Marine. At the end of the '30's the Green Head became property of the AE.

During the WWII the AE needed to

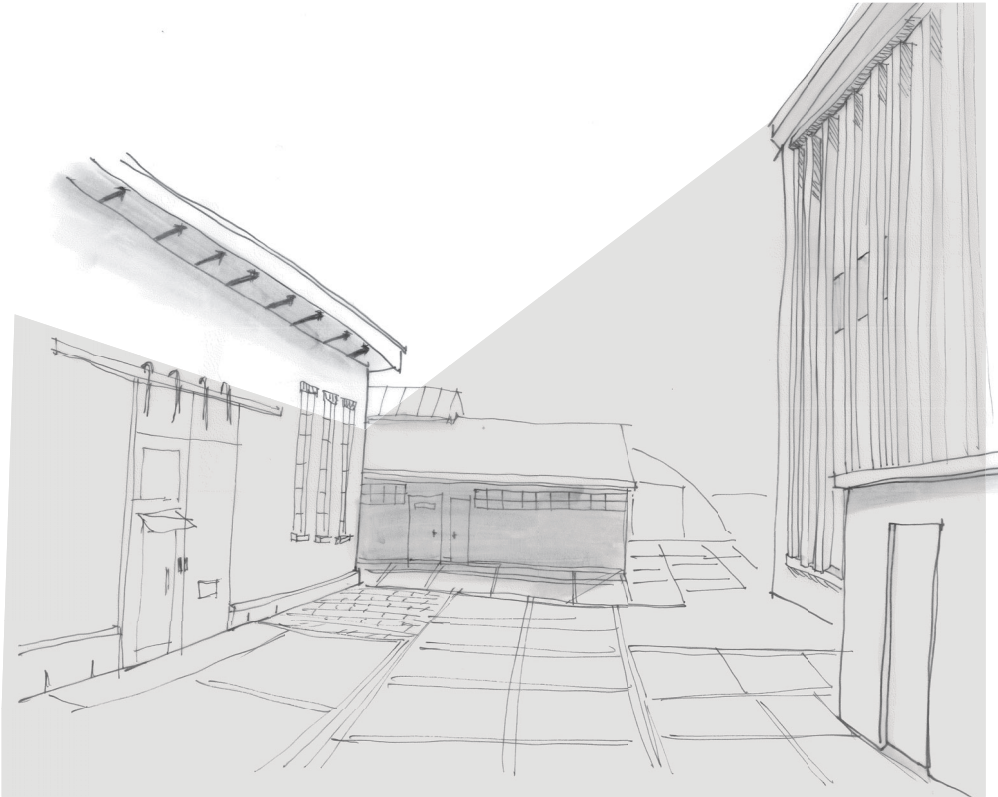
defend themselves. The AE built shelters on the on the Green Head, since this was only place on where there was space to built.

After the WWII the AE was producing more civil- and agricultural products. Building 421 was used for the storage of machinery.

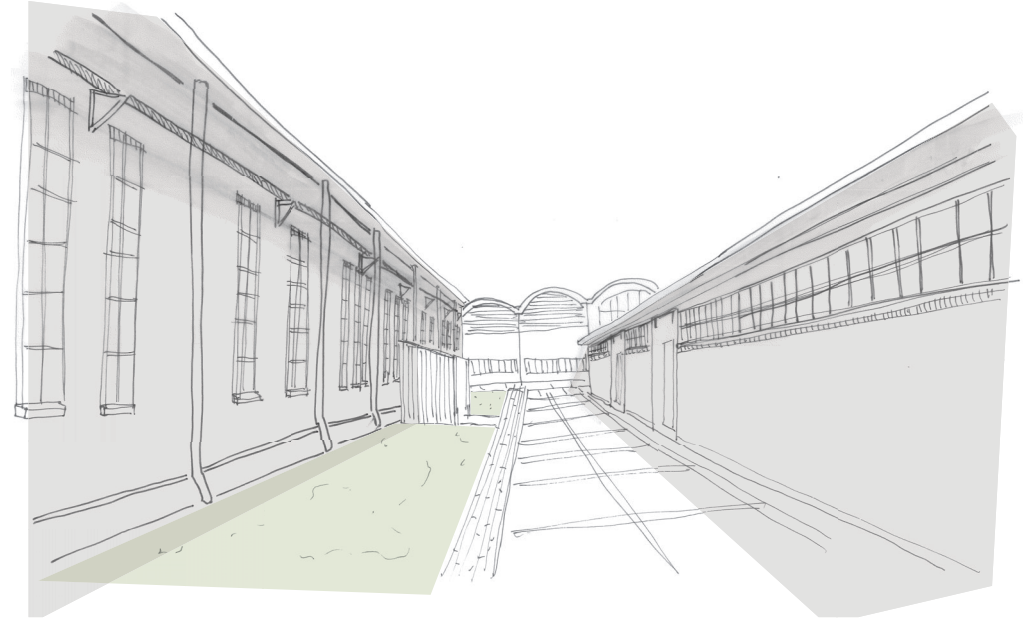
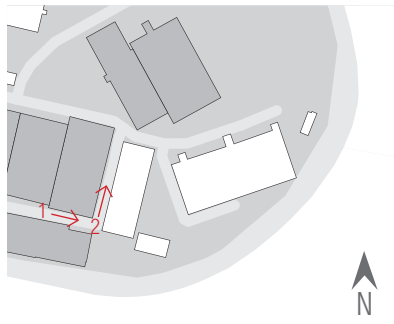
Building 430 was built in combination with building 429 for the US facilities program for NATO.

Ensemble

Approaching the Green Head Routing



1. Dark alley in between the Ladder and building 430



2. Alley in between the Ladder and the Wash House

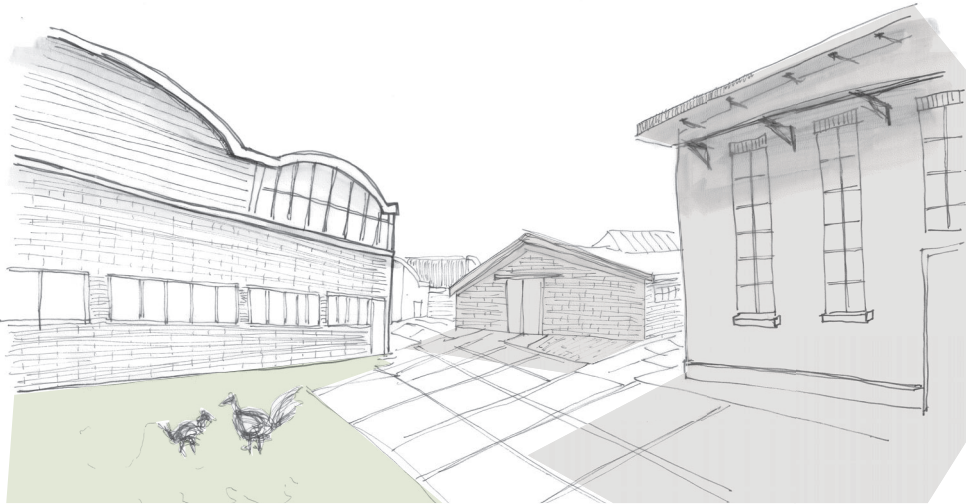
The shades of building 430 make this alley dark and cold. The alley feels forgotten and the facades feel like the rearsides of the buildings.

The alley in between the Ladder and the Wash House, feels a lot more intimate, since the buildings are not that high

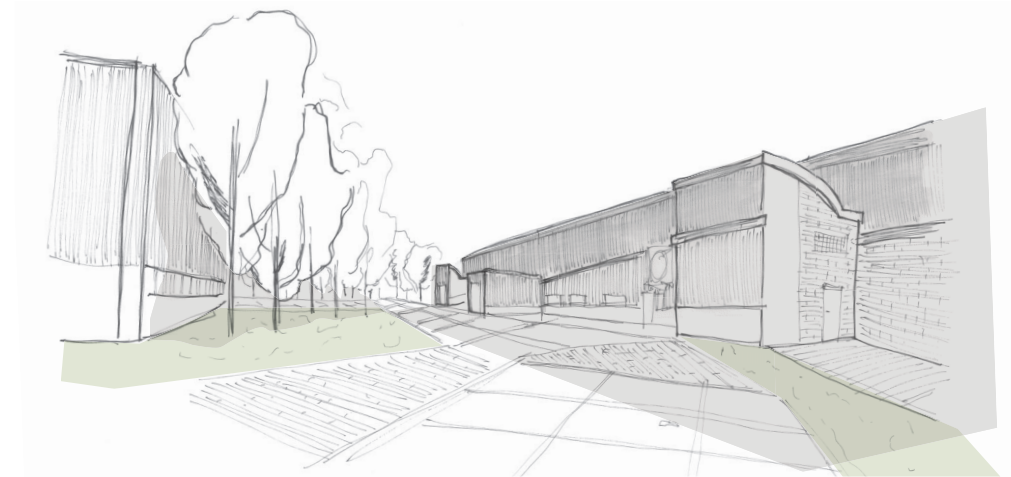
and there is more light. Also the green strip make this alley feel more warm, instead of the all cold pavement alley in between the Ladder and building 430.

Ensemble

Approaching the Green Head Routing



3. Approaching from Middenweg - zigzag

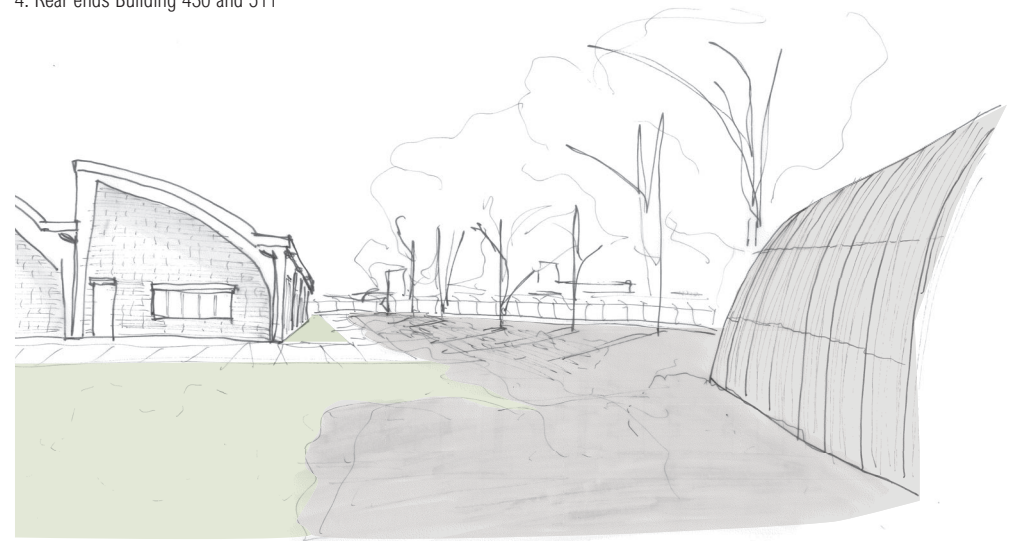
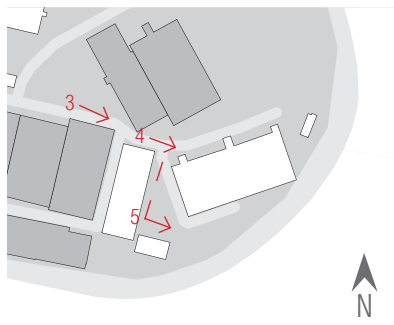


4. Rear ends Building 430 and 511

When approaching from the Middenweg (3) it feels like a 'zigzag' to the ensemble and like it's been fully built.

Approaching building 430 and 511 (4) there is a clear pathway towards the water, but this path rather feels like an abandoned path and it ends in a dense area with trees and a closed fence. The rear ends of the buildings do not really open towards the path.

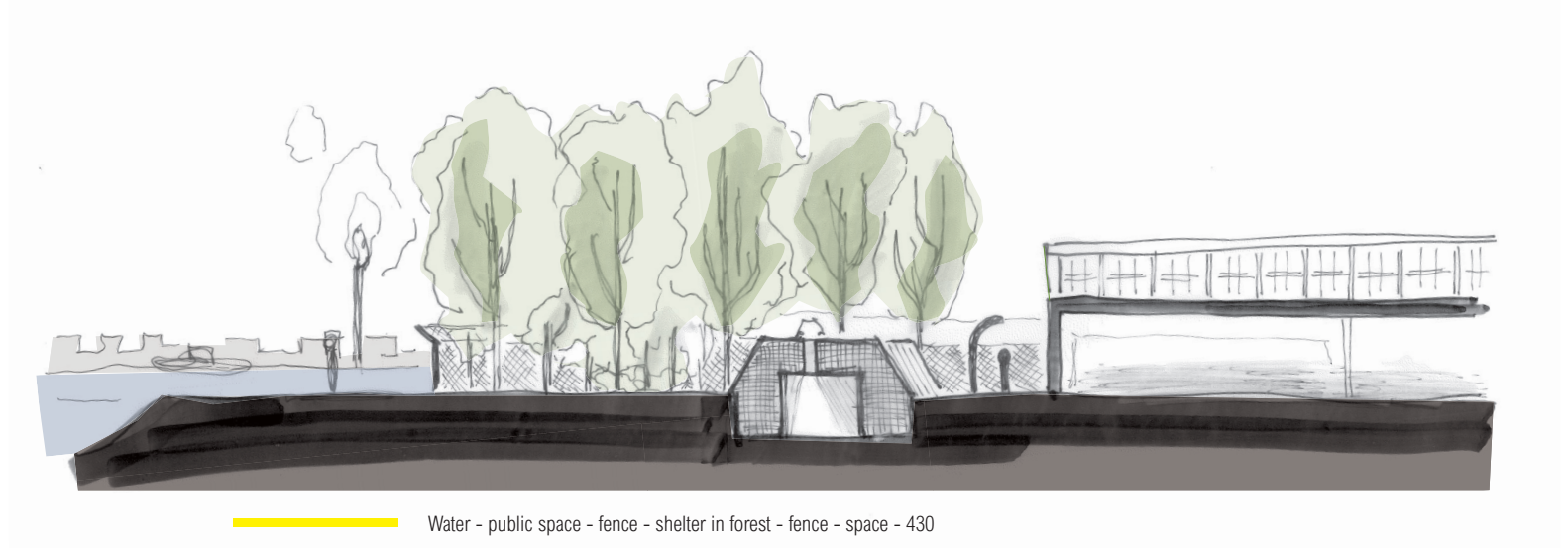
When walking towards the Romney hut (5) and turning left, the plot opens itself towards the water. The trees rather give a salvaged and green feeling to the site.



5. Site opening towards the water, enclosed by trees

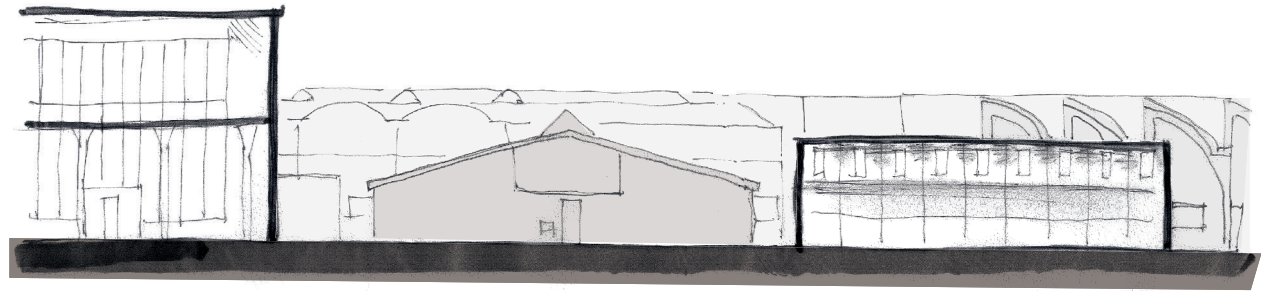
Ensemble

Borders - different sections throughout the ensemble

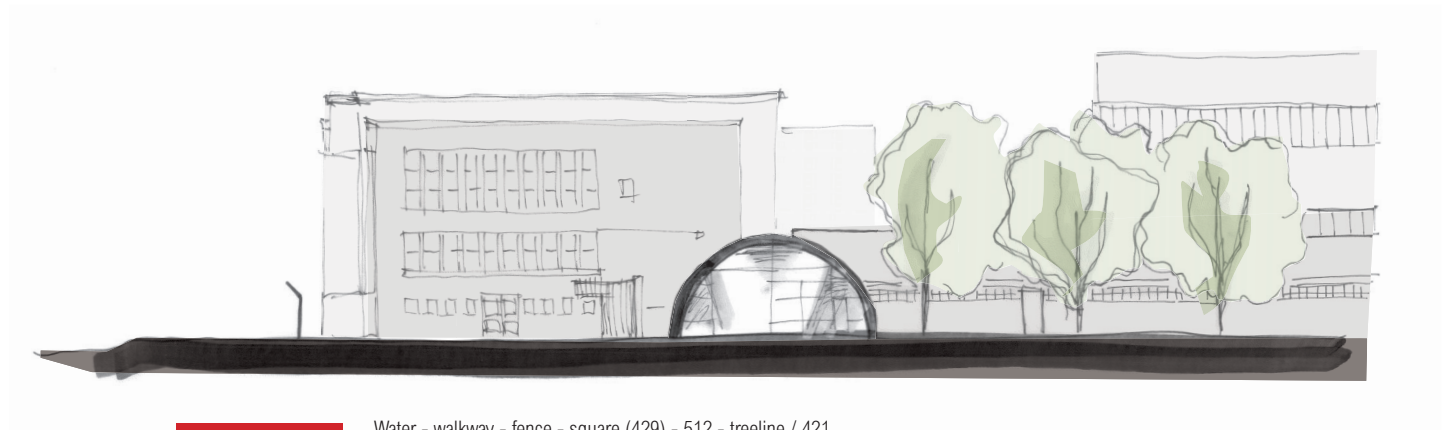


Ensemble

Borders - different sections throughout the ensemble



429 - alley - 421 - 512

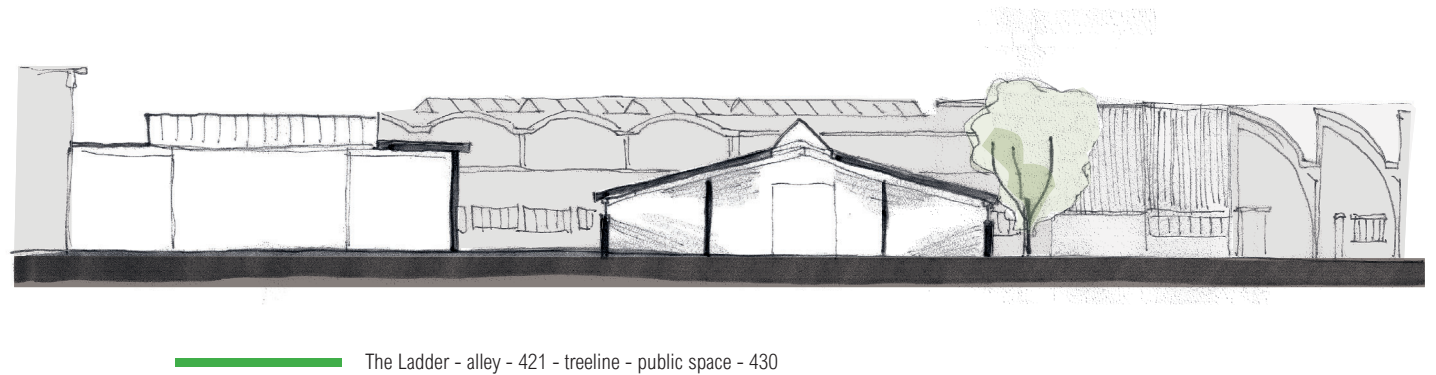
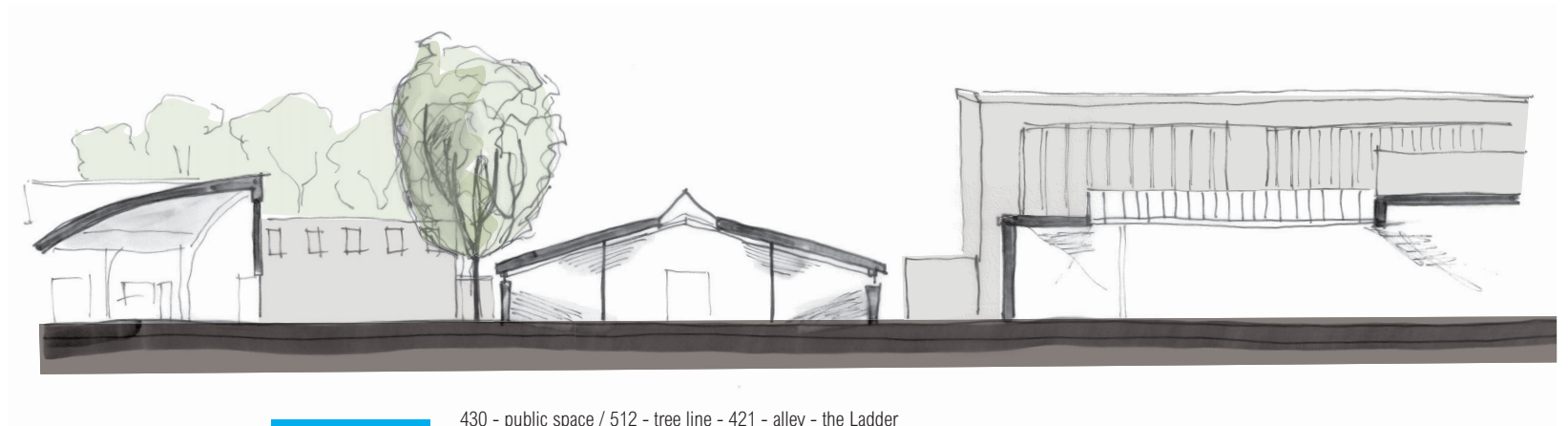


Water - walkway - fence - square (429) - 512 - treeline / 421



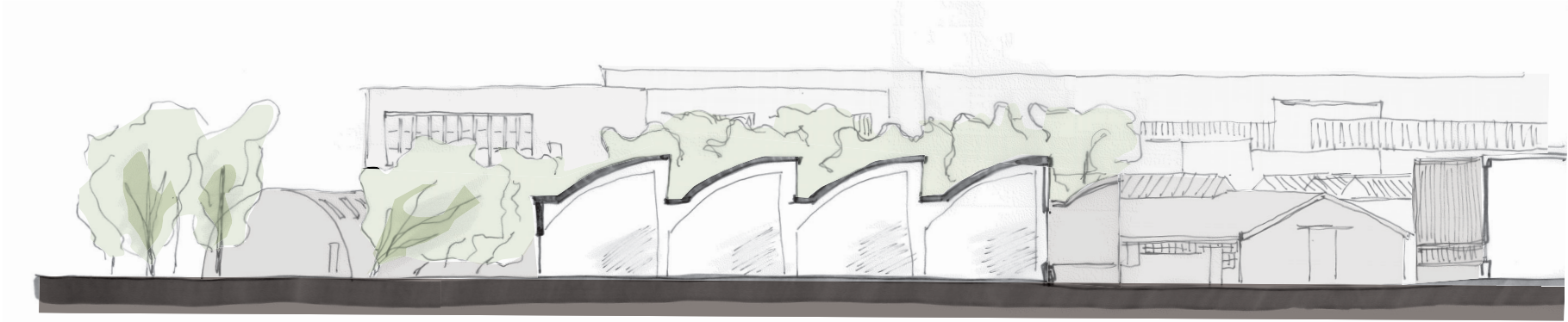
Ensemble

Borders - different sections throughout the ensemble



Ensemble

Borders - different sections throughout the ensemble

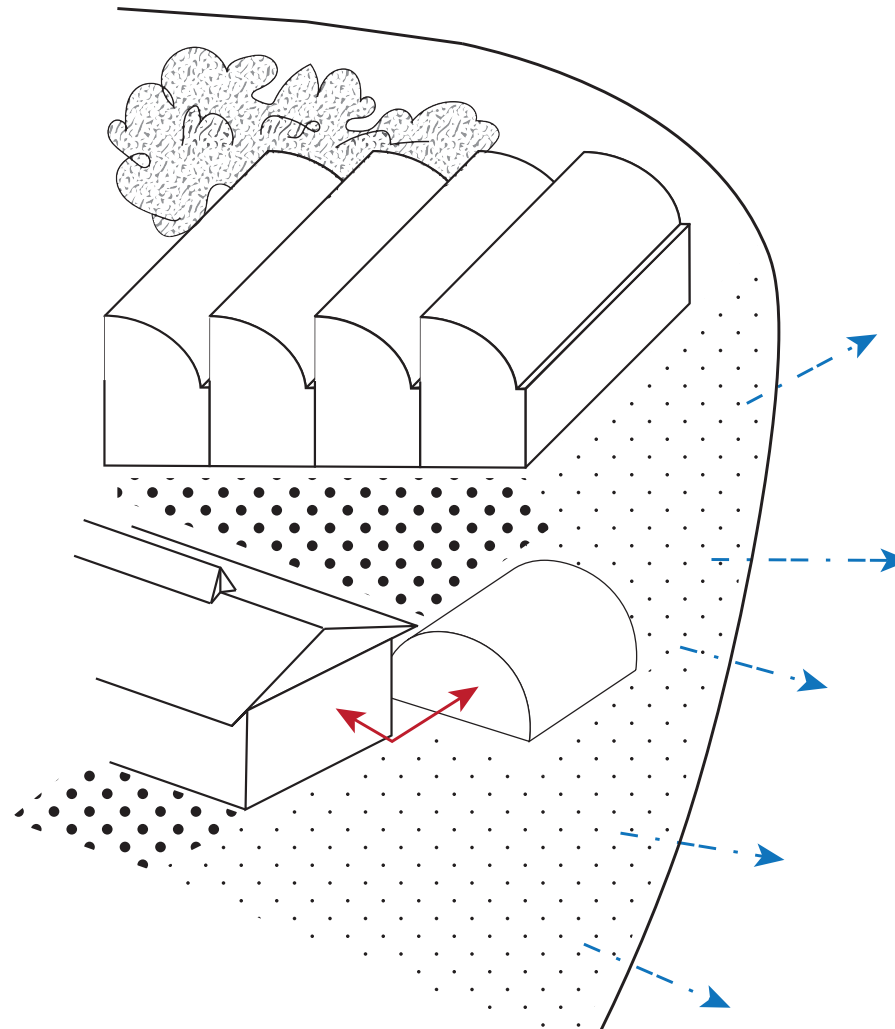
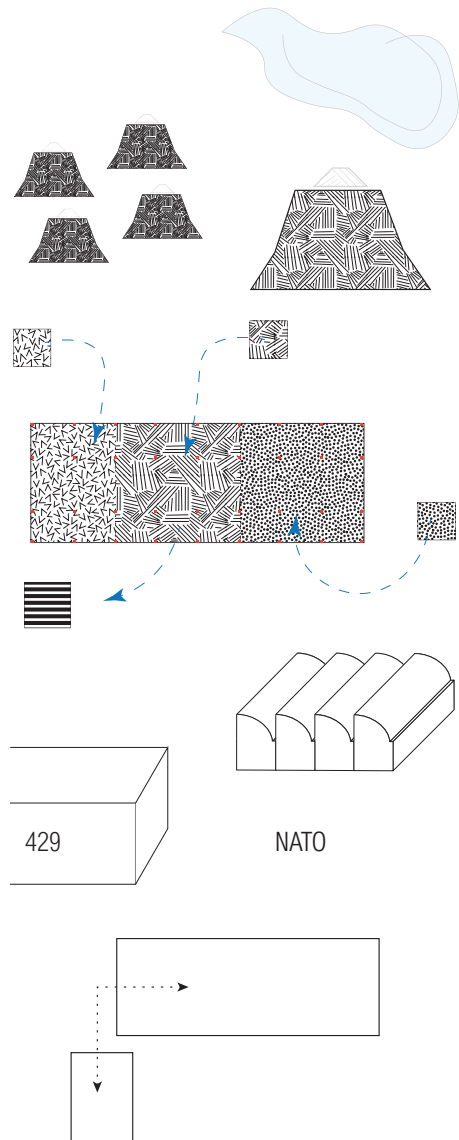


Tree line - 512 - trees - 430 - open space / 421 - 511



Ensemble

Essence by Chenna Tabeling



Functional purpose:

The Green Head for a long time was excluded in the production process of the Artillery Establishments.

1939 > 382 main post command air attacks

1952 > 421 as 'facilitator' for the AE

1956 > 430 AE expanded to the Green Head for the use of the NATO.

1980 > The Romney hut is built as an extra storage to the Wash house

Potential:

Its thé head of Hembrug!

Dilemma:

Long time not a part of the Hembrug, how to connect?

No attention was drawn to the head due to safety > a lot of green was planted; how to draw attention to the head when its hidden?
> Hold on to former meaning of head or neglect?

Industry is causing a lot of impotunity

Design ideas:

Transmission zone / building

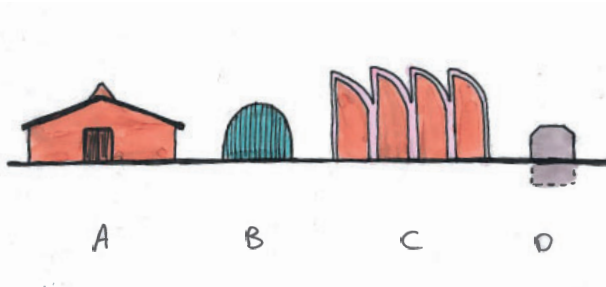
Idea of connection 421+512

Create public space near water

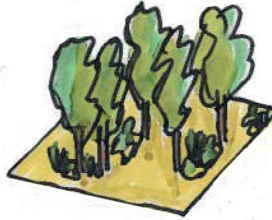
Create intimate public spaces

Ensemble

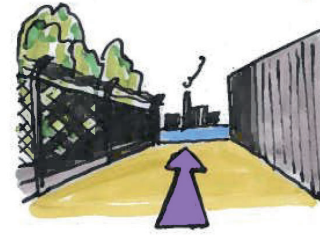
Essence by Bram Hulshof



Different characters



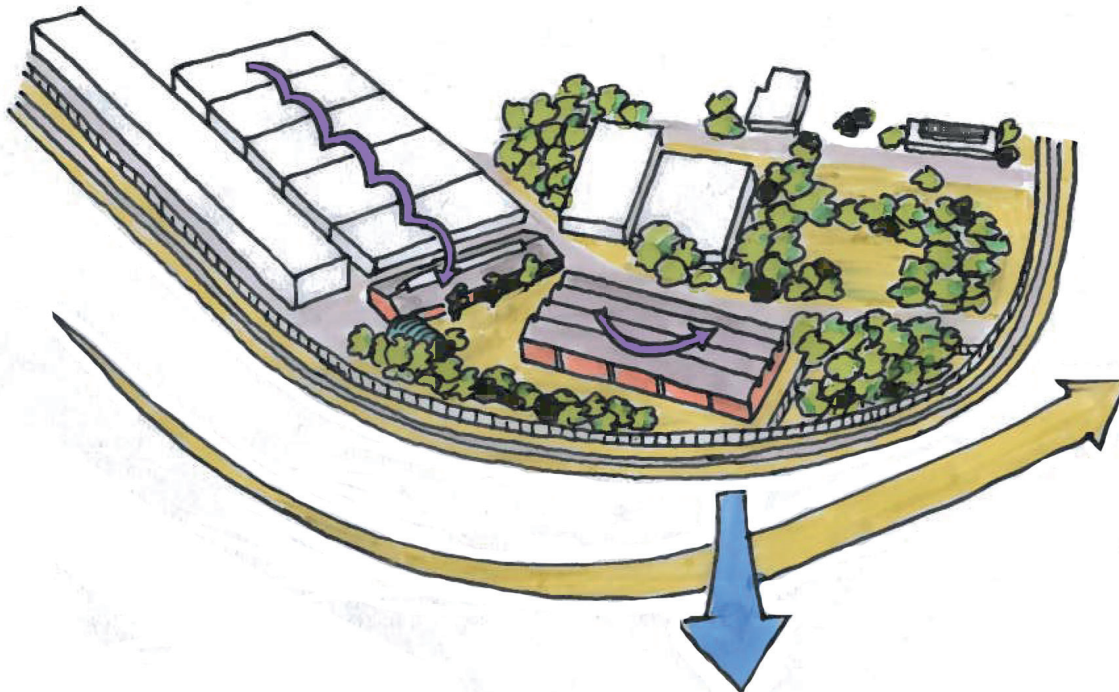
Greenery



Viewlines



Fences



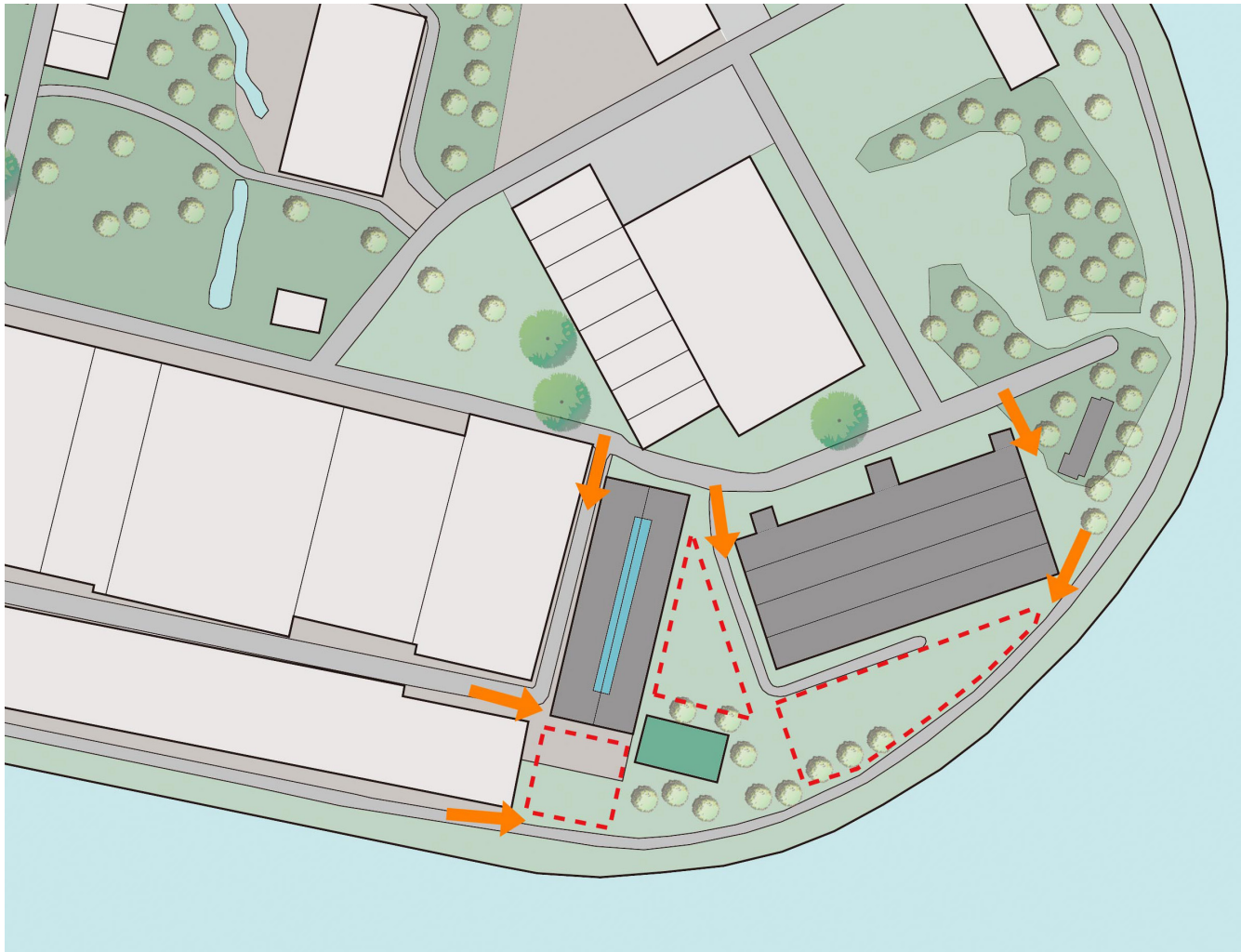
Overall the ensemble is a very diverse site. As an example, just the four buildings all differ in terms of function, materialisation and shape. The public spaces of the ensemble also have a lot of different characters. The density of the old trees alternate with the openness of the fields. Views are blocked by greenery and fences but than again a far viewline across the North Sea Canal peaks through.

Although some relations to the direct vicinity can be discovered, like buiding 421 (the Wash House as a continuation of the Ladder), the site opens up and sets itself free from the strict orthogonal grid of the production buildings at the west.

Altogether the ensemble, by being so diverse, forms an interesting, green, spacious and welcoming site.

Ensemble

Essence by Junyi Zuo



The ensemble of Green Head of Cape located in the corner of the peninsula which is isolated from the rest of Hembrug terrain with two side waterfront.

Building 430, building 421 and the fence around the shelter and along the ring route make up the border of the ensemble.

The entrances of the ensemble are usually the small pathway or alley, but when people go further, large open space will be appear.

The Romney hut divides the large open space into three smaller space in human scale, and create a sequence of space and building which are between each other.

The ensemble also could be considered as the continuation of space sequence of Ladder, but it shifts the from the grid. Waterfront of the ensemble provides a lot of opportunities.

For the future plan for the ensemble, how to build the connection to the rest of Hembrug terrain and organized buildings with the public space are the main challenges and dilemmas.

Overview of buildings on Cape of the Head South

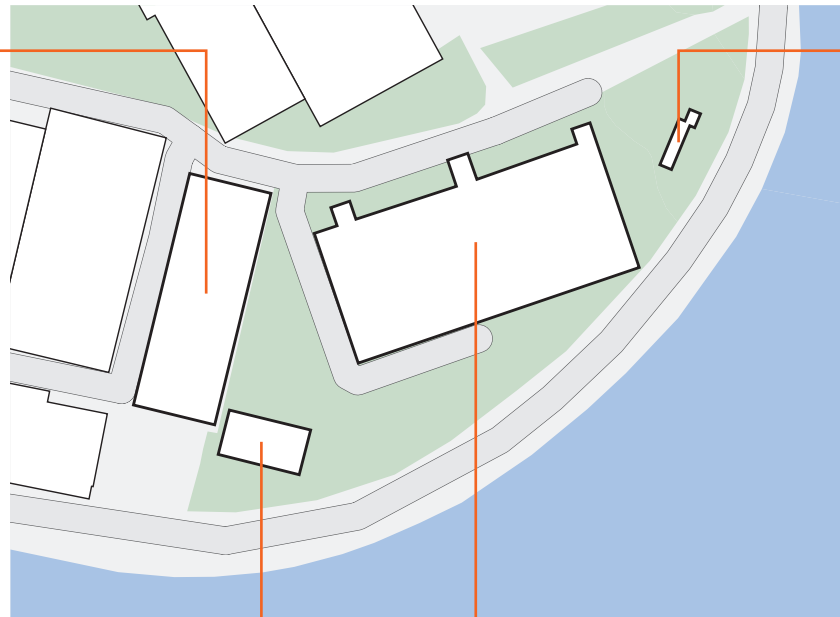
Building 421

Constructed in 1952
Storage and washing room



Building 382 (shelter)

Constructed in 1939
Bomb shelter and command post for air protection



Building 512 (Romney hut)

Constructed in 1980
Storage



Building 430 a/b

Constructed in 1956-1958
Assembling ammunition





430 - the Factory

Building 430 - the Factory

Overview

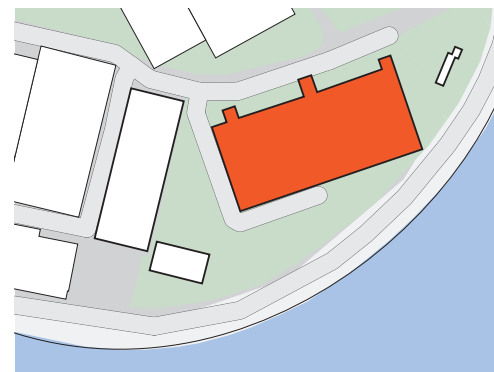
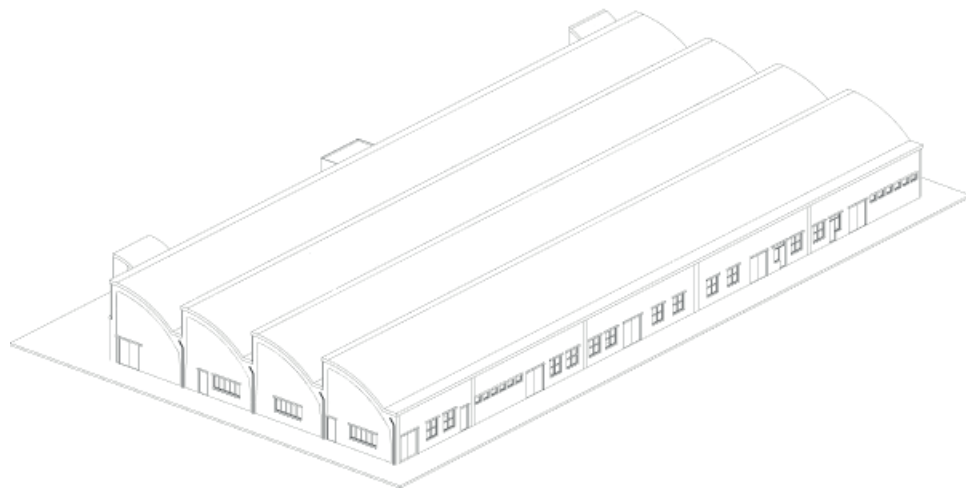
Constructed in **1952-1958**

Former function: **assembling ammunition**

Current function: **storage**

Short description:

This building was built in the 1950's as project '.55" Ammo. Ammo meaning ammunition and '.55" meaning .55 caliber. The project was part of the 'US F.Y. '55 Facilities Assistance Program'. This program enabled the US to produce weapons and ammunitions abroad. Though owned by the Dutch government, the site and the building were exploited by the US. This building was built in two phases: the first part of the building was finished in 1956 and the second part in 1958.

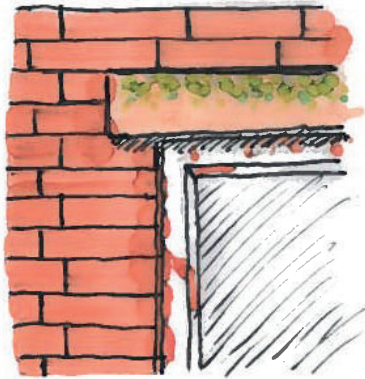


Source: image by Bram Hulshof

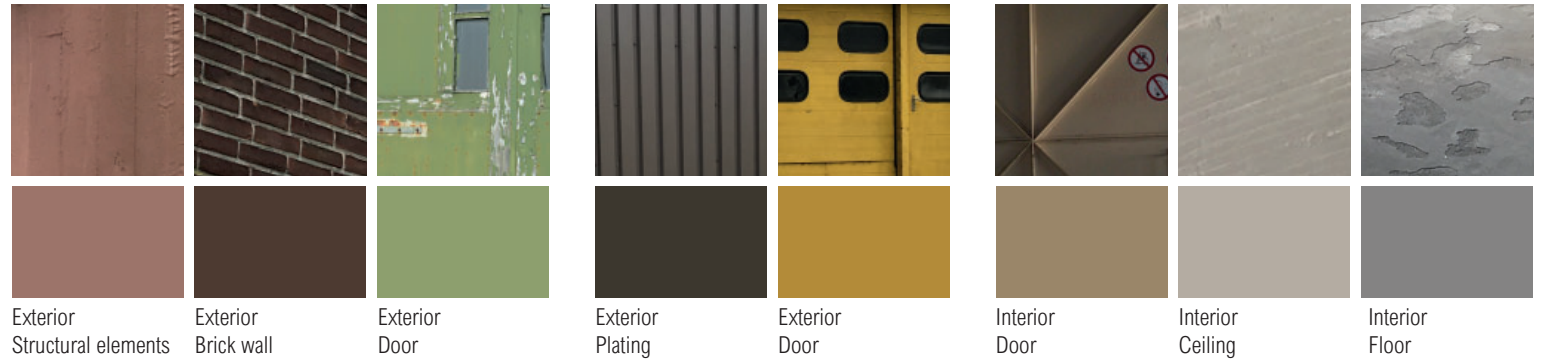
Source: image by Bram Hulshof

Building 430 - the Factory

Architectural characteristics



Steel windows with rust



Exterior
Structural elements

Exterior
Brick wall

Exterior
Door

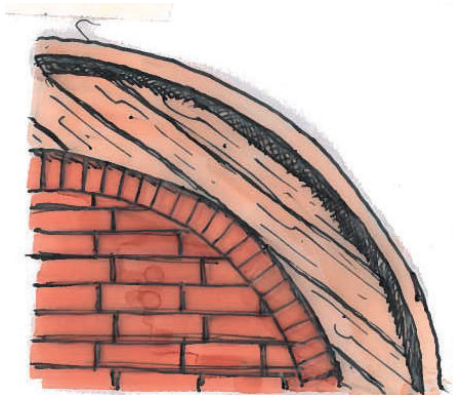
Exterior
Plating

Exterior
Door

Interior
Door

Interior
Ceiling

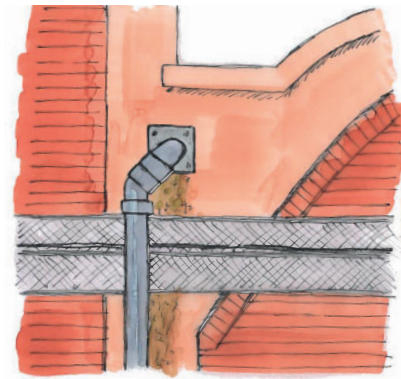
Interior
Floor



Connection of the masonry to the
concrete structure



New finish of the North facade with
steel plating and plastic windows/doors



Leaking rainpipes and added cable
trays



Double door entrances

Building 430 - the Factory

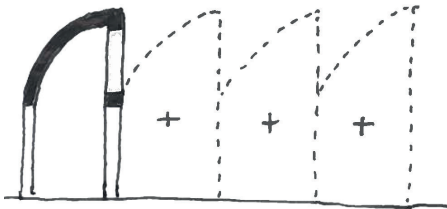
Architectural characteristics



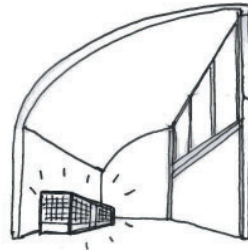
Rhythm of the facade



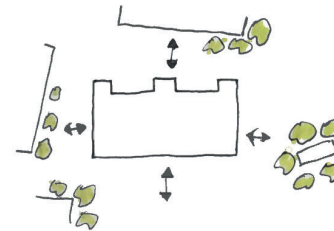
Continuous columns



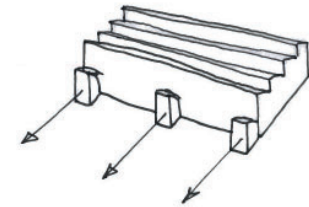
Sequence of modules



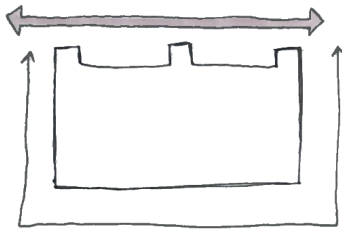
Box within a box



Free-standing building



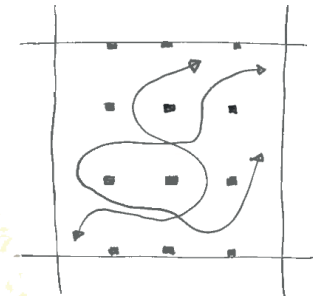
Communicating 'fingers'



Main road and path



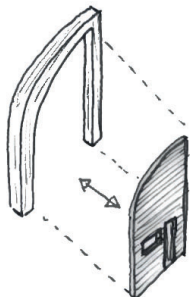
Contrast structure and masonry



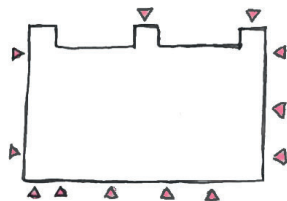
Free floor plan



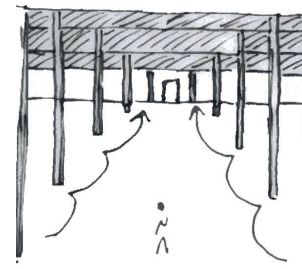
Dramatic height



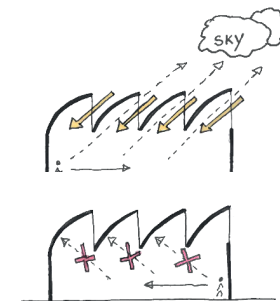
'Frame' and 'In-fill'



Entrances, main entrance?



Lined up columns lead the way



Open vs closed spatial experience

Building 430 - the Factory

Conclusions on Building Technology

For the full building technology analysis see the appendix.

Building 430 was built in two phases. An extension of the first part was possible due to a 'future proof' foundation which the second building part was able to use.

Though the same construction method was used, each of the two building parts has a (stable) structure on it's own. Therefore the following description applies to each of the two building parts:

The whole structure of building 430 is made of reinforced cast concrete on top of a concrete foundation. Although casted in several phases, the whole structure forms one monolithic structure. The continuous columns (A) are connected to each other by longitudinal beams (B) and shell roofs (D).

Together with an additional wall in between the columns, these elements provide the stability in longitudinal direction.

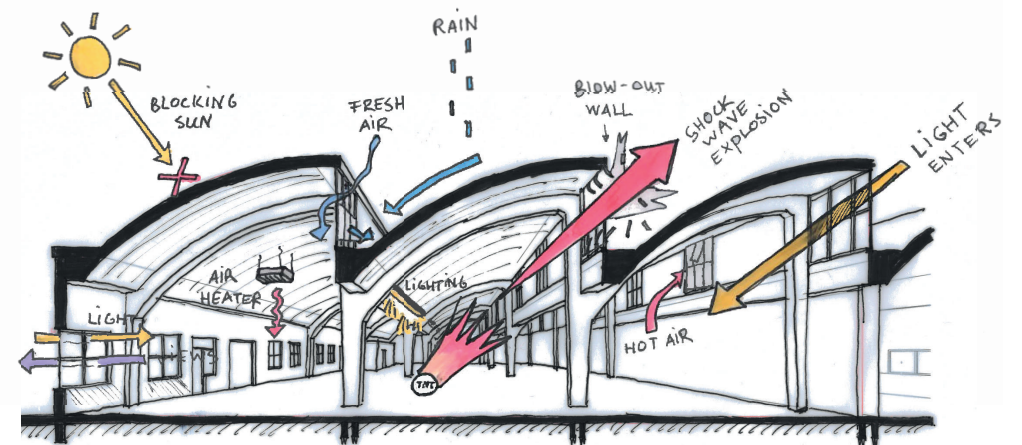
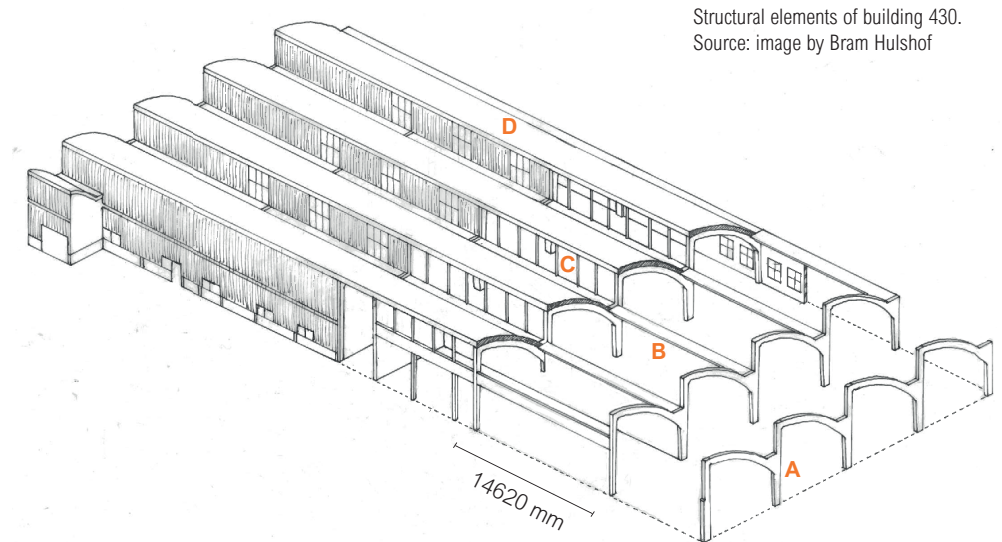
The continuous columns are stable on their own and create the stability in transverse direction.

Building 430 has a strong concrete frame meaning that the brick walls are simply an infill and could be removed without any structural problems. The blow-out walls near the shell roofs were also placed within the concrete structure (C).

The shell roofs not only provided a lot of light to the interior, they also functioned to redirect a possible explosion towards the blowout walls.

To go on due to the shape of the roof, rainwater flows down into a big gutter, leading the rainwater to the east and west facade where it flows down the facade in a gutter (connected to a sewer system underneath the ground).

Other than some electric heaters hanging from the ceilings and a lot of added services to the facades, this building does not have a fully functioning climate control system.



Building 430 - the Factory

Essence by Chenna Tabeling
Isolated - Exterior



Lots of open space around the building with greenery

Functional purpose:

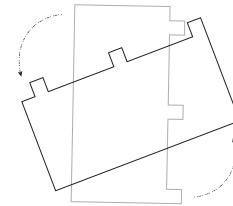
Assembly ammunition
No relation to the AE, used for purposes of the NATO

Potential:

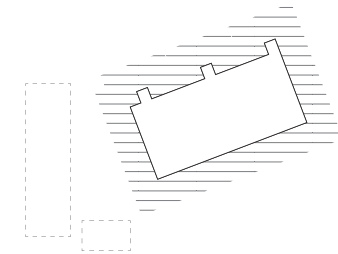
Alternation causes leftover spaces

Free standing building > lots of space around the building

Nice view towards the water



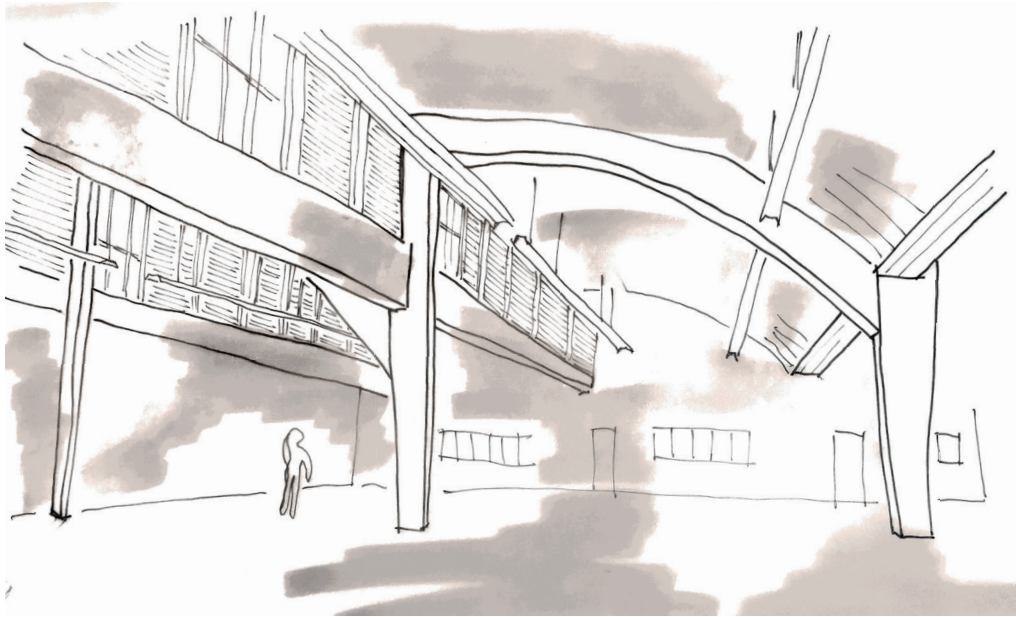
Shifted from grid



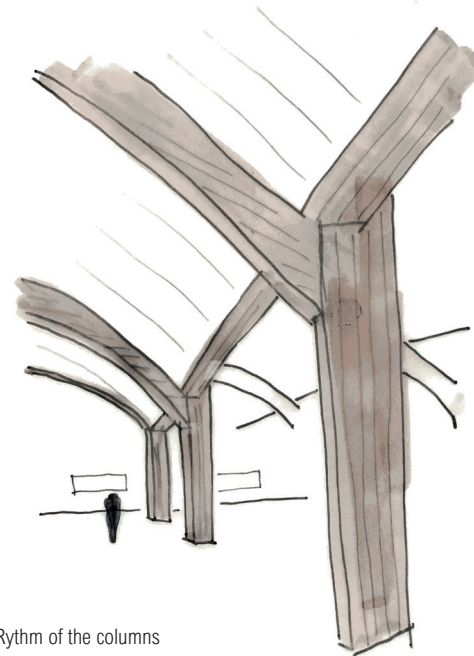
Lots of open space around the building

Building 430 - the Factory

Essence by Chenna Tabeling
Interior



Light and dark (current situation)



Rythm of the columns

Potential:

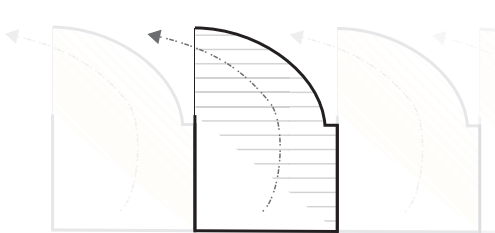
Building structure creates opportunities for a 'changeble' layout

Shape of roof; multipurpose > Northern (working) light, water drainage, history of the blowoutwall and former function, characteristic of the building

Inside out view

Dilemma:

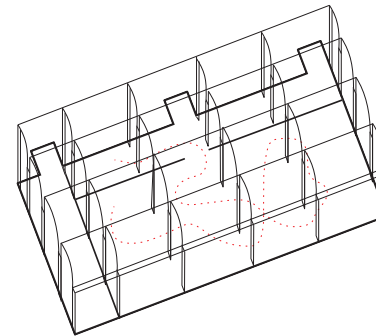
Koudebrug in facades and structure.



Northern light / ventilation / relation to old function



Inside out view



Open floorplan due to structure

Building 430 - the Factory

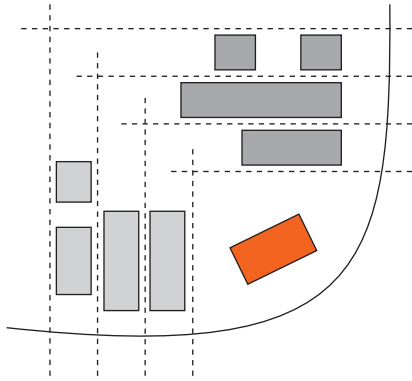
Essence by Bram Hulshof



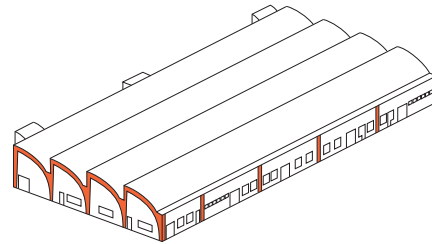
Source: image by Bram Hulshof

Building 430 - the Factory

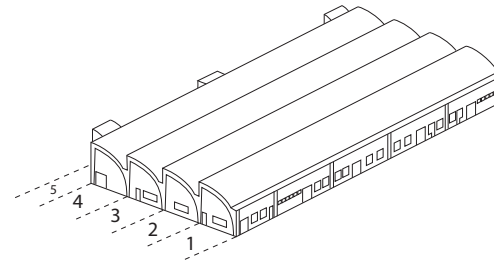
Essence by Bram Hulshof



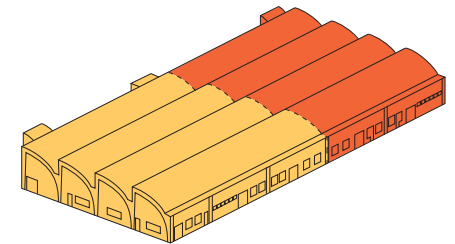
Building is shifted from grid



Main structure visible in facade



Sequence of spaces



Building was built in two phases

Source: images by Bram Hulshof

In my opinion one of the most important aspects about building 430 is the fact that it is shifted from the grid of the Hembrug terrain. Therefore the buildings isolates itself from the neighbouring buildings. At the same time interesting public spaces are created in between the neighbouring building and building 430.

When we look at the building itself the most striking to me is the visibility of the structure within the facade. The structure is clearly visible and creates an articulation of the facade. Although

not very good in terms of insulation, the visibility of the structure in the facade embodies the honest and functional approach in which this building was built. It emphasises the repetition/sequence of spaces inside to the outside.

To go on, the fact that the building was built in two phases creates an interesting debating point. Although the extension was made to mirror the existing building, there could be an opportunity to treat the extension differently from the first building part.



Potential: alteration of non-original north facade

Dilemma: restoring the original facade or creating a new facade?

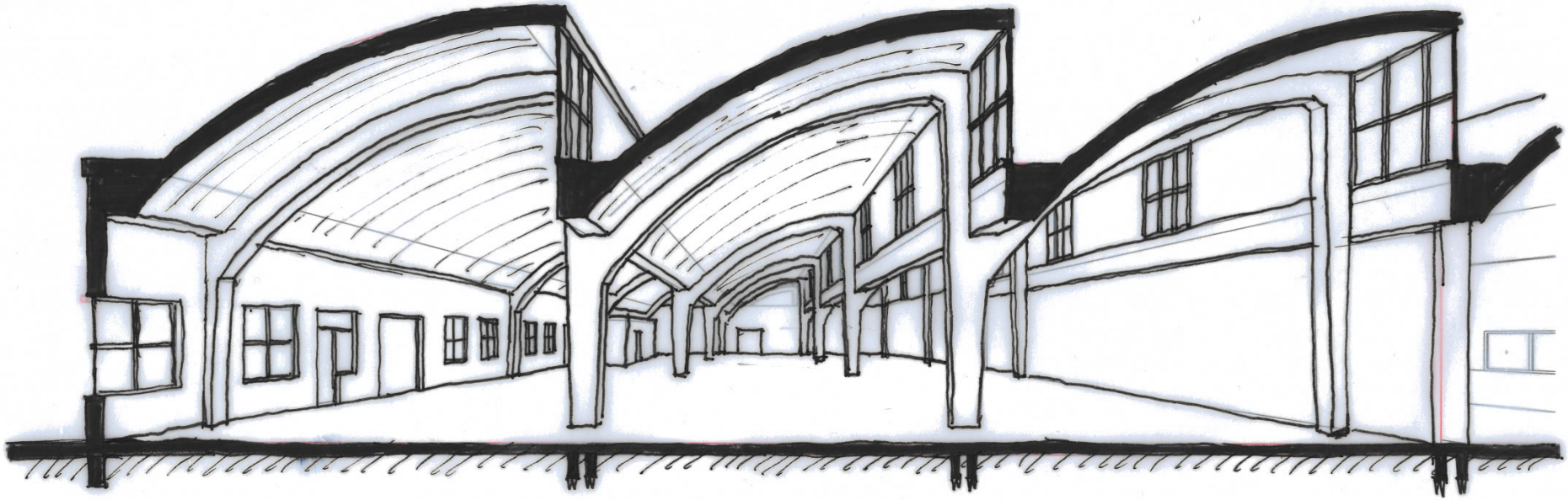


Dilemma: do we have to bring back the original interior walls?

Potential: smaller rooms might be needed in terms of programming

Building 430 - the Factory

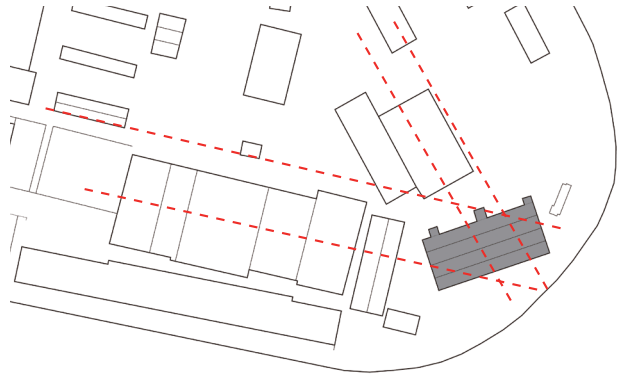
Essence by Junyi Zuo



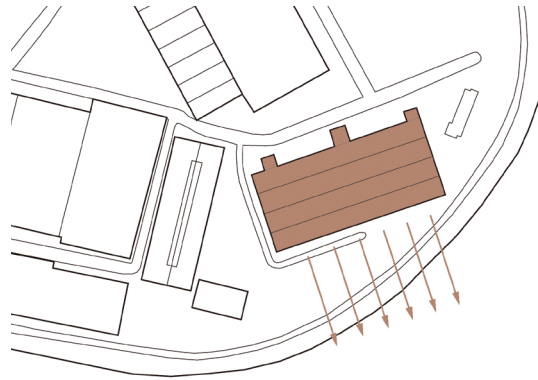
Section perspective

Building 430 - the Factory

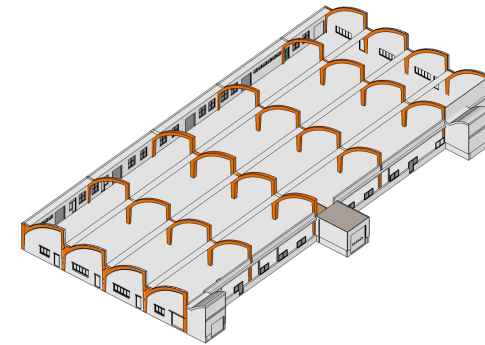
Essence by Junyi Zuo



Shift of the grid



Orientation to water



Flexible open and high space

Building 430, the Factory is the main building of the ensemble. The shell roof was originally designed to control the direction of explosions. Its significant shell roof is high recognized from the site.

As a building that is shifted from the grid, stands loose from the rest of the buildings. The building is also facing the water since its shift.

The clear structure of the Factory is also visible in the facade. The repetition of the circular beams and columns create the sequence of the space underneath. It has a flexible open floor plan and logical structure for a potential redevelopment.

Potentials

The visible structure in the façades show their construction. It means that the filled brick skin could be removed and make the facade open and transparent.

As a result of the shell roof structure, a large and high interior space with plenty of sunlight is created. Which has large potential for more functional space.

The orientation of the building on the ensemble provides a good view towards the water and towards the other side of the river. There are large public space in front of the building facing the river, which provides opportunities to create a communication between the building and the water.

Dilemmas

The special location of the Green Head is isolated from the rest of the Hembrug terrain. It is important to create a relation to the neighbourhood.

As the only building in the ensemble shifted from the grid, how to respond to this shifting is a challenge.



Source: images by Junyi Zuo

Building 430 - the Factory

Conclusions

Building 430 was built as part of the U.S. Facilities Assistance Program. Building 429 (the long white building alongside the North Sea Canal) was also built as part of this program and some existing buildings of Plots in the Wood also took part. At this moment it is unclear if there was any direct functional relationship between all of these buildings.

For now we assume that building 430 mostly was an independent production building and it did not have any direct functional relationship with the rest of Artillery Establishment. It even sets itself apart from the main grid of the Hembrug terrain. A reason for this could be that shifting the building from the grid enabled better usage of the available site in terms of square meters. Before building 430 was built, temporary shelters at the cape also followed the bend.

In terms of typology, in first instance there seems to be a strong relationship with the buildings in the ensemble Plots in the Wood. Though indeed the buildings all have a shell roof, at closer inspection it turns out that building 430 does differ in a couple of ways from the shell roofed buildings at the Plots in the Wood. The structure for example, is not showing in the facades of the

430
No walls in between columns



Plots in the woods
Walls in between columns



buildings in Plots of the Wood. There, the masonry completely covers the structure at the exterior while in 430 the masonry is simply an infill of the structure and therefore the structure is clearly visible.

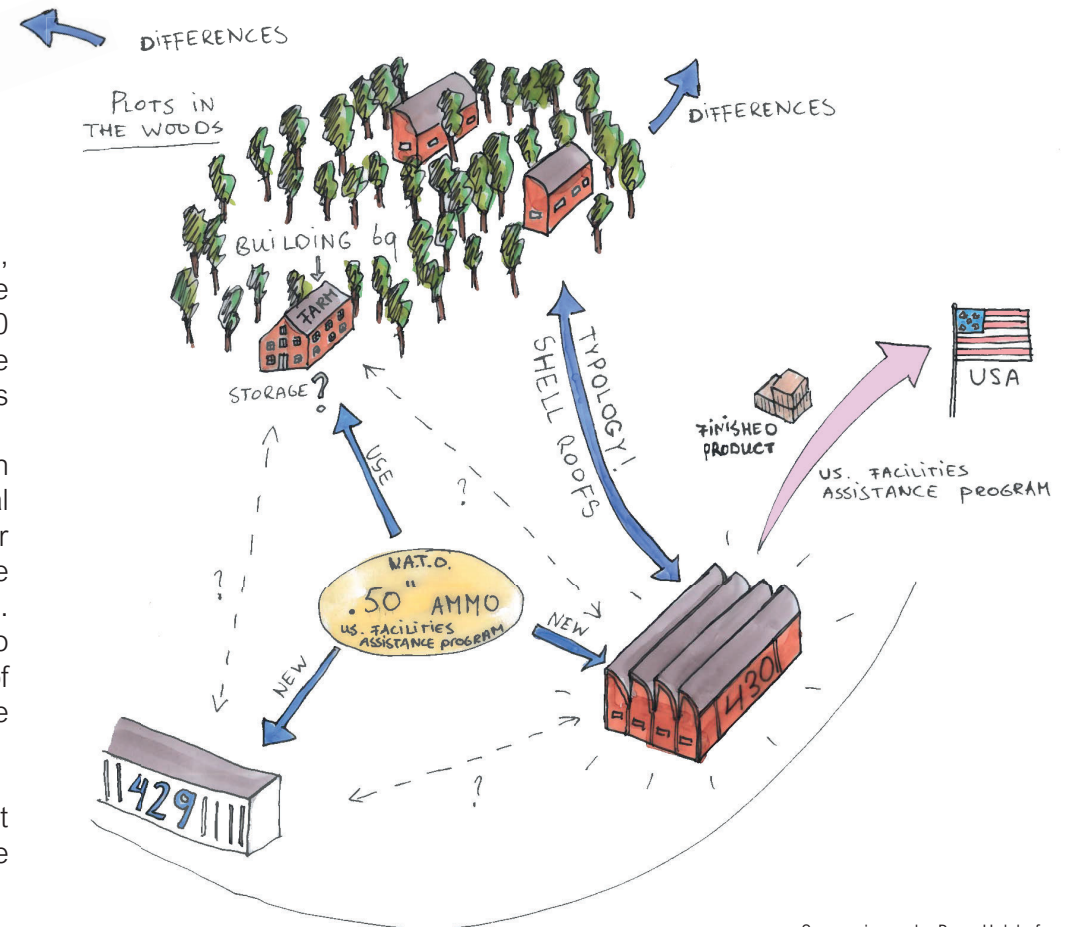
Next to this, building 430 has an open floor plan with columns. The several modules of shells are placed together in both longitudinal and transverse direction without walls in between. The buildings in Plots in the Wood do have walls in between the columns of the modules instead and therefore the spatial experience differs.

Other than those differences the fact remains that building 430 does share the same roof typology.

430
Visibility of structure in facade



Plots in the woods
Structure not visible





421 - the Wash House

Building 421 - the Wash House

Overview

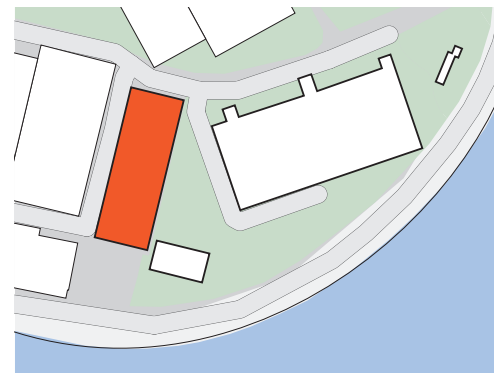
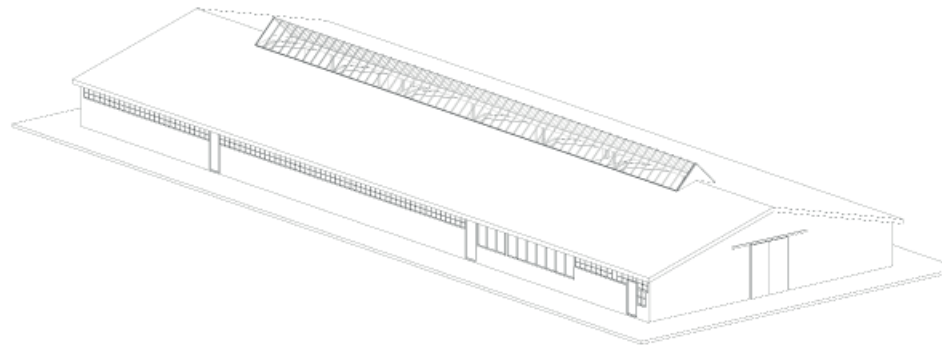
Constructed in **1952**

Former function: **storage/wash house**

Current function: **not in use**

Short description:

This buildings was build in the 50's as a storage building. In 1980-1985 Eurometaal transformed part of the building into washing and dressing rooms (the part of the building facing the North Sea Canal).

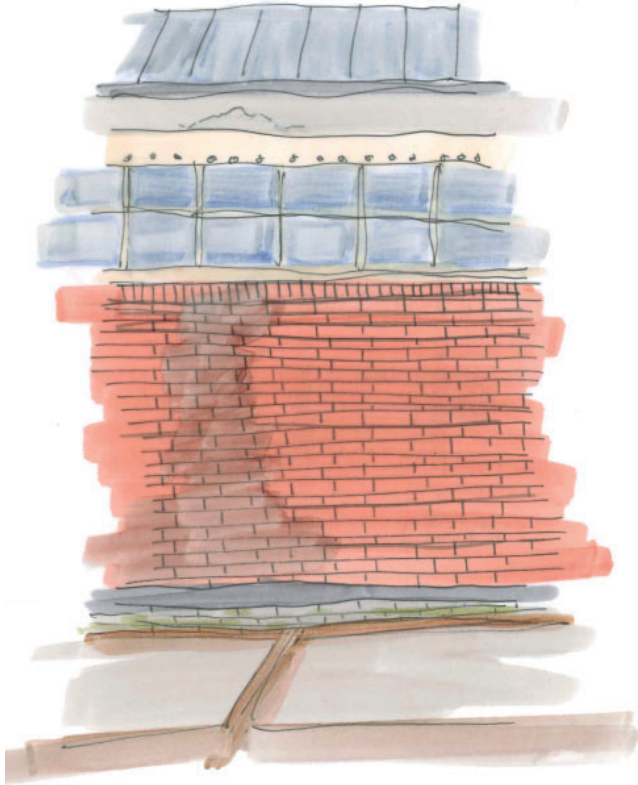


Source: image by Bram Hulshof

Source: image by Bram Hulshof

Building 421 - the Wash House

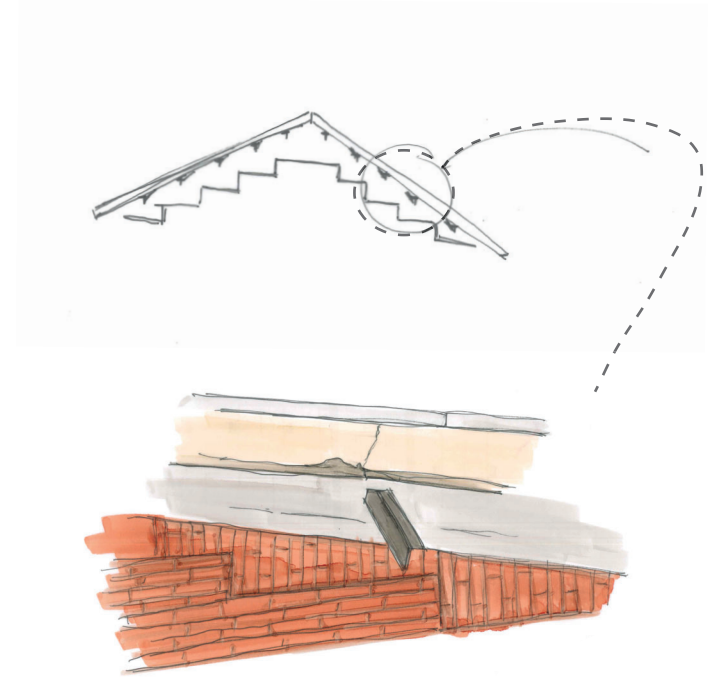
Architectural characteristics



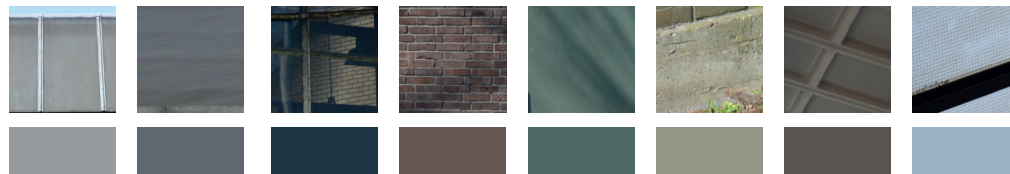
Layers of the exterior



Layers of the interior



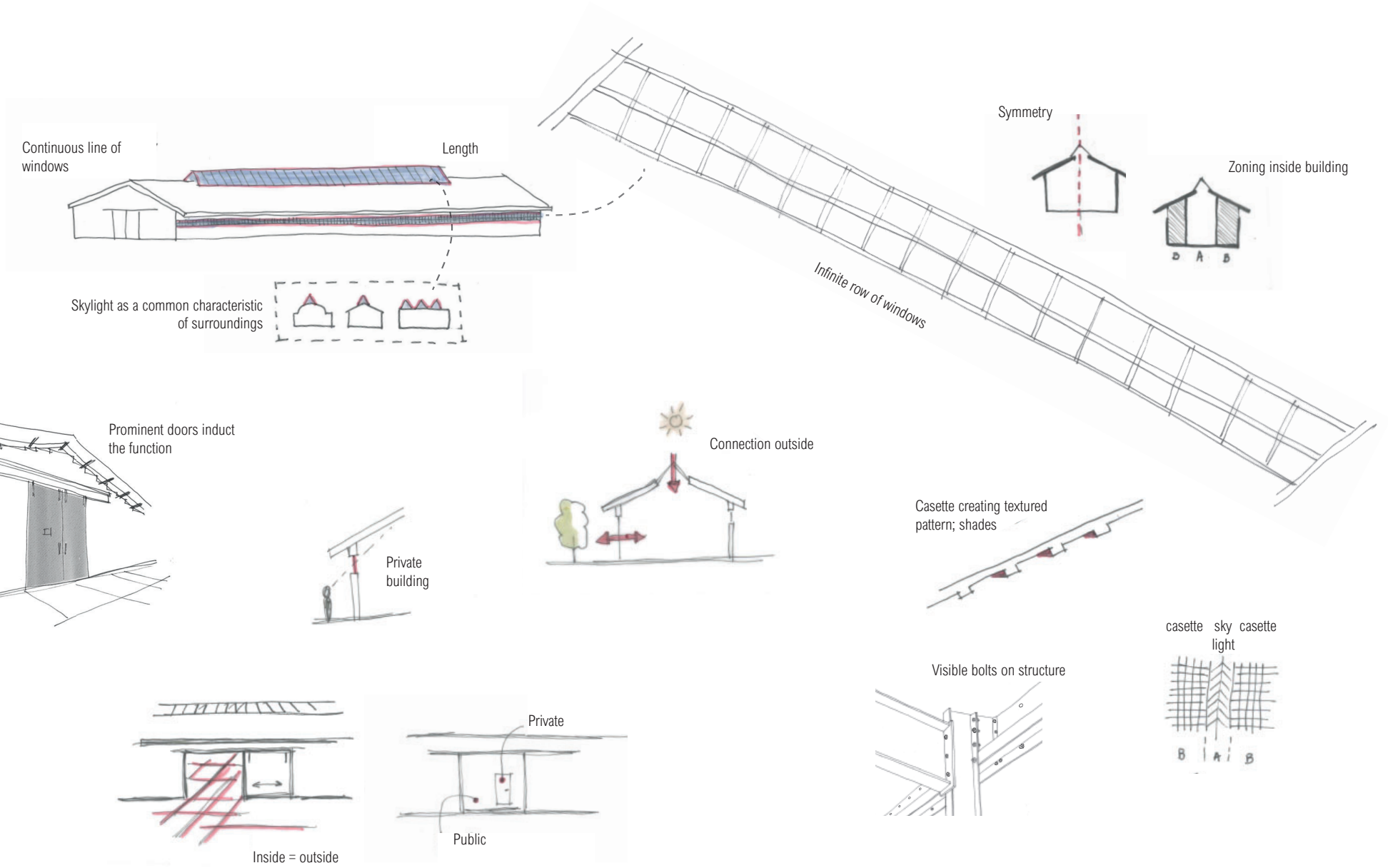
Roof detailing in brickwork



- Exterior
Rusted skylight
- Exterior
Bitumen
- Exterior
Glass
- Exterior
Brickwork
- Exterior
Sliding doors
- Exterior
Visible foundation
- Interior
Cassette ceiling
- Interior
Wired glass

Building 421 - the Wash House

Architectural characteristics



Building 421 - the Wash House

Conclusions on Building Technology

For the full building technology analysis see the appendix.

Although the building has brick facade all around, the structure of building 421 consists out of a steel skeleton.

Nine steel portals (A) are lined up and form the main structural element of the building. Each portal has 4 columns, the two on either end of the portal are partly set within the masonry wall. Each of the columns is founded with a concrete pole and the exterior walls are built upon a concrete beam. The floor is not founded.

The main portals are connected to each other by steel HEA purlins (B). In between the purlins concrete cassettes (C) are placed forming a flat surface for the roof finish.

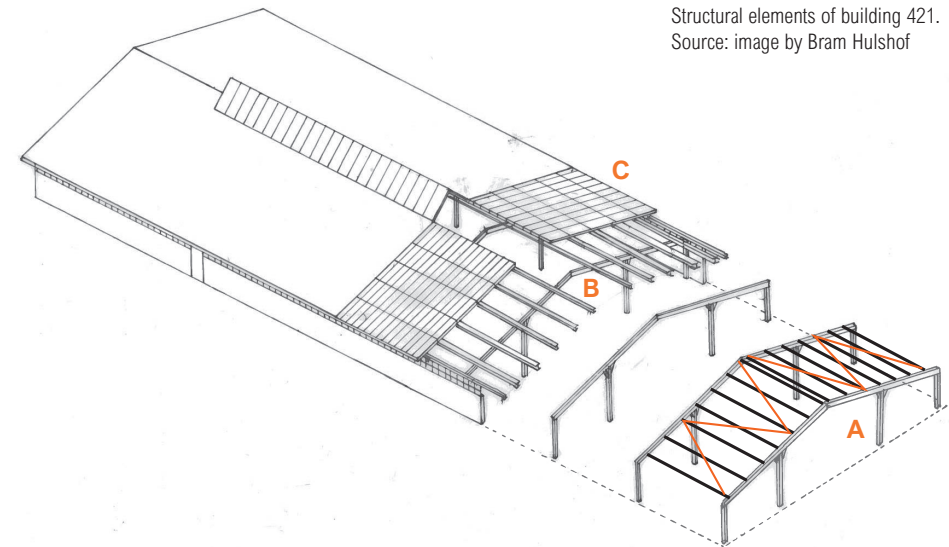
Stability in transverse direction is created by the fixed connections of the columns to the main beams. The columns at the end of the main beams are placed 5 cm within the masonry walls enabling the walls to help with stabilizing the building in longitudinal direction. The purlins (due to their specific connection to the main beams, see appendix) also add

to the stability in longitudinal direction. Furthermore, steel bracings in the roof (at either site of the building) help to keep the building stable in longitudinal direction while preventing the building to rotate as well.

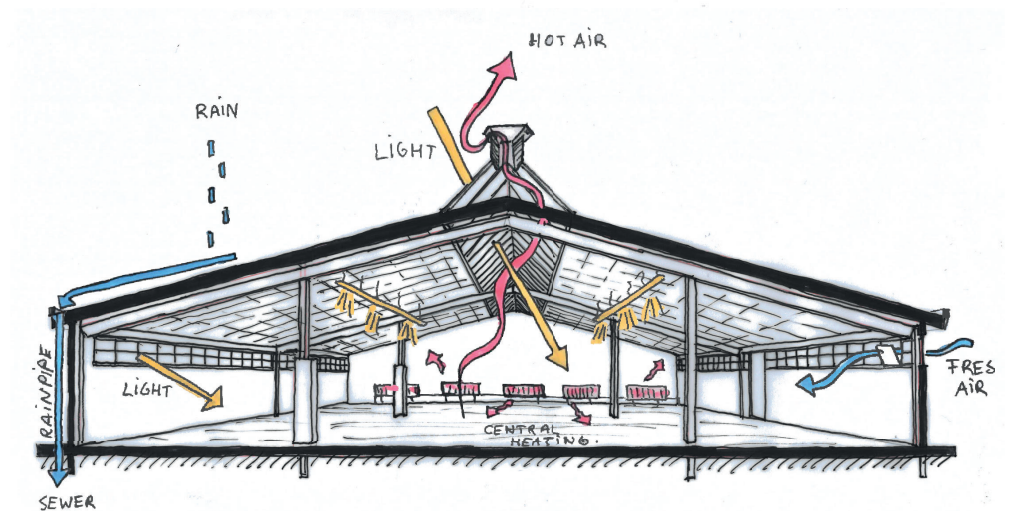
The structure creates a relatively free floor plan which gives opportunities for reprogramming the building in the future.

In the current situation the building is not insulated. If necessary the roof could be insulated from the outside enabling the 'honest' structure to remain visible. The exterior walls could be insulated on the inside maintaining the masonry facade on the outside. The connection then between the insulation of the roof and the walls might pose a dilemma.

Natural ventilation is created by enabling the hot air to rise up and exit the building through the chimneys in the skylight. Those chimneys might be of use in climatising the building in the future. If new climate systems are required in the future, ducts and pipes could for example be placed in between the purlins. This enables them to run the full length of the building although clearly in view in case the structure should remain visible.



Structural elements of building 421.
Source: image by Bram Hulshof



Source: image by Bram Hulshof & Junyi Zuo

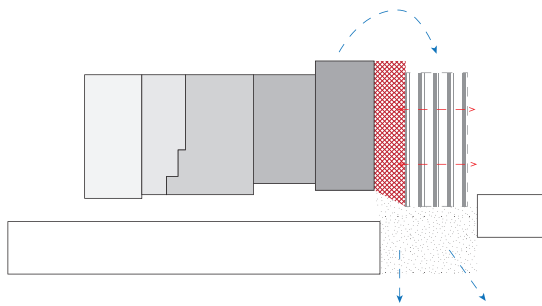
Building 421 - the Wash House

Essence by Chenna Tabelaing

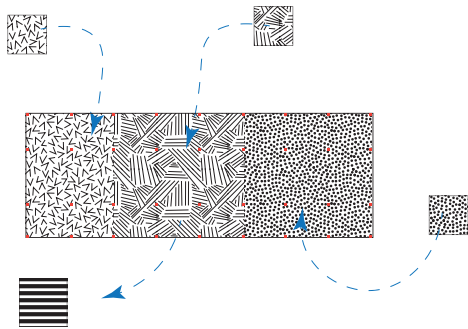
'Facilitator for space as transmission zone'



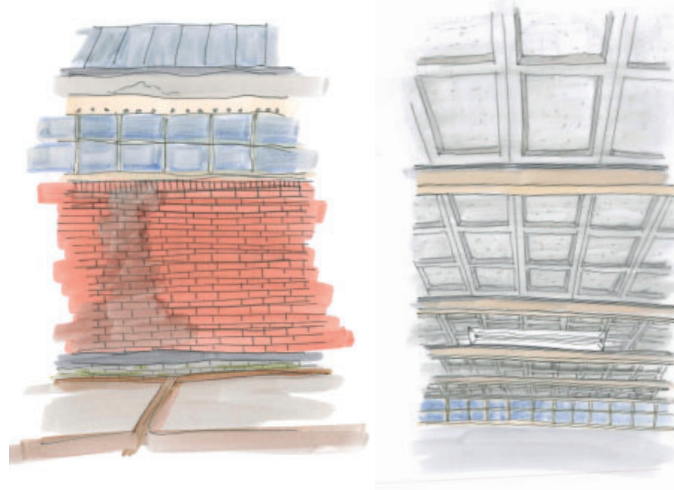
Skylight as a recognizable characteristic of the neighbourhood



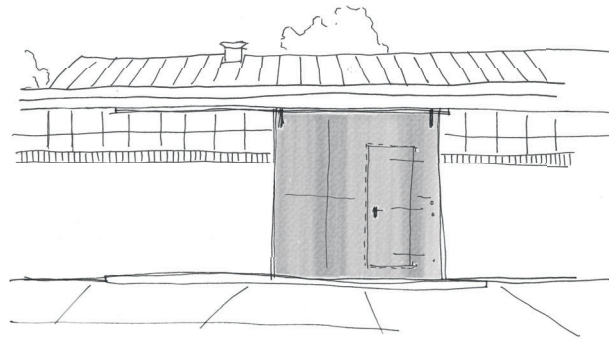
Alley / the Wash House as transmission (zone) from its old purpose towards the AE
Shared square (functional relation) with 512 > opens towards the water



The building as a facilitator for space, flexible in its use
Its meaning in the broader context, towards the AE and Eurometaal



Layers building 421; clear facade (in/exterior) propose linear gesture



Doors unlock the building; show former function; inside-outside relation when open

Functional purpose:

The Wash house and alley as a transmission zone (/border) in between the Artillery Establishments and NV Eurometaal towards the (for a long time excluded) Green Head.

Facilitator for space; it 'served' the Hembrug area

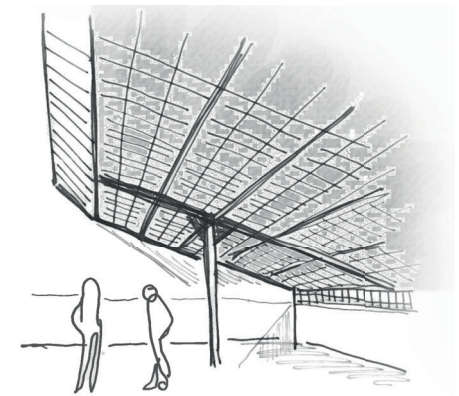
Potential:

Structure creating an easy adaptable floorplan
Skylight as a characteristic that is recognizable in the neighbourhood (states relation towards the AE)
Alley / the Wash house as transmission (zone) from Ladder / AE towards the Green Head
Big doors making this building a transmission in between the AE and the Green Head.

Dilemma:

How to keep / restore spatial value when the interior is changing?

Doors as interruptors of the visual length



Layers inside the building and skylight

Building 421 - the Wash House

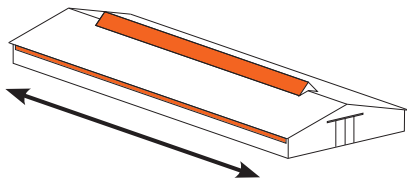
Essence by Bram Hulshof



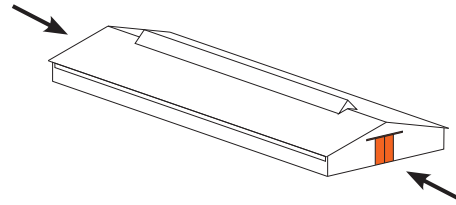
Source: image by Bram Hulshof

Building 421 - the Wash House

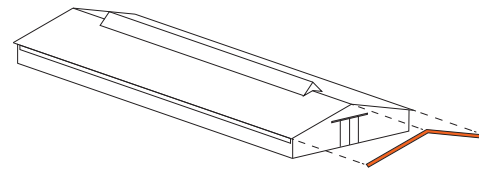
Essence by Bram Hulshof



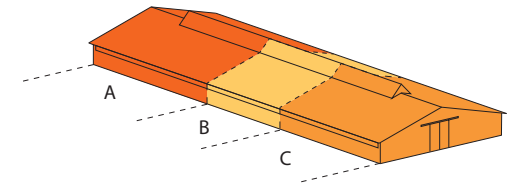
Horizontality
created by windows and skylight



Main entrances on front sides



Shape of roof (zadeldak)



Multifunctional use of space

Source: images by Bram Hulshof

I think in essence building 421 has an emphasis on the longitudinal direction. The continuous horizontal windows on both side facades and the skylight attribute to this.

With this longitudinal direction comes the emphasis on both front facades as main entrances to the building. Although several openings have been added to the side facades the front facade with its symmetry, the shape of the roof and the big sliding doors, forms a grand entrance to the long building. Unfortunately several walls have been

placed perpendicular to the longitudinal direction, preventing a line of sight from one end to the other end.

Ofcourse there is a possibility to re-establish the spatial quality although I do value the fact that different parts of the buildings were used for different functions. Here an interesting dilemma can be discovered.

Within the ensemble the building plays an important role in defining the public space especially towards building 430.



Potential: Restoring longitudinal spatial quality by removing walls.

Dilemma: How to create spaces without losing this spatial quality?

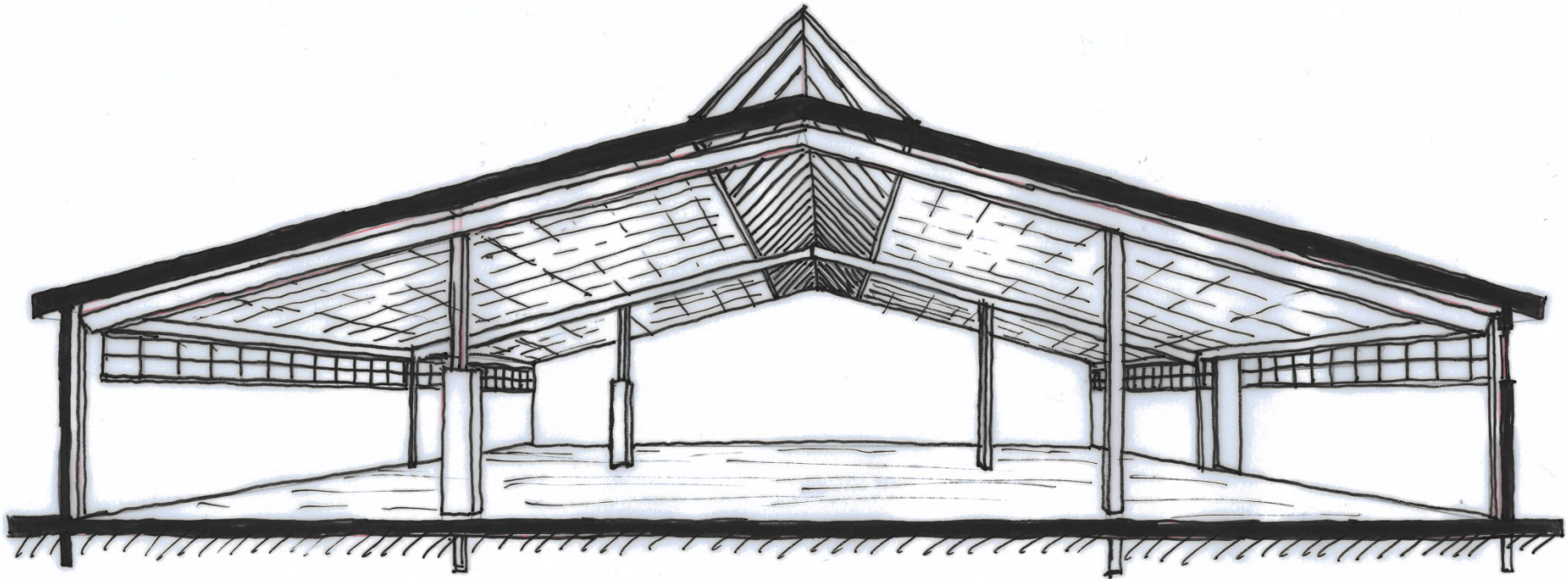


Potential: removing bigger, non original, windows from facade

Dilemma: restore the holes or keep signs of interventions?

Building 421 - the Wash House

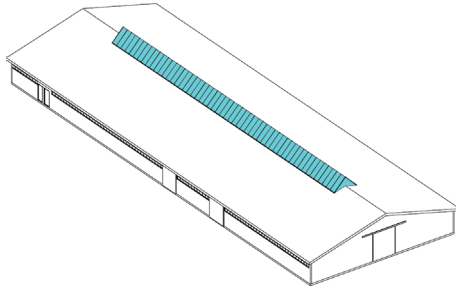
Essence by Junyi Zuo



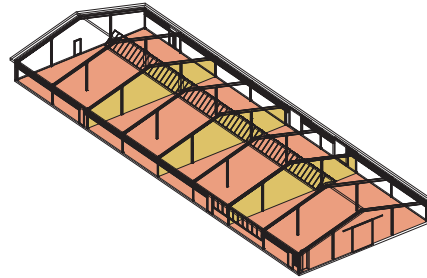
Section perspective

Building 421 - the Wash House

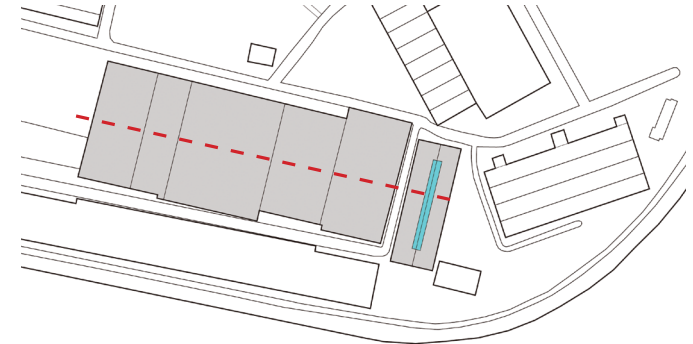
Essence by Junyi Zuo



Skylight and long horizontal windows



Flexible open floor plan



Continuation to the Ladder



The skylight was the highlight of the building 421 “The Wash House”, which not only provide the lighting but also make the slated roof a better shape. It is rarely to see a skylight on a slated roof in Hembrug area.

The long horizontal windows on both of the long façades are another significant element of the building, which provide the lighting and keep the privacy at the same time.

The “Wash House” is located parallel to the Ladder with a path in between. They can be seen as a sequence of complex and the “Wash House” could be a continuation of the Ladder.

Source: images by Junyi Zuo

Potential

It has potential to build a connection with the Ladder as the continuation of the space sequence and enhance the connection of the ensemble to Hembrug.

The clear and logical structure provide the building with a open floor plan. With the partition wall, the long interior space could be used as large collective space, or it can be divided in different functional spaces.

Dilemmas

The length of the building, as well as its significant horizontal window, continuation and interruption of the sequence could be a big challenge.



Building 421 - the Wash House

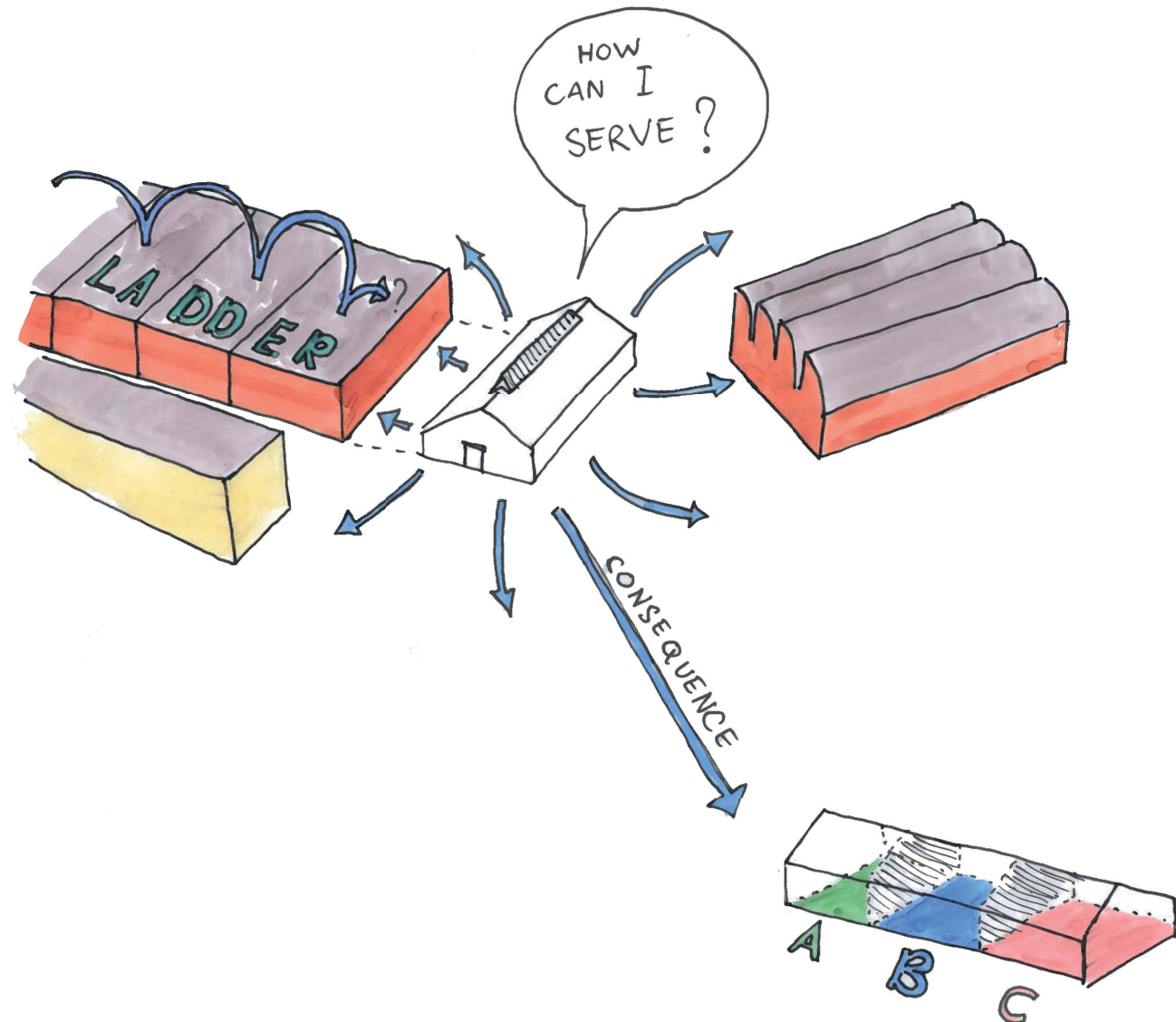
Conclusions

Building 421 has a strong relationship with the Ladder. It follows the same grid and has approximately the same length. While it does have a relationship with the ladder it is not connected to the ladder. You could argue that this is the first step of the grid dissolving into the cape.

Building 421 was built in the same style (almost a duplication) of storage buildings 347 and 348. Those buildings were built in the 40's and have been demolished by now. Drawings from the National Archive show the similarities between those older buildings and building 421.

In terms of functionality we can conclude that building 421 has always been a facilitating building. It was subordinate to the production buildings. This is the reason why the function of the building could easily change over time according to the demands of facilities.

Though this building did not play a big role in the bigger context of the Hembrug terrain it does react to its vicinity (follows the grid) and it was built to serve adjacent production buildings (though it is still unclear what kind of storage was inside the building).





512 - the Romney hut

Building 512 - the Romney hut

Overview

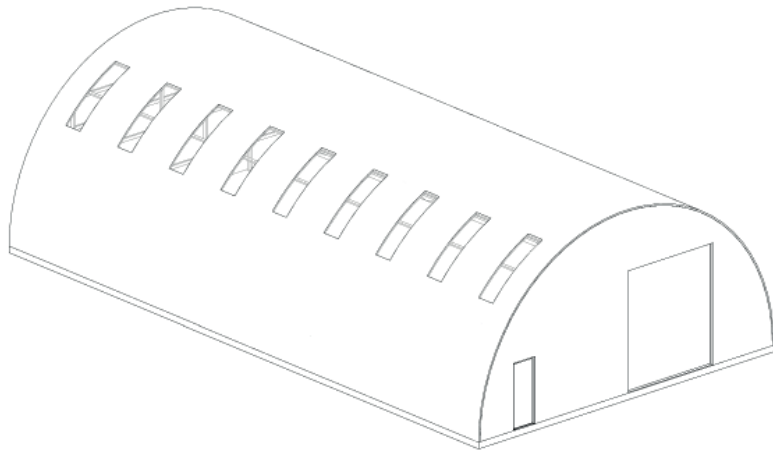
Constructed in **1980**

Former function: **storage**

Current function: **not in use**

Short description:

In 1980 Eurometaal build a 'Romney hut' as a storage facility for vehicles. This prefab and widely used building type (produced by the Romney company) was a low-tech, fast and cheap way of adding a storage building.

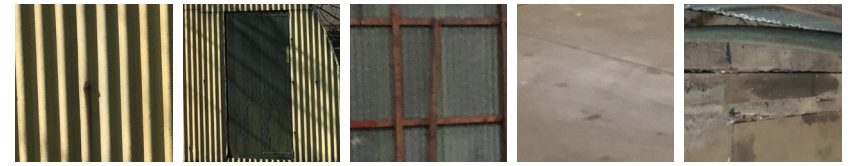


Source: image by Bram Hulshof

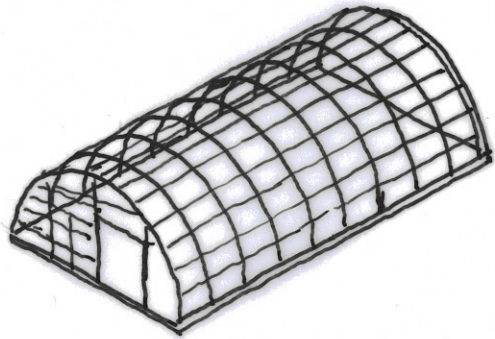
Source: image by Bram Hulshof

Building 512 - the Romney hut

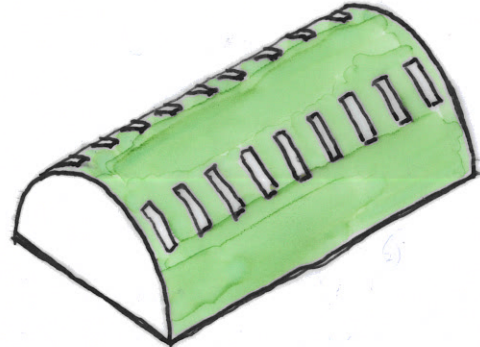
Architectural Characteristic



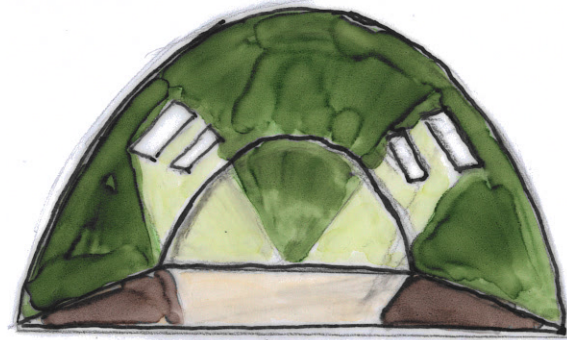
Exterior Steel Exterior Steel Interior Steel frame Interior Floor Interior Floor



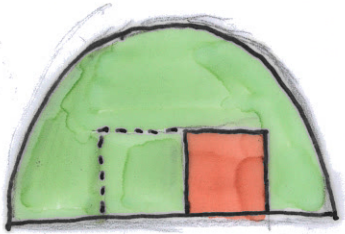
Clear structure



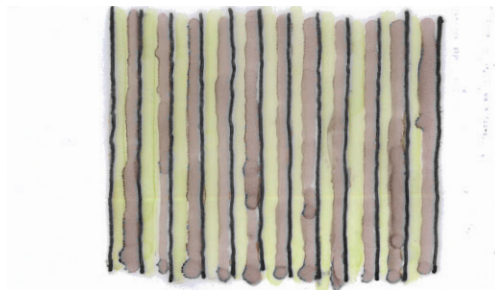
Facade is roof, geometrical shape



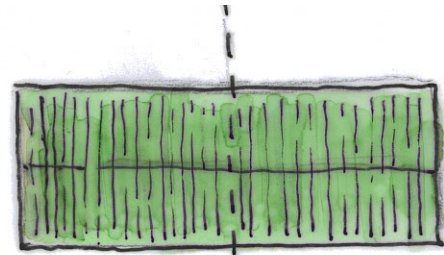
Close outside, light inside



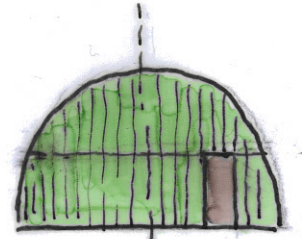
Big sliding door



Uneven plating



Symmetrical façades



Building 512 - the Romney hut

Conclusions on Building Technology

For the full building technology analysis see the appendix.

Building 512, the Romney hut, consists out of a prefabricated steel structure. This catalog building was developed by the British army during WWII and turned out to be a very functional building due to its big span.

The building consists of half circular trusses (A), which are assembled from smaller pieces. Once a truss is assembled it is hoisted into position and connected by bolts to a wooden beam (bielzen). Other than that, the building does not have a foundation and the floor simply consists out of Stelcon plates.

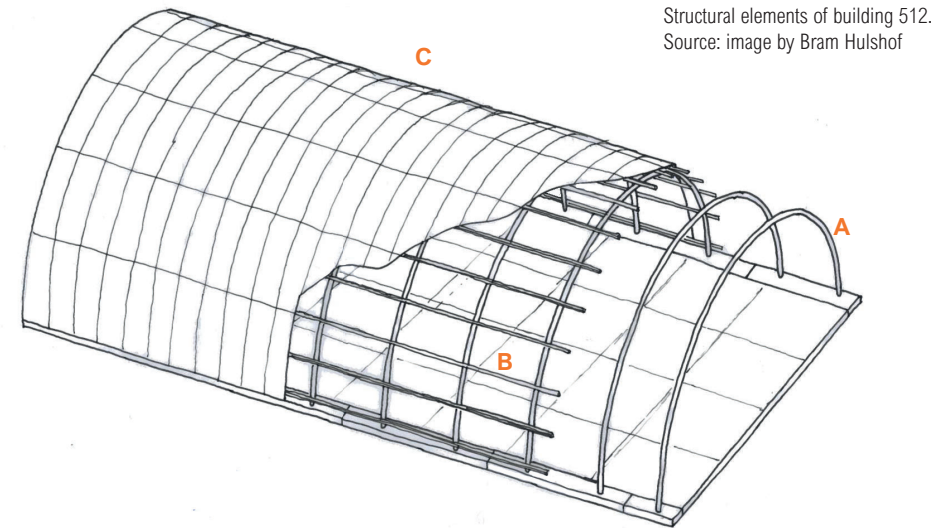
The trusses form the main load carrying elements and create stability in transverse direction. The trusses are connected to each other with wooden purlins (B). Those purlins are bolted onto connectors (part of the main trusses). The fact that each purlin is shifted from the one below creates stability in longitudinal direction. The metal

sheeting (C) which is connected to the purlins create extra stability and form the exterior and interior finish as well. This construction method was simple, cheap and quick.

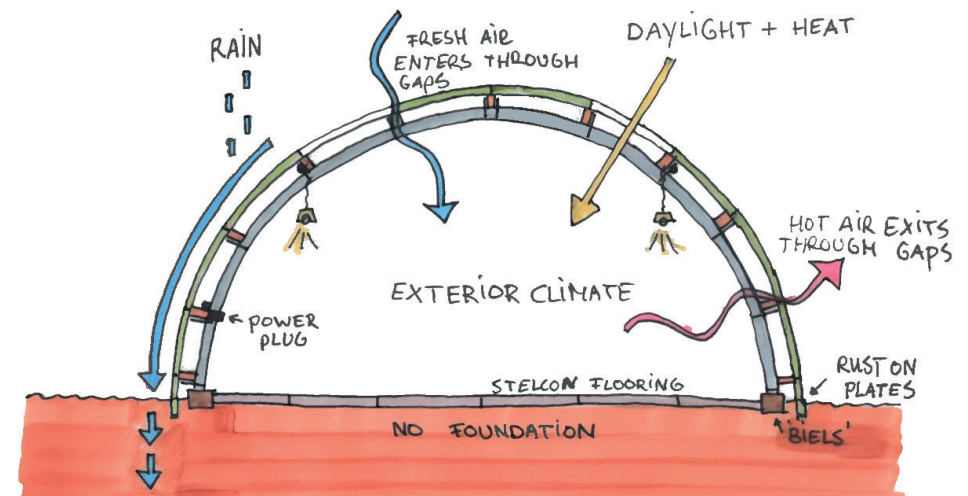
In terms of services this building can be considered to be a shed. It is not insulated and gaps in between the sheeting is causing the interior to have an exterior climate. At some moment of time an air heater was added to the interior causing the interior to be heated a little bit. Next to this heater, the building has electricity which is necessary for the lighting and energy plugs inside.

Those services are coming in from building 421 (the Wash House) making the Romney hut largely dependent on this building.

To conclude, this catalog building, seen all over the Netherlands, is not really more than a very useful shed (in terms of spatial use). Every element of this building has a structural purpose (load bearing or stability).



Structural elements of building 512.
Source: image by Bram Hulshof



Source: image by Bram Hulshof

Building 512 - the Romney hut

Essence by Chenna Tabeling
Additional storage to the Wash House



Functional purpose:

Additional storage unit to building 421 - the Wash house.

Potential:

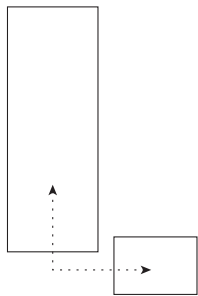
Original purpose that it was connected with building 421

Example of an easy (to be placed temporary) structure

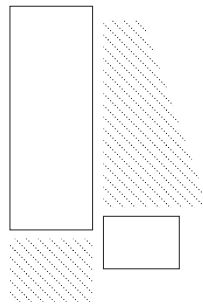
Effect of surprise

Dilemma:

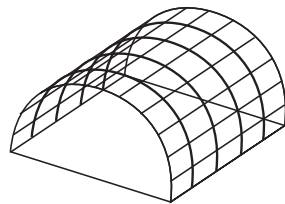
To keep or not to keep?; The hut defines the public space; as well as it obstructs the view to the water.



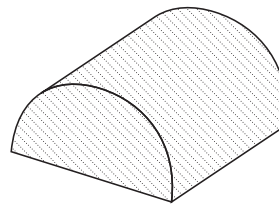
Related to building 421



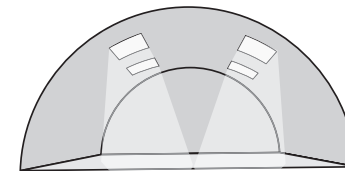
Defines public space ensemble



Clear structure



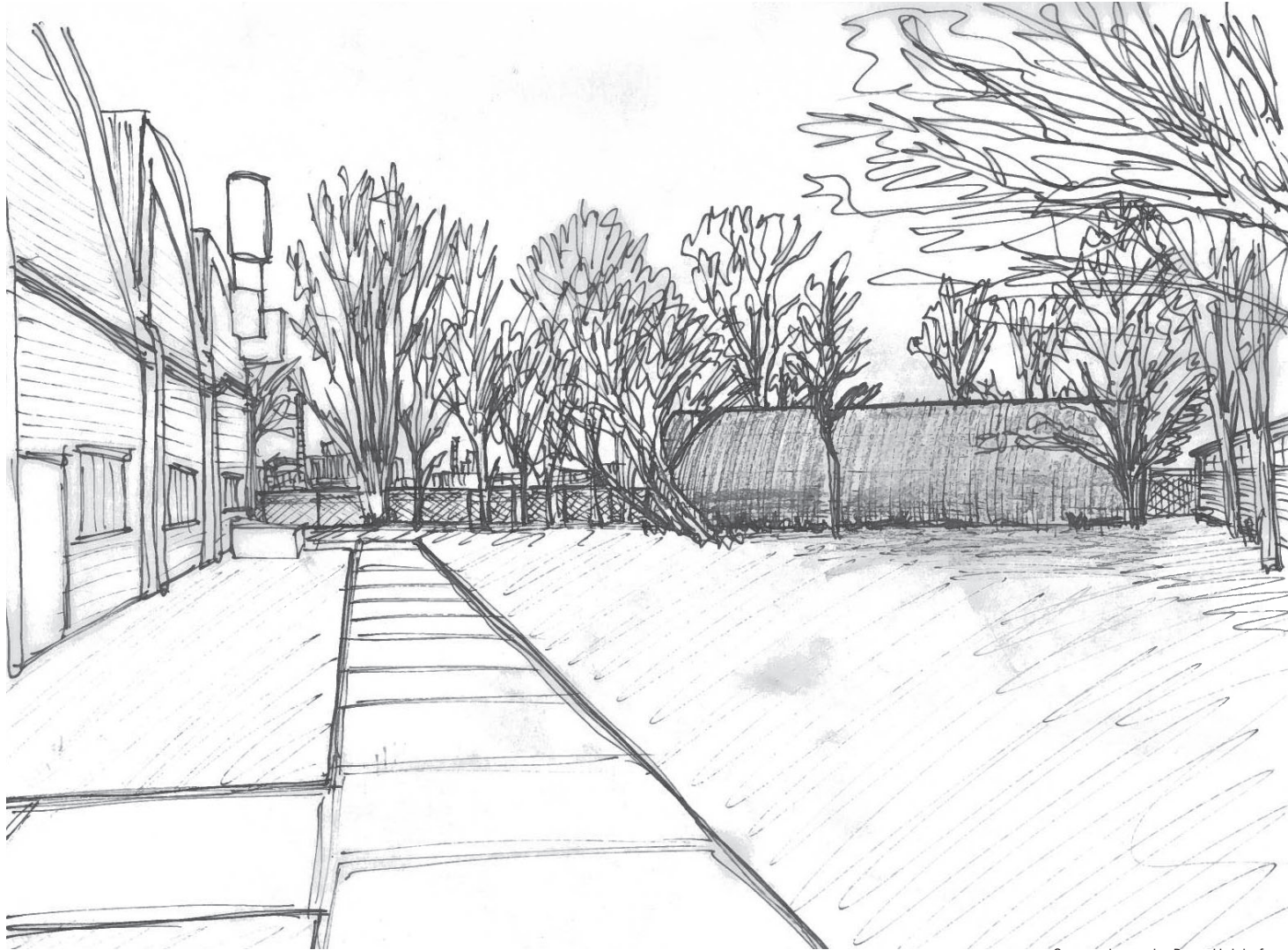
Closed from the outside...



... Element of surprise!

Building 512 - the Romney hut

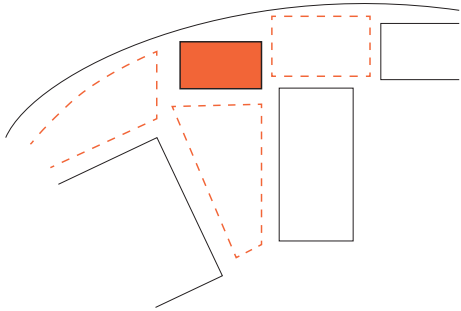
Essence by Bram Hulshof



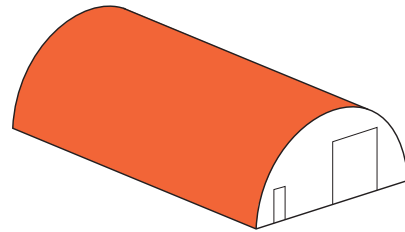
Source: image by Bram Hulshof

Building 512 - the Romney hut

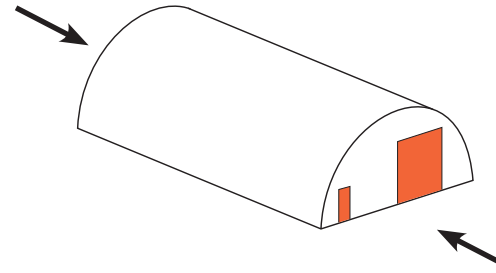
Essence by Bram Hulshof



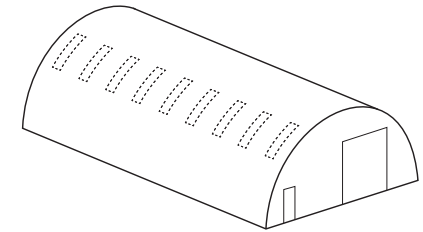
Defining/dividing the public space



Simple geometrical shape



Entrances only in the front facade



Closed from outside, light from inside

Source: images by Bram Hulshof

Building 512 is not a very valuable building on its own in my view. However, I think it is of great importance in terms of urban design.

The building divides one big public space in several smaller human scale spaces with different atmospheres. Although blocking the view towards the water, building 512 almost creates a scenic route through the public domain.

The fact that the building has a simple but strong geometrical shape helps with this function. Furthermore it has a

closed appearance, creating a decor of rusting plates in the background of the public space.

Although closed from the outside, in the interior the building is spacious and light due to the translucent plates on the roof. It has a private and isolated character.



Dilemma: obstruction of the views towards the North Sea Canal

Potential: Dividing the public space in smaller more human scale spaces

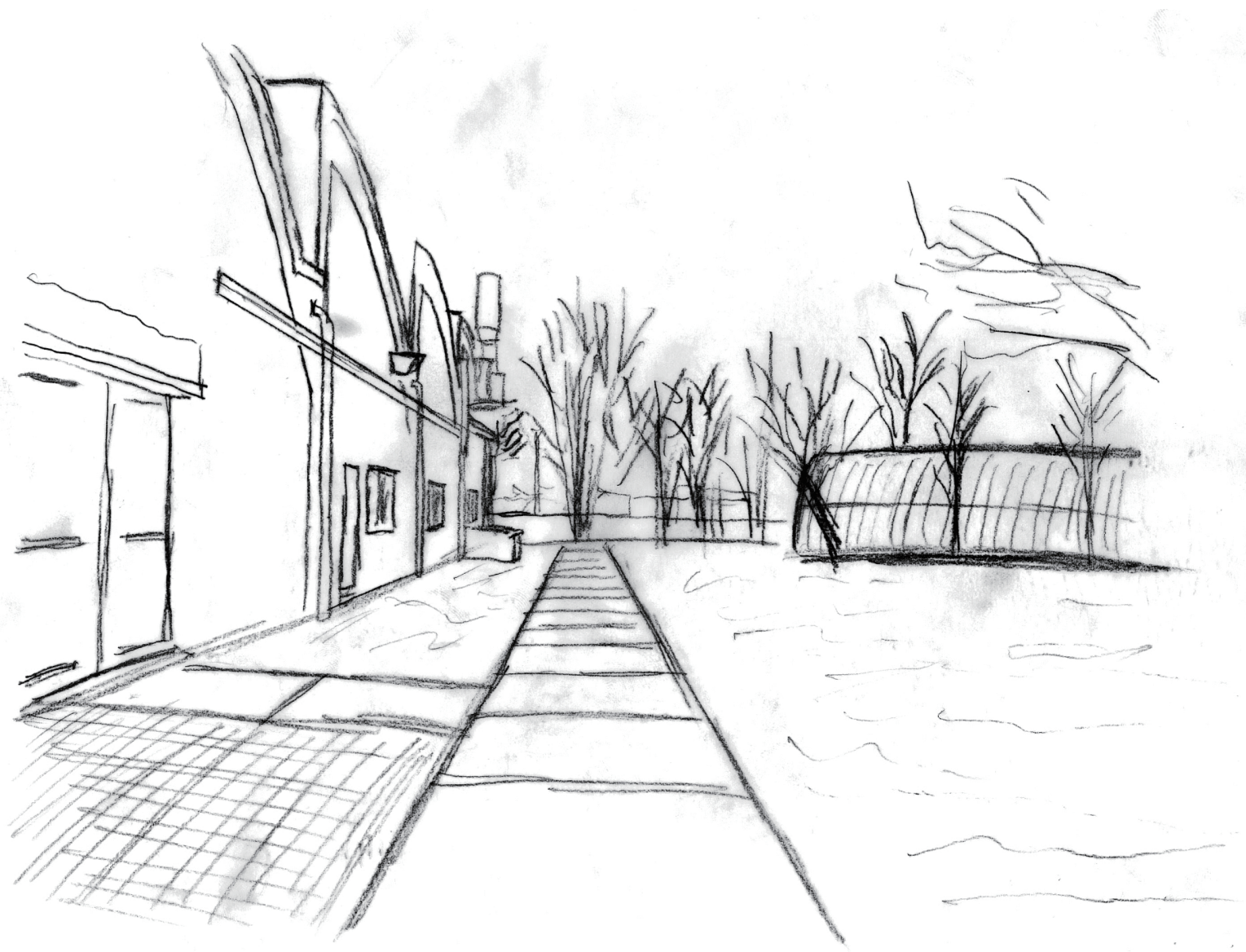


Potential: relate building 512 to building 421

Dilemma: small passage in between buildings

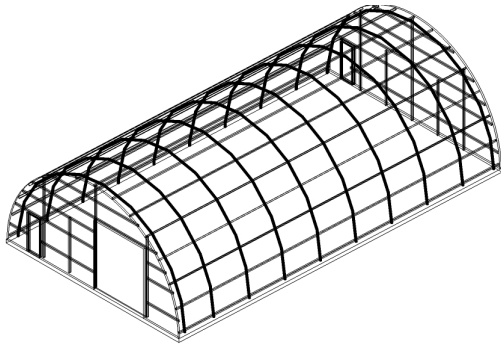
Building 512 - the Romney hut

Essence by Junyi Zuo

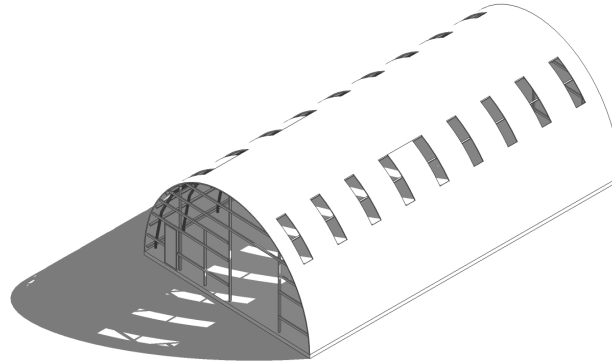


Building 512 - the Romney hut

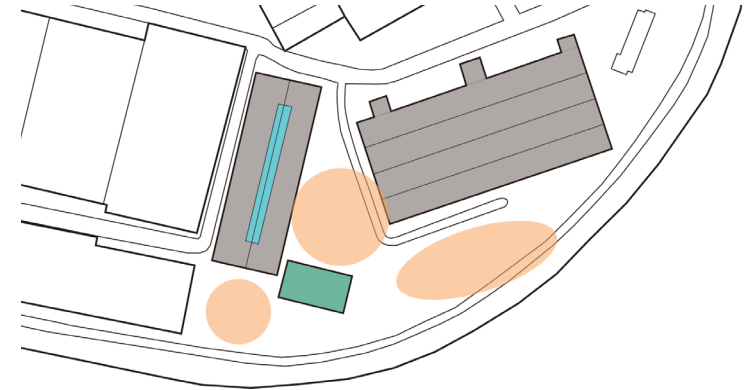
Essence by Junyi Zuo



Clear Structure



Light transmission



Define the public space

The Romney hut was used as a storage shed and built up out of a prefabricated steel structure. It divides the public space in between the buildings and the waterfront in different ways. Creating three public spaces around the Romney Hut: the largest space in front of “The Factory” facing the water, space between the three buildings of the Green Head and a small space between the “Wash House”, the Romney hut and the white bullet factory in the west.

The Romney hut is not as valuable as the other building, but its positioning give the building an important role in shaping the public space and defining the ensemble.

Potential

The windows on the roof/facade of the building provide the interior with light. However, these windows are not visible from the outside, but can be seen from the inside. It provides the opportunities for flexible lighting use.

The Romney hut helps to divide the public space into a human scale, it could a potential for the contextual design.

Dilemmas

The Romney hut is a temporary structure, so it has a lower performance in stability.

The Romney hut shapes the public space but it also obstructs the view-line to the water.

The main material of Romney hut is metal plating, the potential of this plating is limited.



Source: images by Junyi Zuo

Building 512 - the Romney hut

Conclusions

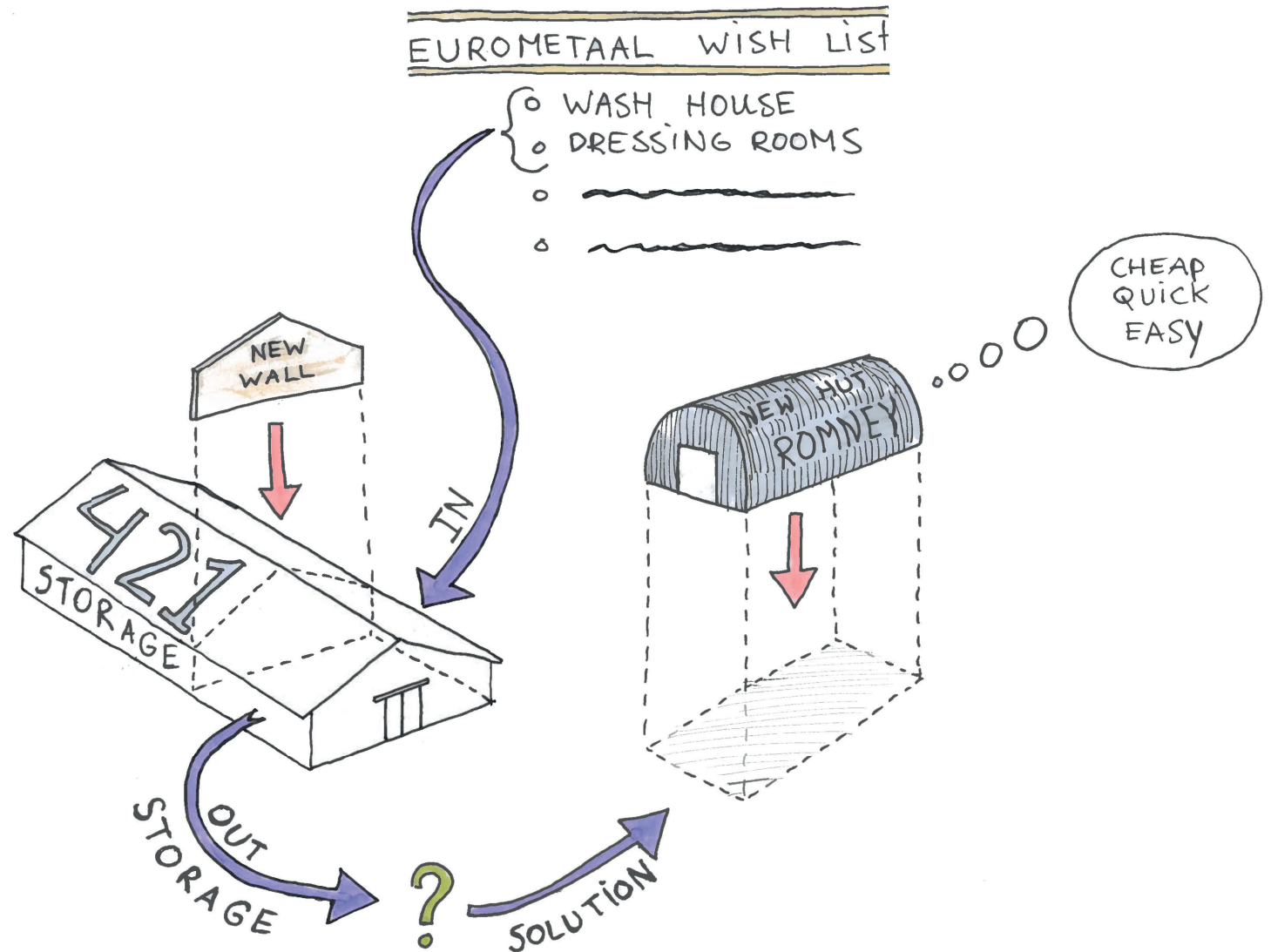
The Romney hut was built by Eurometaal at the same time part of building 421 was transformed into washing and dressing rooms.

We assume Eurometaal decided that building 421 could easily be transformed into washing and dressing rooms. Building a new building for those functions was expensive and relocating some of the storage of building 421 to make place for the washing and dressing rooms was easier and cheaper.

A cheap and quick solution for relocating the storage of building 421 took form in the construction of a Romney hut close to building 421.

This would explain why the Romney hut was build directly next to building 421 with the main entrance towards the front of this building.

Building 512 is the only Romney hut on the whole Hembrug site and one of the youngest buildings. Though just built to house some storage (relocated from building 421), it does have it's impact on the experience of the public spaces on Cape of the Head South while it divides a big public space in three smaller ones.





382 - the Shelter

Building 382 - the Shelter

Overview

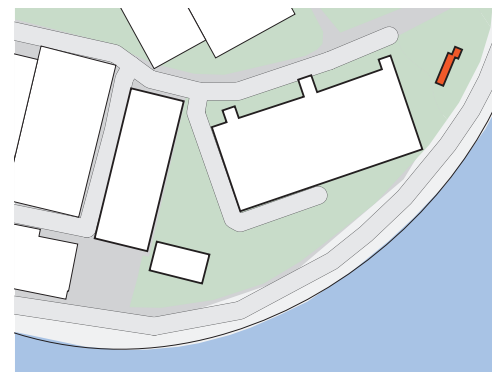
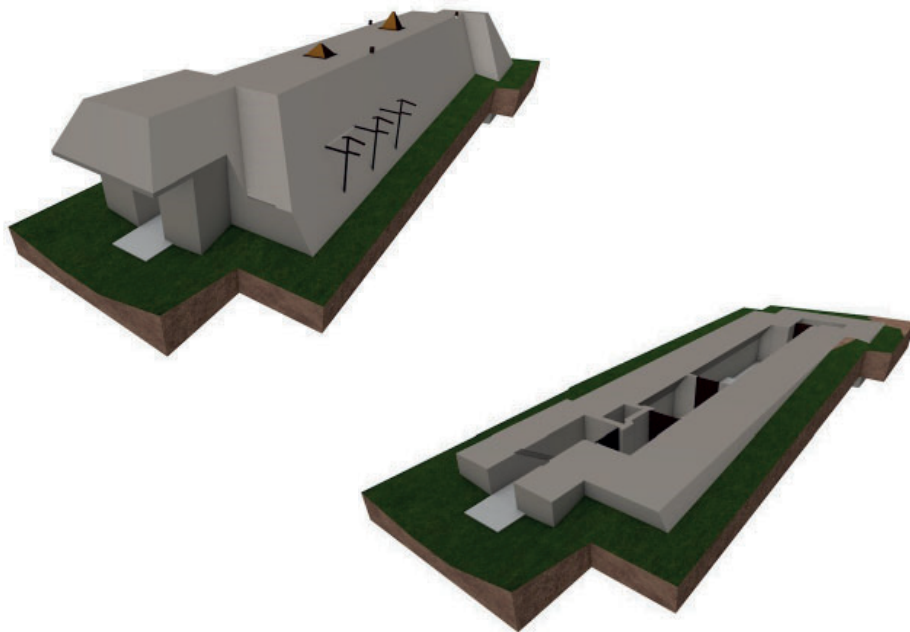
Constructed in **1939**

Former function: **shelter/command post**

Current function: **not in use/unusable**

Short description:

Once this shelter was part of a large group of shelters scattered over the Hembrug terrain. This shelter however was build as one of the two main command post. The other command post, located on the west of the Hembrug terrain, is buried with earth. Being the only shelter from the 1930's left on the Hembrug terrain, this building is listed building (in spite of it being filled with rainwater causing it to be unaccessible).

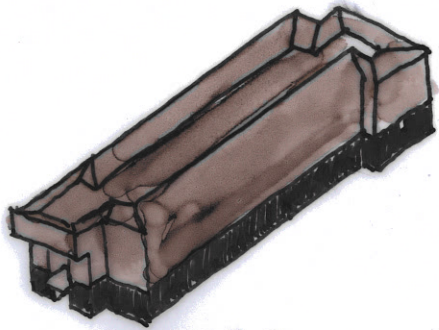


Source: image by Bram Hulshof

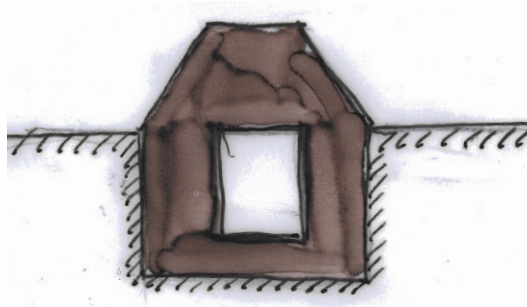
Source: image by Bram Hulshof

Building 382 - the Shelter

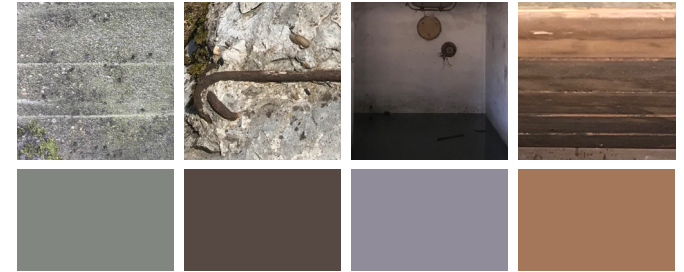
Architectural Characteristic



Underground space



Solid/mass

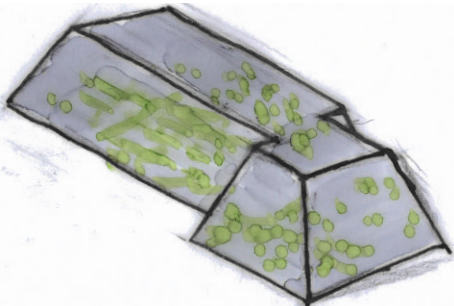


Exterior Concrete

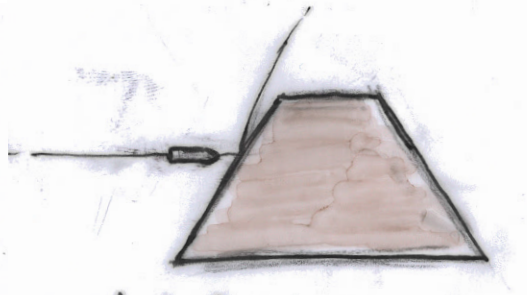
Exterior Reinforcement

Interior Concrete wall

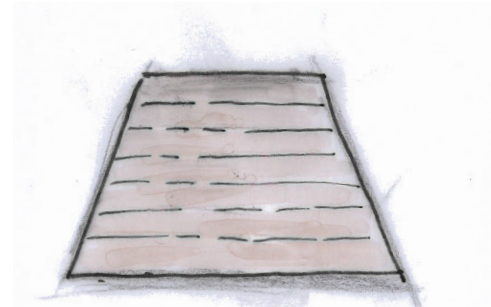
Interior Ceiling



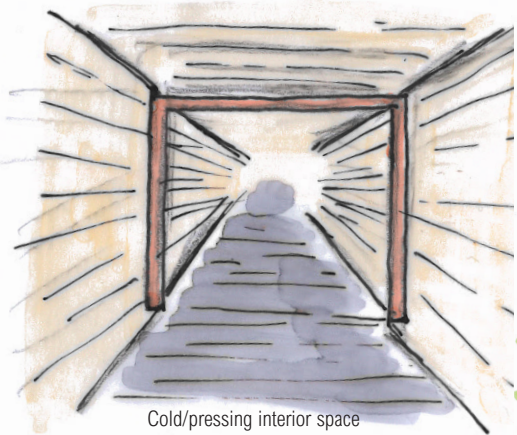
Moss on the facade



Sloped facade (pop up shooting)



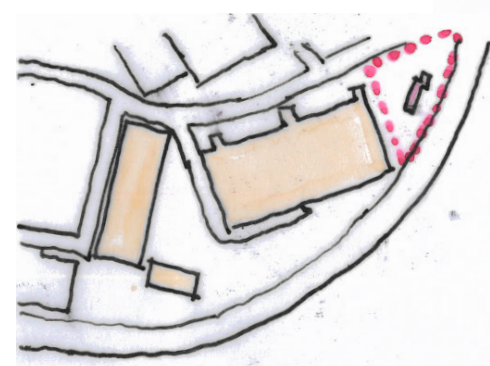
Horizontal wooden casting



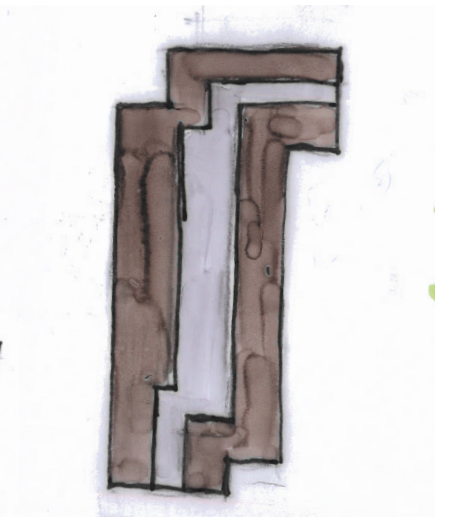
Cold/pressing interior space



Hidden in trees and fence



Isolated from the rest area



Meander floor-plan

Source: images by Junyi Zuo

Building 382 - the Shelter

Conclusions on Building Technology

Although not a lot of information about the shelter was available to us and the shelter itself was inaccessible, we can make some remarks about the shelter in terms of Building Technology.

The shelter is completely made from reinforced concrete. The casting can still clearly be seen on the exterior facades as well as in the interior. It's structure had to be able to endure heavy bombings. As a consequence the building has an enormous mass, the roof alone is 3 meters thick. The massive structure forms one monolithic whole which is stable in all directions.

We assume the shelter has a pole foundation. Otherwise, due to the fact that the shelter is located on a polder, the building would have been sinking into the ground because of its enormous mass.

The mass does have a positive effect in terms of interior climate control. The building has a large thermal mass and it is partly embedded in the ground. The earth has a relatively stable temperature making it unnecessary to install heating or cooling devices inside the building. Although the shelter does not have any insulation it can be expected that the

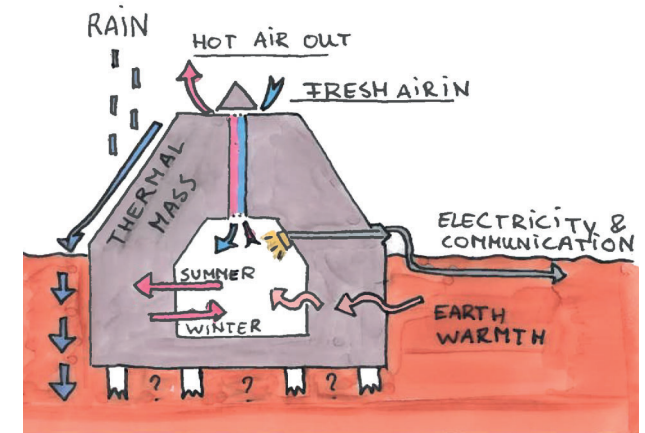
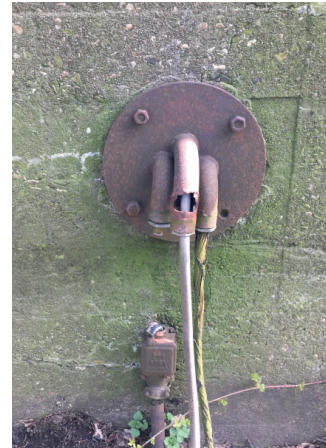
temperatures inside would be relatively comfortable even without heating or cooling devices.

The most important services were the electricity (mostly for lights) and communication to the outside world. At the side facade you can clearly see some cables coming out/or going in the shelter. We assume these cables were the main energy supplies and the main communication cables.

In the front of the building some newer (not original 1930's) services can be seen. These services probably have to do with the energy supply, a fuse box is visible behind a transparent cover.

Ventilation of the shelter is created by pipes running through the thick roof. Caps on the pipes can be seen sticking out of the roof.

The shelter was created for a very specific purpose. Therefore it has an enormous mass, sloped facades to bounce off bombs and bullets and few openings. Except for the lighting and communication, the building has a low tech ventilation and heating principle which probably worked fine for the purpose it served.

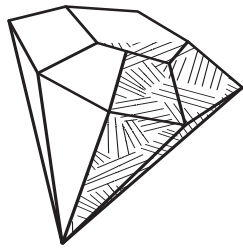


Source: image by Bram Hulshof

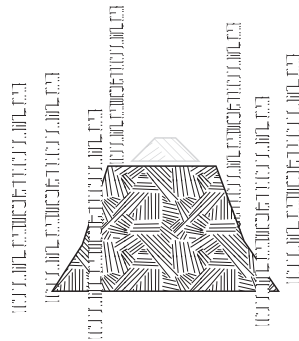


Building 382 - the Shelter

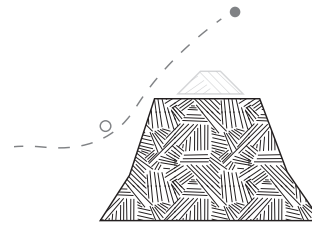
Essence by Chenna Tabeling
'Relict of the past'



Diamond



Hidden in greenery
Trees, shrubs and moss



Sloped facades and mass

Functional purpose:

Protect the people!

Potential:

Its a diamond from the past. Visualize the past;
explain its functional use as **main** command post

Dilemma:

Hidden in greenery, as a main post. How can
visualize that its there?

Full of water, no accessibility.

Building 382 - the Shelter

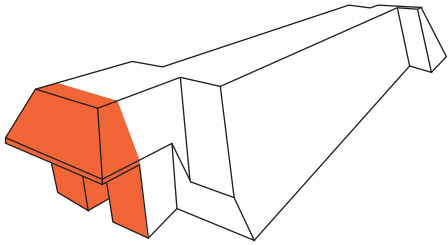
Essence by Bram Hulshof



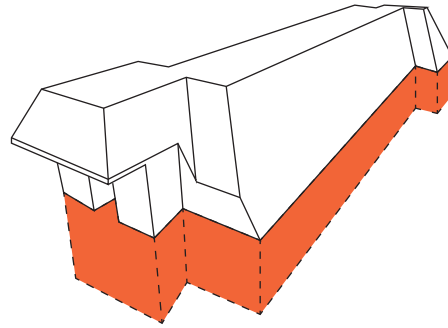
Source: image by Bram Hulshof

Building 382 - the Shelter

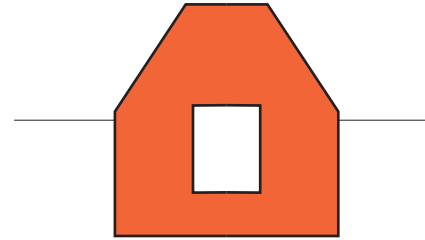
Essence by Bram Hulshof



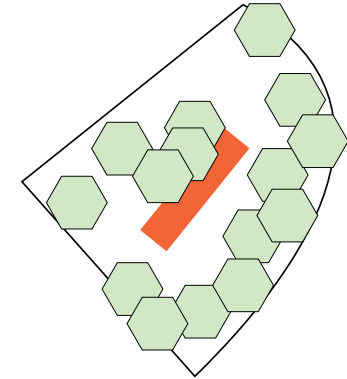
Emphasized entrance



Partly hidden underground



Big solid/closed mass



Hidden/isolated by fences and greenery

Source: images by Bram Hulshof

In the past the shelter should create a safe hide-out. Not only has the threat of war disappeared (causing the shelter to lose its function), the shelter even is completely inaccessible.

Partly buried underneath the ground and enclosed by fences and trees, the shelter forms an isolated relict from the past. Although in winter relatively visible, in summer the greenery provides a real cover.

Once discovered, the shelter remains to have a closed (secretive) atmosphere.

The immense mass, the material and the sloped walls reveal its former function.

Although located on one of the most beautiful spots of the Hembrug terrain, the building has a completely closed character. Only the entrance is emphasized giving the building a front.

In essence, the building has become more of a monument from the past than a building. This poses an interesting debate for its future. Should you leave it as a monument or give it new meaning?



Dilemma: inaccessibility due to rain water

Potential: inaccessibility might contribute to the spirit of place



Potential: Nice views from top of shelter

Dilemma: Greenery obstructs view in summer

Building 382- the Shelter

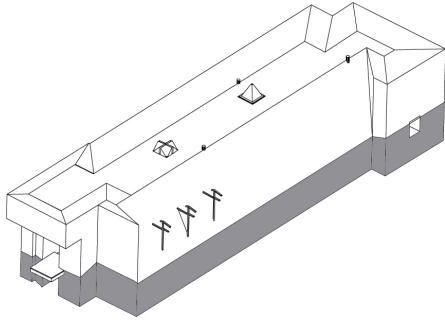
Essence by Junyi Zuo



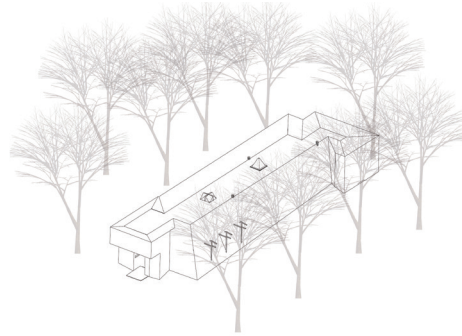
Source: image by Junyi Zuo

Building 382- the Shelter

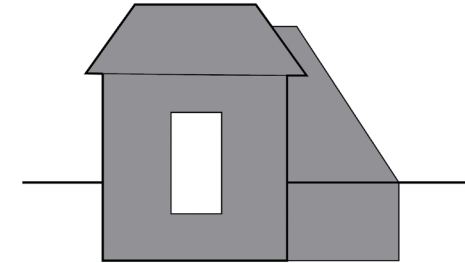
Essence by Junyi Zuo



Underground/closed space



Hidden in trees



Mass/solid volume



The shelter was one of the only survived bunkers in Hembrug. For its specific function, it has extremely thick concrete walls, which show the mass. Most of the interior space of the shelter is lain underground. This provides the shelter with a special potential to create a different spatial atmosphere in comparison to the other buildings.



The shelter is located at the furthest point of the ensemble, isolated by fence and hidden in the trees.

Potential

Special underground space.
It would be interesting to show the mass through the section cut.

Dilemmas

Isolated from the ensemble by fence and trees. How to create a connection towards the other buildings?
Limited and closed interior space.



Source: images by Junyi Zuo

Building 382 - the Shelter

Conclusions

The shelter currently does not have a very apparent relationship with the hembrug terrain but once it was part of a vast network of shelters scattered around the whole Hembrug terrain.

Within this network building 382 was one of two main command posts of the air raid protection. The other command post, an identical shelter located on the north east of the Hembrug terrain, is demolished like the big temporal shelters with earth walls.

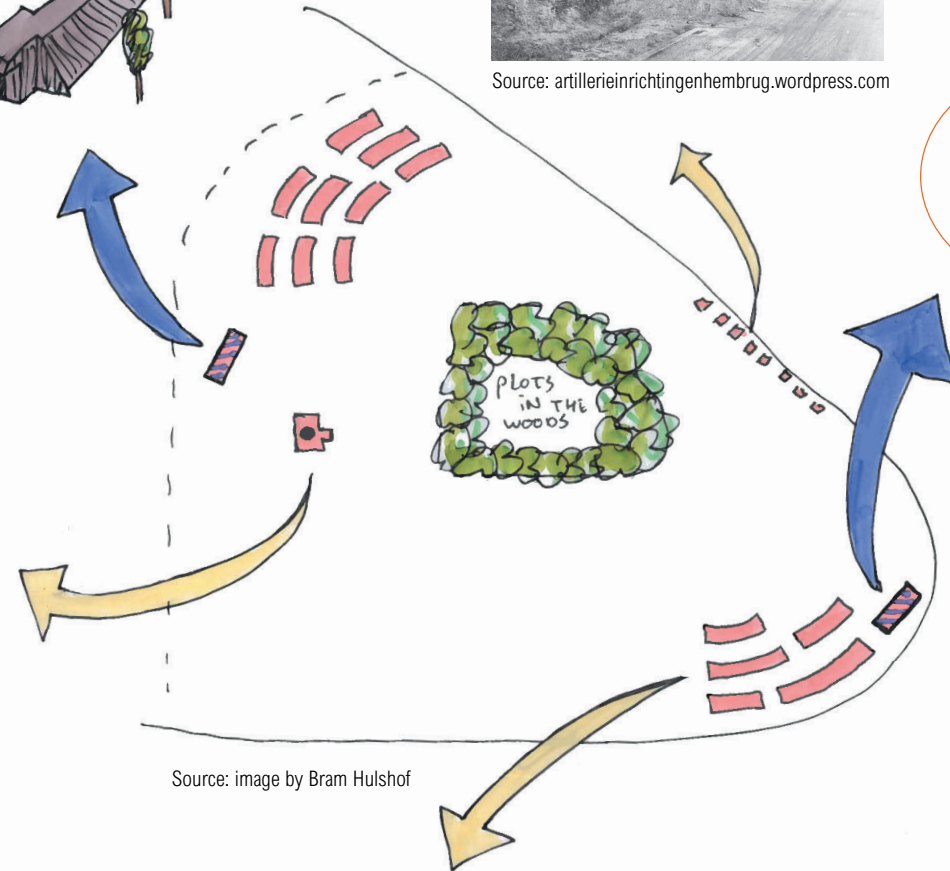
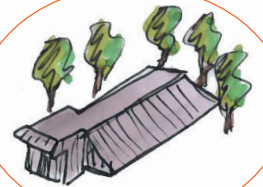
Our shelter remains the only shelter of this 1930's network of shelters. Nowadays it tells the story of the thread of bombings during the war. A weapon and ammunition factory did form an interesting site to bomb during the war. As a consequence of the specific production at the site shelters had to be build.



Source: <http://www.ipernity.com>



Source: artillerieinrichtingenhembrug.wordpress.com



Source: image by Bram Hulshof



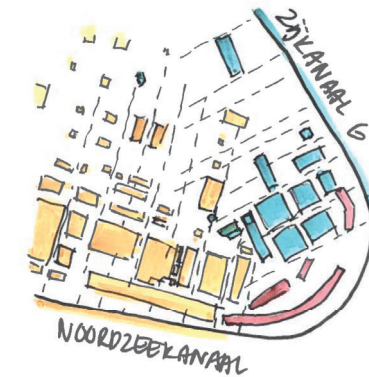
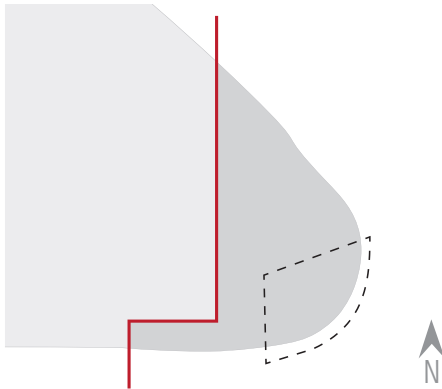
Source: archieef.zaanstad.nl



To conclude

Ensemble

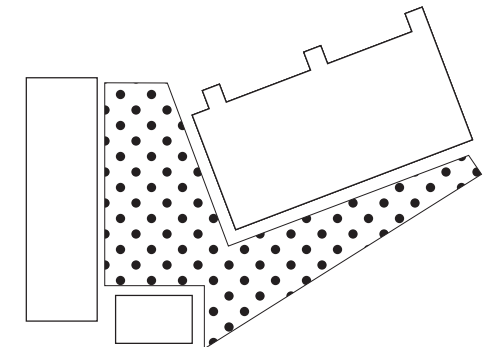
What is the relation between the Green Head of the Cape South and the whole Hembrug site?



1941



1996



Excluded from production process AE

The Green Head of the Cape South for a long time was not included in the production process of the Artillery Establishments, since the ground was in possession of the Marine. At the end of the '30's the Green Head became property of the AE.

During the WWII the AE needed to defend themselves. The AE built shelters on the on the Green Head, since this was only place on where there was space to built. After the WWII the AE was producing more civil- and agricultural products. Building 421 was used as a storage for machines. Building 430 was built in combination with building 429 for the US facilities program for NATO.

Direction of the buildings

The perpendicular direction based on the North Sea Canal and Sidecanal G determined the structure of the Hembrug area. These directions clash into each other on the Green Head of the Cape South.

The drawing of 1941 of Green head of Cape South, located at the head of the peninsula shows (in red) the shelters which follow the waterfront. This seems a logical way of building since now the space is used in the most optimal way.

The drawing of 1996 seems to show the same sort of turn in the orientation of the Factory as the shelters did in their time. In assumption that the Factory

now uses the space in a most optimal way. Since this building won't fit on the plot if you turn this shape around.

The Wash House follows the direction of the Ladder, which creates a small alley in between these buildings. Since the Factory and the Shelter are shifted relative to the Wash House, angled inbetween spaces have originated on the Green Head.

To conclude

The Green Head of the Cape South did not had anything to do with the Hembrug area, until the 30's when it got included in the AE. Even then the site remained to set itself apart from the Hembrug terrain in terms of spatial and functional relations. The few relations that were placed in the past, are no longer recognizable. This all adds up to the site being a green oasis with four different impulses on the head of the peninsula.

Conclusion

Chenna Tabeling

What is and was the relation of the Green Head of the Cape South to the Hembrug site?

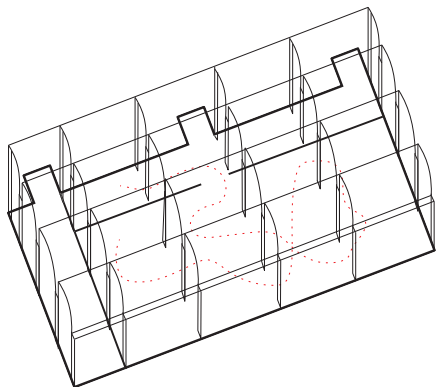
- What was and/or were the former function(s) of the buildings(aspects)? and; Why did the buildings layout changed over time?
- Were these changes related to a broader context?

Flexible use of the Factory

The different floorplans over time (of the setup of the machinery), show that the Factory (serving the NATO) was very flexible in how the machines were placed and how the set up changed. When the production process changed, the building layout changed. All this in order to make the process more efficient. Concluding that everything in the building is transformed to serve the production process; the building itself functions as a well performing machine. All this was possible due to the structure providing a free floorplan.

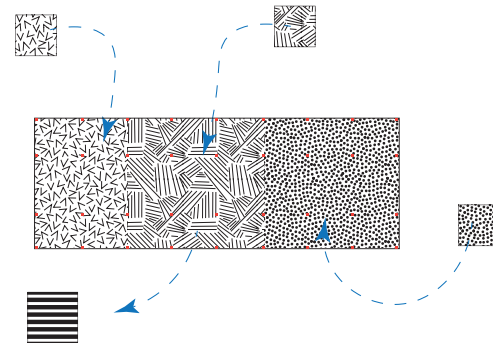
Multifunctional roof

The roof was multifunctional in a way that it did not only provide a roof against water, but it as extra incidental it provided light, ventilation and extra safety to the building.



The Wash House as facilitator

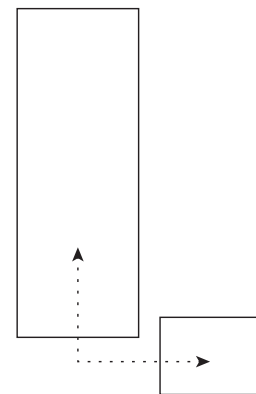
Since the demand of the weapon industry decreased after the World War II, the AE continued with the production civil goods. In 1952, building 421 (the Wash House) is built as a storage of machinery. Around the 80's the building is transformed into a wash house for Eurometaal. The change in the layout and purpose shows its flexibility as building towards the Hembrug area. It facilitated the Hembrug area with space, which was needed at that time.



Connection with the Wash House

The Romney hut served as an extra storage to the Wash house (before it was a wash house).

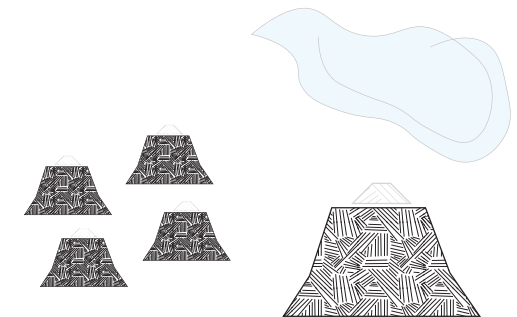
Nowadays the physical presence of the hut defines the public space near the wash house.



Protect the people!

The shelter was one of the main command posts for air attacks during the second World War.

Its main purpose was to protect the people. Architectural outcomes of its function presence are its mass, hiddenness, sloped roof and more.



Conclusions

Bram Hulshof

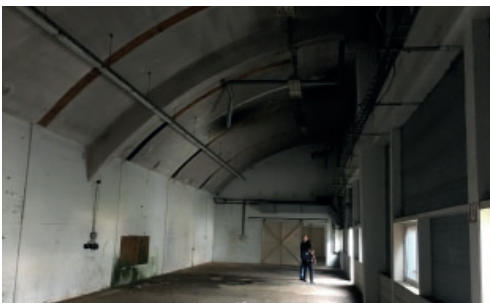
What interventions were made to the buildings and why?

Building 430 - the Factory

Being the only production building on our ensemble, it was to be expected that the building changed over time due to developments of the production process.

Indeed the interior does show traces of removed walls, replaced walls and new walls. Most exterior facades are in relative original condition other than some additions of services and the disappearance of the penthouses and replacement of some windows. The north facade and the blow-out walls in the roof however have been changed drastically though.

Altogether, we can say that (within the structure of the building) a lot of changes over time did happen with minor effect to the overall appearance of the building (except for the North facade and the blow-out walls).



Building 421 - the Wash House

Most alterations to this building relate to the changes in functional use. Once a large open space, now several walls perpendicular to the longitudinal direction have been added (creating several smaller spaces inside the building).

These changes/additions of functions caused the facades to be altered as well. New doors were added and original doors were removed. Some windows have been enlarged as well.

We can conclude that the original appearance of the building can still be seen but the changes in functional use altered the interior spatial experience and the articulation of the facade.



Building 512 - the Romney hut

The Romney hut does not show signs of big interventions. Only some plates were replaced at some moment in time (most likely because of rainwater penetration due to holes created by rust). This however can also simply be looked at as 'maintenance'.

The services coming in from building 421 (electricity and an air heater) might be additions to the building. No proof has been found but then we can ask the question how relevant this is.

We can state that building 512 is almost completely original. Just some original material (a couple plates) have been removed.



Building 382 - the Shelter

The shelter is a very well preserved relict from the past. Other than the addition of a electricity box on the front of the building, no alterations to the building can be identified.

Because of the inaccessibility of the interior we cannot provide an answer to the question relating to the interior. We expect some services to be added to the original surfaces.

To conclude, no original material seems to have been removed from the shelter.



Conclusion

Research Question Junyi Zuo

What kind of design approaches are used in head of the cape to define the space and what is its response to the specific location at the corner of the Hembrug area and the meeting of the different grids?

Building 430 - the Factory

Standing on the meeting point of the grid, you can see that building 430 is shifted from the grid, standing on its own.

By the shifting of grid, it shapes a large public space between the building and the river; and the south facade of the building is directly facing the water.

The north facade has been changed and aluminium plating has been added. It could be seen as a border of the ensemble which is quite different from the rest of the other façades.

Overall, building 430 make it as a core building to control the ensemble, shape public space and establish connection to the water.



Building 421 - the Wash House

The Wash House shows the strong continuation to the building 342, which contribute to the relationship between the Green Head of Cape and the Ladder. This sequence is an important connection of the ensemble to the rest of Hembrug terrain.

The space between the Wash House and the Factory provide a feeling of space from narrow to open gradually, which attract the visitor to enter.

In conclusion, building 421 is an important link in connecting the Green Head towards the neighbourhood as a continuation of the Ladder and guidance to the visitor to enter.



Building 512 - the Romney hut

From the urban design perspective, the Romney hut is a key point to sharp the open space and define the ensemble.

In the Green Head of Cape, the Romney hut divides the public space in between the buildings and waterfront and defines these spaces in different styles. Thus, there are three public spaces defined by the Romney Hut: the largest space in front of "The Factory" facing the water, a triangular space with a sequence of trees in front of the entrance to the site and a small space covered by the shadows of the trees and a square located between the "Wash House", the Romney Hut and the white bullet factory in the west.



Building 382 - the Shelter

As one of the oldest construction on the Green Head, the shelter is kept private by the trees.

The fence around the shelter functions as a border to define the ensemble. The alley in between the fence and building 430 provides the access to the ensemble and also connects the shelter with the ensemble. The forest around the shelter is remained, in order keep the border to the west .

The shelter was not built in the same period as the rest of buildings, the connection from the shelter towards the ensemble is weak.



Appendix Green Head of the Cape South



Bram Hulshof

Chenna Tabeling

Junyi Zuo

Date: 15-4-2019

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Appendix Architectural Analysis

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Ensemble

Photo impression



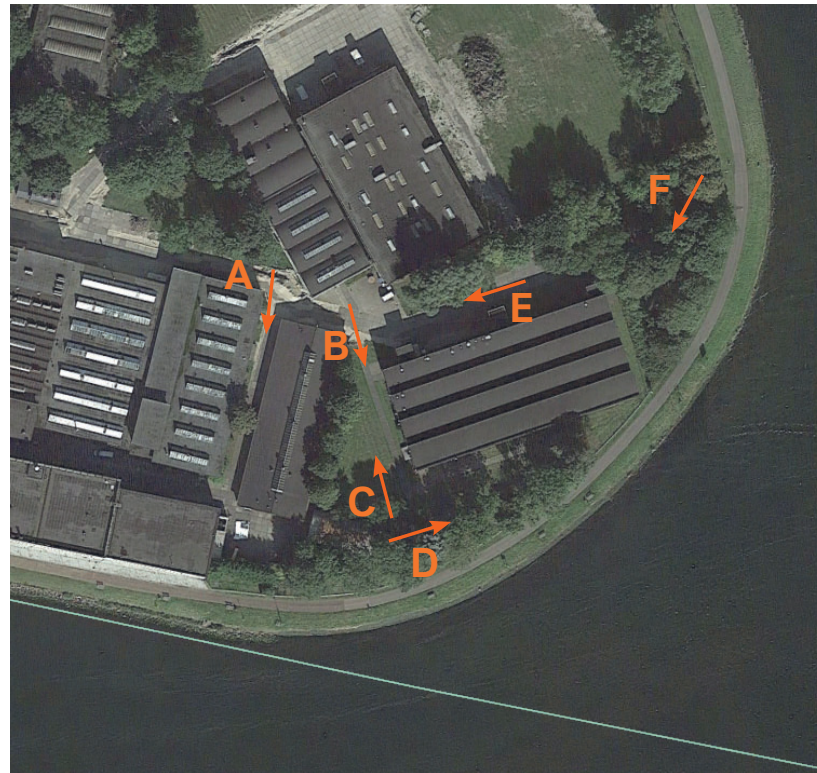
A



B



C



Source plan: google maps



D



E



F

Ensemble

Dimensions public spaces

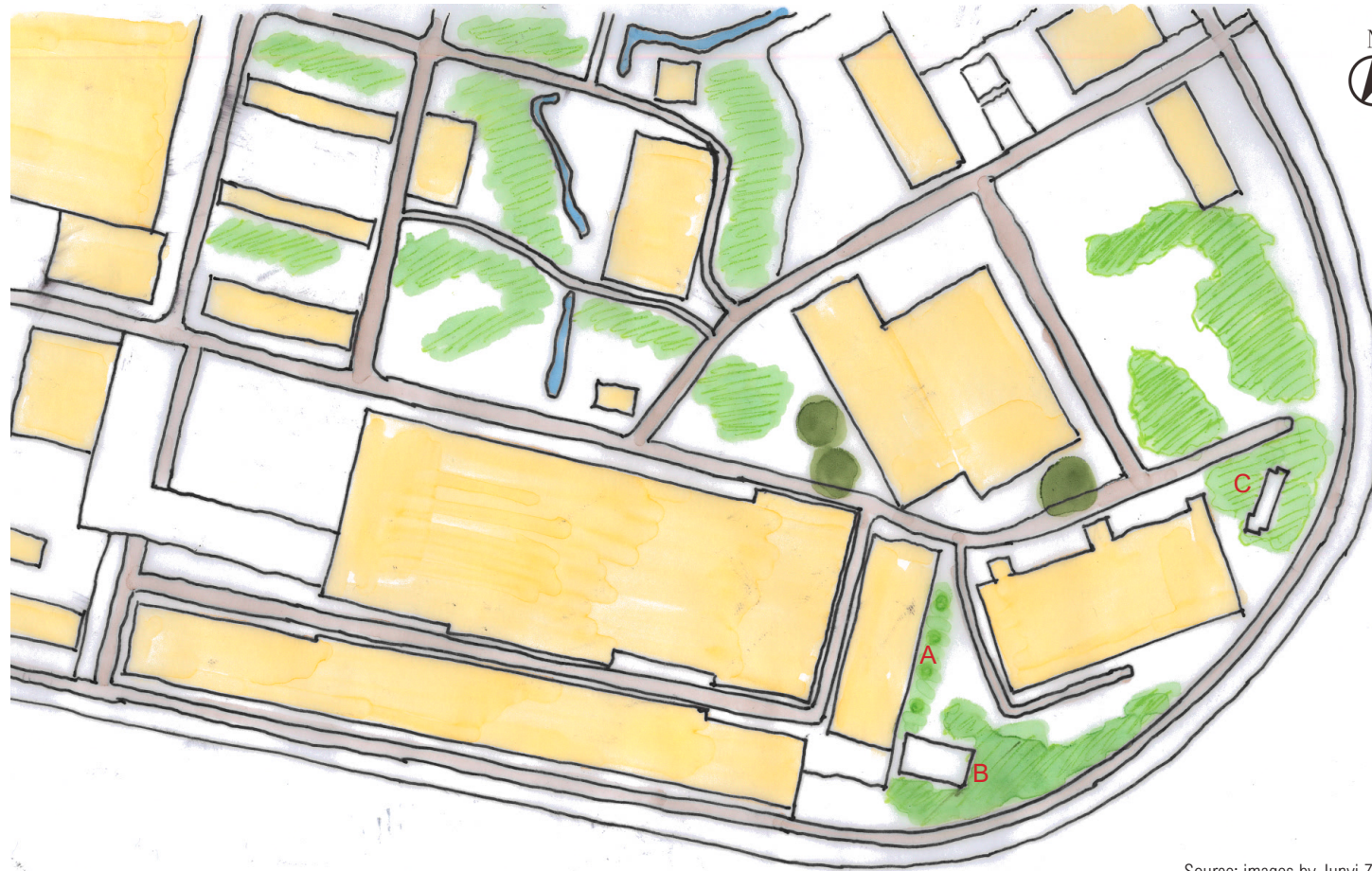


Although there is a lot of open space in the ensemble, every building still has a neighboring building within 9 meters. Especially building 421 is enclosed by a lot of neighboring buildings and most far from the water. Building 382 is the most detached building, it lies isolated on the tip of the terrain.

Source: images by Bram Hulshof

Ensemble

Road Structure and Material



There is a lot of the greenery on the Green Head of the Cape. Most of the greenery is located along the fence and the road, which surrounds the Romney hut and the shelter.

A



Trees in front of building 421.

Trees are planted in a sequence in front of the east facade of building 421, which lead the way for visitors to enter the ensemble.

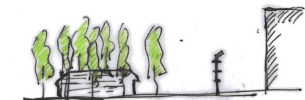
B



Trees around the Romney hut

The Romney hut is surrounded by trees. The trees create shading for the open space. The trees planted along the fence add to the border and visually hide the Green Head as seen from the other side of the North Sea Canal.

C



Trees hide the shelter

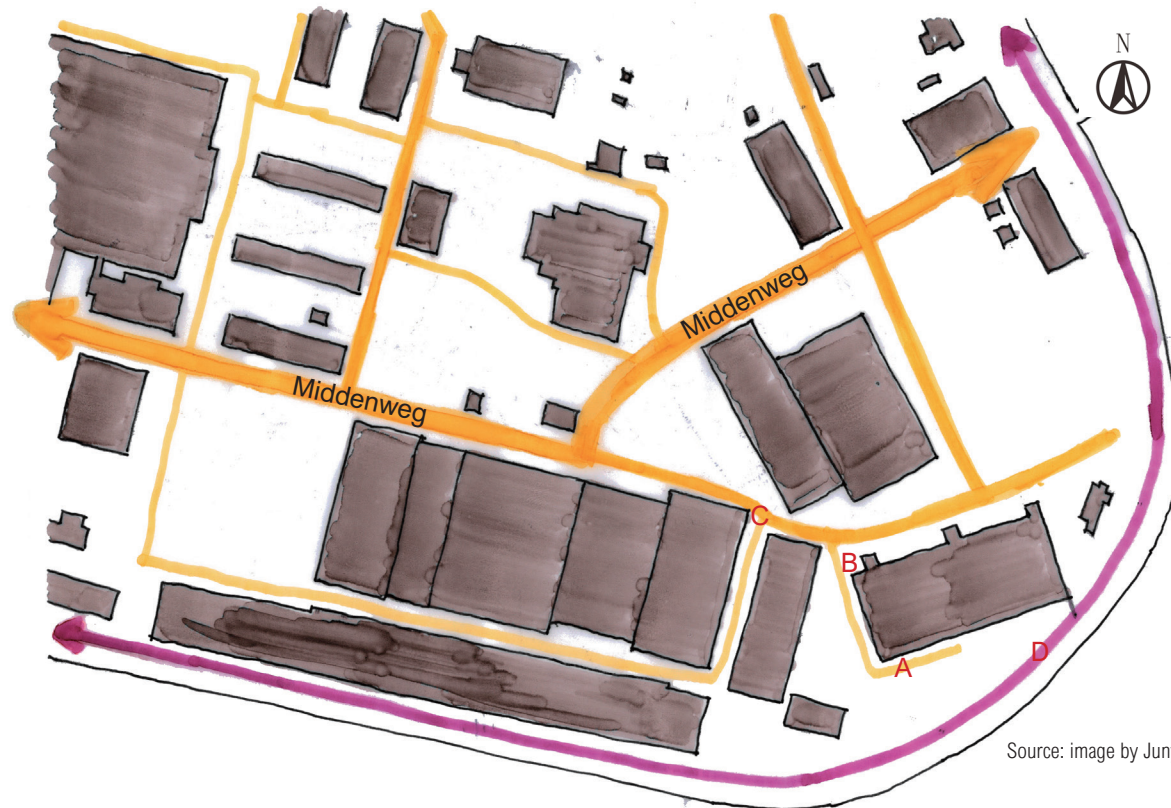
The shelter is completely hidden by the trees and encircled by a fence. This secludes the shelter from the rest of the ensemble. The past is hidden in the forest behind the fence.

Source: images by Junyi Zuo

- Road structure
- Building
- Greenery
- Monumental trees (over 60 years)

Ensemble

Road Structure



Source: image by Junyi Zuo



The main road structure is the “Middenweg”, which connects the two main entrances of the Hembrug terrain. Secondary road structures coming from the main road, give access to the buildings.

The main road and pathways to the main entrances of each building are made of stelcon concrete slabs. The trees are usually planted along the main road to guide the visitors. The smaller accesses are made by bricks. The brick patterns in the pathways vary a lot. The route along the water is an asphalt road which allows vehicles and bicycles to move quickly.



A Fig: concrete pavement



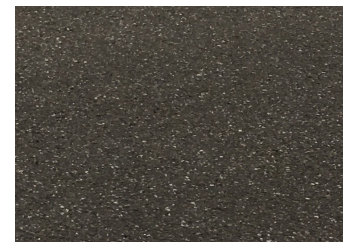
B Fig: brick pavement “diagonal herringbone”



C Fig: brick pavement “basketweave”



D Fig: asphalt road



Ensemble

Photo of the Green Head of the Cape



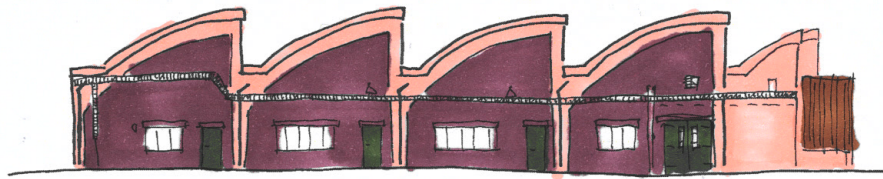
Green Head of the Cape with: Peat sheds, shelters, building 421 (the Wash House)
Date unknown: approximately around 1941

Ensemble

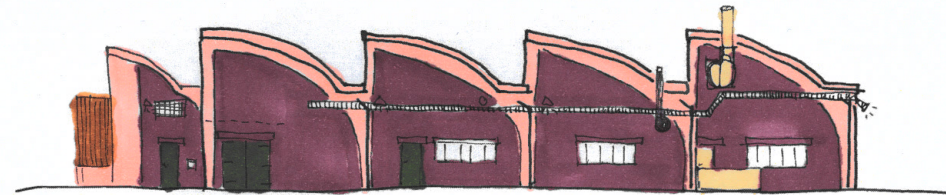


Building 430 - the Factory

Material



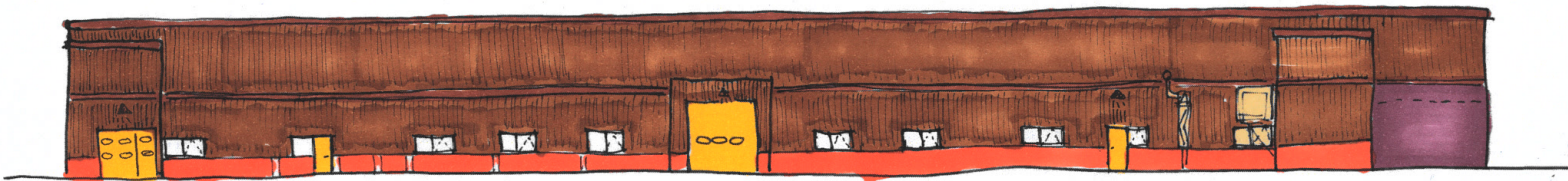
East Facade



West Facade



South Facade



North Facade

- Concrete structure
- Old brick
- New brick
- Concrete roof
- Aluminium plating
- Iron door
- Aluminium rolling door

Building 430 - the Factory

Conclusion facade

The Factory has the same shell roof as seen in Plots in the Woods. However the Factory shows a different built up in the facade. The facade of the Factory shows the concrete structure with an brick infill. The facades of the buildings in Plots of the Woods rather do not show the concrete structure but are entirely surrounded by bricks.

Something that can be conclude out of this is that the brickwork is not load bearing and could be removed.



Facade of building 430



Facade of building in Plot in wood



Columns of building 430

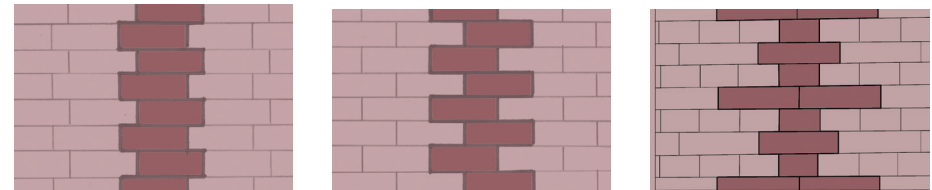


Walls of building in Plot in wood

For the shell roof buildings, the columns provide the main load bearing. In building 430 a free floorplan is the result of the many columns in the main interior space. In contrast, the interior space of shell roof buildings in Plot in the Woods is divide by concrete wall. In that sense the Factory in contrast to the plots in the Woods creates more possibilities since its flexible open floor plan.

The most common material in the ensemble is red bricks with the pattern of “3-klezorenverband”, which is the original pattern. But also the “halfsteensverband” can be found in the ensemble. The halfsteensverband is mostly used when renovating parts of the building.

The Green Head shows a different pattern than the rest of the Hembrug area, where the most common brick pattern: “kruisverband” is used.



klezoor verband

half steens verband

kruisverband

The different types of brick patterns, shows different periods of construction.

By looking at the different bonds of the brickwork, the old and the new can be distinguished.

Building 430 - the Factory

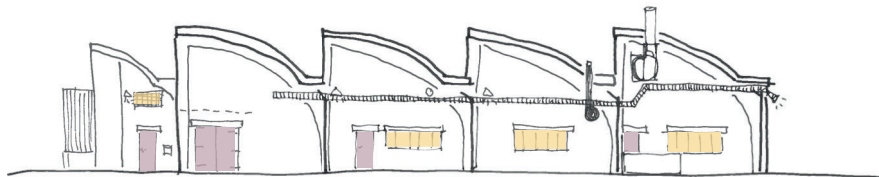
Facades with openings



South



North



West



East

Legend

- Doors
- Windows
- Openable windows

The facades partly represent what happened / changed inside the building.

The doors represent the entrances to the building. In which its hard to define which doors were meant for the transportation of the goods and which were meant as an entrance to the workers.

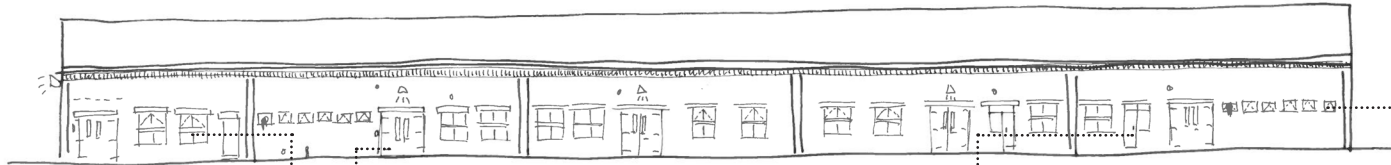
The small windows on the south facade represent the toiletgroups of the building.

The blow out wall and the windows in the 'roof' are demolished.

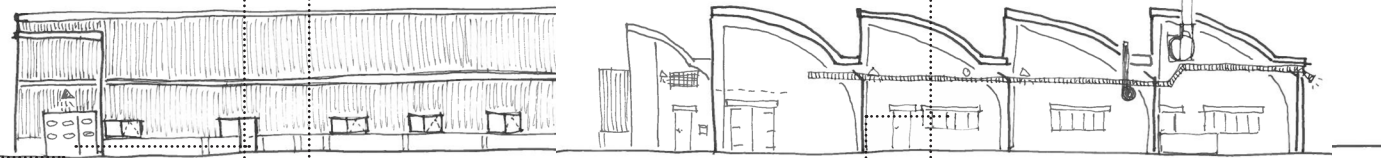
A clear rythm in the facade is discovered, this is partly in response to the structure.

Building 430 - the Factory

Doors and Windows



Source: image by Chenna Tabelaing



Source: image by Chenna Tabelaing



Fig: Square window



Fig: Horizontal window



Fig: Small window for toilet



Fig: Rolling door



Fig: Steel door



Fig: Steel door

Building 430 - the Factory

Interior Material



Fig: Concrete shell roof with wood casting



Fig: Concrete beam with wood casting



Fig: Shell roof windows



Fig: Concrete column with wood casting



Fig: White bricks wall



Fig: White painted bricks wall



Fig: Stucco wall

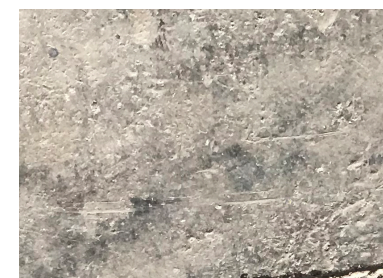
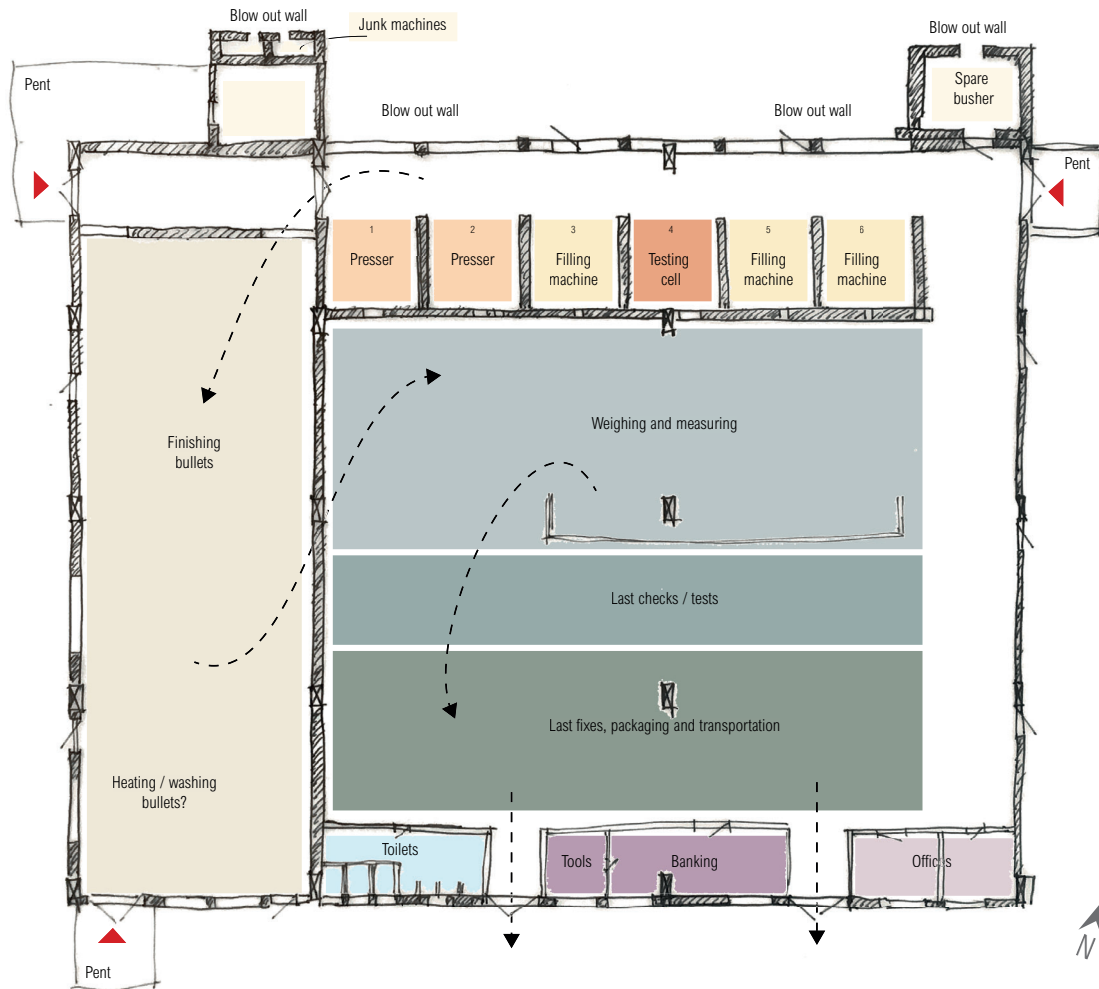


Fig: Concrete floor

Building 430 - the Factory

Floorplan part A

Original drawing from 1955



This drawing is based on the original map of the layout of the machinery. To be seen in the appendix.

Unfortunately the drawings cannot show exactly how the flow of the process of manufacturing went and how it was organized. The arrows and colours give an assumption.

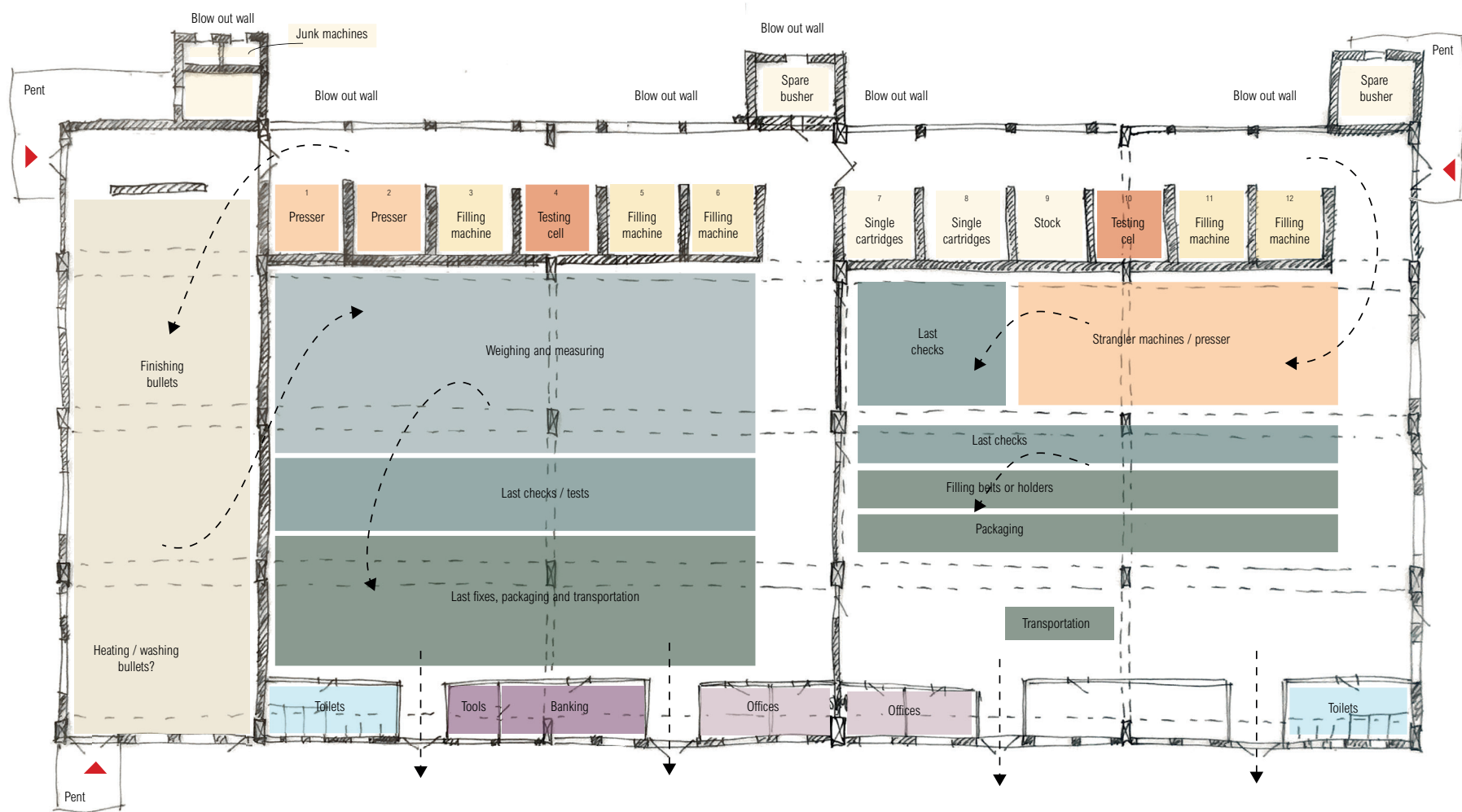
Legend

- Production process
- Finishing bullets
- Checks and transportation
- Supportive units
- Toilets

Building 430 - the Factory

Floorplan part a/b

Drawing in between 1956 to 1961



Part b was constructed when part a was finished. The AE had already planned the expansion from the beginning, since the foundation had already been laid.

Buildingparts a and b were constructed both in the timeschedule from 1955 till 1961. The set up of the machinery to be seen in the appendix.

Unfortunately the drawings cannot show exactly how the flow of the process of manufacturing went and how it was organized. The arrows and colours give an assumption.

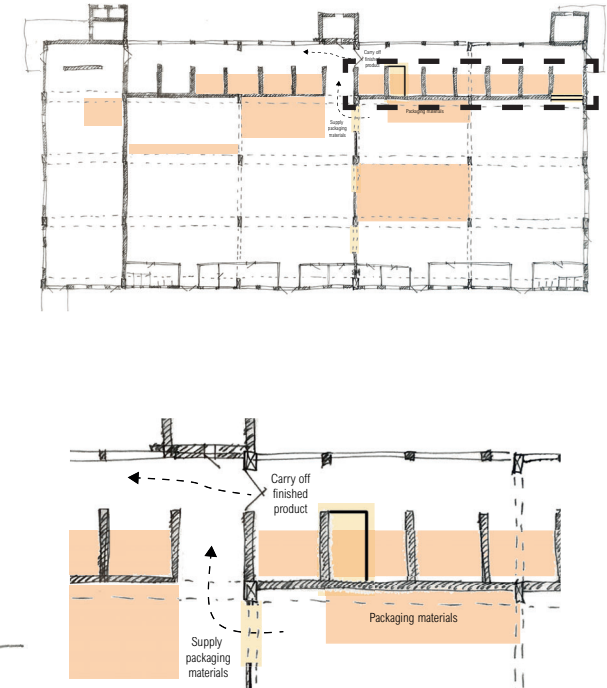
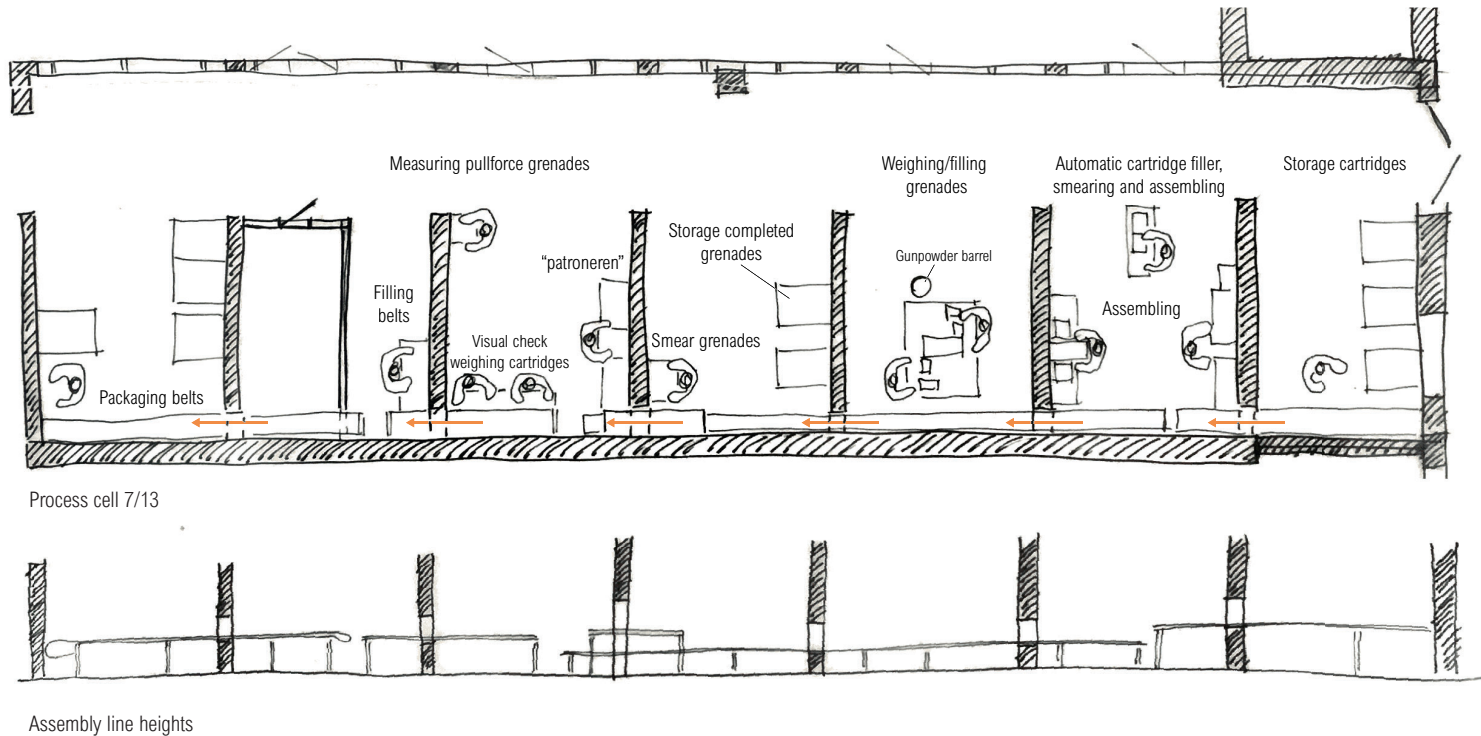
Legend

- Production process
- Finishing bullets
- Checks and transportation
- Supportive units
- Toilets

Building 430 - the Factory

Drawing from 1979

Changes and work logistics cells 7 to 13



The drawing from 1979 shows a few changes in the layout of the floorplan. An extra cell was added to the right part of the cellstructures.

since very specific drawings of the process were made. They probably wanted to make the process even more efficient, since they added an assemblyline to transport goods from one to another cell.

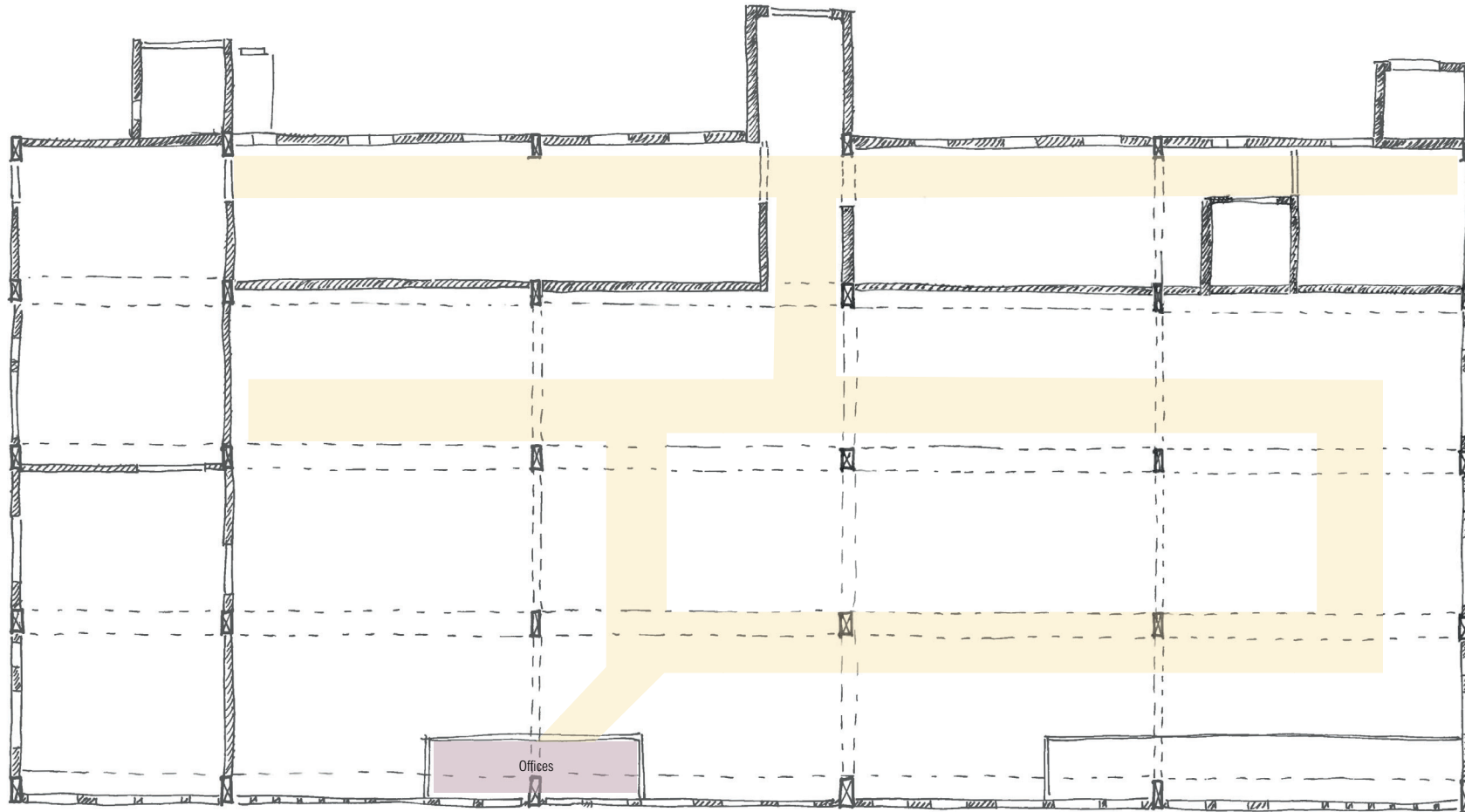
A change in the process is assumed,

Legend

- New added structures
- New organisation

Building 430 - the Factory

Current floorplan part a/b



The layout of the Factory as seen on the floorplan dating from 1979, changed one more time. This is the layout as seen today in the Factory. This floorplan showed real clear walkways (yellow) in between the machines.

The cellstructure in the northern part of the buildings is demolished and the workspace for the banking is also demolished.

See the appendix for changes in the set up of the layout of the machinery.

Nowadays the factory is used by a firemans society who are recuperating an old firetruck.

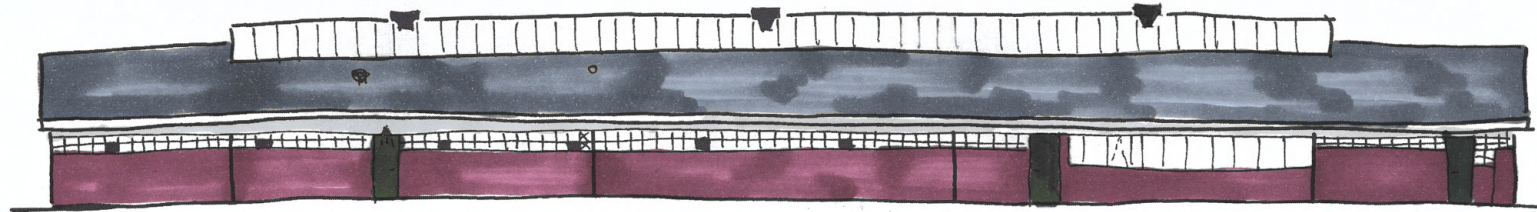
Legend

- Walkways
- Supportive units

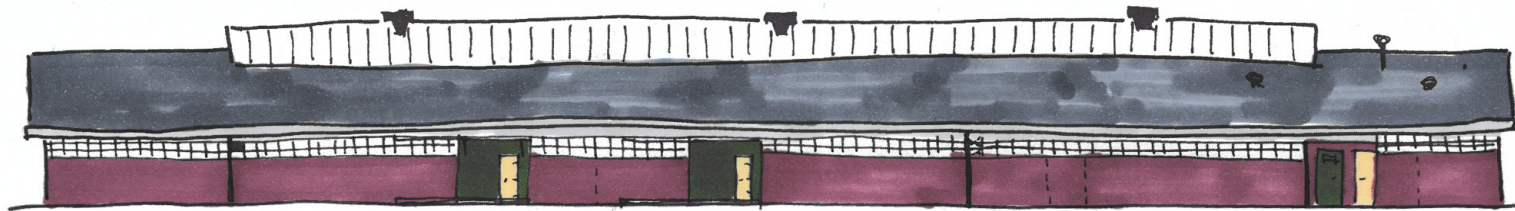


Building 421 - the Wash House

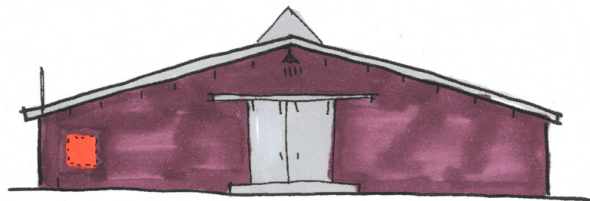
Material



East Facade



West Facade



North Facade

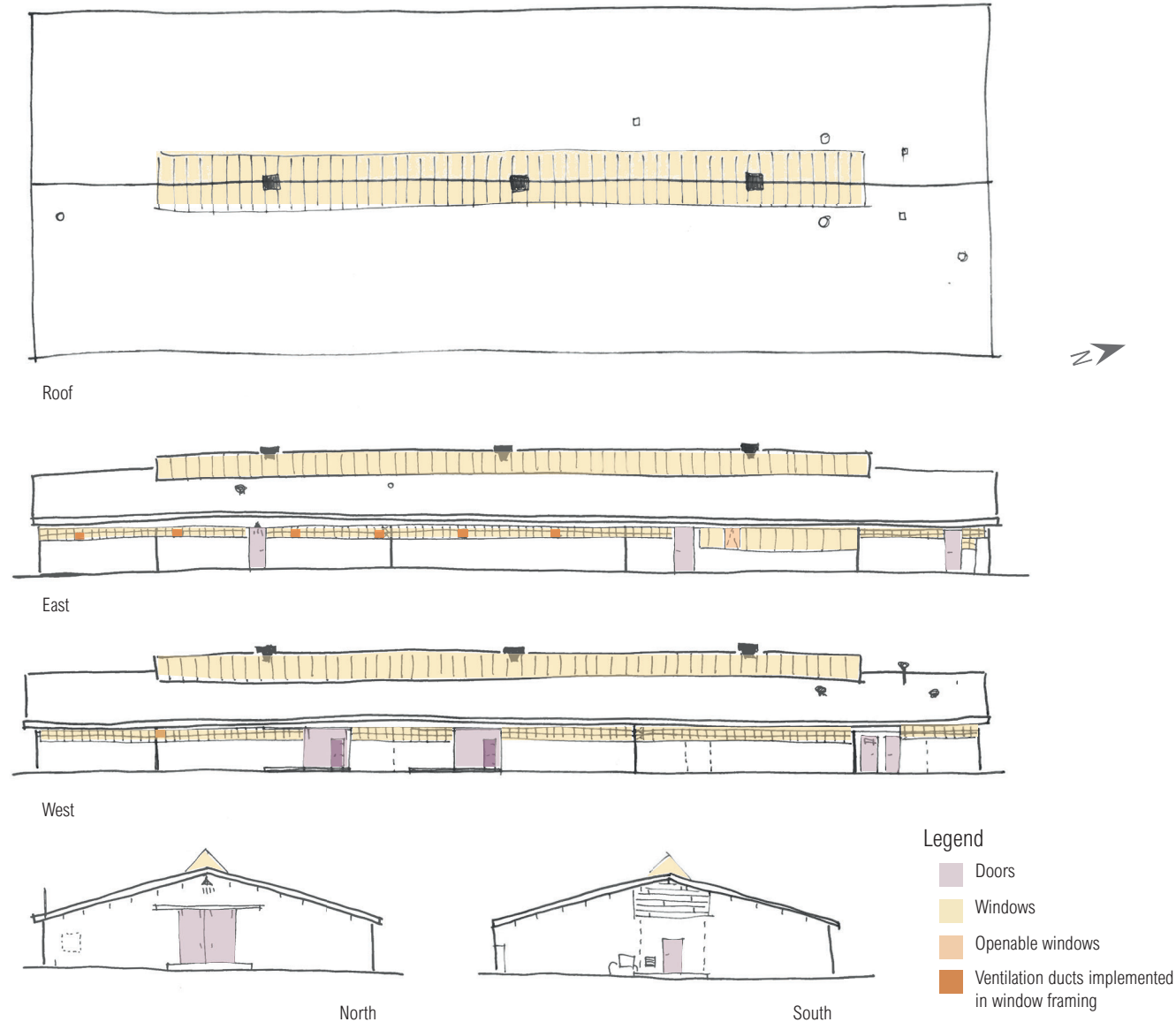


South Facade

- Old brick
- New brick
- Concrete roof
- Steel door
- Iron door
- Timber

Building 421 - the Wash House

Facades with openings



The facades partly represent what happened / changed inside the building.

The small doors (dark purple on the big sliding doors) represent the entrances to the building for the people.

The big doors represent the openings in the facade through which the big machines could go through.

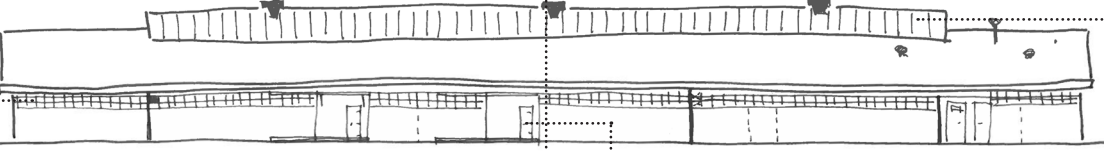
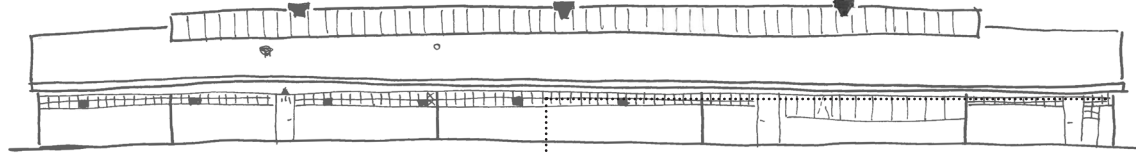
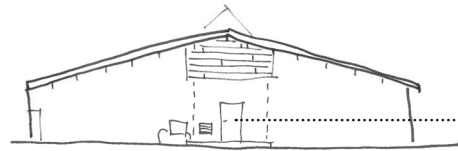
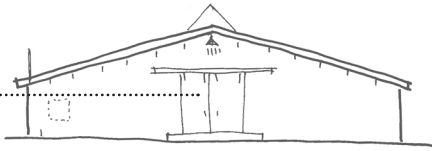
The windows in this case provide light. The high placement of the windows under the gable roof block out direct sunlight and create a private interior.

The bigger windows on the east facade, clearly show a change as a reaction towards the original layout of the floorplan.

The skylight is one of the recognizable skylights of the surrounding buildings. It provides the building with light from the ceiling.

Building 421 - the Wash House

Doors and Windows



Source: images by Chenna Tabelaing

Source: images by Chenna Tabelaing



Fig: Horizontal window



Fig: Square window



Fig: Rood window



Fig: Sliding door



Fig: Steel door



Fig: Steel door

Building 421 - the Wash House

Interior Material



Fig: Single herringbone brick floor



Fig: Square brick floor



Fig: Steel roof window frame



Fig: Cassette ceiling



Fig: Steel column



Fig: Steel beam



Fig: Concrete wall

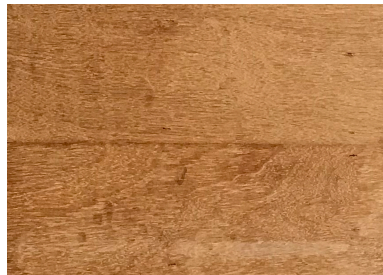


Fig: Timber wall



Fig: Brick wall

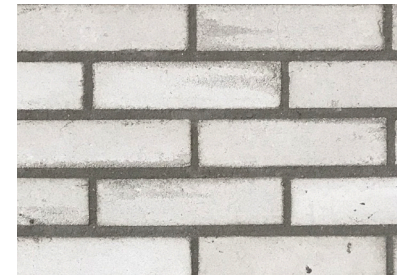
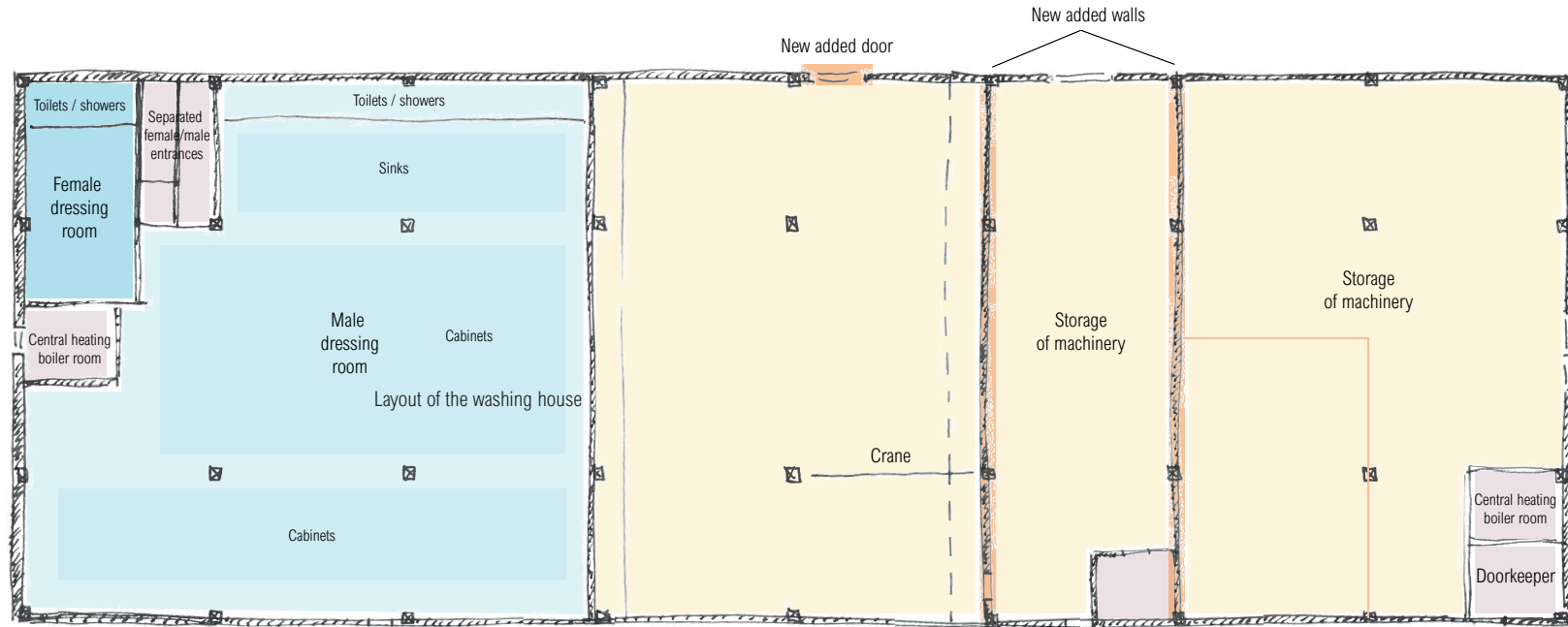


Fig: Brick wall

Building 421 - the Wash House

Floorplan drawing around 1981



Since the demand of the weapon industry decreased after the World War II, the AE produced civil goods instead of weapons and ammunition. In 1952, building 421 (the Wash House) is built as a storage for machines.

In the 80's a part of the Wash House was transformed into a Wash House for the workers of Eurometaal.

The parts that were not transformed stayed in their old function.

See the appendix for the original plan and the floorplan of the setup of the cabinets, sinks, toilets and showers.

Legend

- Non original structures
- Storage
- Male dressing room
- Female dressing room

- Supportive units

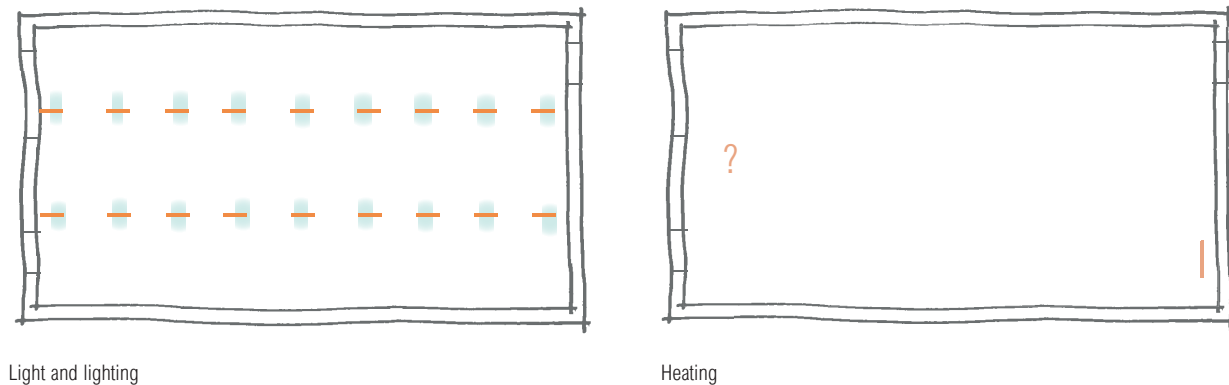
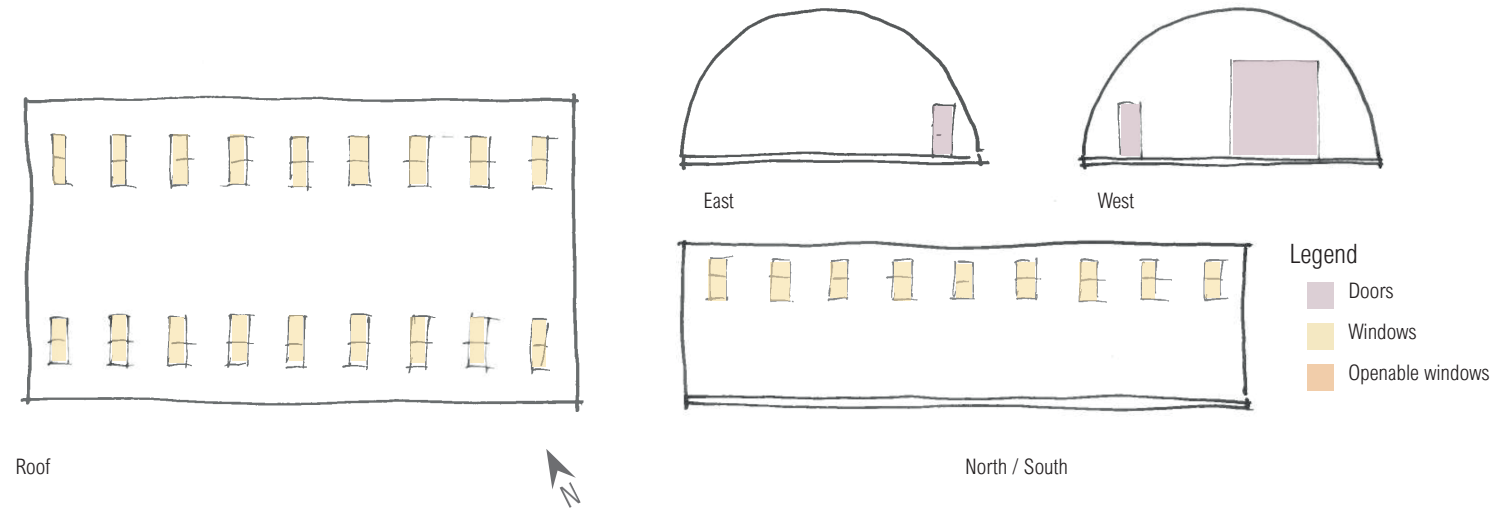
Building 512 - the Romney hut

Principles

The Romney hut is an easy to assemble shed, which is built throughout the Netherlands.

This particular Romney hut was built in 1980. It functioned as an extra machinery storage to the Wash House. Facts like the big sliding orientated to the shared square in front of the Wash House and the Romney hut and that the hut draws off electricity from the Wash House, confirm its former function.

The Romney hut has no rainwater drainage, but the shape of the roof leads the water to the ground. This might be also a reason why a lot of greenery is planted around the hut.



The plating of the Romney hut is a bit rusty. Causing that at first you don't notice the windows, but actually there are many.

The building does not have any ventilation facilities. But it ventilates enough since the hut is not wind and airtight and it's not isolated. But since the main purpose of the hut was to store machines, probably all these requirements were not obligated.

Building 382 - the Shelter

Principles

Building 382 was a bomb- and gasfree shelter, built in the year 1939 for the Artillerie Inrichtingen during the WO II. The shelter was the headpost of multiple shelters of the airdefence. Nowadays (on the Green head of the cape South), the shelter is the only one left.

The space was only meant for short time stay, since there were no facilities built in against radioactive fall out. After WO II the shelter was used for drill tests on packages of munition.

The shelter is partly lays undergrounds. The sloped shape of the shelter was to bounce off any attacks of grenades or airbombs. This is also why there is a large overhang above the entrance of the shelter. On the roof is a radio-installation. The concrete (inside and outside) still shows the wooden formwork of how the shelter was built. The shelter possesses 1.5 to 1.9m thick walls, a 3m thick roof and is 19.5m x 5.5/6.5m long and width.

At the entrance is a stairs going down. To enter the shelter a steel door needs to be passed. Long benches are placed along the walls in the longest direction. The shelter provides a waiting room, a dressing room and a chamber for the

leader. The last space shows how the shelter was used as main-post.

The former shelter is of highly cultural, military and architectural historical value, since it is an unique example which is still intact and it shows important historical-functional parts of the Hembrug complex.

The closed skylights on the roof had to provide ventilation in the shelter, but the 'openings' had to be closed at the same time due to safety measures.

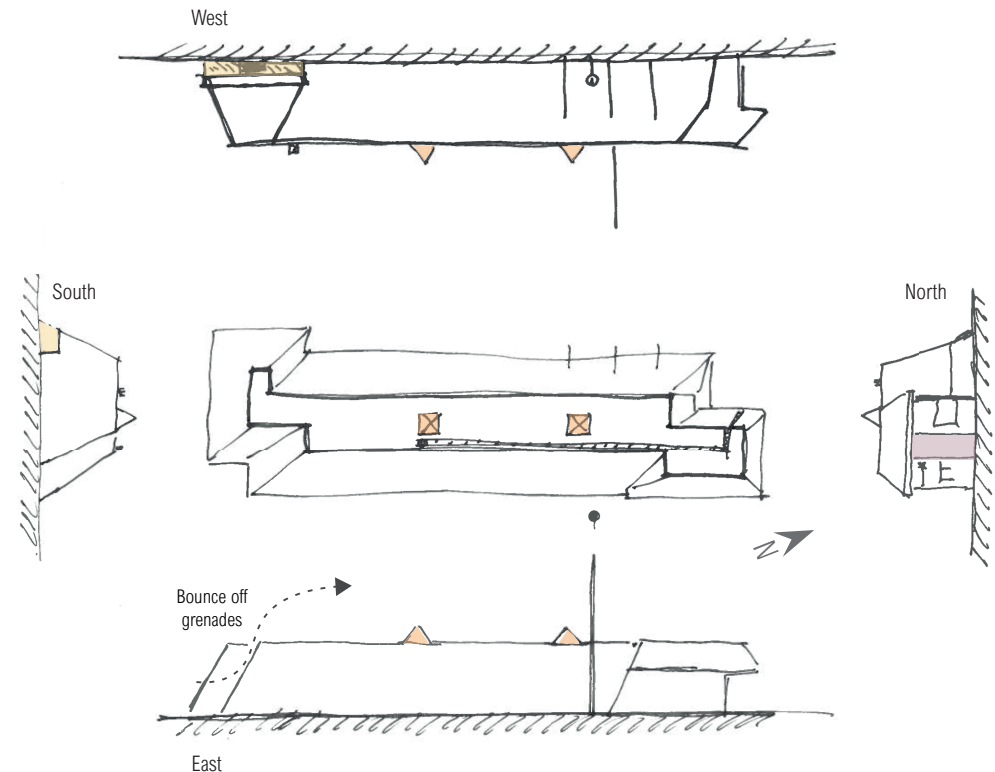
Sources:

Rijksdienst voor cultureel erfgoed; retrieved from: <http://rijksmonumenten.nl/monument/530309/hembrugterrein:-schoolbunker-gebouw-382/zaandam/>

Cultuurhistorische verkenning, hembrugterrein zaanstad (rijksbouwmeester)

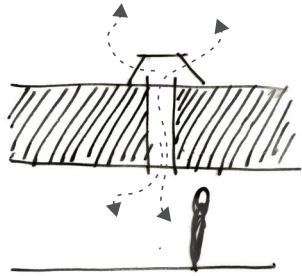
Legend

- Doors
- Windows
- Openable windows

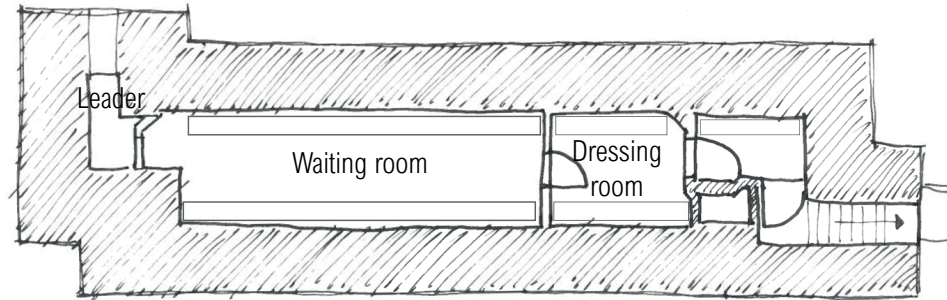


Building 382 - the Shelter

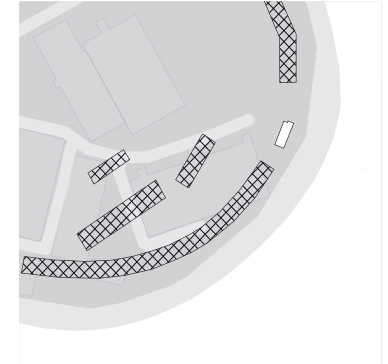
Principles



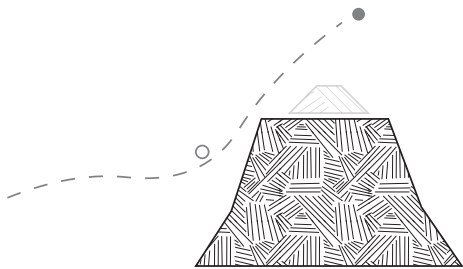
Ventilation principle



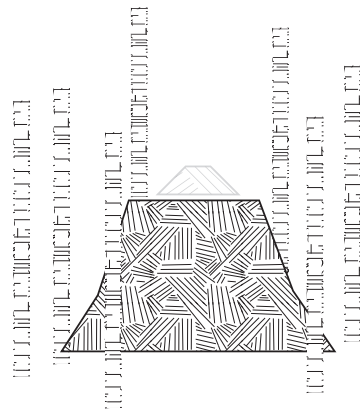
Floorplan



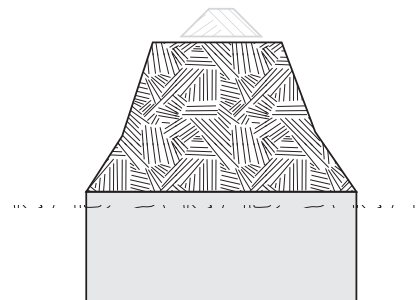
Shelters followed curve of the waterfront



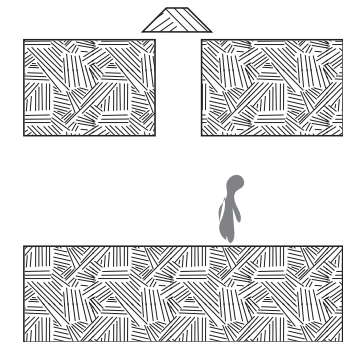
Shape to bounce off attacks



Hidden



Underground



Mass





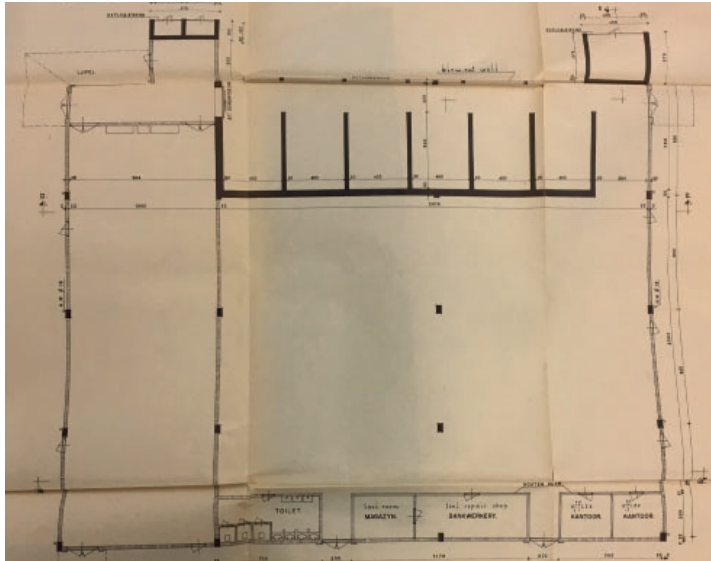
Appendix Building Technology

Content Appendix Building Technology

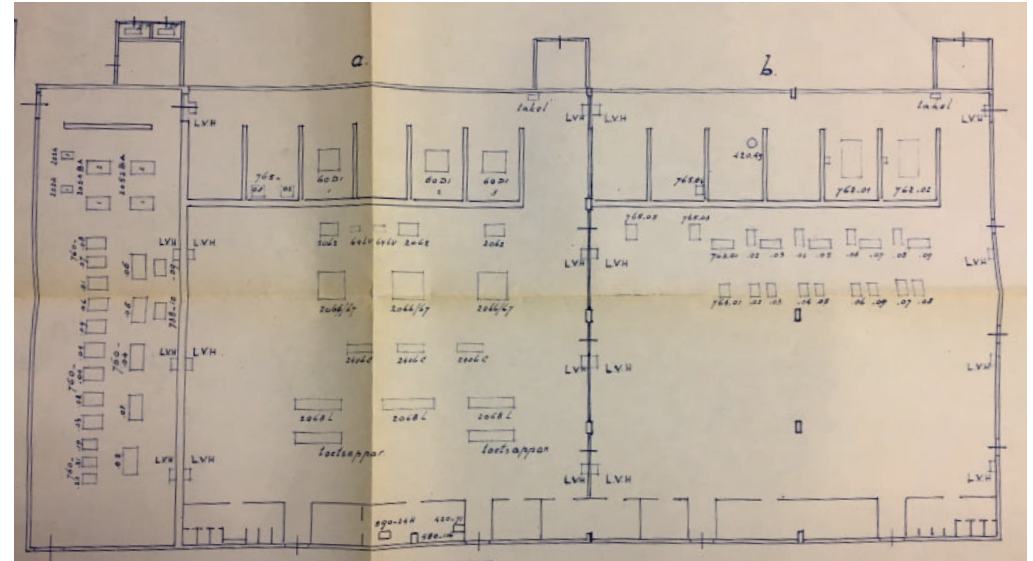
Building 430 - the Factory	Page 30
Building 421 - the Wash House	Page 38
Building 512 - the Romney hut	Page 44

Building 430 - the Factory

Main building phases

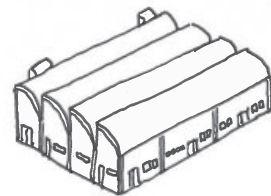


Plan of the original building, 1955, source NA



Plan showing the extension, 1958, source NIMH

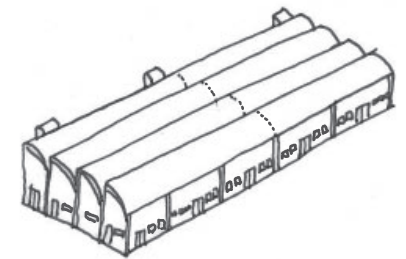
Like the numbering (a/b) already reveals, building 430 was built in two main building phases. A drawing of the first part of the building (with the year 1955) was found in the National Archive. However, this drawing could simply be the blueprint, so we cannot be sure the building was built in 1955. Another drawing from 1956 shows the placement of machines in the 'already existing building'. Therefore we can assume that this first part of building 430 was completed in 1956 for sure.



1956

Source: image by Bram Hulshof

Another plan from 1958 shows the building with a new extension in the longitudinal direction. This extension was built to mirror the already existing part of building 430. Next to a gap in between adjoining structures of the old and new part of the building, nowadays there is hardly any visible differentiation between the original and extended part of building 430.



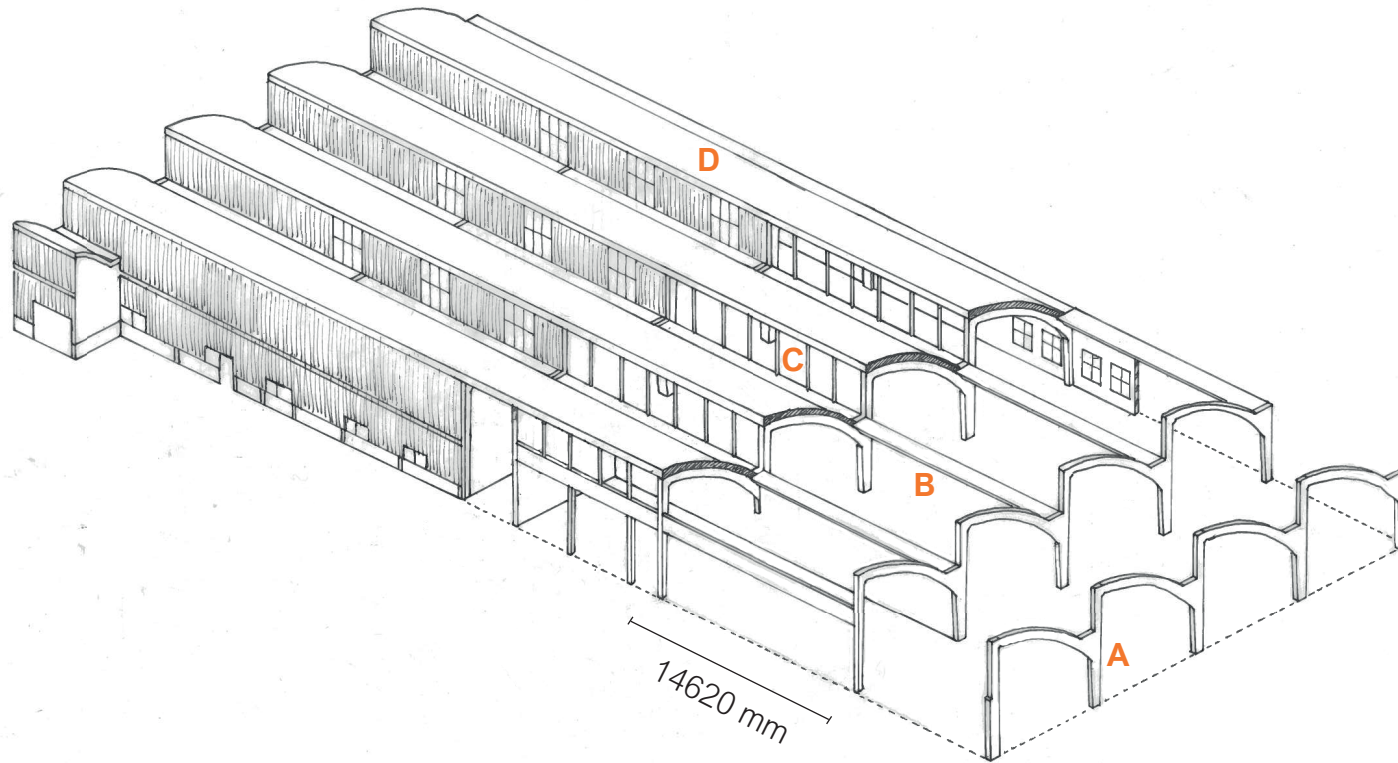
1958

Source: image by Bram Hulshof

The 'new' part was given the letter 'a' and the original part the letter 'b'.

Building 430 - The Factory

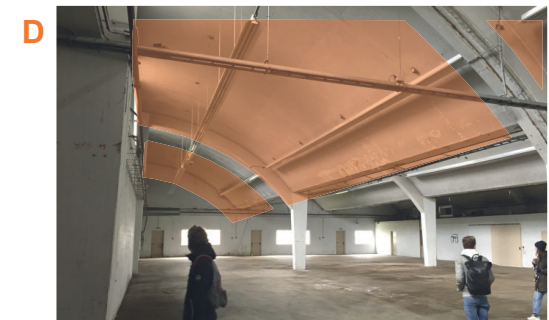
Structural elements



Building 430 was built in two phases. Though the same construction method was used, each of the two building parts has a (stable) structure on it's own. Therefore the following description applies to each of the two building parts:

The whole structure of building 430 is made of reinforced cast concrete. Although casted in several phases, the whole structure forms one monolithic structure. The continuous columns are connected to each other by the longitudinal beams and roof shells.

Source: image by Bram Hulshof

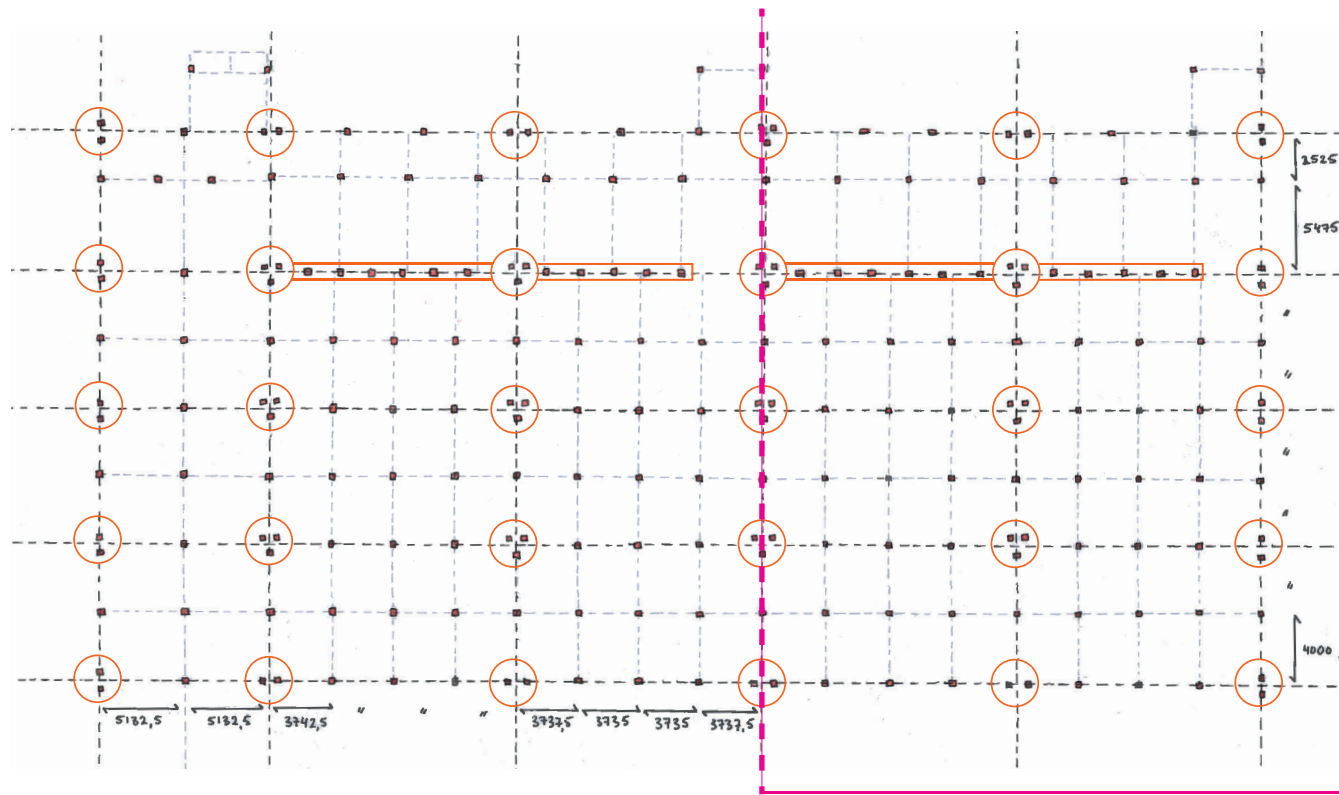


Building 430 - The Factory

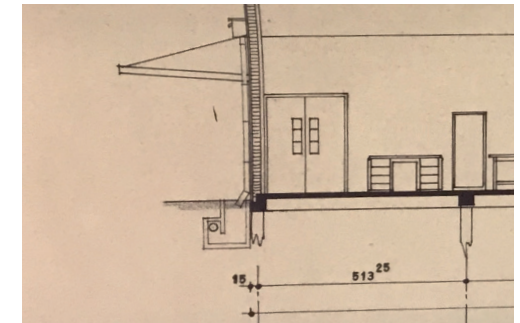
Foundation

Building 430 has a concrete pole foundation. Each column is founded by two or three poles and the concrete floor is founded by a raster of single poles. All poles are connected by concrete beams.

By looking at the foundation plan the main structure of the building is clearly visible. The double and triple poles (within the orange circles) all carry the columns that are the main load carrying elements of the building. The lined up poles (within the orange squares) carry the walls which are there for stability in longitudinal direction.

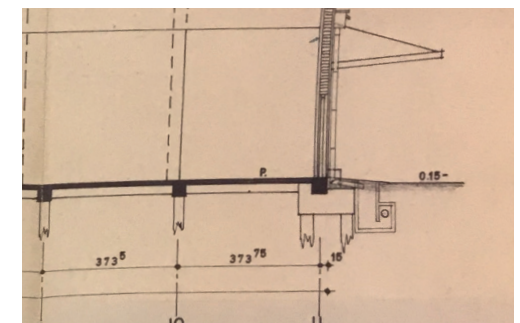


Source: image by Bram Hulshof



Section without the 'shared foundation', 1955, source NA

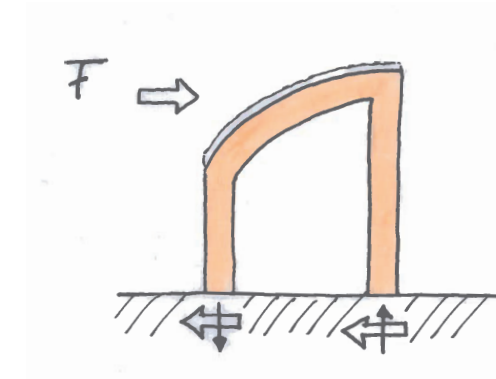
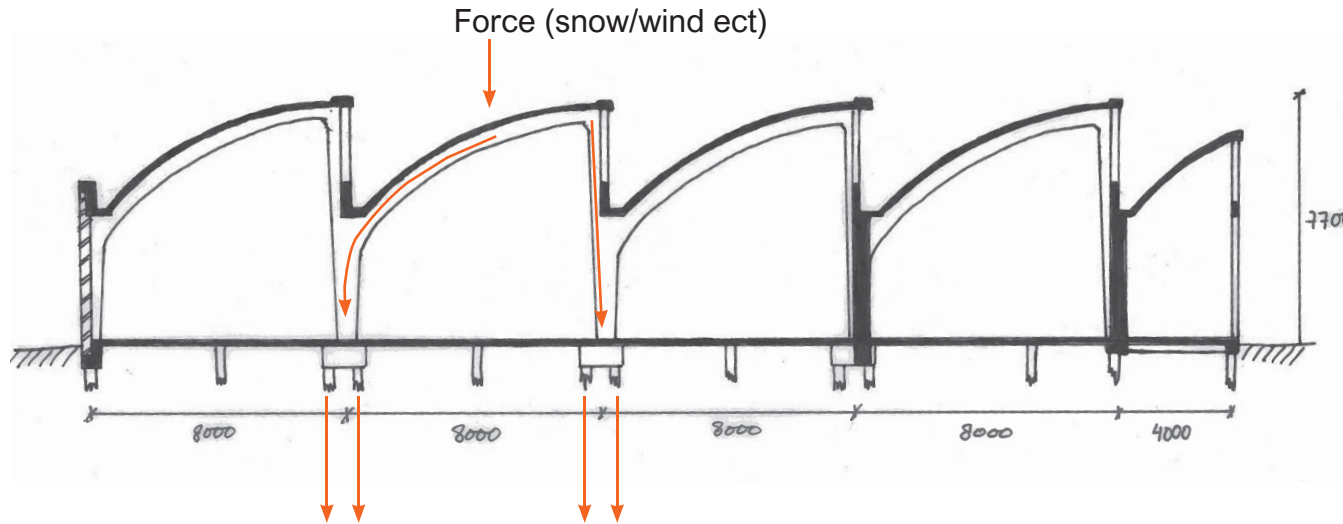
Building 430 was built in two parts. The foundation at the east facade of the first building part was made in such a way that an enlargement of the building in the future was possible. The first couple of columns of an extension could be placed onto the existing foundation.



Section of the 'shared foundation', extension not built yet. 1955, source NA

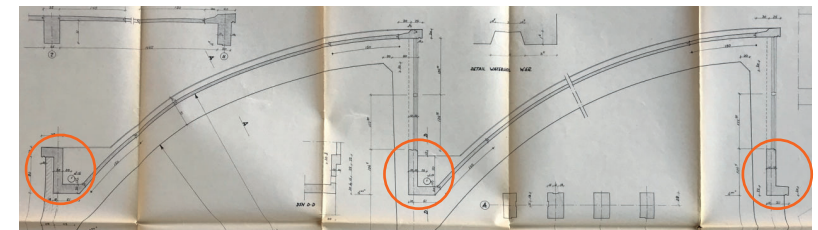
Building 430 - The Factory

Stability and load transfer

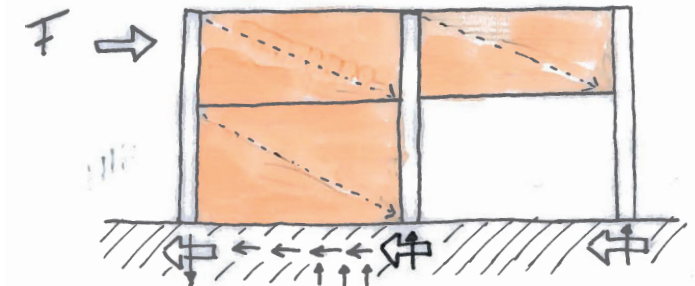


The columns, the roof shells and the beams in between the columns are all directly connected to each other by reinforcements. Although poored in several phases the concrete (and reinfort) form one monolithic structure capable of spreading forces from all directions towards the foundation.

The continuous columns provide stability in transverse direction while the beams, the concrete walls in between the columns (and the roof shells) create stability in longitudinal direction .



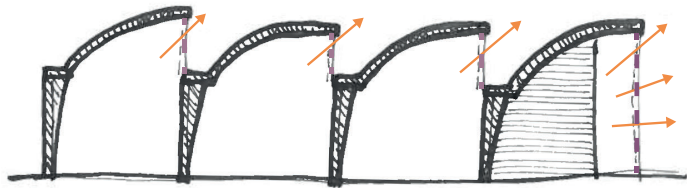
Section showing main beam in between columns, date 1955, source: archive Hembrug Zaandam BV



Building 430 - the Factory

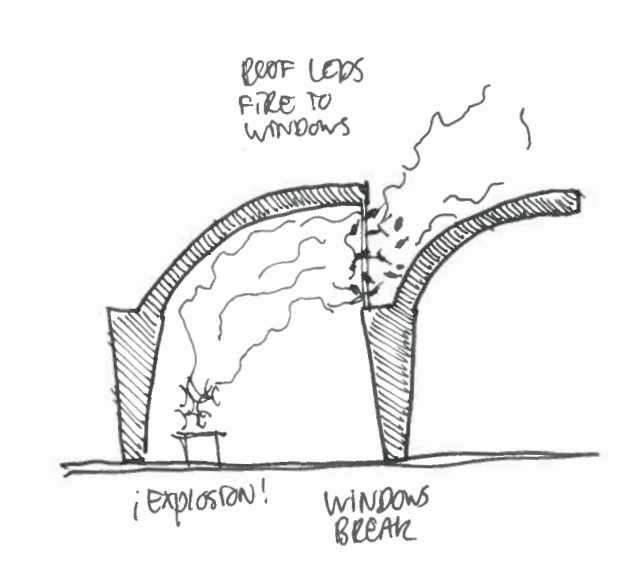
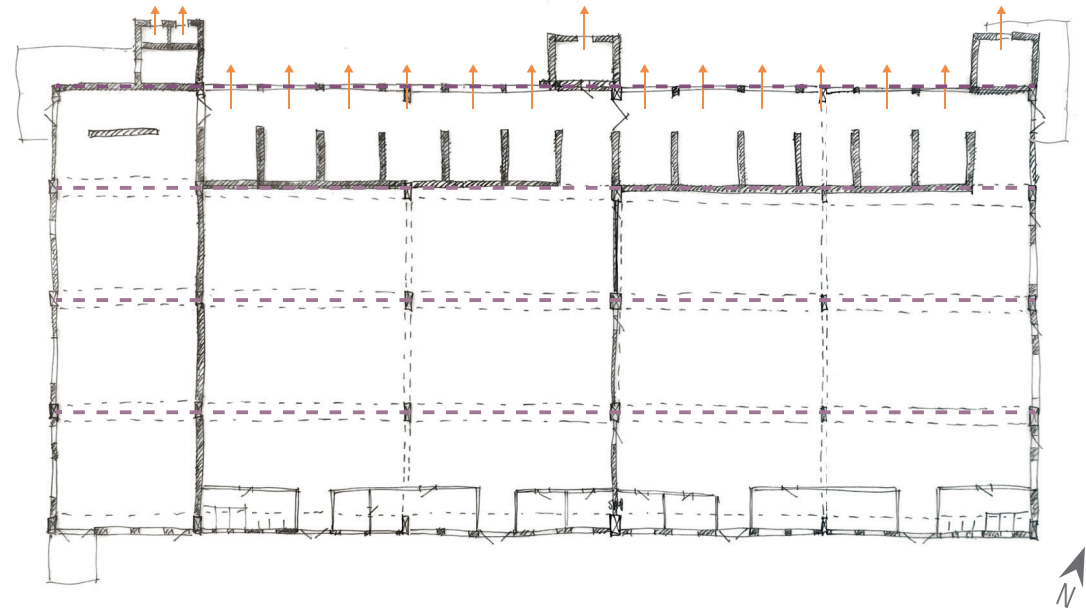
Principles

On the northern part of the building the most dangerous activities of the assembling-process took place. This is why the architect provided the building with a blowout wall and also curved roofs which led 'the explosion' to a certain direction.



Legend

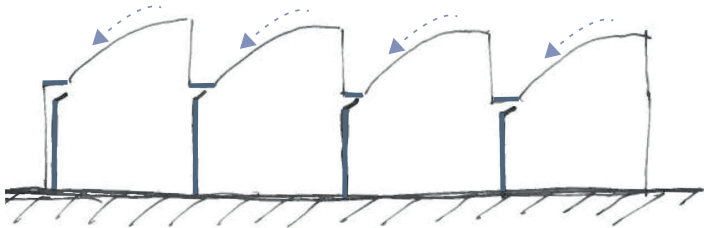
- Direction of explosion
- - - Blow out wall
- - - Blow out windows
- /// Thick (concrete) walls



Building 430 - the Factory

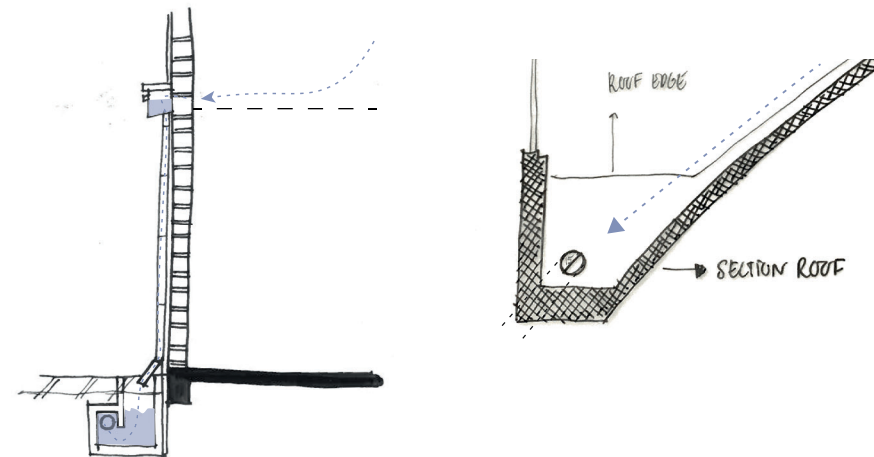
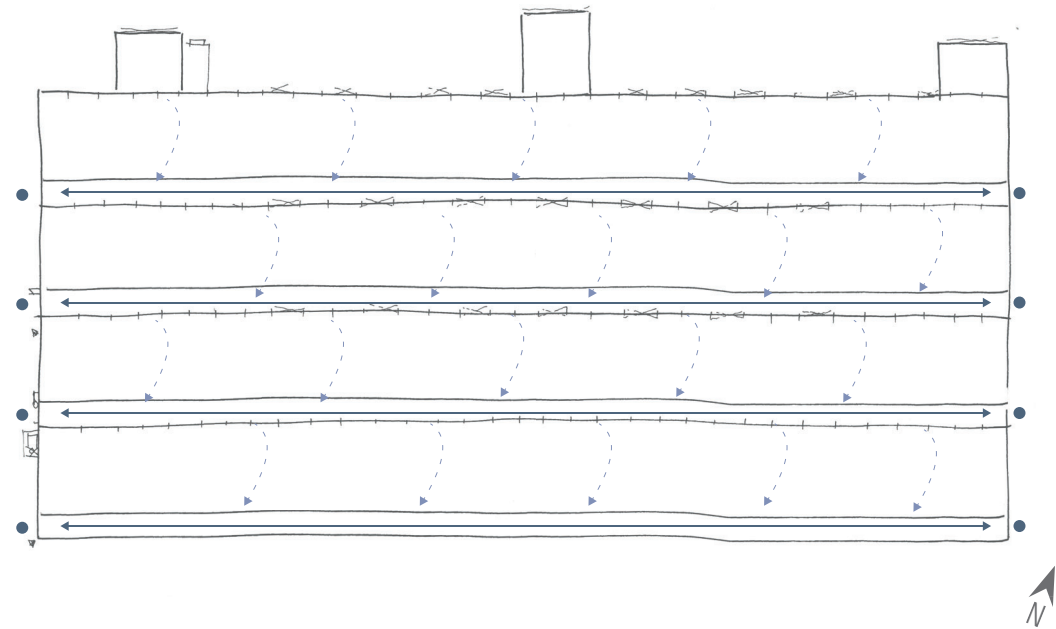
Principles

Due to the shape of the roof, the rainwater flows to the flat parts of the roof and after that it is collected in the gutter, flowing to the west and north side of the building.



Legend

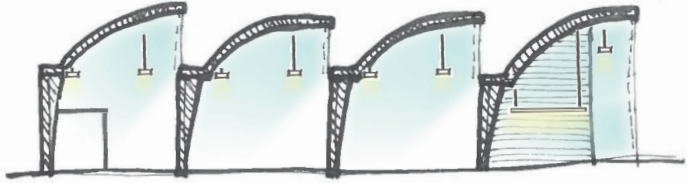
- Waterflow
- Water to pipe
- Rainwater drainage



Building 430 - the Factory

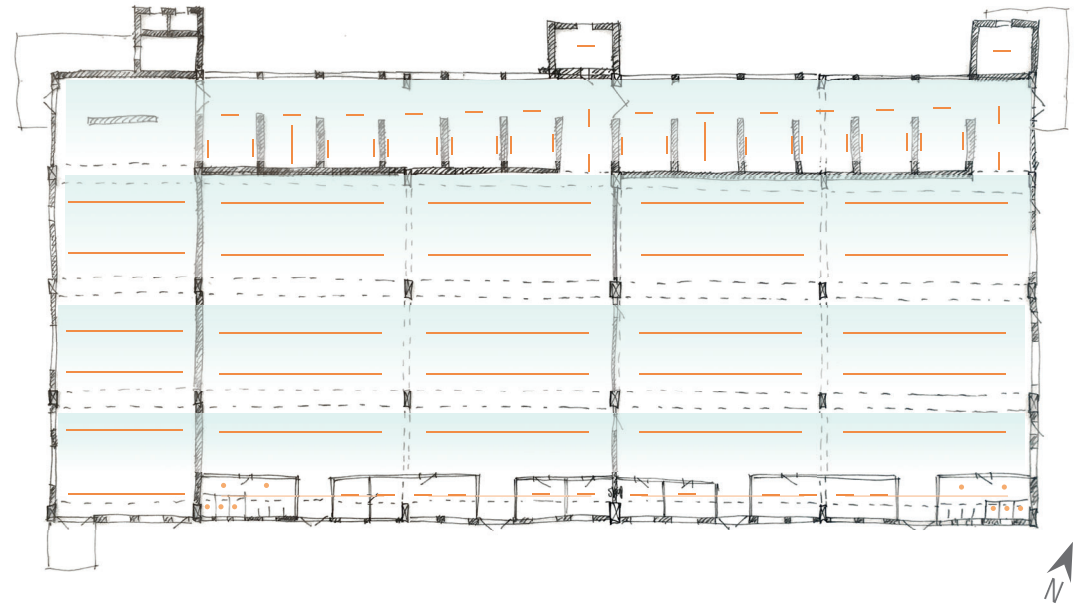
Principles

The windows on the northern parts of the roofs, give northern light. Northern light provides optimal circumstances to work. Also many fluorescent lighting is placed in the building as supporting light. These lights also made it possible for the factory workers to work longer days.



Legend

- Northern light
- Lighting
- Light fixtures
- Casual lighting

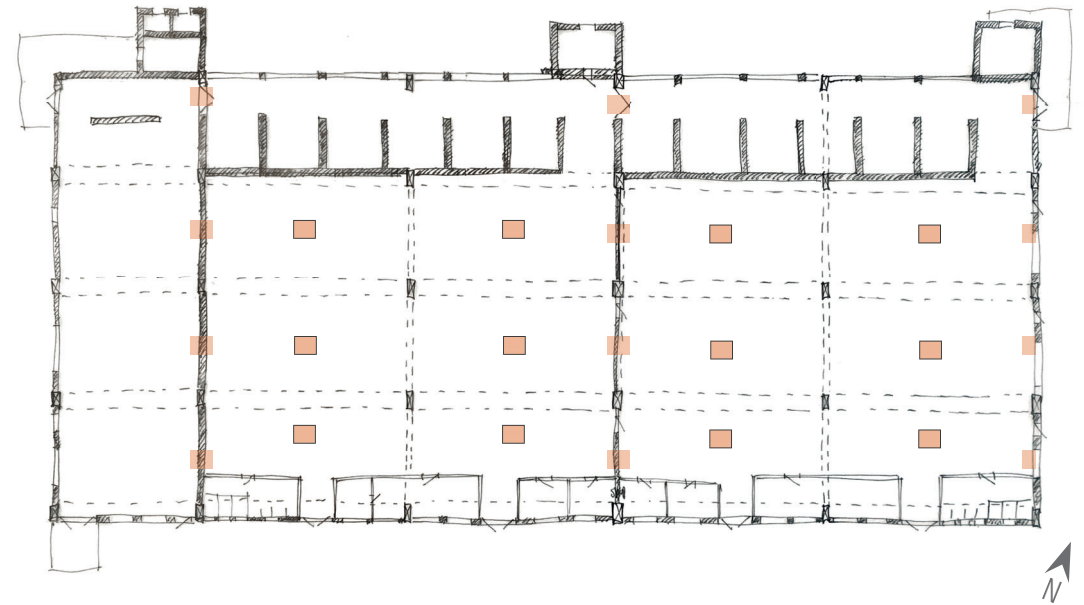


Building 430 - the Factory

Principles

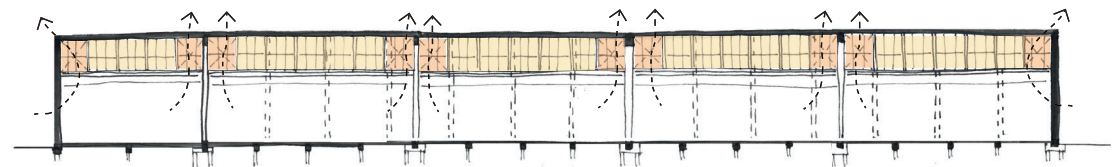
The building was heated by electrical airheaters hanging on the ceiling. With a fan blowing hot air through the space

The building was naturally ventilated and had multiple openable windows. The ventilation 'flow' goes from the facade to the windows on the highest level (see section).



Legend

- Former airheating system
- Now visible airheating system



Ventilation principle

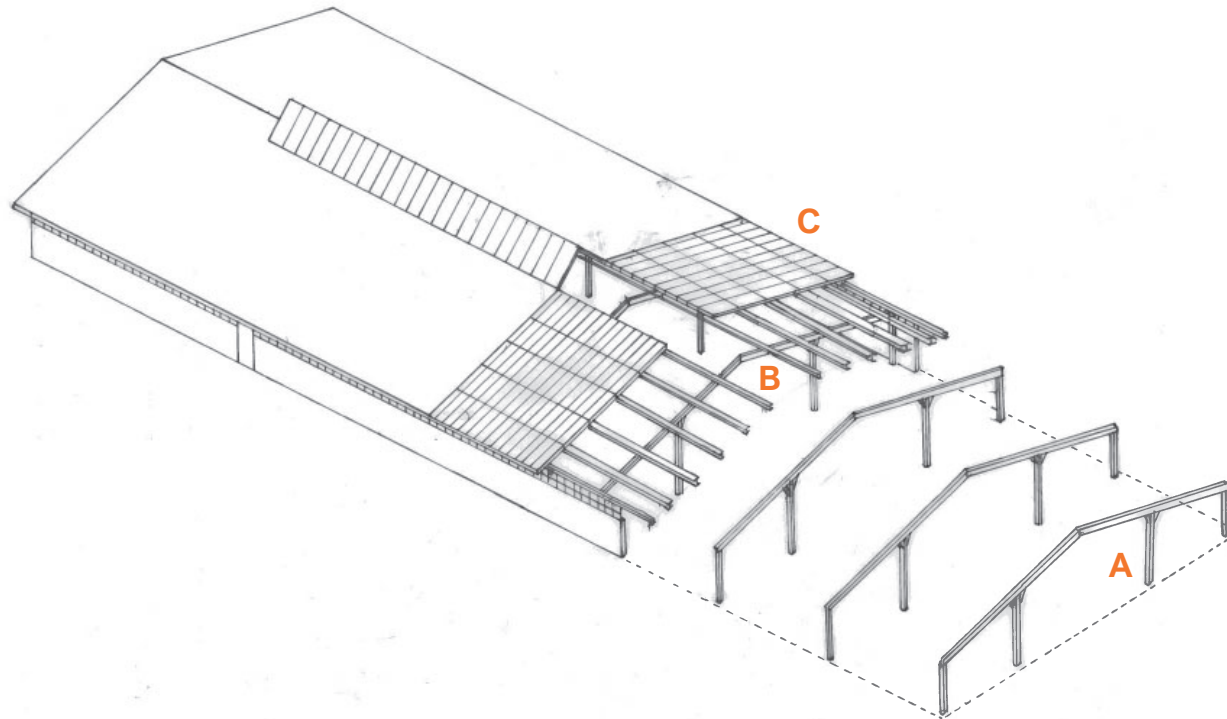
Legend

- Doors
- Windows
- Openable windows



Building 421 - the Wash House

Structural elements



Building 421 has a steel structure consisting of nine main steel portals connected to each other by steel purlins. In between the purlins concrete cassettes are placed forming a flat service for the roofing. Although adding to the stability, the brick facades are not structural.

Other than the columns and side facades, the floor is not founded.

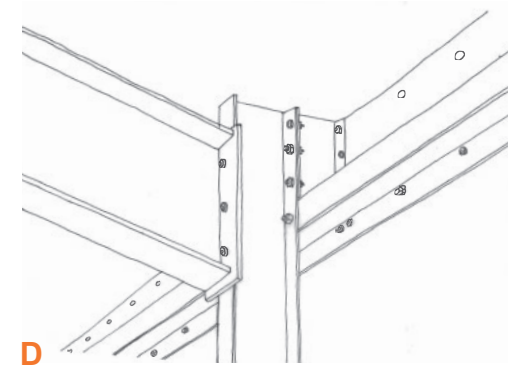
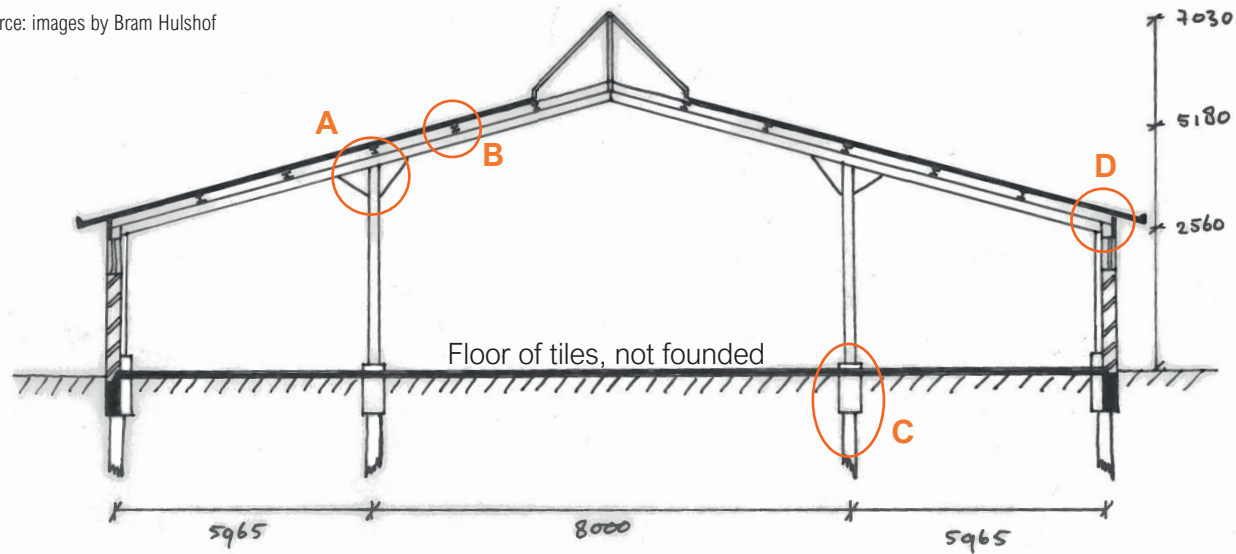
Source: images by Bram Hulshof



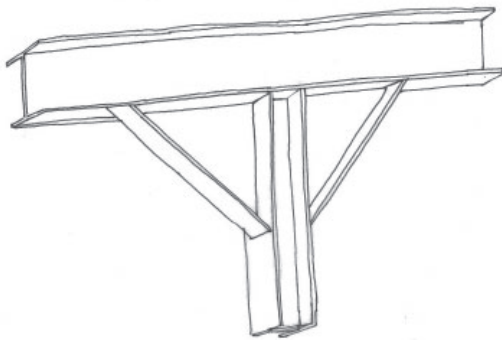
Building 421 - the Wash House

Details

Source: images by Bram Hulshof

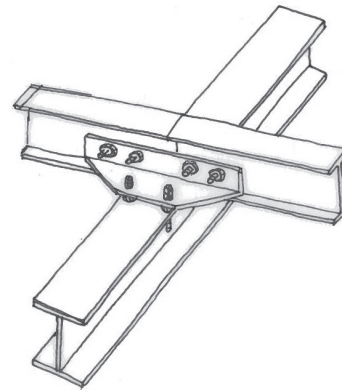


The ends of the main beams are bolted against columns. These columns are placed 5 cm within the brick facade). Causing the brick facades to attribute to the stability in longitudinal direction.



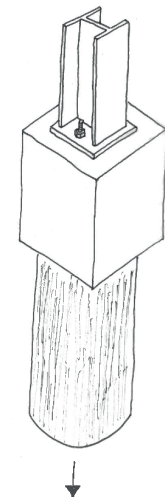
A

The main beams are connected to the columns with fixed connections (welded). Creating stability in transverse direction.



B

The purlins are connected to the main beams by a connector (mounted by bolts). The purlins create stability in longitudinal direction.



C

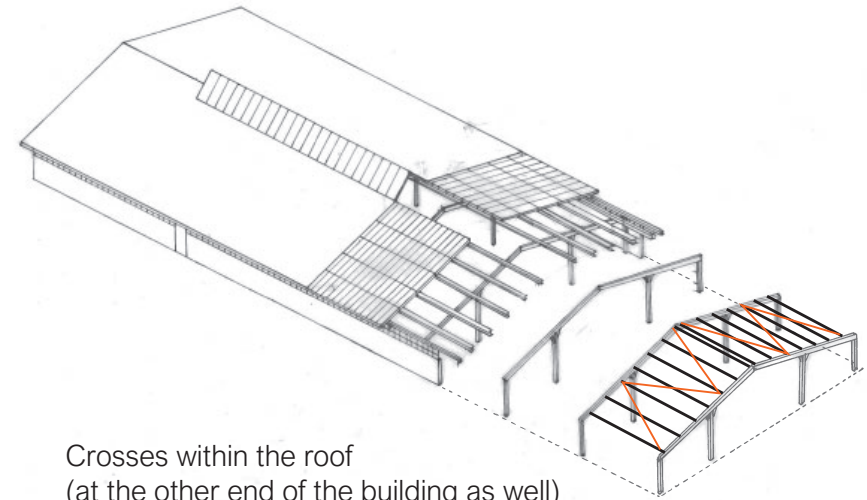
All columns are bolted onto a concrete foundation with poles underneath. The floor does not have a foundation.

Building 421 - the Wash House

Stability

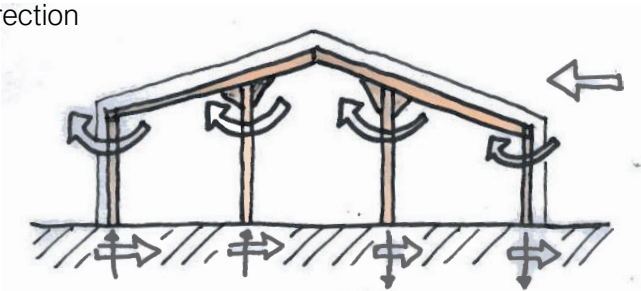
Building 421 has a steel structure. In transverse direction the fixed connections of the columns to the beams create stability. The columns at the end of the main beams are placed 5 cm within the wall enabling the walls to help with stabilizing the building in longitudinal direction. The purlins (due to the way in which they are connected to the main beam, see previous page) also add to the stability in longitudinal direction.

Within the roof structure stability crosses can be seen. Those crosses add to the overall stability and prevent the building to rotate.

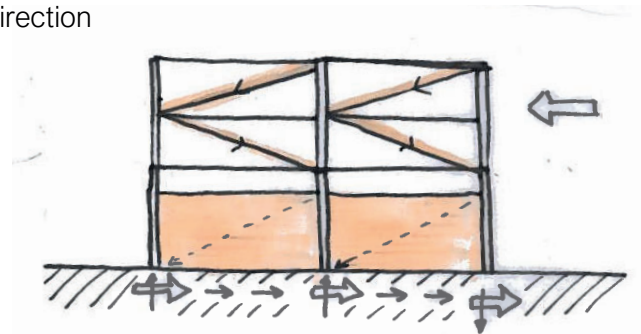


Crosses within the roof
(at the other end of the building as well)

Transverse direction



Longitudinal direction



Fixed connections



Stability crosses

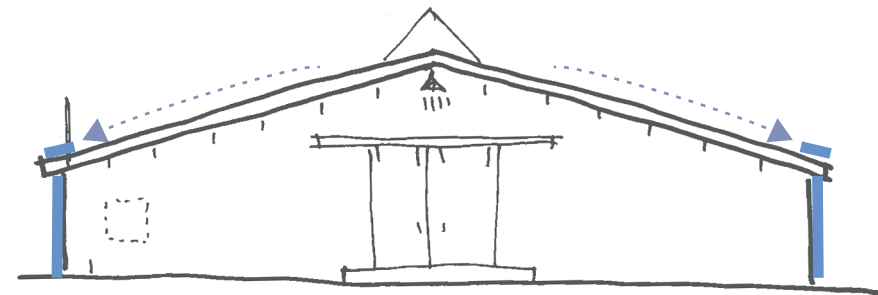
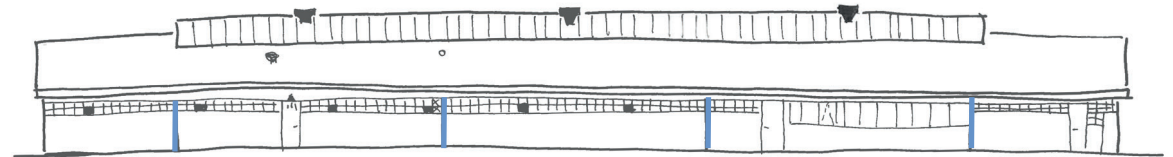
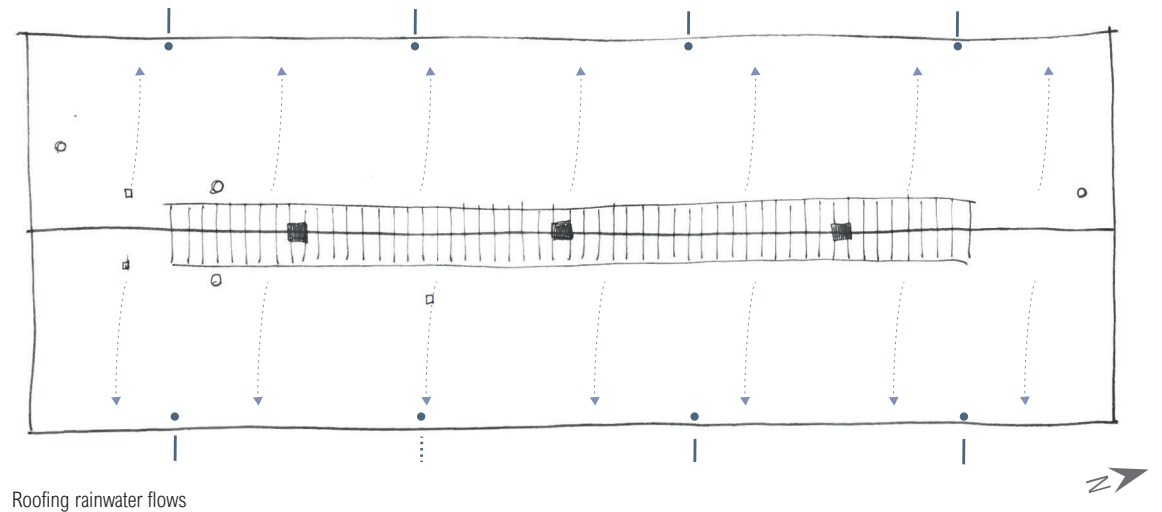


Columns placed within wall

Building 421 - the Wash House

Principles

The waterdrainage of the Wash house is quite clear with the gable roof. The water flows from the middle of the roof towards a gutter, which leads the water to the rainpipes.

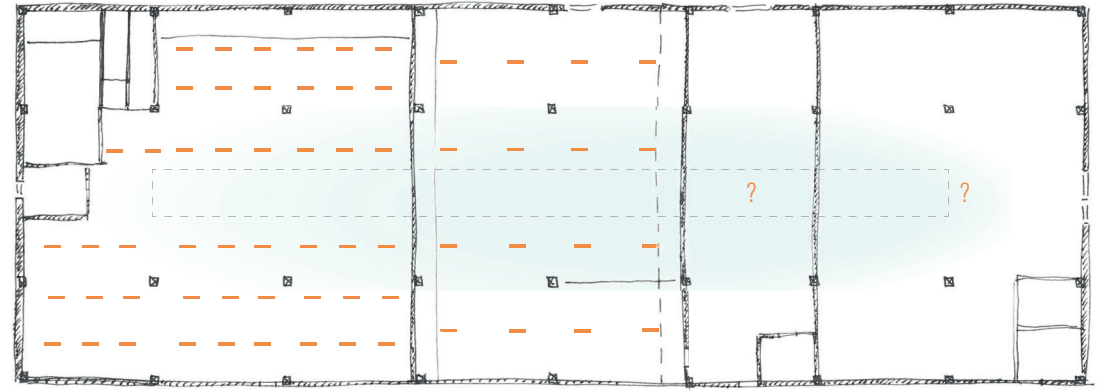


Building 421 - the Wash House

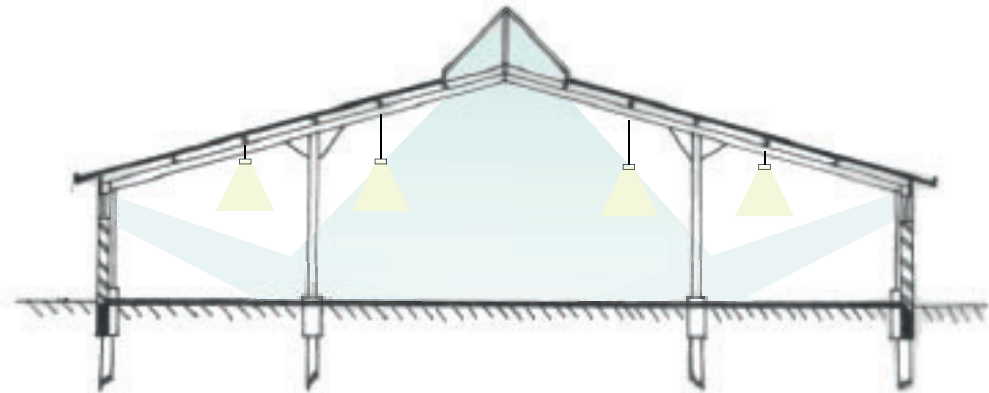
Principles

The lightfixtures are placed in a clear rythm along the ceiling. They provide light on places where the skylight and windows can't reach.

The high windows in the facade in combination with the gable roof ensure that less direct sunlight comes in, which provide the Wash house with a better inside climate for storage.



Light and lightfixtures

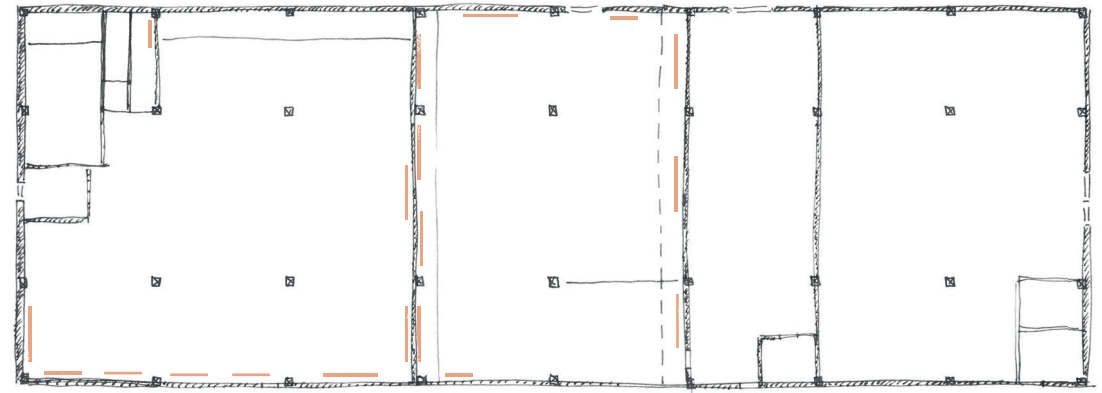


Building 421 - the Wash House

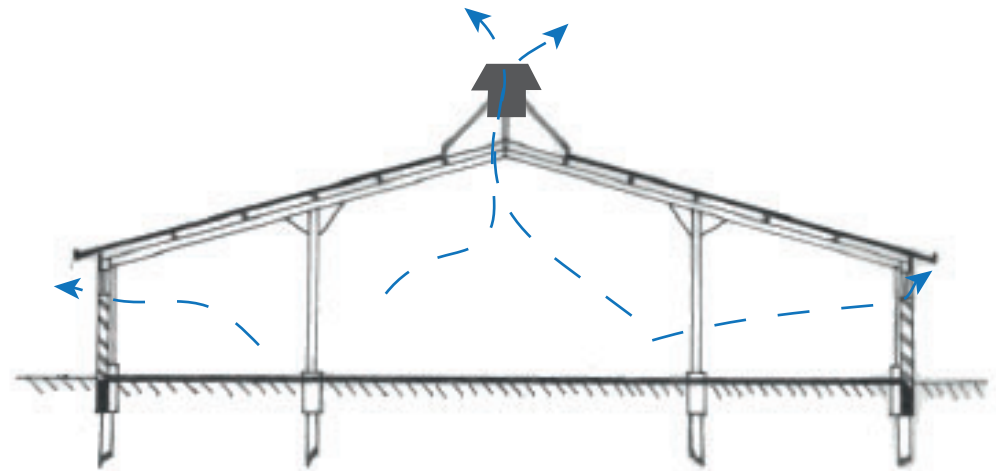
Principles

The central heating system is quite young relative to the building. With its former function as a building for storage it probably did not need that much of heating.

Some windows have ventilation grills instead of glass; the skylight has three ventilation shafts through hot air can escape (see facade sketch on the next page for ventilation grill implemented in window framing).



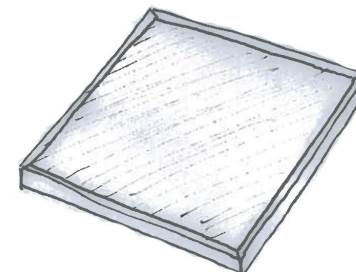
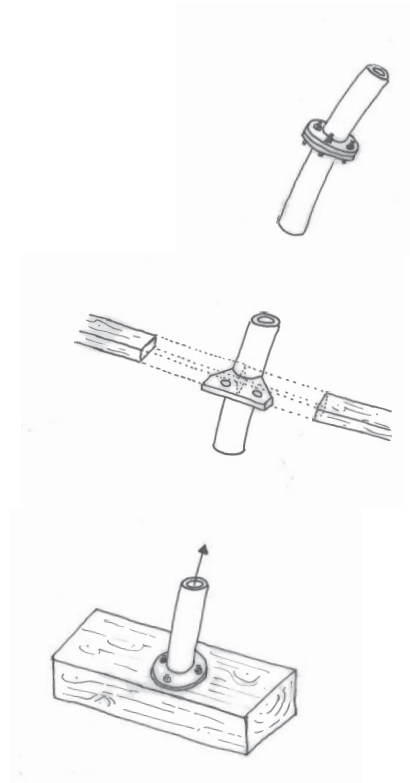
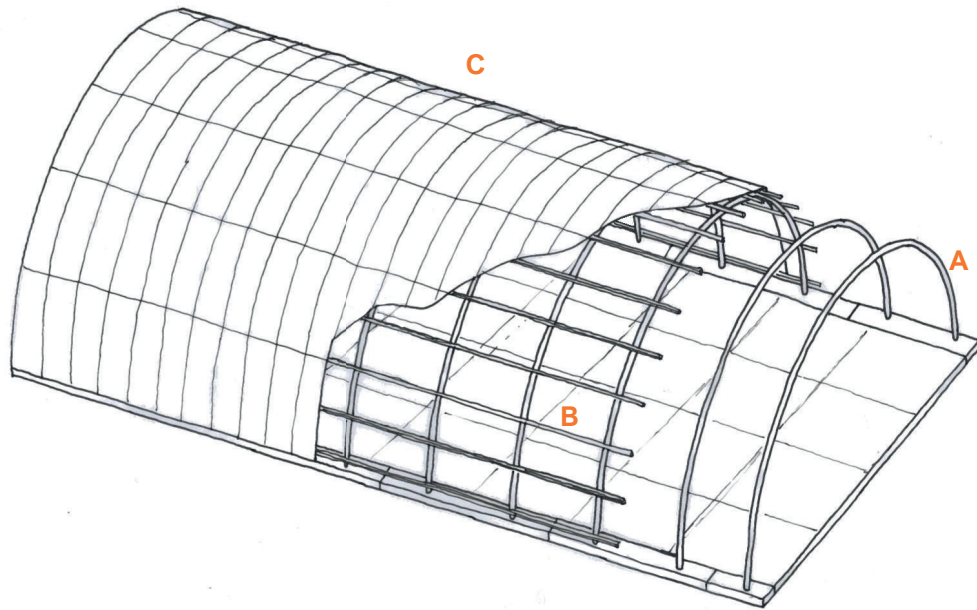
Central heating



Ventilation principle

Building 512 - the Romney hut

Structural elements



Stelcon plate flooring



Building 512 is a well known building type: the Romney hut. Half circular trusses form the main load carrying elements which are connected to each other with wooden purlins. Metal sheets are connected to the purlins creating stability and the exterior and interior finish. This construction method was simple, cheap and quick.

The building does not have a foundation. The steel trusses are bolted onto wooden beams (bielzen). The floor consists of Stelcon plates which are not founded.

Building 512 - the Romney hut

Construction of a Romney shed



Preparing the ground



Pile driving for the foundations

*Building 512 seems not to have a concrete foundation with piles.
Just 'sleepers' underneath the columns.*



Pouring of the foundation and the floor



Smoothing the concrete base.



Assembling the main steel trusses



Erecting the main structure



Connecting the wooden posts



Adding the exterior facade (steel plates)



Finishing the side facades





Appendix Cultural Value

Content Appendix Cultural Value

Building 430 - the Factory Page 48

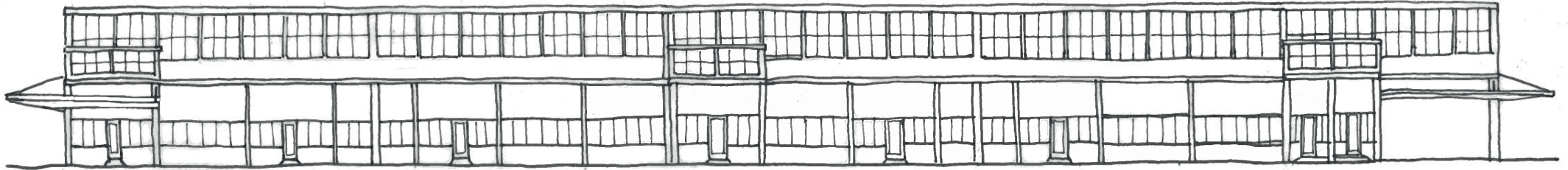
Building 421 - the Wash House Page 62

Building 512 - the Romney hut Page 75

Building 382 - the Shelter Page 81

Building 430 - the Factory

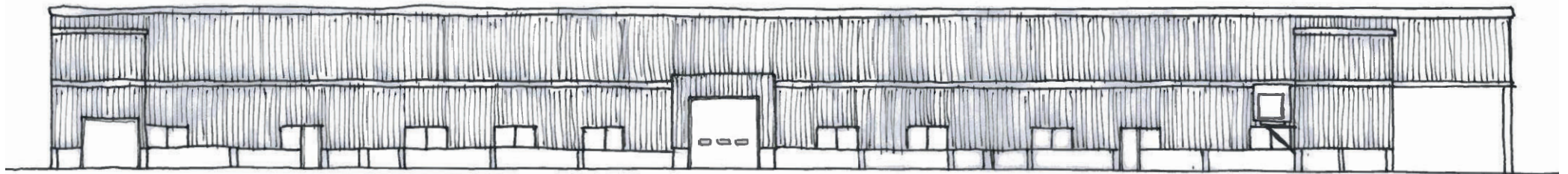
Interventions north facade



Source: image by Bram Hulshof

Situation 1958

(own reconstruction with the help of archive drawings, source: archive Hembrug Zaandam BV)



Source: image by Bram Hulshof

Current situation



Photo showing windows, date unknown, source Gemeente archief zaanstad

The north facade shows the biggest transformation of all the facades. This facade used to be a blow-out wall. All windows have been removed and new plating has been added in front of the structure of the facade. This structure however is still clearly visible from the inside.



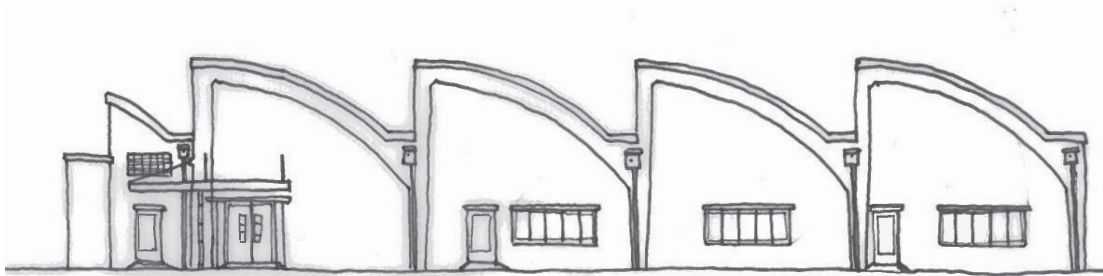
Original columns visible



Original articulation still clearly visible

Building 430 - the Factory

Interventions west facade



Situation **1958**

(own reconstruction with the help of archive drawings, source: archive Hembrug Zaandam BV)

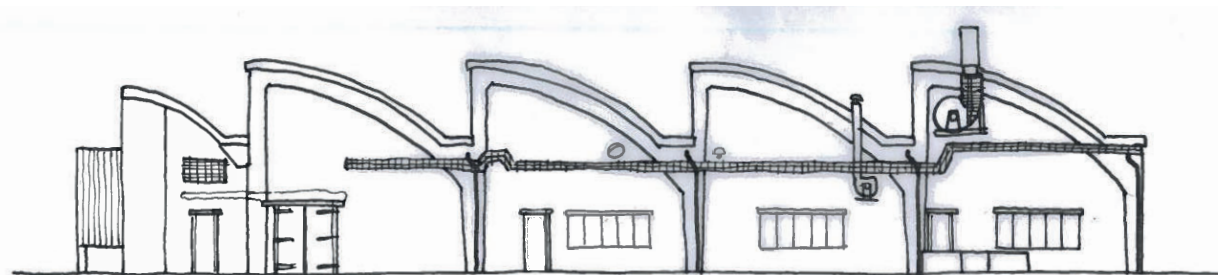
The west facade is relatively untouched. Though some services have been added to the facade (like chimneys and a cable tray) the original facade is pretty intact. Like the south facade a penthouse has been removed but other than that no original material has been removed from this facade.



Location of a former penthouse



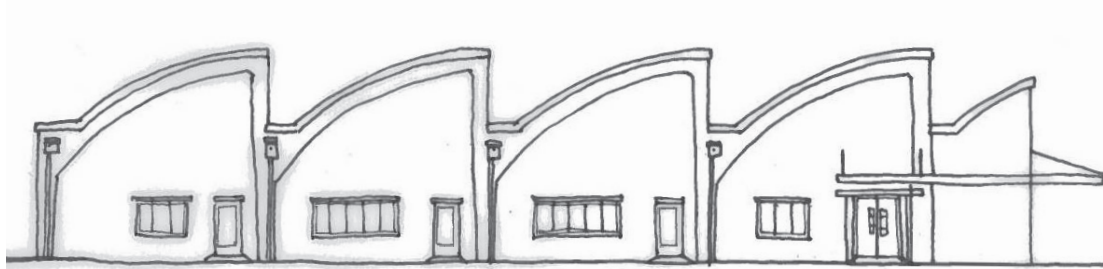
Blocked door and added services



Current situation

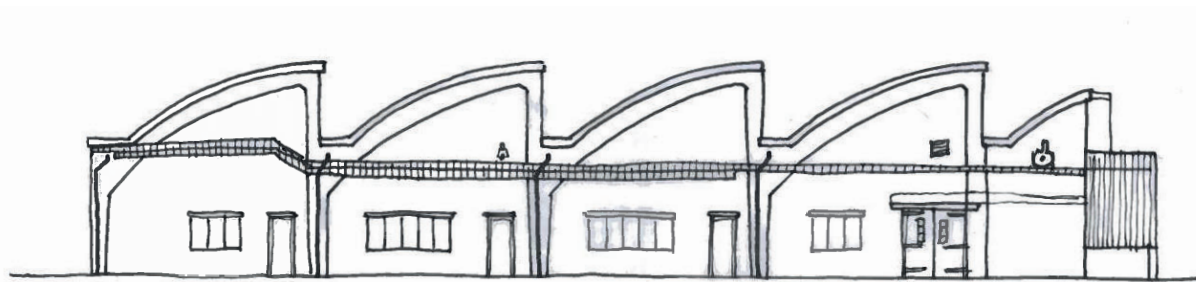
Building 430 - the Factory

Interventions south facade



Situation **1958**

(own reconstruction with the help of archive drawings, source: archive Hembrug Zaandam BV)



Current situation

The east facade is the most original of all the facades. Some services have been added to the facade (like pipes and a cable tray). Except for the disappearance of the penthouse, this facade has not been changed over time.



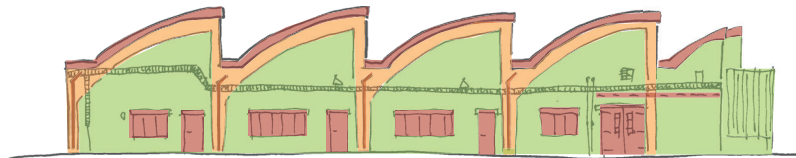
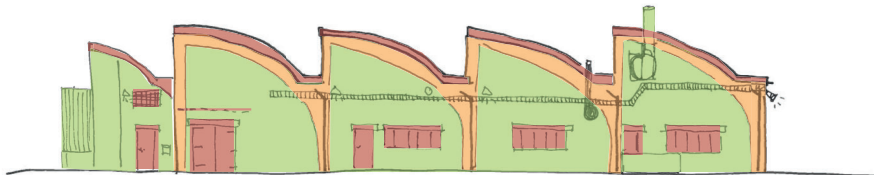
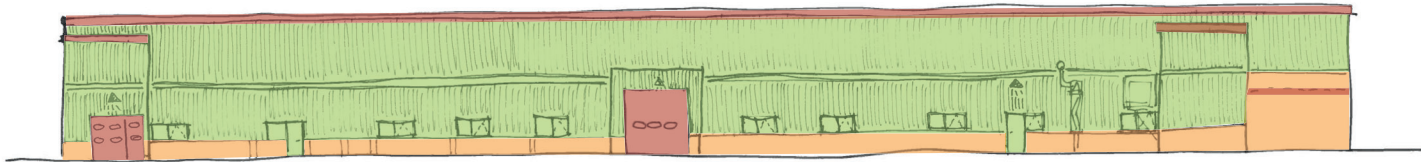
Building 430 - the Factory

Value matrix Chenna Labeling

	Age value	Historical value	Intentional commemorative value	Not intended commemorative value	Use value	New-ness value	(Relative) art value	Rarity value	Architectural value
Surroundings					Big public spaces around building				
Site		Shifted from grids							
		Relatively free standing building							
Skin		Building was built in two (matching) phases						Structure is showing in exterior façade	Rythm in the facades
		Blow-out walls							Iron windows
									Brick pattern (staand klezoor verband)
Structure		Castings visible on concrete			Height of space				Repetition of shells
		Shape of the roof			A lot of daylight due to windows in roof				Visibility of structure in facade
		Foundation was made 'future proof'							
Space plan		Layout derived from functional needs			Relatively free/open floor plan				
					Different functions had different place in building				
Surfaces	Floor is covered with old oil stains						Castings on concrete gives a nice relief (shadows)	Just one original office room left	Interior painted white
Services					Rainpipes				
Stuff		Original light fixtures							
Spirit of place					Light from above	Industrial atmosphere is quite fashionable			

Building 430 - the Factory

Levels of significance by Chenna Tabeling



The building is one of the few (with the Shelter) whose orientation is twisted in relation to the rest of the Hembrug area.

Hembrug was originally set up with all isolated buildings in order to prevent chainreactions in case of explosions or fires. The Factory is a large building and probably did not fit on the plot, if it was not turned.

The shape of the roof has a historic feature related to the old function (manufacturing bullets) of the building.

The shape of the roof would've led an explosion to the northern side of the building. The windows, who are now removed, must have created a nice northern light inside the building. Which also provides a good worklight. The shape of the roof had the purpose of drain the water towards the rainpipes.

The open floor plan provided a flexible floorplan.

This made it possible for the Factory to constantly change the layout of the set up of the machinery. This is why I also choose to value the visibility of structure in the facade less, since in the facade it had no direct other purpose than a structural purpose.

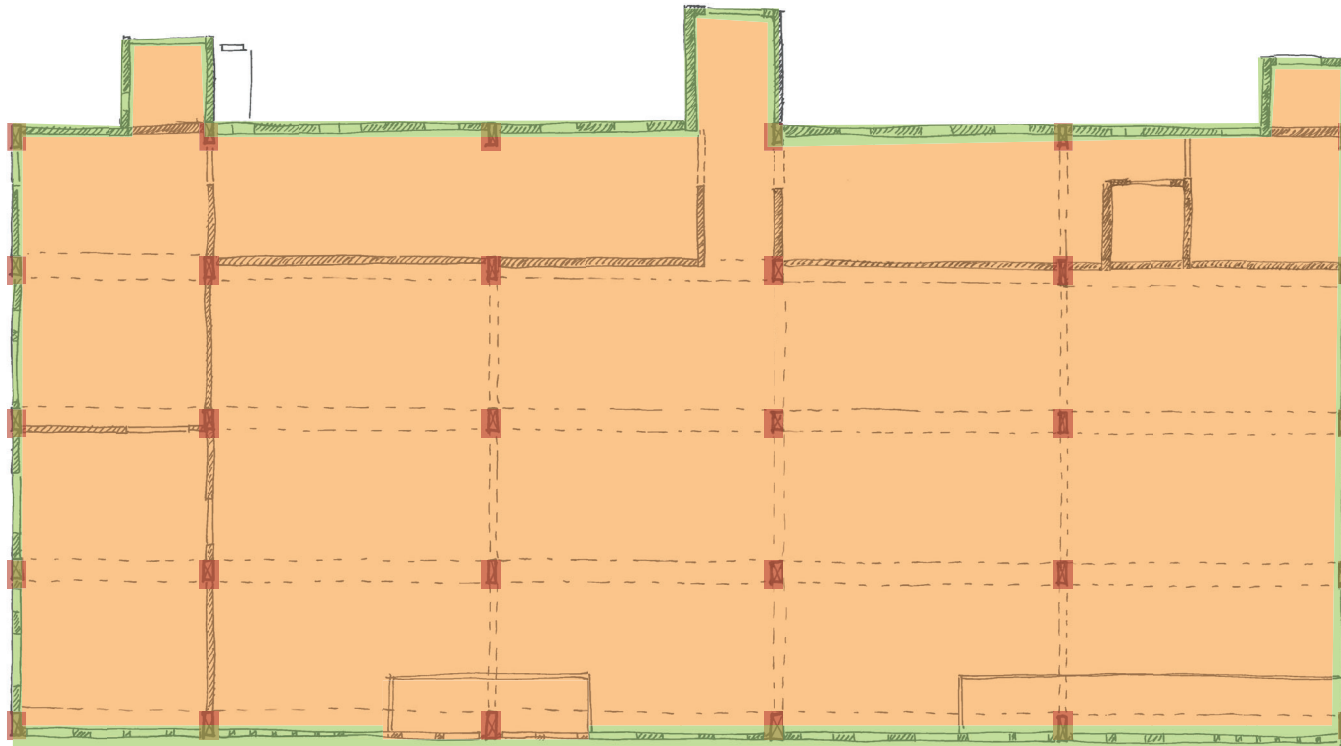
Next to these values, I personally really like 'honest' architecture. This is why I would preserve the wood grains on the concrete.

Building 430 - the Factory

Levels of significance by Chenna Tabeling

Green: Most valuable

Italic: In between
What does this has to do with any of the above?



Orientation to site
Shape of the roof
Open floor plan
Rythm of the columns
Wooden nerves on structure

Isolated building
Visibility of the structure of the facade

Blow-out walls

Height of space

Steel windows

Rythm of the facade

Expansion

Functional lay-out

Future oriented foundation

Brick patterns (masonry bond)

Original office

White interior

Light fixtures

Design ideas:

T.b.d.

Building 430 - the Factory

Value matrix Bram Hulshof

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Services					Rainpipes				
Stuff		Original light fixtures							
Spirit of place					Light from above	Industrial atmosphere is quite fashionable			

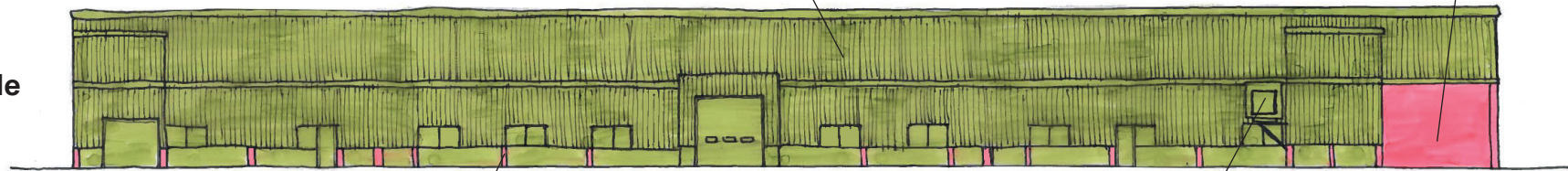
Building 430 - the Factory

Levels of significance by Bram Hulshof

The original steel windows from this former blow-out wall have been removed from within the concrete structure. Insulation material and steel plates have been placed on top of the concrete facade structure. The new facade finish does not show it's original articulation and therefor has a low value.

Just a small part of the original finish can be seen in this facade . Therefor this masonry has a high value.

North facade



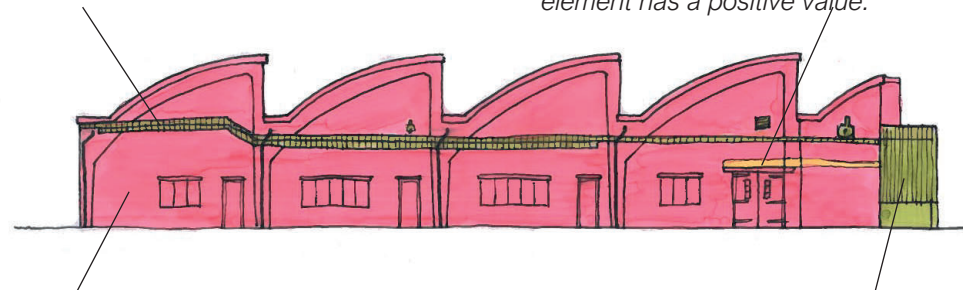
Only a small part of the original facade structure is visible in the bottom of the facade, showing the original articulation of the facade. Therefor these elements have a high value.

New services are mounted directly in front of and onto the north facade. These services are relatively new and disturb the aesthetics of the facade resulting in them having a low value

Modern cable trays disturb the rithm and aesthetics of this facade. Other than some minor functional value, this element has an overall low value in relation to the facade.

Traces of newer brick show the location of former penthouses. This subtle scar from the past tells us something about the original design of the facade. Therefor this element has a positive value.

East facade



Original facade showing the concrete structure with masonry infill. All steel doors and windows are still original (high value).

An protruding newer extension (different in shape, material and dimensions from the original protruding building parts) is clearly visible, disrupting the design of the facade with it's shell roofs.

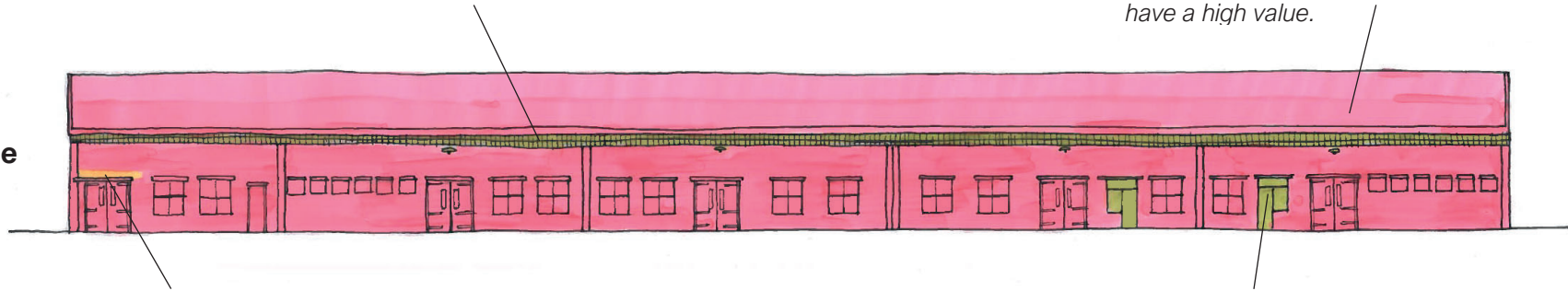
Building 430 - the Factory

Levels of significance by Bram Hulshof

The added cable tray is clearly visible on this facade and contrasting with the brick and concrete. To go on it is also running through the original rhythm of the facade (created by the visibility of the concrete structure). This element has a low value.

This facade is very much in original condition. The closed shell roof, the concrete structure with its masonry infill, the openings with original steel doors and windows all have a high value.

South facade



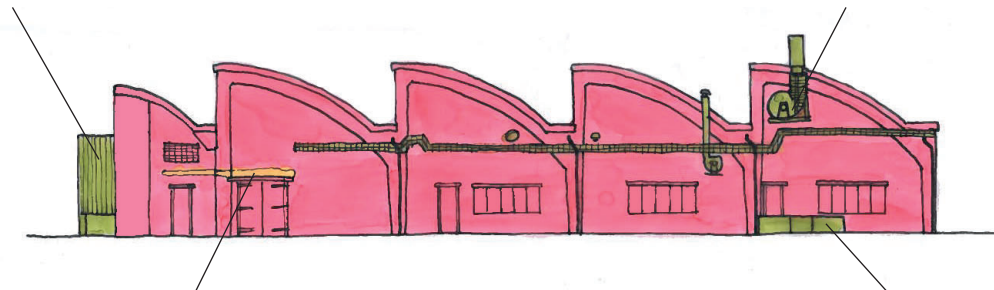
Again traces of a former penthouse can be seen. The fact that the traces are clearly recognisable without really disturbing the facade, gives this element a positive value.

Not only has original windows been removed, the original articulation of openings in this facade has been disturbed by the additions of two single doors. Therefore these elements have a low value.

Also in this facade the extension (different in shape, material and dimensions from the original protruding building parts) is clearly visible, disrupting the design of the facade with its shell roofs.

Next to the cable trays (discussed before) this facade also shows some additions of big vents and ventilators. Although showing the changes in functional use in the interior, these elements disrupt the facade in a very harsh way. Therefore all the services added to this facade have a low value.

West facade



This facade also shows the traces of a penthouse. Not only the location of the connection can be seen, the masonry underneath the former penthouse clearly has less patina. This all tells the story of the former penthouse which would have been a striking element on this corner of the facade. A positive value is given to these traces.

A poorly constructed timber box (probably holding some services) blocks an original opening of this facade. This element does not add any value to the facade and therefore has a low value.

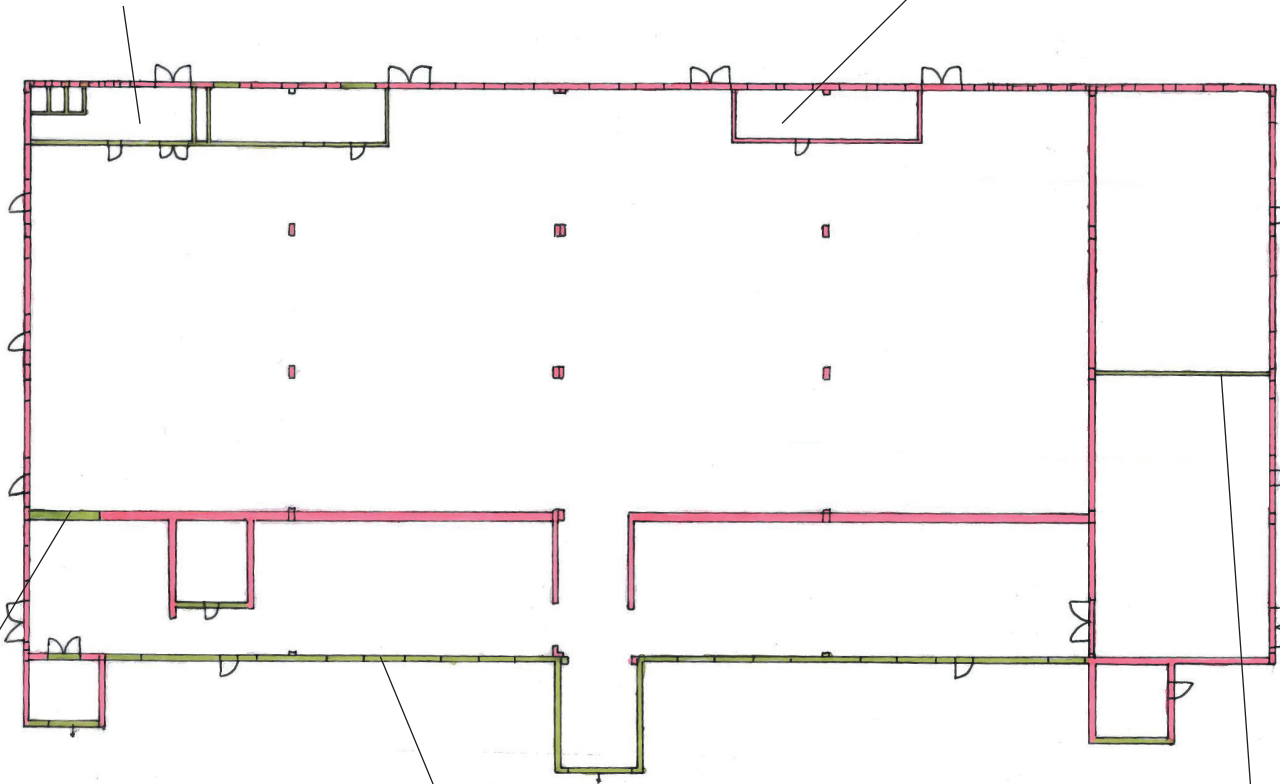
Building 430 - the Factory

Levels of significance by Bram Hulshof

Former offices (like the one to the right) have been replaced by new masonry offices). These offices, though having the same spatial concept, differ in materialisation and they are not exactly on the same spots the original offices were in. Therefore these rooms have a low value.

This is the only original office left (placed within the bigger space of this production building). This transparent office room, made from steel and glass, therefore has a high value.

Plan (ground floor)



Some original openings have been filled blocking the experience of the original spatial sequences.

Like mentioned at the facades, the north facade has a low value due to its current finish. The concrete structure underneath this finish however has a high value.

This wall has been added and was not part of the original design of this space. It also disrupts the spatial experience of the space (in full transverse direction). Altogether this wall has a low value.

Building 430 - the Factory

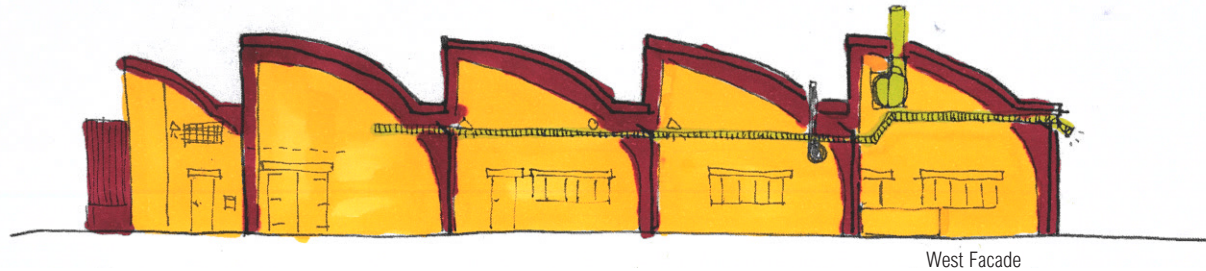
Value matrix Junyi Zuo

	Age value	Historical value	Intentional commemorative value	Not intended commemorative value	Use value	New-ness value	(Relative) art value	Rarity value	Architectural value
Surroundings					Big public spaces around building				
Site		Shifted from grids							
		Relatively free standing building							
Skin		Building was built in two (matching) phases						Structure is showing in exterior façade	Rithm in the facades
		Blow-out walls							Iron windows
									Brick pattern (staand klezoor verband)
Structure		Castings visible on concrete			Height of space				Repetition of shells
		Shape of the roof			A lot of daylight due to windows in roof				Visibility of structure in facade
		Foundation was made 'future proof'							
Space plan		Layout derived from functional needs			Relatively free/open floor plan				
					Different functions had different place in building				
Surfaces	Floor is covered with old oil stains						Castings on concrete gives a nice relief (shadows)	Just one original office room left	Interior painted white
Services					Rainpipes				
Stuff		Original light fixtures							
Spirit of place					Light from above	Industrial atmosphere is quite fashionable			

Building 430 - the Factory

Levels of significance by Junyi Zuo

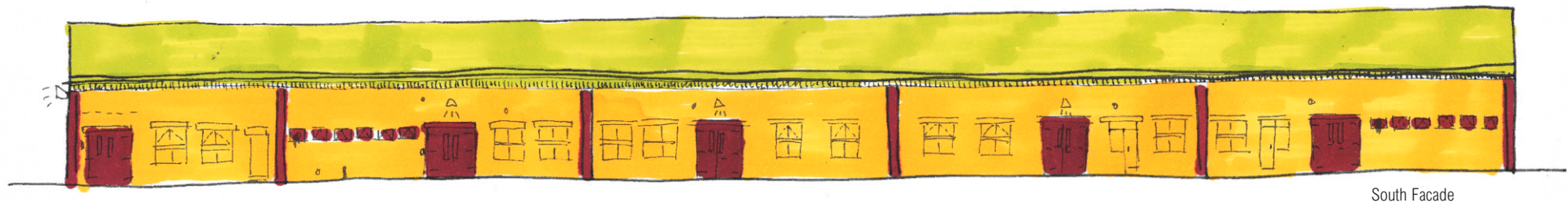
The repetition of the circular beams and columns create the sequence of the space underneath.



The structure is visible in the facade. The beams and columns provide the main load bearing and the filled brick skin could be removed and make the facade open and transparent.

Even though the shell roof is the most significant composition of the building, it is not quite visible from the south facade. Thus, it is not that valuable for the roof from the perspective of the south facade.

- High value
- Common value
- Low value

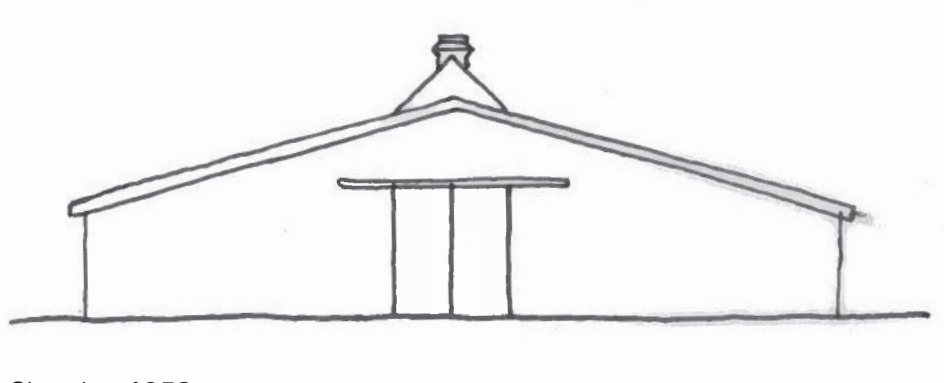


The structure is also visible to see the sequence of the interior space. The big sliding doors for each portal show a repetition of the space sequence.

The shape and scale of the windows also relate to the interior function. For instance, it is easy to know the small square windows belong to toilet.

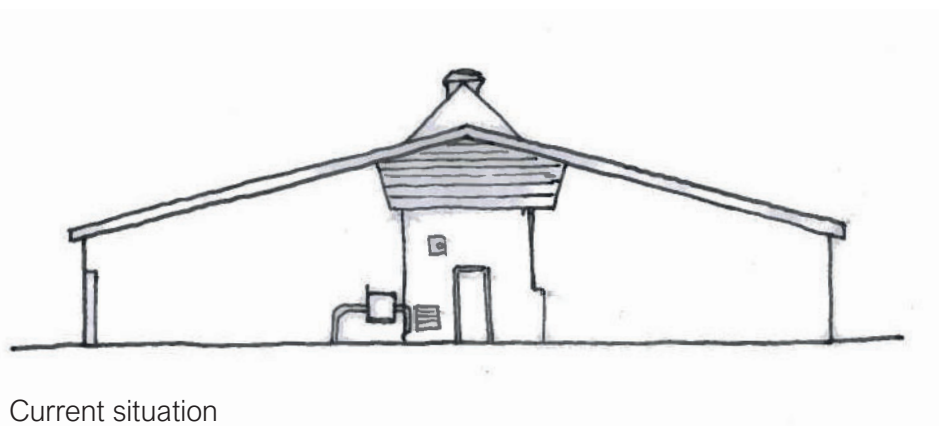
Building 421 - the Wash House

Interventions south facade



Situation 1952

(own reconstruction with the help of archive drawings,
source: Archive Hembrug Zaandam BV)



Current situation

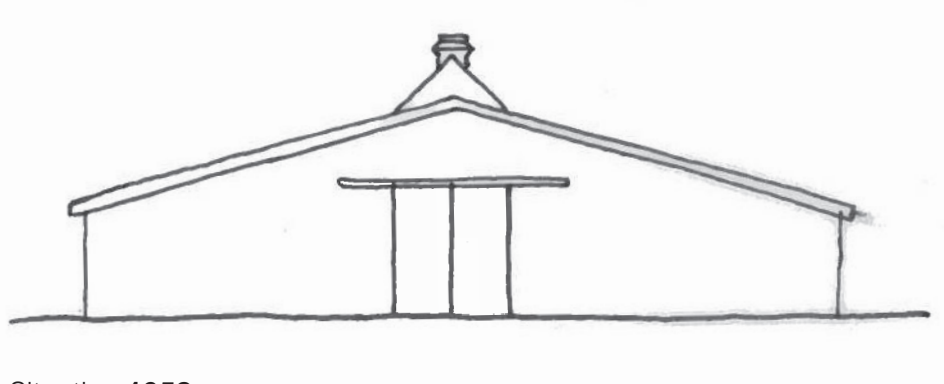
Source: image by Bram Hulshof

The south facade clearly shows some alterations over time. Most clear is the filled up opening. In an areal picture from the 50's the original sliding doors can be seen. This alteration of the facade as probably part of the transformation of part of this building into washing and dressing rooms in the 80's. Next to the disappearance of the big sliding doors the wooden planks on top of the facade and the grill, ducts and pipes are later additions as well.



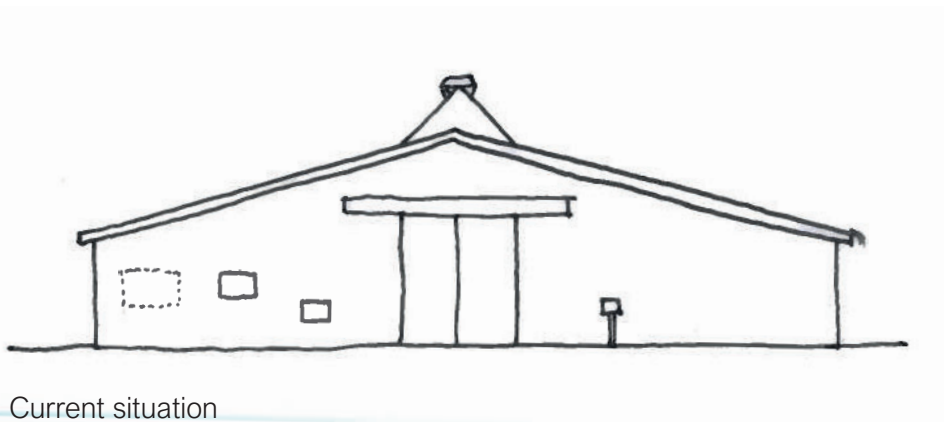
Building 421 - the Wash House

Interventions north facade



Situation 1952

(own reconstruction with the help of archive drawings, source: archive Hembrug Zaandam BV)

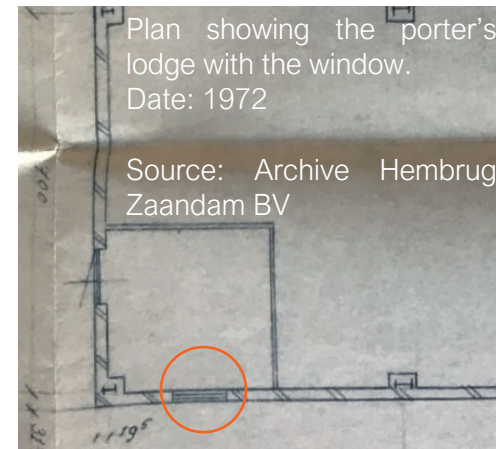


Current situation

Source: image by Bram Hulshof

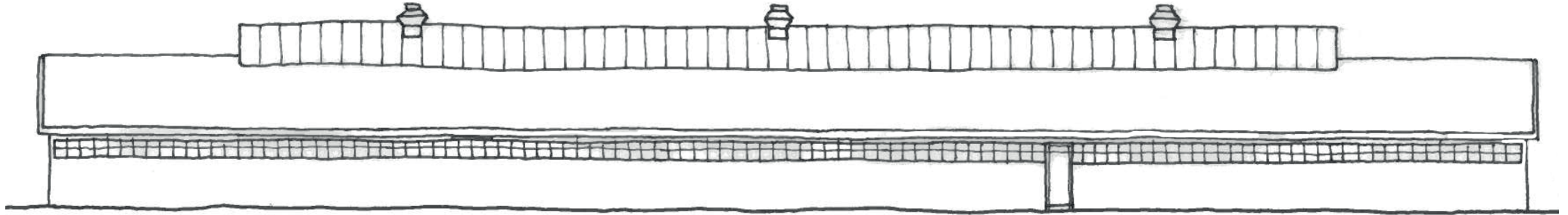
The north facade has not been altered much. However at some time an opening was added in this facade. Together with the addition of a door in the east facade these interventions were part of the construction of a porter's lodge within the corner of building 421.

After some time this opening was filled up again now showing contrast with the original masonry (difference in masonry bond and brick type).



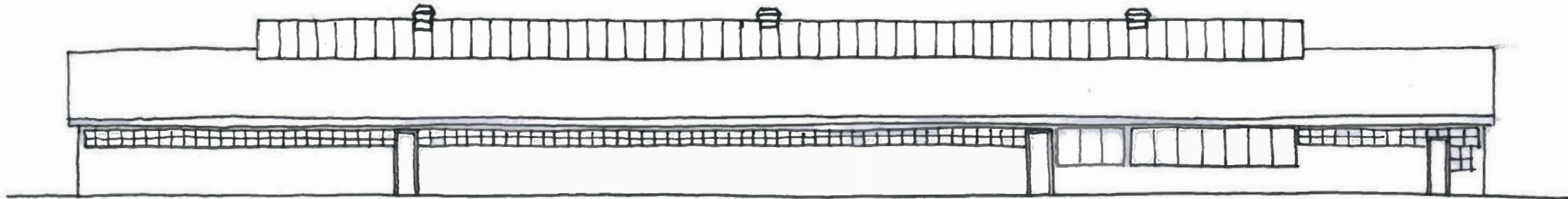
Building 421 - the Wash House

Interventions east facade



Situation **1952** (own reconstruction with the help of archive drawings, source: archive Hembrug Zaandam BV)

Source: image by Bram Hulshof



Current situation

Source: image by Bram Hulshof



Added single door

The interventions in this facade are related to the changes in functional use of the building. The left door for example was added in the 80's as part of the transformation of part of the building into washing and dressing rooms (probably as a fire escape door). There used to be only one door in this facade.



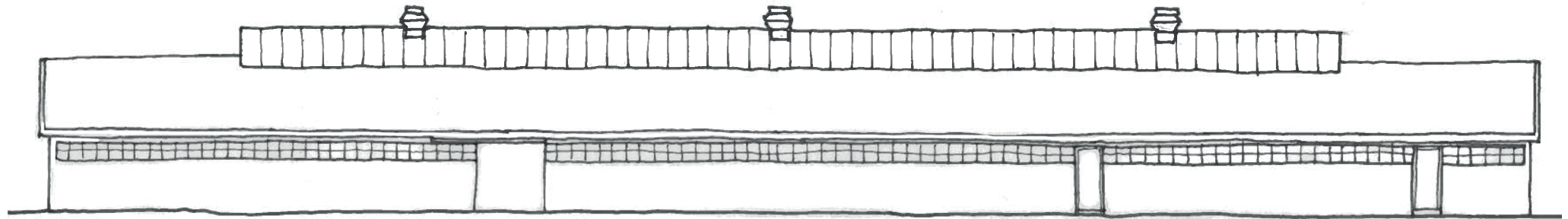
Larger windows were added



Added door and window

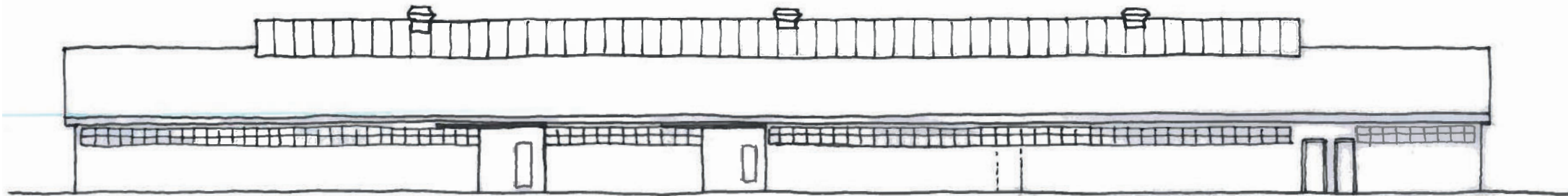
Building 421 - the Wash House

Interventions east facade



Situation **1952** (own reconstruction with the help of archive drawings, source: archive Hembrug Zaandam BV)

Source: image by Bram Hulshof



Current situation

Source: image by Bram Hulshof



Added sliding door

This facade shows most interventions. Two single doors disappeared and 2 single doors and one big sliding door were added.

These alterations, like we discussed before, are all related to the functional changes of the building over time.



Filled up single door



Filled up single door and new doors

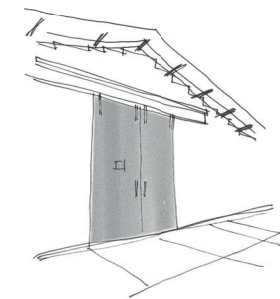
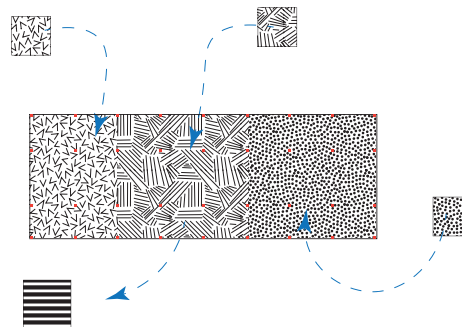
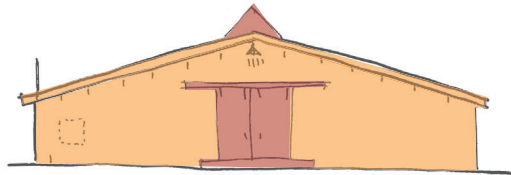
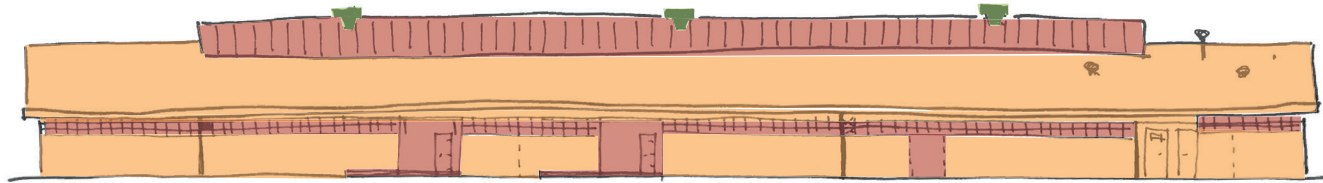
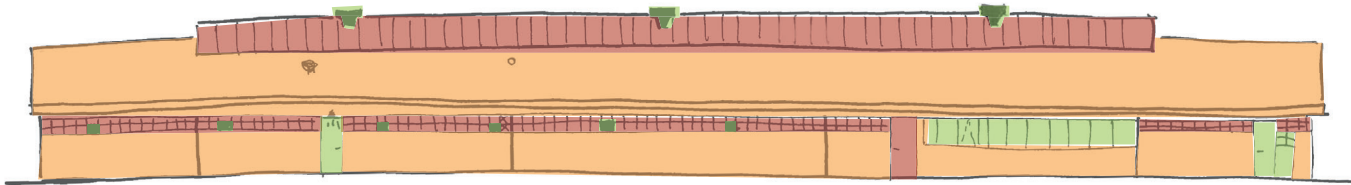
Building 421 - the Wash House

Value matrix Chenna Labeling

	Age value	Historical value	Intentional commemorative value	Not intended commemorative value	Use value	New-ness value	(Relative) art value	Rarity value	Architectural value
Surroundings		Continuation of the Ladder (but detached)							
Site									Defines the public space
									Allee in between building and The Ladder
Skin	Patina on bricks	Big sliding doors reveal storage function		Skylight becomes a recognisable part of the building	Skylight brings a lot of light to the interior				Skylight
	Weathered windows				Big sliding doors in front and side facade				Continuous horizontal windows
									Brick pattern (staand klezoor verband)
Structure					Height of space				Shape of the roof (zadeldak)
					Clear and logical structure				Honest structure (not hidden)
Space plan		Different functions together in one building			Relatively free space plan				
Surfaces									Cassette ceiling
Services		Old washing sinks still in place			Chimneys part of original design				
Stuff									
Spirit of place	Diffuse natural light due to weathered windows	70's washroom clearly recognisable			Height of the windows creates privacy inside				Big sliding doors as the main portals unlocking the building

Building 421 - the Wash House

Levels of significance by Chenna Tabeling



Skylight as a common characteristic of surroundings

The building as a facilitator for space, flexible in its use

Doors unlocking the building

Alley / the Wash House as a transmission (zone) from Hembrug to the (for a long time excluded from this site) Green Head; as an transmission between these functions.

The alley and the Wash house are the last 'elements' set up in the direction of the Hembrug area. This depicts the relation from the Green Head to the Artillery Establishments and NV Eurometaal, in which the Wash house had its purpose.

The alley in between the Ladder and the Wash House feels like a very intimate space when approaching from 429. The Wash House as a continuation of the Ladder gives the direct link of the building relation with the Artillerie Inrichtingen. The position also defines the public space on the eastside of the building, since the Factory (430) is shifted.

The doors reveal the storage function and can unlock the buildings as a transmission towards the Green Head. The doors state the synonym as main portals which unlock the building. The facade of the Wash House is quite closed, you can only look inside when looking up. This view gives a direct look to the skylight. But once inside the building, you can see its beauty.

The different functions inside the building, prove this building to be 'easy' adaptive. This in relation to the relatively free setup of the floorplan / the clear structure.

The combination of shape of the building, the skylight and the horizontal windows create a linear gesture. Which relates to the shape of the Ladder (connection with AE).

The skylights as seen as a recognizable element and reference towards the characteristics of the surroundings buildings, stating this relation with the former purpose of the building; as facilitator for space for NV Eurometaal.

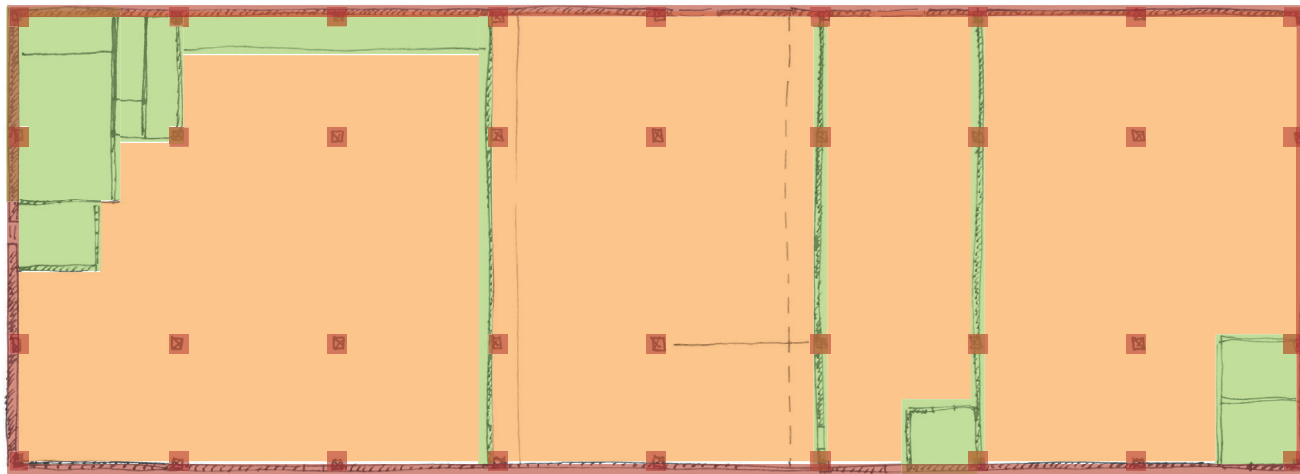
Building 421 - the Wash House

Levels of significance by Chenna Tabeling

Green: Most valuable

Italic: In between

What does this has to do with any of the above?



Alley in between Ladder and building 421
Transmission zone from Hembrug to Green Head

Continuation / extensions of the Ladder
Big sliding doors both head and side
Different functions together in one building
Skylight

Horizontal windows

Cassette ceiling

Structure (understand / see logic structure)

Closed building (feeling from the inside)

Height of space

Washroom

Shape of the roof

Brick pattern

Chimneys

Design ideas:

Create a lively alley

Revitalize the square (connected with 512)

Create connection with eastern public space of the Ensemble, maybe from alley through the building?

Building 421 - the Wash House

Value matrix Bram Hulshof

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	Weathered windows				Big sliding doors in front and side facade				Continuous horizontal windows
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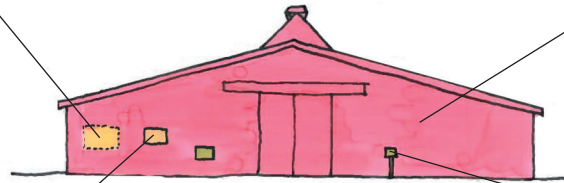
Building 421 - the Wash House

Levels of significance by Bram Hulshof

A former opening (made with the creation of a porters lodge in the corner of the building) has been filled in, establishing a closed facade again. A different brick and masonry bond has been used so the former opening remains visible. This trace tells the story of the changing functional use of the interior of the building and therefore has a positive value.

Most of this masonry facade is in original condition. The closed and symmetrical facade with the original big sliding doors therefor has a high value.

North facade



A box with open compartments is placed onto this facade. Employees had to put their cigarettes and lighters in those compartments before entering the buildings. This element has historical value because it tells the story of the workers. Although added to the facade this element has a positive value.

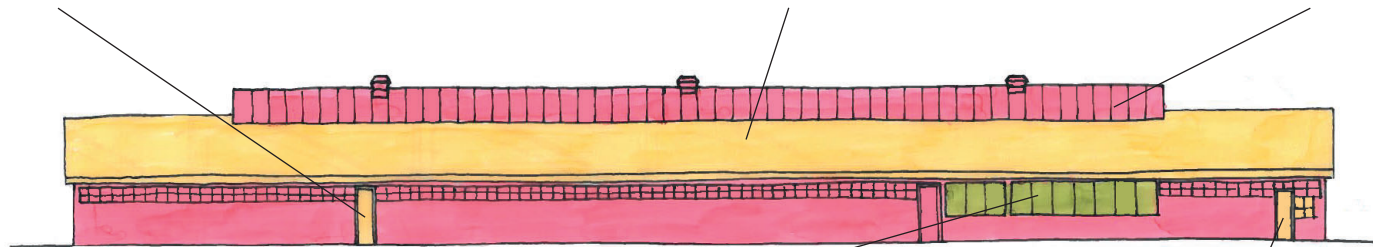
Small boxes with new services are mounted to the facade. These elements create a contrast with the facade and do not add any aesthetic or significant historical value to the building. This results in them having a low value.

This door was added together with the creation of the wash house within this storage building. It tells the story of the changing functional use having its affect on the facades. Because this is a relatively small alteration it has a positive value.

Though the shape of the roof has a high value, the roof finish is a simple and recently renovated black coverage. This finish in itself does not have a lot of value resulting in the roof having a positive value.

The skylight has a high value. Not only does it provide a lot of daylight into the interior, it also forms a characteristic and striking element of the building.

East facade



The original windows were completely replaced by new larger windows made from wood instead of steel. These elements do not go well with the original design of the facade and therefore are given a low value.

This door and window tell the story of the porter's lodge (see also north facade). Added in a relatively early stage of the building and telling the story of the porter, this element has a positive value though it does disturb the horizontality of the facade.

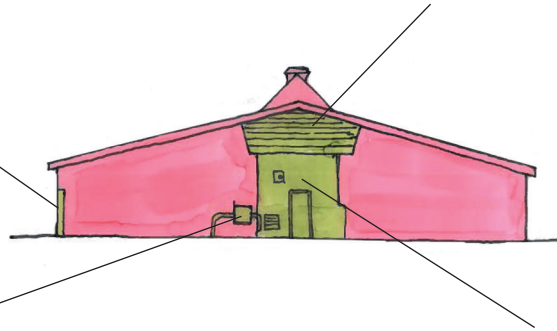
Building 421 - the Wash House

Levels of significance by Bram Hulshof

An steel plate is put on (only) the left corner for protection. This element disturbs the symmetry and does not have any particular value instead of some function value. This element has a low value.

Wooden planks are placed on top of the masonry. This element covers the original masonry and therefor has a low value.

South facade



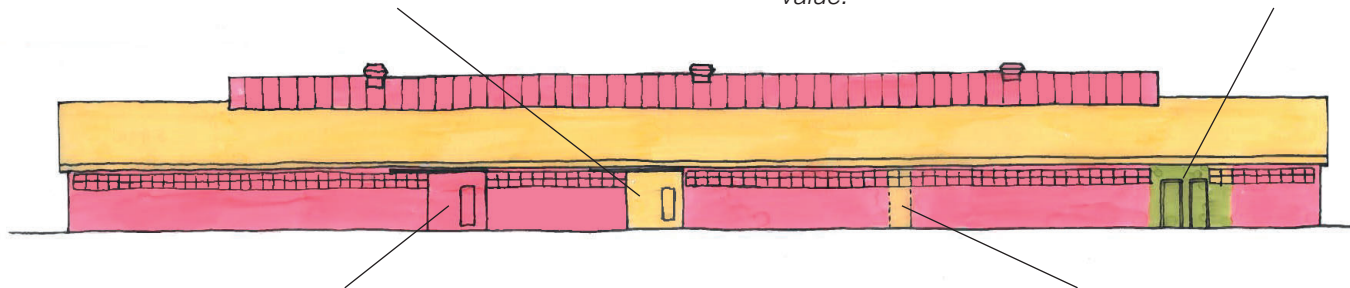
Services have been mounted to the facade without the symmetry and aesthetics of the facade being taken into account. These services have a low value in relation to this whole facade.

The original sliding doors have been removed and the opening in this facade has been filled in. Although in general the changes in the facades tell the story of the changes of the functional use of the interior, this interventions was made within the front facade, one of the two main entrances. Therefor this intervention has a low value.

A new sliding door was added as a duplication of the original sliding door. It does have the same function and the same materialisation and therefor has a positive value

A big part of the original wall (including an original opening) has been replaced by a new wall with two wooden doors next to eachother. This intervention is clearly contrasting with the facade and therefor has a low value.

West facade



The masonry facade with it's striking horizontal windows has only one original door: the sliding door. Therefor this sliding door has a high value.

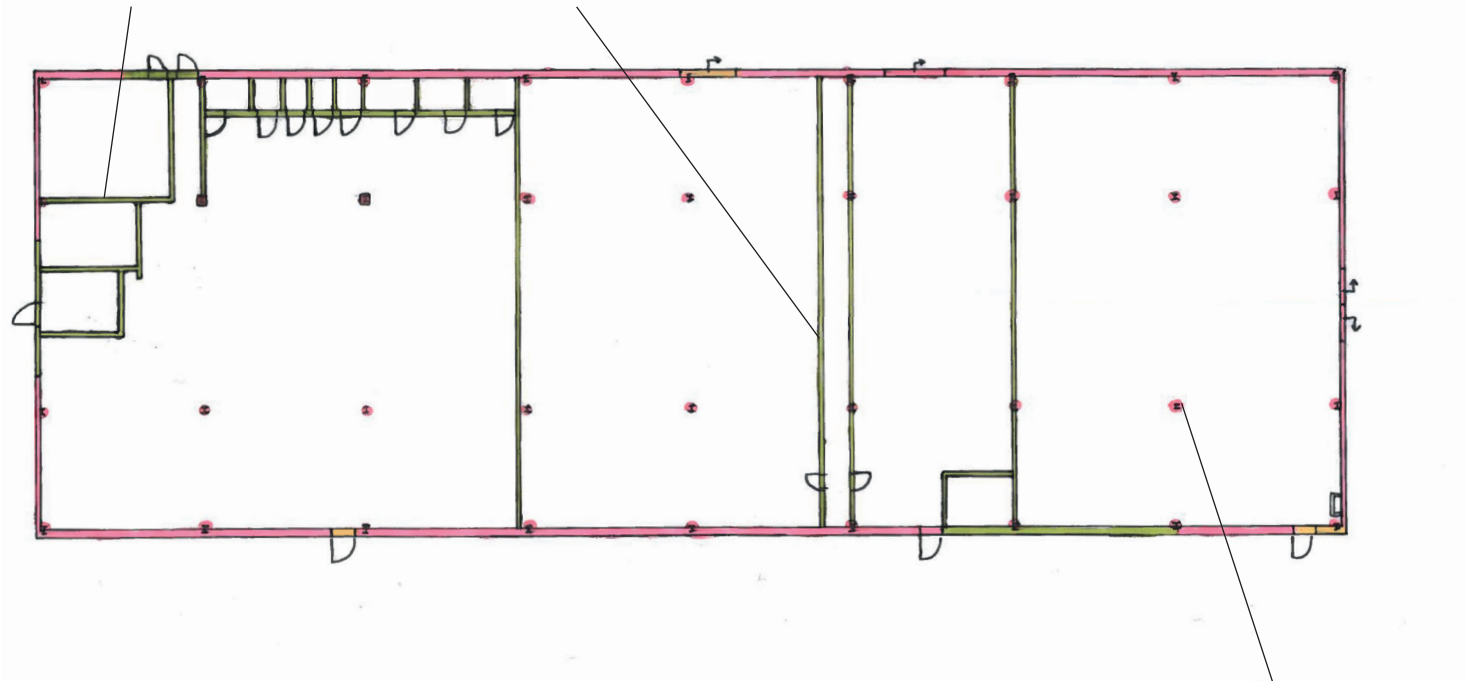
Though not disturbing the facade, traces clearly show the location of a former (original) opening. The fact that the location of the original door is still recognisable has a positive value.

Building 421 - the Wash House

Levels of significance by Bram Hulshof

Originally the building had a completely open floor plan. All walls added inside disturb the original experience of the space. Next to this, the connections of the walls to the ceilings (especially to the concrete cassettes) is quite poor. Although these walls were created in order to split the building in several smaller spaces with different uses, these walls in itself have a low value.

Plan (ground floor)



The whole steel structure (columns, beams and purlins) has a high value while they form the skeleton of the building.

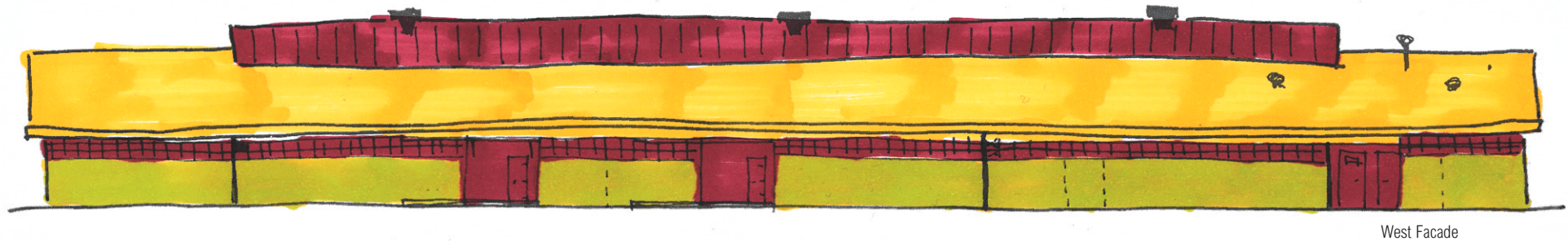
Building 421 - the Wash House

Value matrix Junyi Zuo

	Age value	Historical value	Intentional commemorative value	Not intended commemorative value	Use value	New-ness value	(Relative) art value	Rarity value	Architectural value
Surroundings		Continuation of the Ladder (but detached)							
Site									Defines the public space
									Allee in between building and The Ladder
Skin	Patina on bricks	Big sliding doors reveal storage function		Skylight becomes a recognisable part of the building	Skylight brings a lot of light to the interior				Skylight
	Weathered windows				Big sliding doors in front and side facade				Continuous horizontal windows
									Brick pattern (staand klezoor verband)
Structure					Height of space				Shape of the roof (zadeldak)
					Clear and logical structure				Honest structure (not hidden)
Space plan		Different functions together in one building			Relatively free space plan				
Surfaces									Cassette ceiling
Services		Old washing sinks still in place			Chimneys part of original design				
Stuff									
Spirit of place	Diffuse natural light due to weathered windows	70's washroom clearly recognisable			Height of the windows creates privacy inside				Big sliding doors as the main portals unlocking the building

Building 421 - the Wash house

Levels of significance by Junyi Zuo

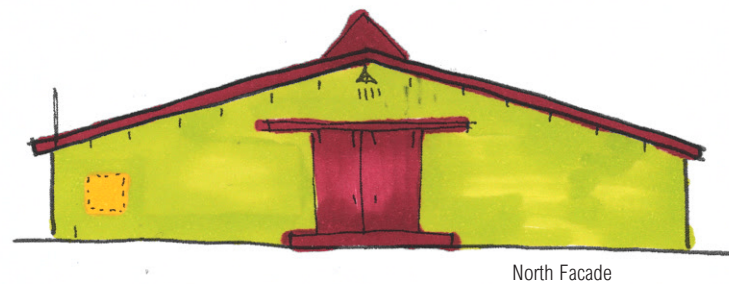


The long skylight and long horizontal windows are the most significant characteristics of building 421. They do not only provide the lighting and keep the privacy at the same time, but the windows also make the slated roof a better shape. Since the slated roof in combination with this skylight is rarely seen in the Hembrug area.

The big sliding doors interrupt the continuation of the horizontal windows with steel frame. These doors also provide the opportunities to divide the interior space in several independent functions

■ High value
■ Common value
■ Low value

The slated roof shows a beautiful geometric shape. The skylight has a different angle in relation to the roof. The interior space changes gradually from the edge to the centre of the building, which create a profound atmosphere like a cathedral.



The former window was refilled with bricks in new pattern. It show a difference in the application of the old versus the new materials.

Building 512 - the Romney hut

Value matrix Chenna Labeling

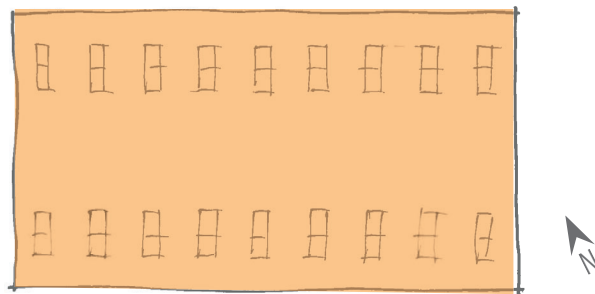
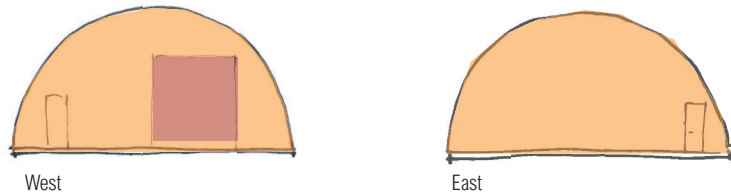
	Age value	Historical value	Intentional commemorative value	Not intended commemorative value	Use value	New-ness value	(Relative) art value	Rarity value	Architectural value
Surroundings		Relation with building 421 (the Wash House)							Close to the water
Site	Big leaning trees enclosing the building.	First building to be built at that spot							Building defines the public space
Skin	Discoloration of the steel plates (rust)	Cheap and quick façade reveals function							Closed façade from outside, open from inside
									Completely covered by one material
Structure		Simple and quick construction method			Clearly visible and logical structure				Simple (recognisable) geometrical shape
Space plan					Completely free floor plan				
Surfaces									
Services									
Stuff	Light fixtures								
Spirit of place					Feeling of privacy inside				

Building 512 - the Romney Hut

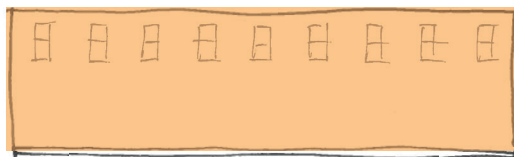
Levels of significance by Chenna Tabeling

Green: Most valuable

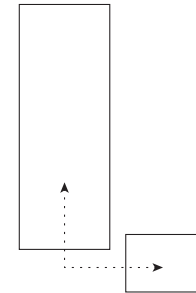
Italic: In between
What does this has to do with any of the above?



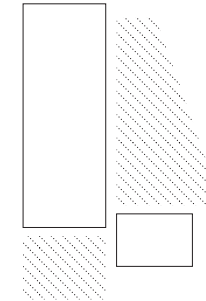
Roof



North / South



Related to building 421



Defines public space ensemble

The Romney hut functioned as an extra storage for the 421 building. However, this building isn't actually so rare, it is quick way of building a shed and the Romney hut you can spot all over the Netherlands.

I've chosen the Green Head for this studio for it's outside spaces. The placement of this hut is creating a intimate outside space. However it also blocks the view to the water...

With an eye on todays future an interesting fact about the Romney hut is that it has a simple and quick construction. This way it's easy assembled and it can be an example on how to standardize easy constructions.

An other element of the Romney hut which suprised me, was that it looked very closed from the outside, since all the metal plates have the same rusty colour. But actually, when you look inside, it has all these skylights which you do not notice at first.

Connection / relation with building 421

Defines the public space

Simple & quick construction

Closed from outside, light from inside (plates)

Rust on the plates

Close to the water

Enclosed by trees

Strong geometrical shape

Completely free floor plan

One material at the outside

Roof is the facade

> Circular shape of roof / facade

Structure (clear and visible)

Light fixtures

Design ideas:

To keep or not to keep?

Create a covered outside area, which shows an easy structure functionally related to building 421.

Building 512 - the Romney hut

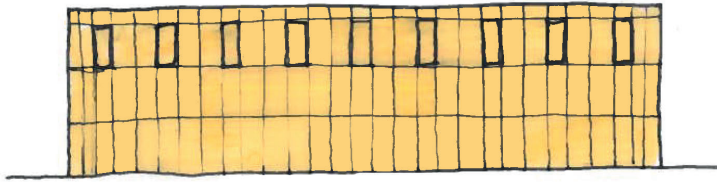
Value matrix Bram Hulshof

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Structure		Simple and quick construction method			Clearly visible and logical structure				Simple (recognisable) geometrical shape
Space plan					Completely free floor plan				
Surfaces									
Services									
Stuff	Light fixtures								
Spirit of place					Feeling of privacy inside				

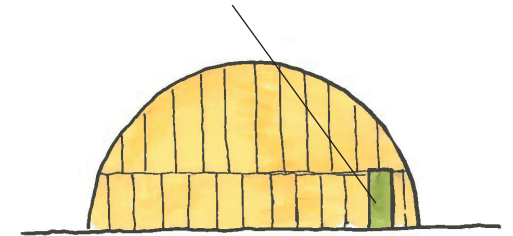
Building 512 - the Shelter

Levels of significance by Bram Hulshof

North facade



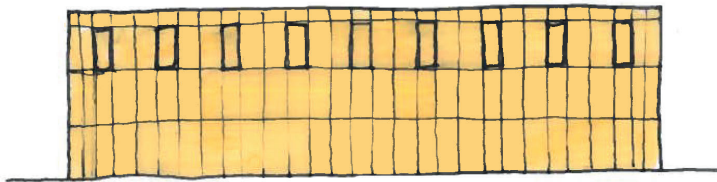
East facade



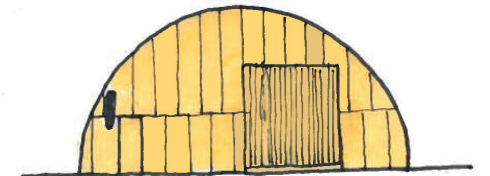
This door breaks the monolithic facade finish in this front facade and therfor has a low value.

This building does not have a particular high value on it's own. However, the fact that the finish of this building consists of only one material (plating) covering both the facades and the roof is quite striking. The material is not very beautiful and is rusting quite severly at some spots. Altogether the facade has a positive value while it does help to create a simple geometrical form within the public space.

South facade



West facade



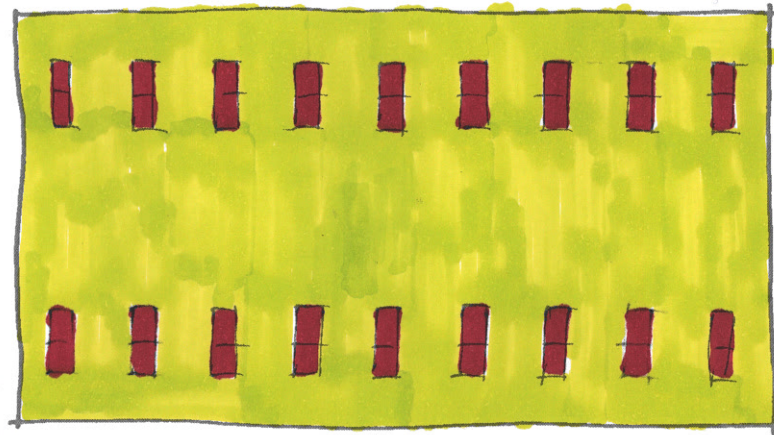
Building 512 - the Romney hut

Value matrix Junyi Zuo

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Surfaces									
Services									
Stuff	Light fixtures								
Spirit of place					Feeling of privacy inside				

Building 512 - the Romney hut

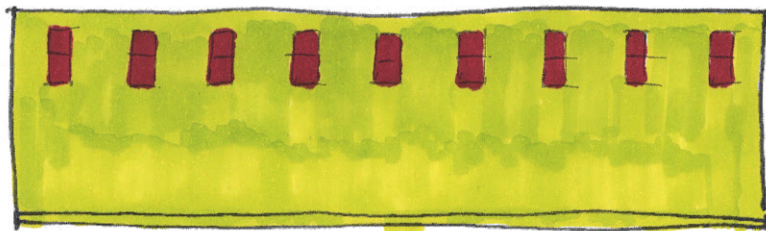
Levels of significance by Junyi Zuo



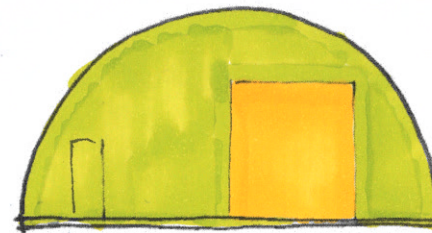
Top view

The geometric shape of the Romney hut make it symmetrical for the façades. There is no border between the facade and the roof; the roof is the facade.

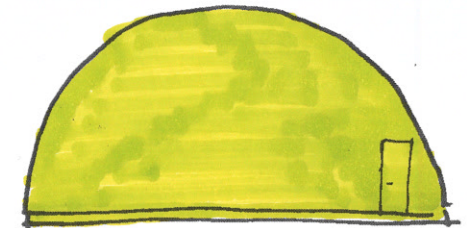
The windows on the facade/roof are not visible from outside, but they provide sufficient lighting for the interior space.



North Facade



West facade



East facade

It also shows the symmetrical of the geometric shape of the Romney hut. The big sliding door occupies half of the facade, which could allow large scale goods to be transported into the interior space.

The building itself is not as valuable as the other buildings in the ensemble, but it plays an important role in shaping the ensemble and dividing the public space in human scale.

- High value
- Common value
- Low value

Building 382 - the Shelter

Value matrix Chenna Labeling

	Age value	Historical value	Intentional commemorative value	Not intended commemorative value	Use value	New-ness value	(Relative) art value	Rarity value	Architectural value
Surroundings		It was the main command post							Long viewlines from site
Site	Old trees surrounding the building	Partly build underneath the ground							Completely surrounded by fences
		Greenery is hiding the shelter							
Skin	Moss on top of the concrete	No windows, closed building							Sloped facades
		Sloped facades							Completely closed building
									Emphasized entrance
Structure		Partly underneath the ground							Big mass
		Massive structure							Casting visible on concrete
Space plan		Sequence of small rooms							
Surfaces									Same material as exterior facade
Services					Existing ventilation shafts				Services clearly stick out from roof and facade
Stuff									
Spirit of place	Filled with water			Tells the story of war and thread					
				Relict from the past					

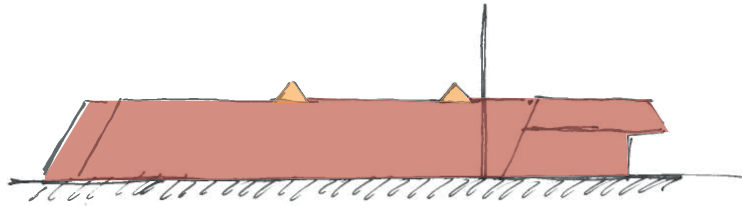
- High value
- Positive value
- Low value

Building 382 - the Shelter

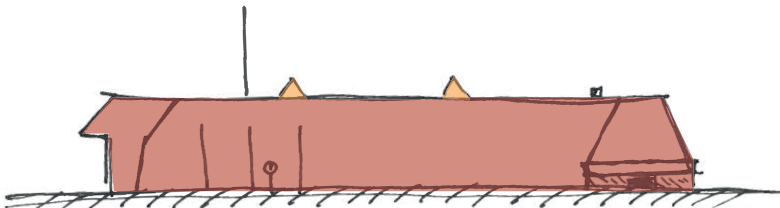
Levels of significance by Chenna Tabeling

Green: Most valuable

Italic: In between
What does this has to do with any of the above?



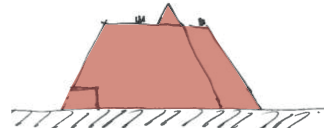
East



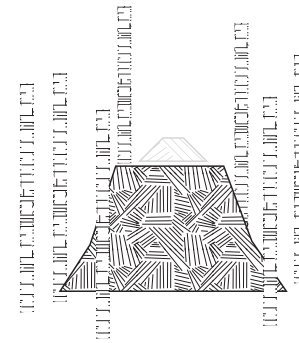
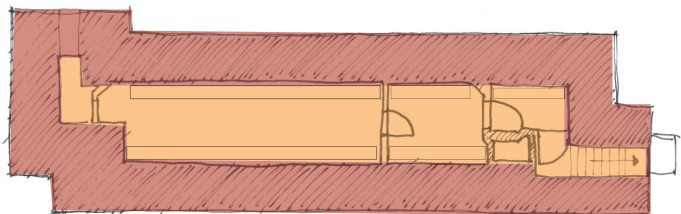
West



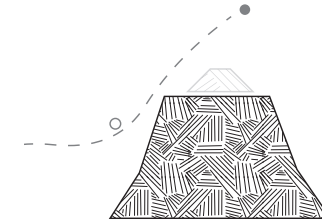
North



South



Hidden in greenery
Trees, shrubs and moss



Sloped facades and mass

The shelter I mainly see as an relict of the past, as a little 'diamond' on the Green Head. Its purpose as a main shelter was to protect the people from dangerous attacks during the WO II. The main features I think are the most important in fulfilling its purpose are the green statements from the list.

The sloped facades bounced off grenades and bombs. Its mass protected the people. The greenery and moss hid the shelter well, in preventing an attempt on an attack.

Next to these values, I personally really like 'honest' architecture. This is why I would preserve the wood grains on the concrete.

Relict of the past

Main command post

Sloped facades

Mass

Trees / greenery hiding shelter

Palina (moss)

Wood casting visible in concrete

Built underground (partly)

Pipes/ventilation ducts

Entrance emphasized

View

Completely closed

Fences surrounding shelter

Shape of floorplan / volume

Sharp corners

Design ideas:

Show the people the main post

Show them the history

Building 382 - the Shelter

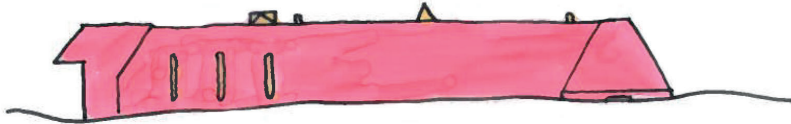
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Stuff									
Spirit of place	Filled with water			Tells the story of war and thread					
				Relict from the past					

Building 512 - the Shelter

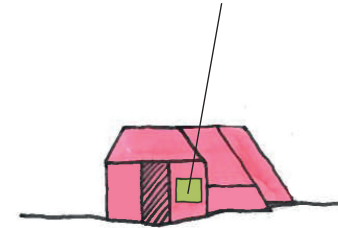
Levels of significance by Bram Hulshof

North facade



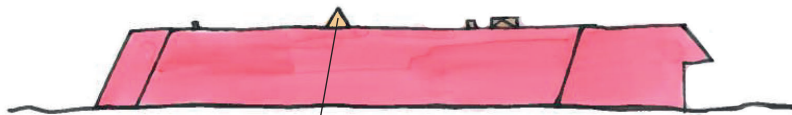
This element is the only addition to this facade and breaks with the smooth monolithic surface of the facade. This element has a low value.

East facade

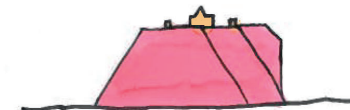


This building does not have openings, is made from one material and has sloped walls. All these aspects attribute to the understanding of this buildings former function as a shelter. This monolithic mass therefore has a high value.

South facade



West facade



Though these elements were used for ventilation and other services inside the shelter, in relation to the mass of the building they have a positive value instead of a high value.

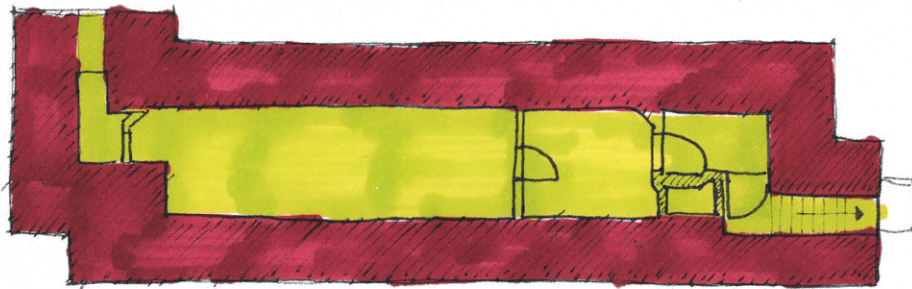
Building 382 - the Shelter

Value matrix Junyi Zuo

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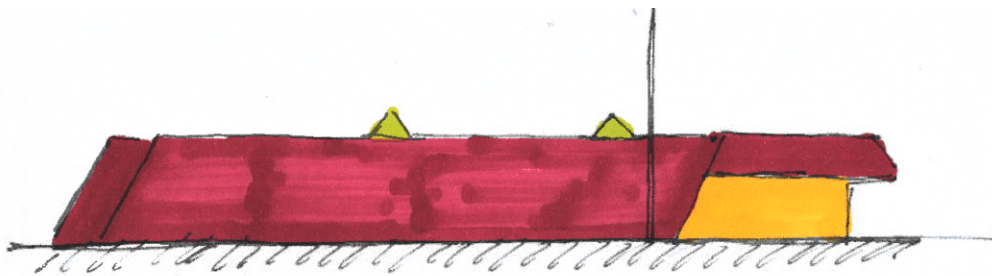
Building 382 - the Shelter

Levels of significance by Junyi Zuo



Floor plan

The floor plan shows the thickness of the concrete wall of the shelter. The concrete itself forms the solid mass of the volume. The limited interior space is laid underground and totally closed. It is cold and dark and imprints a pressing feeling to its visitors.



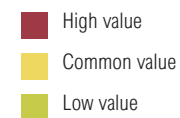
East Facade



North Facade

The different layers from the facade show the meander floor plan of the shelter. It also shows the significant sloped facade. The entrance is quite small and inconspicuous.

The sloped facade is originally designed to protect the people from air attacks and bounces off the attacks. The green moss and the wooden casting on the concrete facade really show the past of this building.





Extra

Decription of the Facilities Assistance Program, NATO

GENERAL PLANT LAYOUT

It is the intention to construct two new buildings at the plant Hembrug (see plan) for the purpose concerned. The manufacturing building nr 429 at Hembrug will be constructed in storeys:

- on the ground floor furnaces and baths;
- on the first floor mechanical equipment;
- underground firing-range and shelter.

The loading and assembling building at Hembrug for the cartridges will be constructed in one floor.

Also will be made use of the existing buildings nrs: 45, 51, 69 and 415.

Power supply: three phase current, to be got from the public system (380 Volts, 50 cycles).

Attached:

- 1 map 1 : 25.000
- 1 plan of the factory at Hembrug

DESCRIPTION OF THE PROJECT

- a. "A.I." possesses production facilities for ammunition in the calibre range .30" - 155 mm.

The entire yearly production capacity in single shift amounts to:

.30" or .303"	40,000,000
9 mm	12,000,000
20 mm	2,000,000
40 mm	600,000
57 mm - 105 mm	125,000
120 mm - 155 mm	25,000

The production time of a single shift is 48 hours a week, about 200 hours a month and about 2300 hours a year.

Besides ammunition, "A.I." manufactures arm components (turnover appr. 1,000,000,- guilders a year) and machine-tools (turnover appr. 5,000,000,- guilders a year).

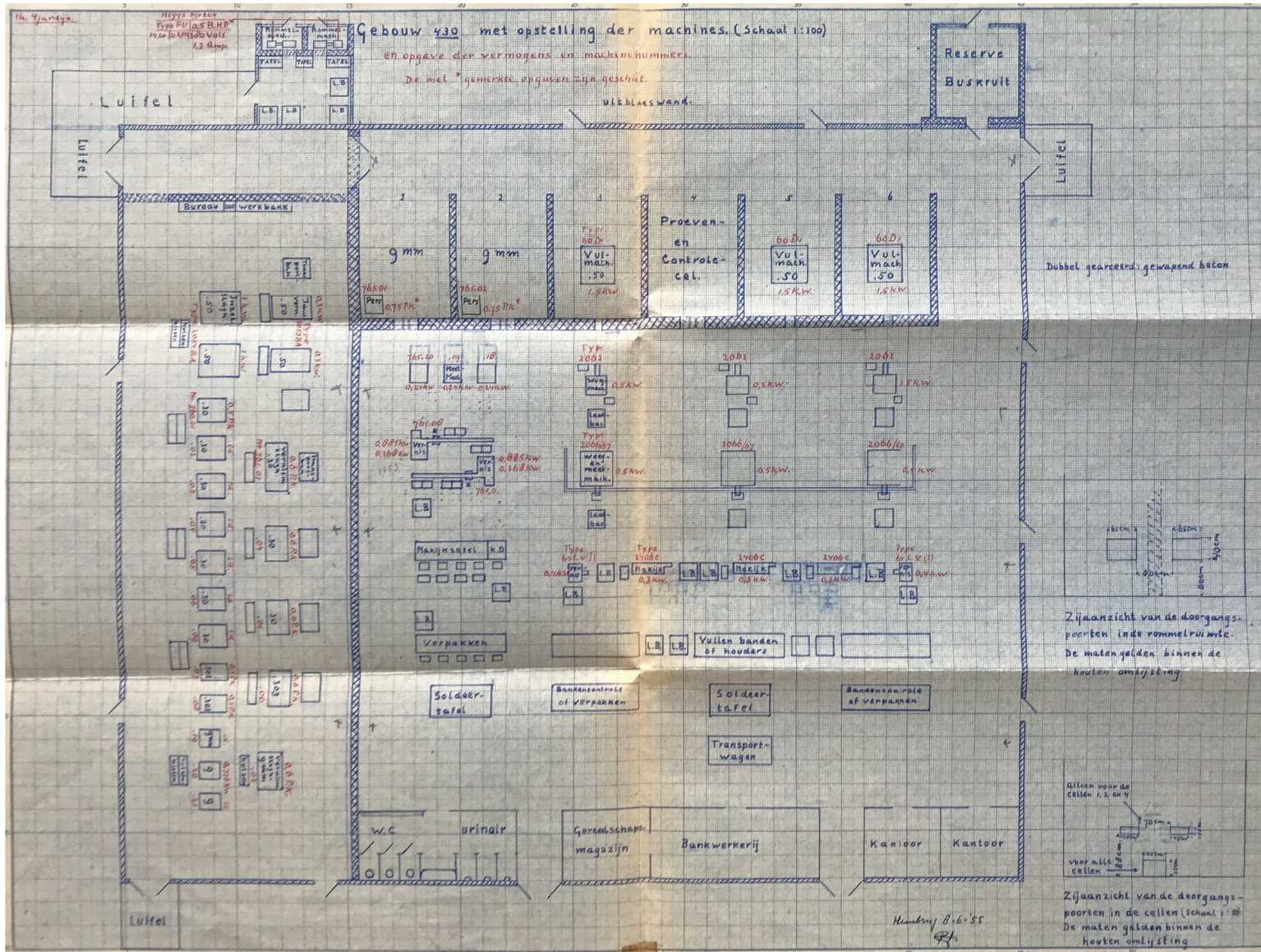
After complete demolition during World War II, the plant was reconstructed in the years 1946-1952. Ownership: all shares are owned by the Netherlands Government.

- b. The purpose of the proposal is to add a production facility for .50" ammunition with an annual production of 10,000,000 rounds in single shift. Brass and gilding metal to be obtained from Belgium (Visseries & Tréfileries Réunies); steel to be obtained from Germany, powder from Koninklijke Nederlandsche Springstoffen Fabrieken, the Netherlands. Transport facilities: Plant is situated on main inland waterways; road facilities; railway connection; labor supply: the plant is situated in a densely populated area.
- c. N.V.Nederlandsche Machinefabriek "Artillerie-Inrichtingen", Hembrug-Zaandam, the Netherlands.
- d. The increased capacity is to be obtained by building and installing a factory department particularly intended for this production.
- e. The increase of the product concerned will be 10,000,000 rounds .50" ammunition annually in single shift.

Building 430 - the Factory

Setup of the machinery - part a

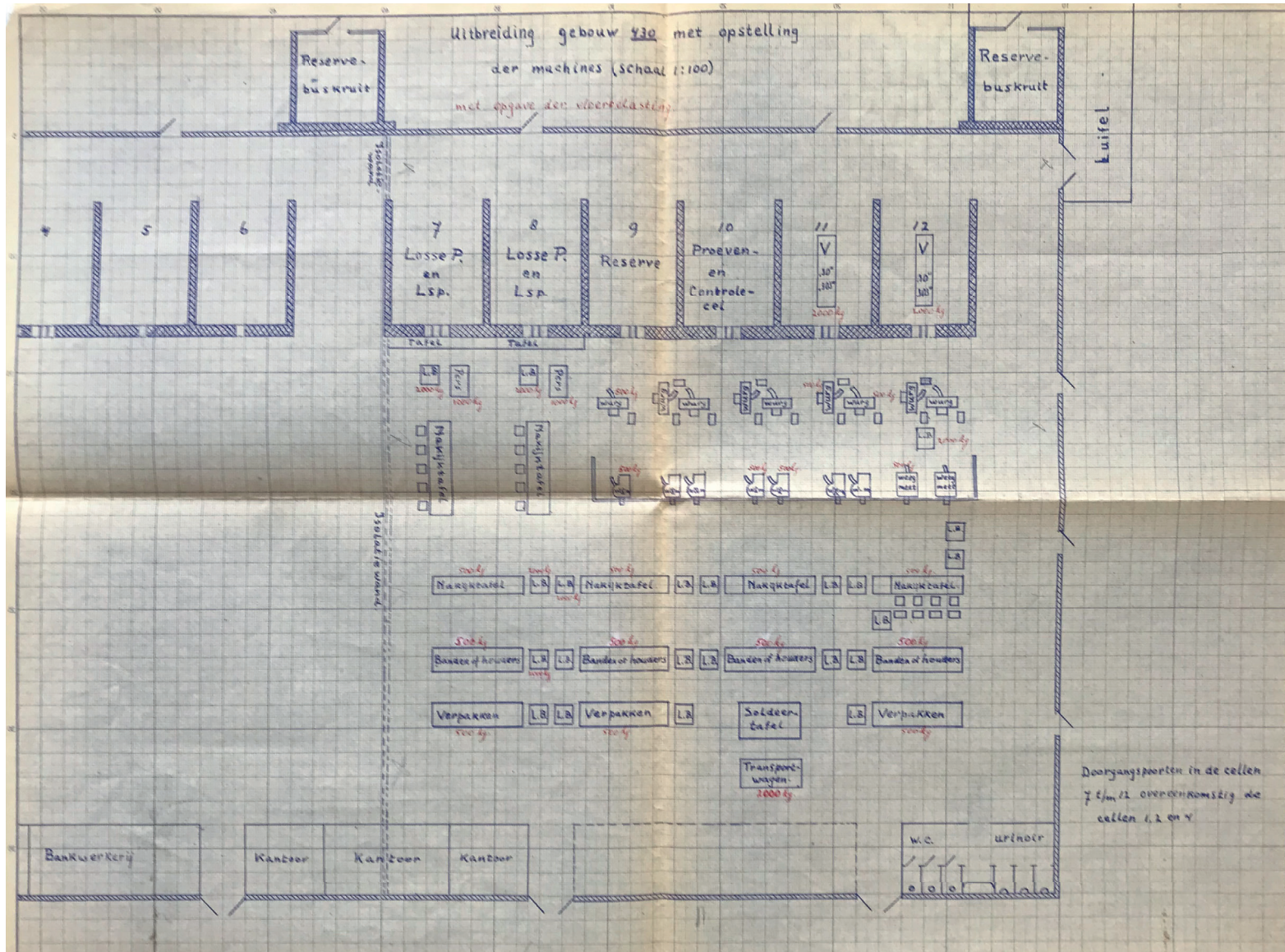
Date unknown; 1956?



Building 430 - the Factory

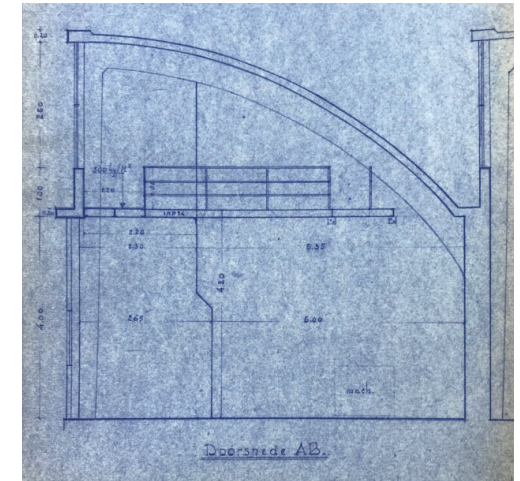
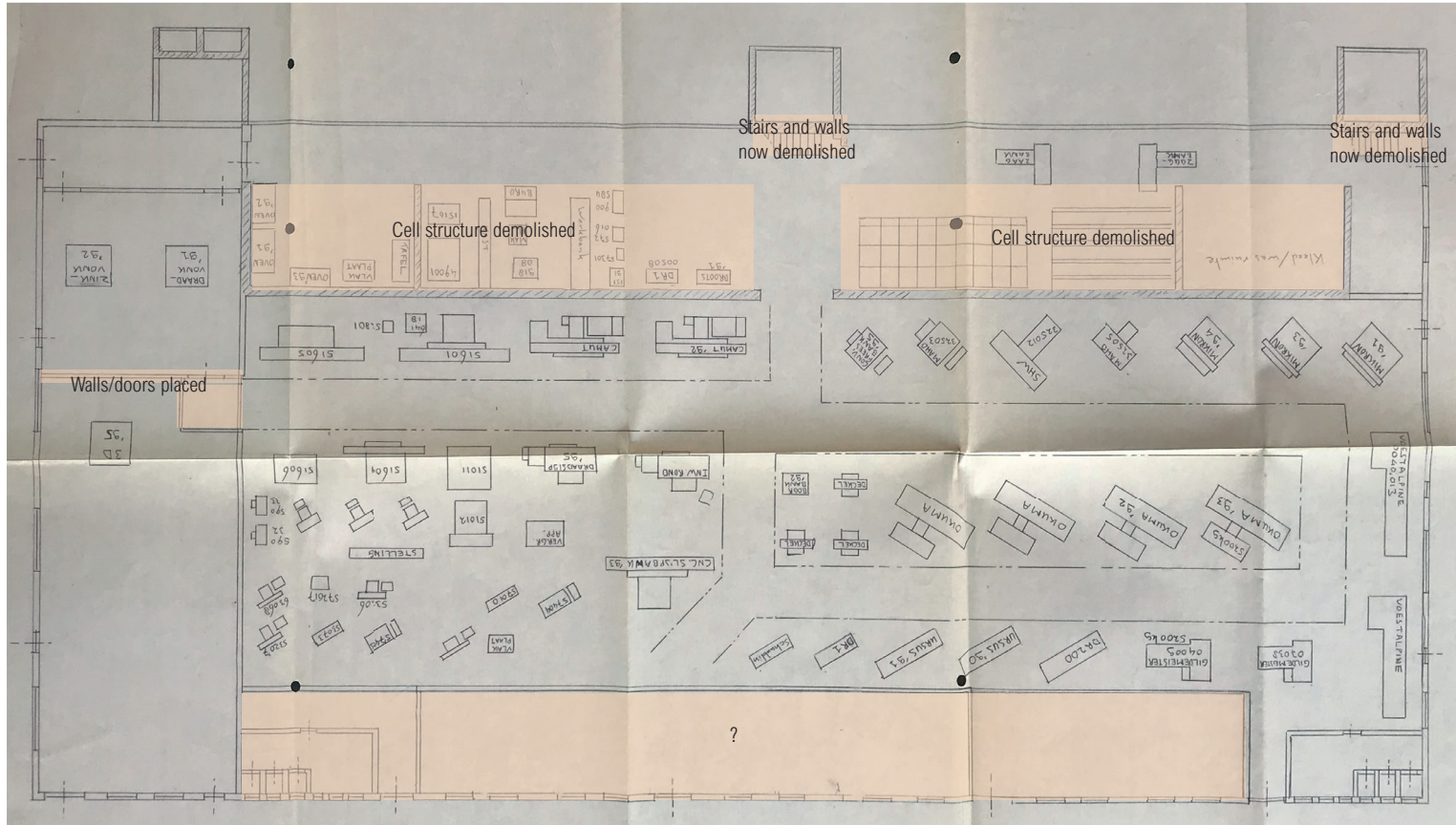
Expansion building with set up machinery - part b

Date unknown; 1956?



Building 430 - the Factory

Set up of the machinery - part b
time; must be at least after 1981

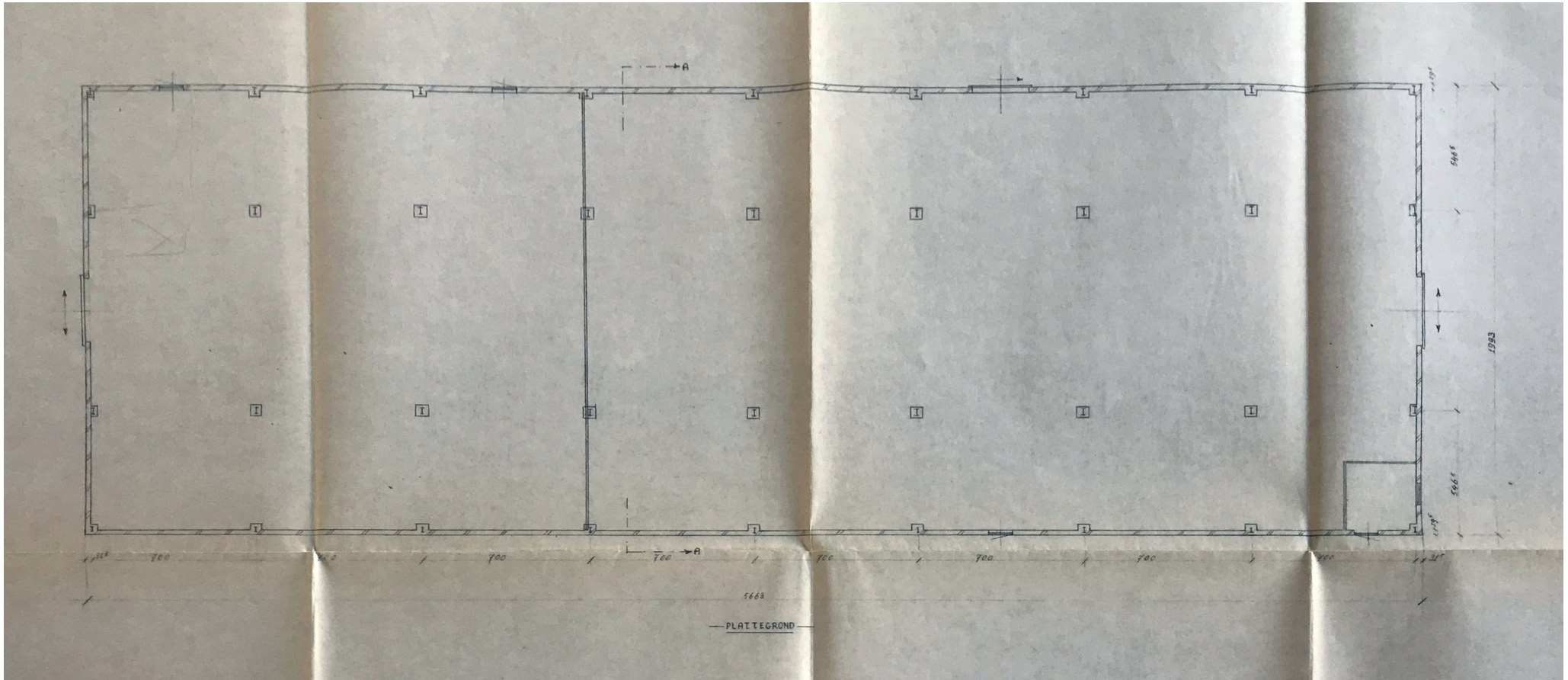


Some images show that at some point there was extra storage space in between an extra created floor and the roof. The stairs to these storage spaces can be seen on the floorplan.



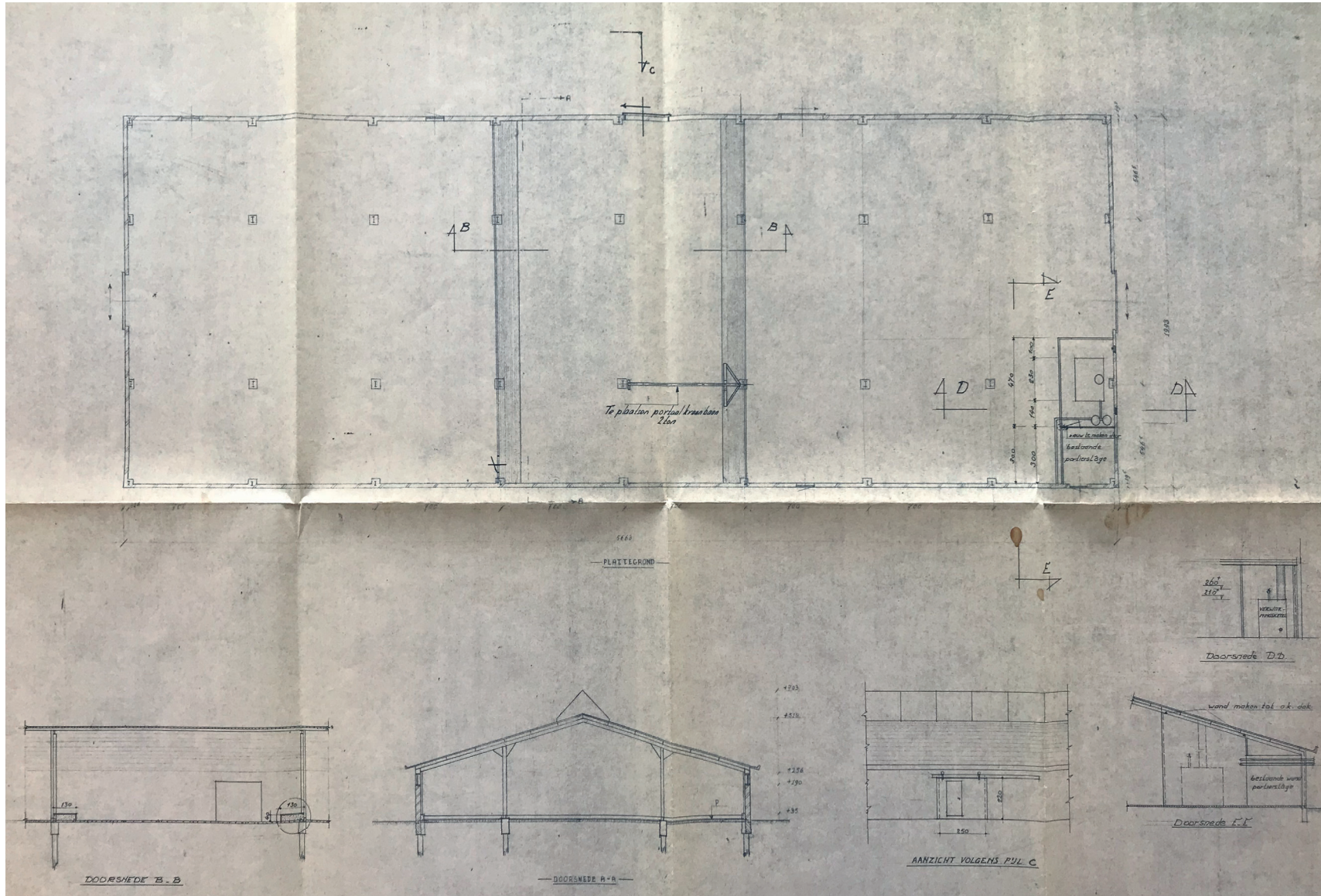
Building 421 - the Wash House

Empty floorplan



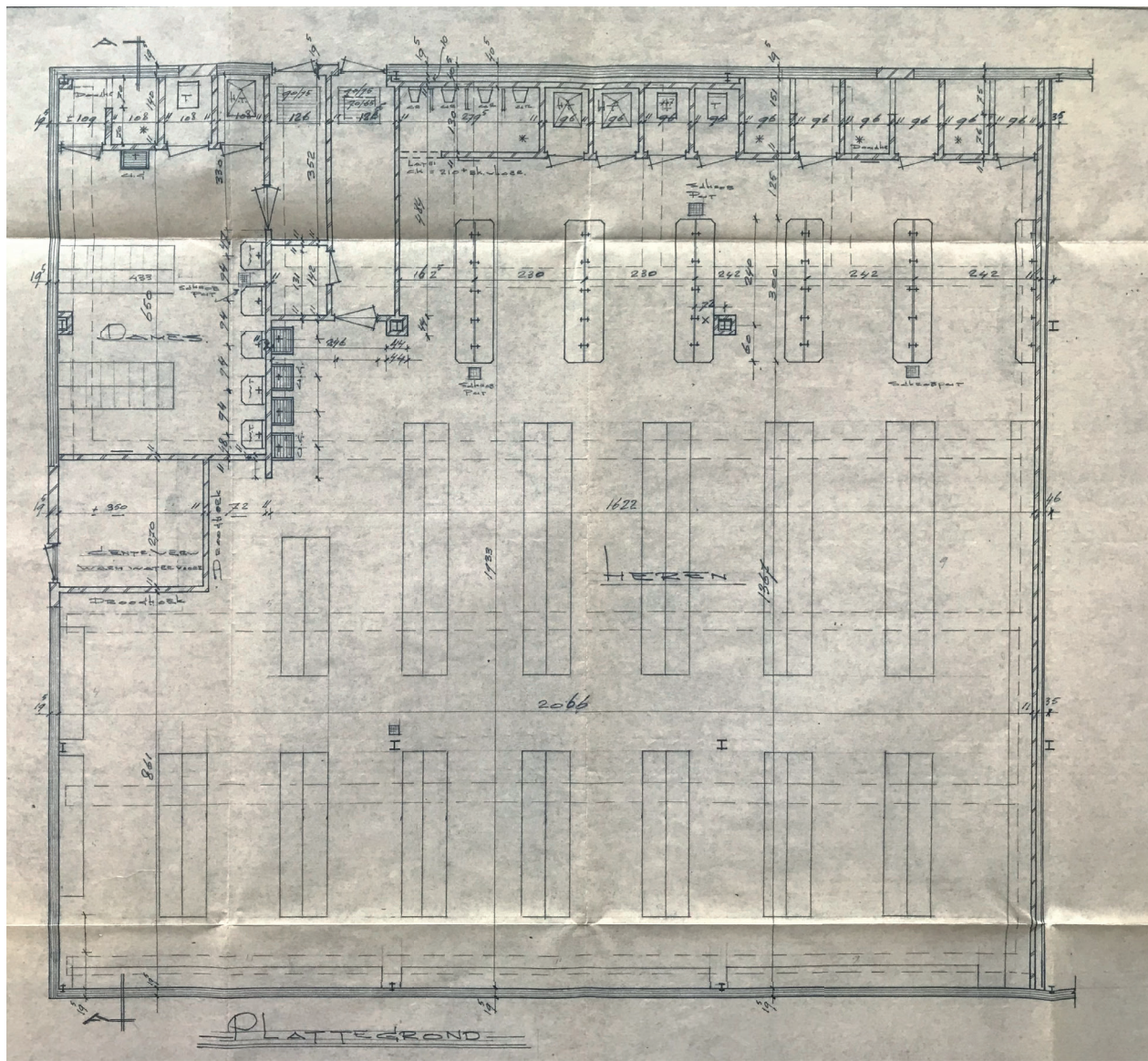
Building 421 - the Wash House

Floorplan changes drawing from 1972



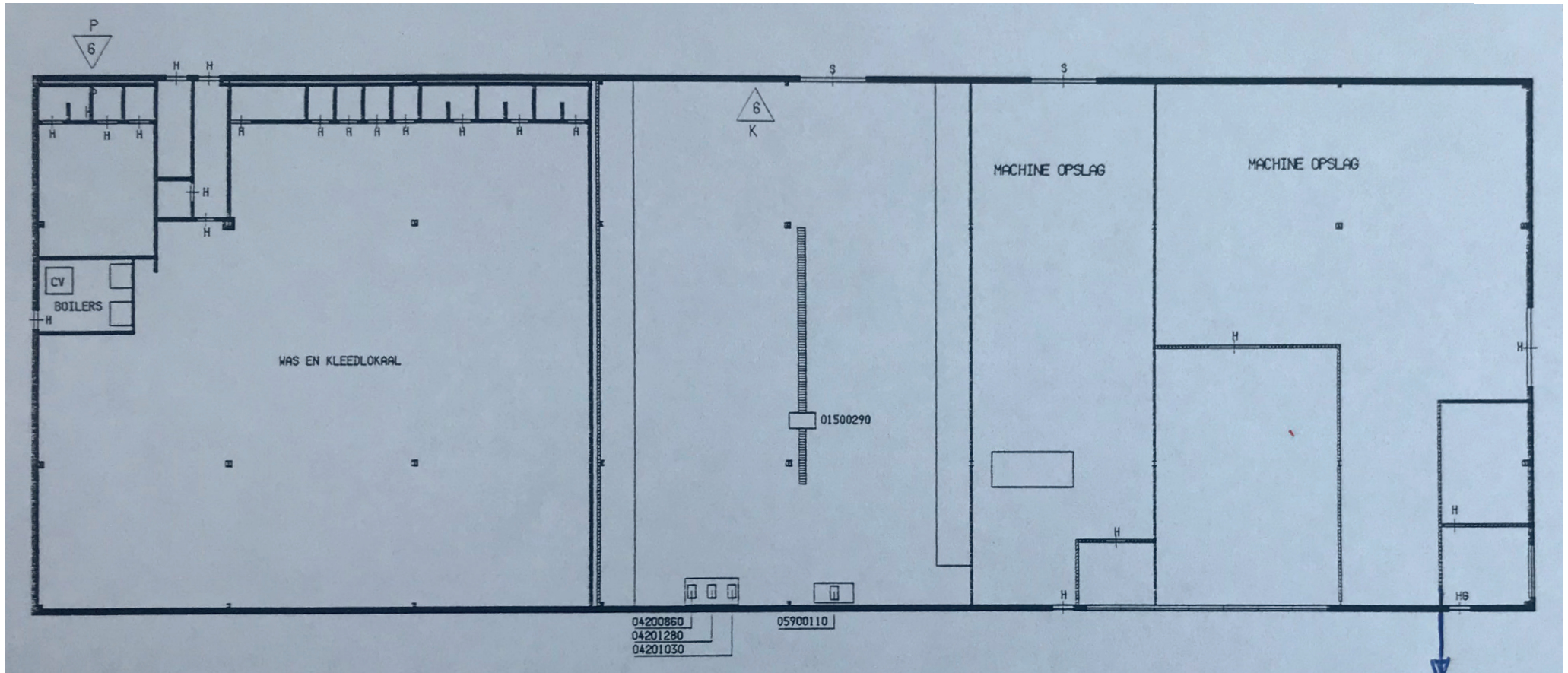
Building 421 - the Wash House

Setup of the washingroom building 421 - 1981



Building 421 - the Wash House

Set up for building 421 - NV Eurometaal 1999



Sources

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Archives

- [GAZ] = Gemeente Archief Zaanstad
 [HZ] = Hembrug Zaandam BV
 [NA] = Nationaal Archief
 [NIMH] = Nederlands Instituut voor Militaire Historie