

Heritage and architecture

Maassilo

Research report

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PREFACE

The Maassilo was built to provide additional grain storage in the developing port of Rotterdam. During the 80's the industry of the Rotterdam started moving towards the Botlek and the Tweede Maasvlakte. In 2003 the Maassilo stopped functioning as a grain storage. At the moment the building has partly been redeveloped. However during the redevelopments some of the beautiful characteristics of the building have been destroyed and a coherent solution hasn't been found.

This report contains my research of the Maassilo in Rotterdam. This research is part of my graduation project for heritage and architecture.

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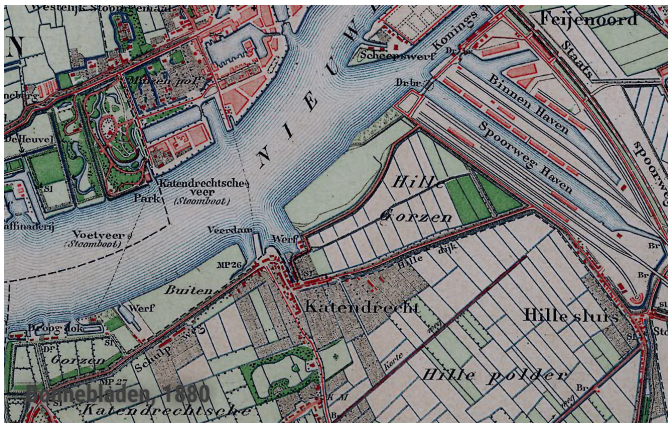
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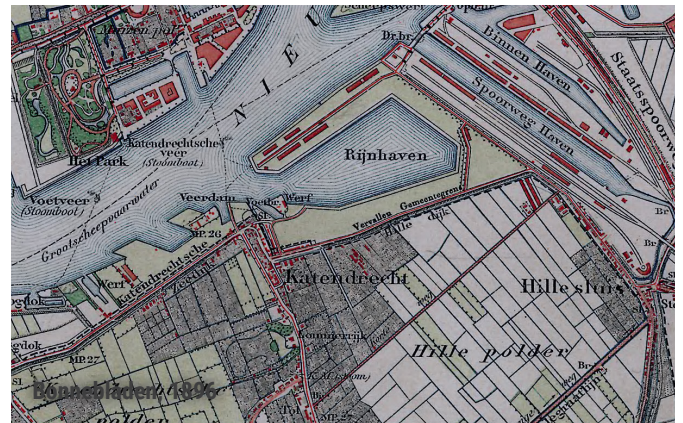
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DEVELOPMENT CONTEXT



The original south bank which was an empty agriculture landscape changed halfway the 19th century. At first the Noorderhaven, Koningshaven and Spoorweghaven got developed by the Rotterdamse Handels Verenigings (RHV).

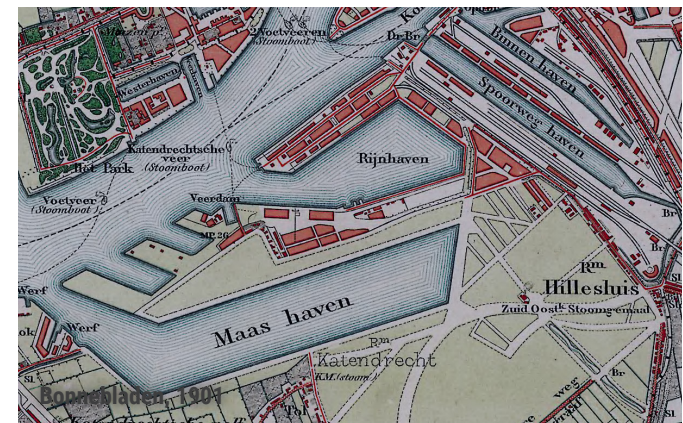


The Rijnhaven got completed in 1894 which formed a new type of harbour for the newly developed steam-driven transhipment of goods.



De Ingenieur 1913

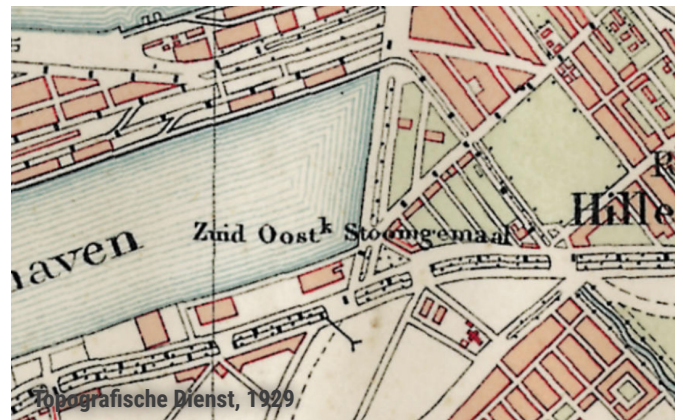
Digging Maashaven



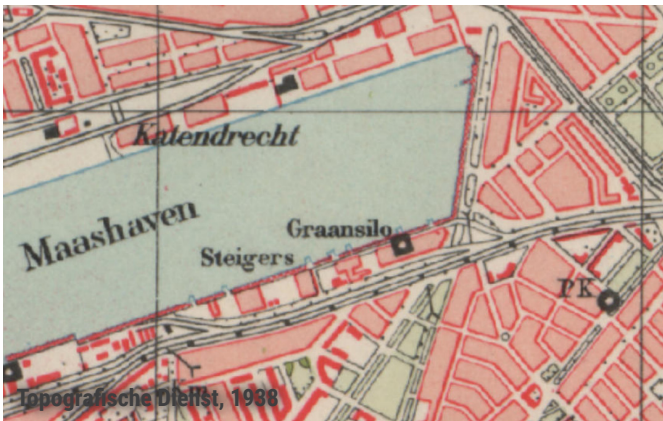
The Maashaven got completed in 1905 and was even bigger than the previous Rijnhaven.



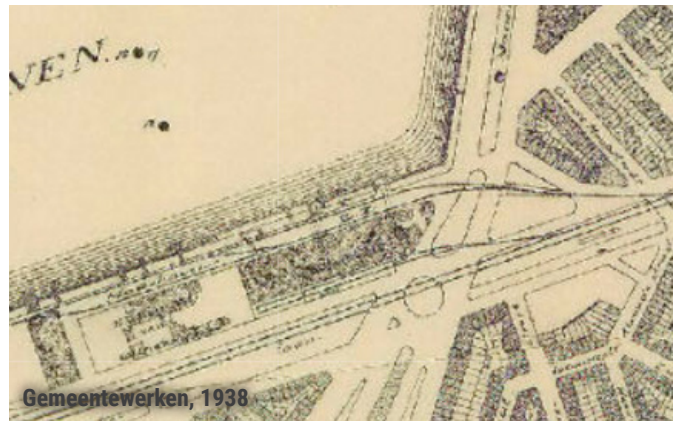
South and South East of the Maassilo roads and neighbourhoods developed slowly.



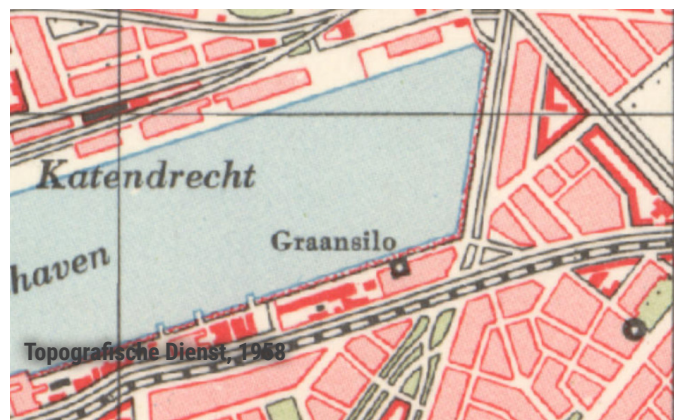
The South quay of the Maashaven got industrialized.



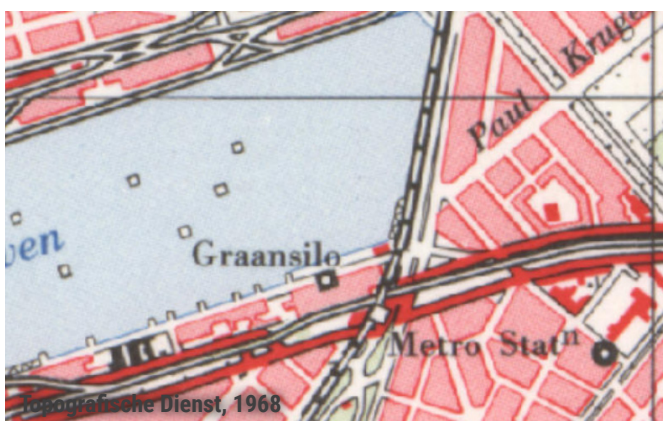
The neighborhoods around the Maashaven have been fully developed.



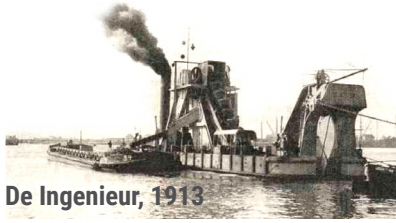
The train tracks next to the Maassilo, which have been there from 1910, are clearly visible on this map.



On the map of 1958 it looks like that the train tracks on the quay have been removed. It is possible that the tracks have been removed because of the construction of the metro line in 1963. There are also no tracks visible in a picture of 1965. We do know for sure is the tracks were not there anymore in 1974 (Het Vrije Volk, 1974).



HISTORICAL OVERVIEW



De Ingenieur, 1913

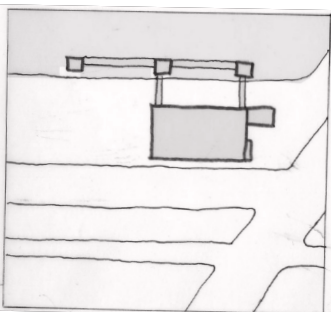
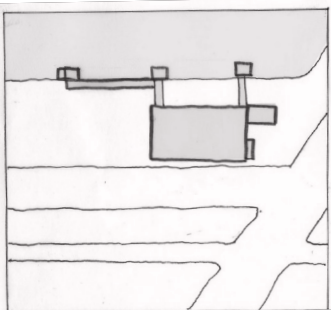
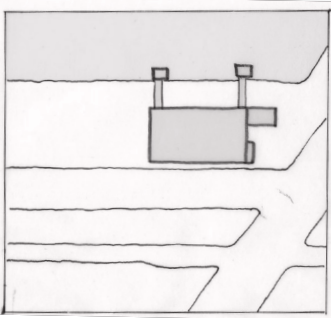
COMPLETION RIJNHAVEN



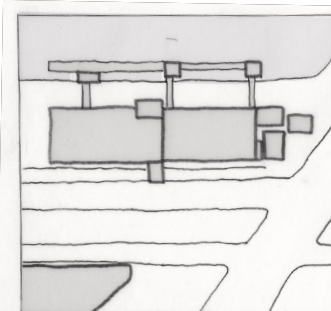
Bouwkundig Weekblad, 1912

PART 1 - J.P STOK

capacity 22 000 tons
Largest reinforced concrete structure of Europe



BRIDGE ABOVE WATER BETWEEN ELEVATOR TOWERS

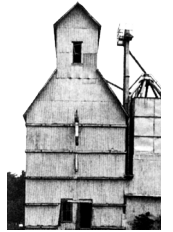


Research report Maassilo

1842

FIRST GRAIN ELEVATOR

Joseph Dart develops the first grain elevator.



1894

1899

FIRST CELL SILO

1905

COMPLETION MAASHAVEN

(1898 - 1905)



De Ingenieur 1913

DEVELOPING NEIGHBOURHOOD

South and South East of the Maassilo roads and neighborhoods developed slowly. The Maassilo was a catalyst of these kind of developments. Just like the Maassilo functions like an impulse for the neighborhood right now.

1910

1917

CONNECTION STRUCTURES ON QUAY

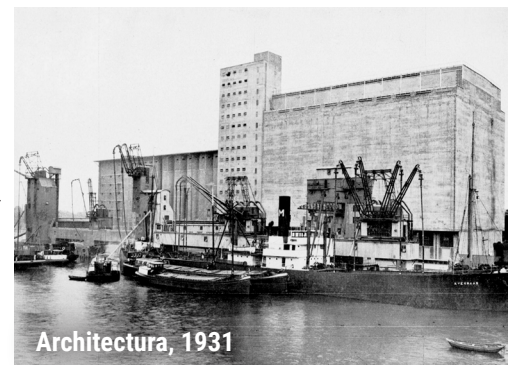


Kunstmuseum Hamburg, ca.1917

Abb. 99. Rotterdam, Kornspeicher am Maashafen

1925

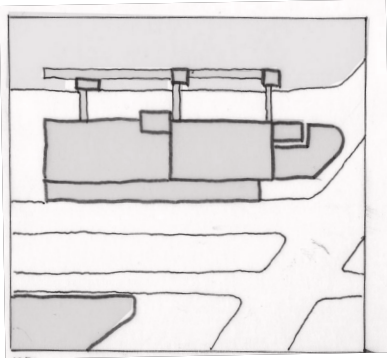
1930



Architectura, 1931

PART 2 BRINKMAN & VD VLUGT

Increased capacity 44 000 tons



1951



CV Maassilo, 1951

1958



CV Maassilo, 1958

PART 3 POSTMA SILO

Increased capacity 22 000 tons

1963

EXTRA ELEVATOR

Designed by Postma

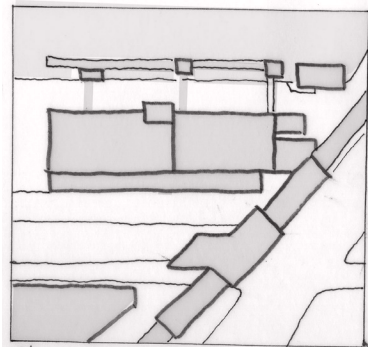
1965



Cees Schultz, 1965

CONSTRUCTION METRO LINE

The metro line is constructed to connect Rotterdam Zuid to the city center.



CONSTRUCTION OFFICE ANNEX DWELLING

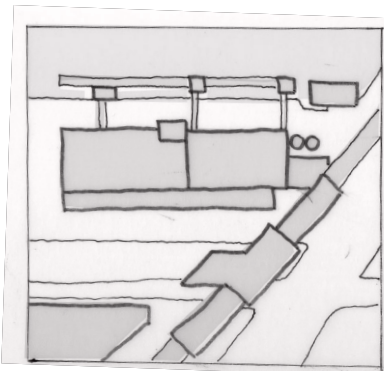
Designed by H. Haan

1971

TRANSFORMATION OFFICE

Dwellings get transformed into office

1980



TRANSITION HARBOR

Industrial harbor moves to Botlek and tweede Maasvlakte. GEM moves to new location, Maassilo only functions as storage

CONSTRUCTION OIL SILOS



CV Maassilo, 2008

2003

MAASSILO STOPS FUNCTIONING AS GRAIN STORAGE

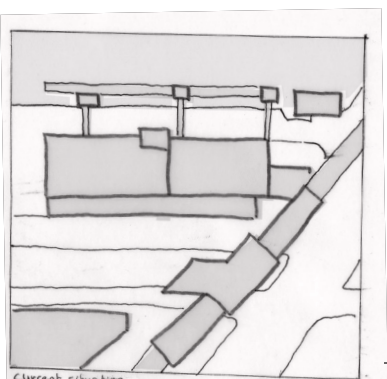
2003 Ontwikkelingsbedrijf Rotterdam (OBR) becomes owner of the building. The Maassilo stops functioning as grain storage.

2008

CREATIVE FACTORY MOVES IN

Maassilo gets redeveloped

2016



Current situation

HISTORICAL DEVELOPMENT

In this chapter the historical development of the ensemble of the Maassilo will be described. Why did the ensemble develop like it did? How did the grain get processed and move through the building? What changed over time? What function does the Maassilo have right now?



Bouwkundig Weekblad, 1912

MAASSILO 1910

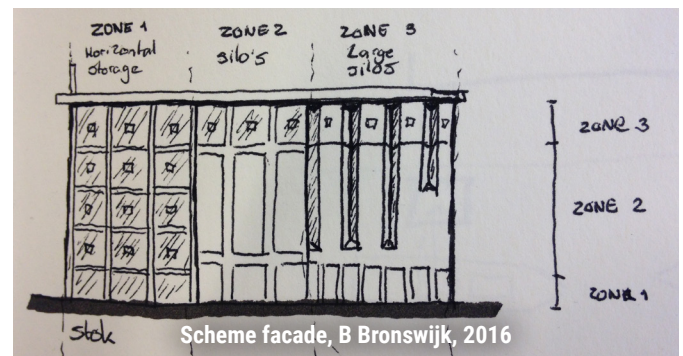
BY J.P. STOK

As Rotterdam developed as import port at the start of the 20th century there was a need to store large amounts of grain. With the development of reinforced concrete the traditional warehouses were replaced by new and larger silo buildings.

The planning permission for the Maassilo was granted in 1906 and the building was completed in 1910 (De Ingenieur, 1910). The reinforced concrete building was 20 meters high and could store up to 20 000 tons of grain. It was one of the biggest silos and the largest reinforced concrete structure of Europe at the time. Originally there was a small two story office annex dwelling in front of the east facade.

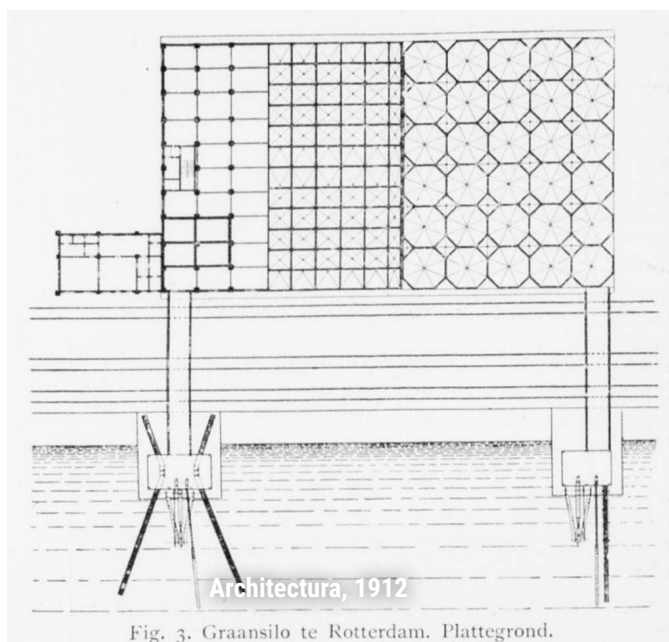


Bouwkundig Weekblad, 1912



The facade is divided in three horizontal and three vertical zones. The different zones display the organization of the building. The east part contained the factory part which consisted of seven horizontal floors as is visible in the facade. In this part the grain got processed before it was stored. These floors offered storage for bags of grain as well.

The top floor has a double height and was used to distribute the incoming grain into the silos. The larger part of the building contained silos to store the grain. The silos differ in size. The middle part consists of 5 rows of 12 square silos (cap. 10 tons). In the west part of the silo the biggest silos are located. These 30 silos with a capacity of 300 tons grain had an octagonal shape to evenly distribute the load of the grain into the structure. The square spaces between these cells were used as silos as well. These had a capacity of 50 tons. The grain could be extracted from the silos on the ground floor.



Architectura, 1912

Fig. 3. Graansilo te Rotterdam. Plattegrond.

Two grain elevators towers were positioned at the quay which were connected to the building by transport bridges. On the quay between the building and the towers there was a train



Charloisaanhetwater.nl, ca.1917

track. The towers were used to load and unload the grain from the ships and were able to weigh the in- and outgoing grain using automatic scales. The grain elevators unloaded the grain from the ships and put it into bags. After that the bags were dropped from the transport bridge over the tracks into train wagons.

Conveyors in the transport bridges were used to transport the grain into the silo building. From here the grain was transported to one of the main vertical grain elevators inside the building. The top installation of these grain elevators is located in the characterizing hexagonal towers on top of the roof. The attic houses two conveyors which distribute the grain into the different silos.

In the basement the grain could be transported from the east to the west side of the building as well. Installations could be connected to conveyors to put the grain into bags (Raander, 1912).

At the picture above you can clearly see the grain elevators (bekerelevatoren) hanging in the ships to unload the grain. The grain elevators was a belt with a set of cups. The grain is vertically transported in the cups. In the top of the elevator the grain was dropped into a separate canal. This simple system was cheap and is still often being used in the industry.

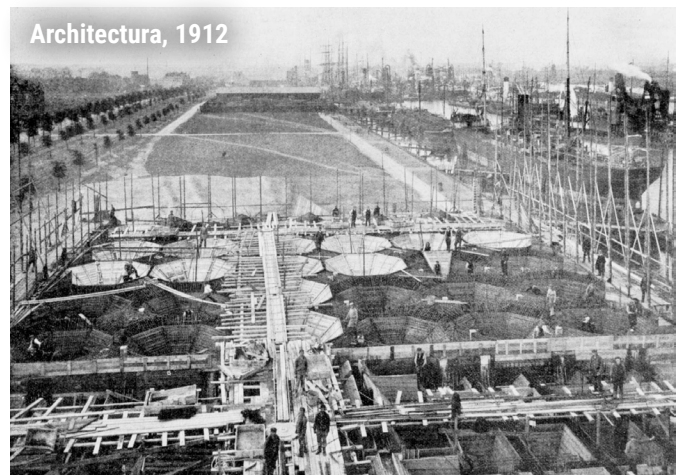
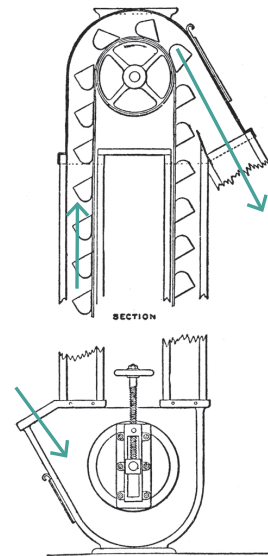
From 1925 a pneumatic system was used in the Maassilo as well. This system, based on air pressure, sucks the grain through tubes. In this report we use the term grain elevator often, depending on the context we either mean the tower, the actual belt system or the whole silo building.

Construction

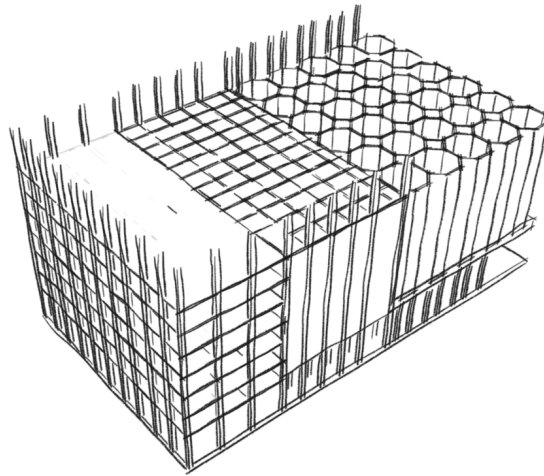
The construction of the silo took one year. Pouring the concrete for the upper part took only 6 months. In the center of the building there is an expansion joint which separates the two halves of the building. For the silos wooden form works were constructed. The frames were 1.80 m high. Each silo was poured individually. After the concrete was poured. The frame was slit upwards to create the next level.



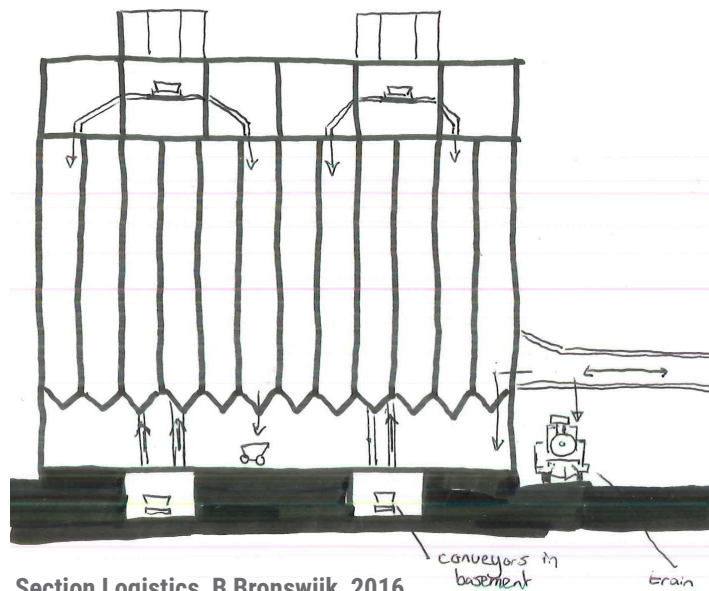
Architectura, 1912



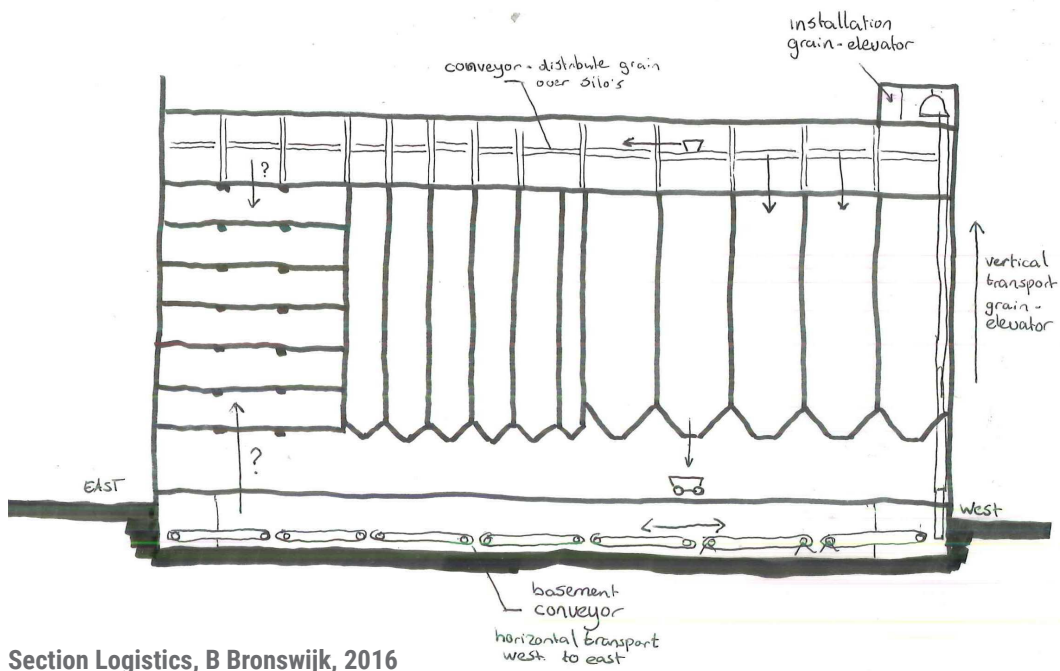
Architectura, 1912



Scheme organization, B Bronswijk, 2016



Section Logistics, B Bronswijk, 2016



Section Logistics, B Bronswijk, 2016



H.H. Richardson
(1838 - 1886)



Marshall Field's Wholesale Store
(1885)

NEO-ROMANESQUE



L.H. Sullivan
(1856 - 1924)



Rothschild store
(1880)



Wainwright building
(1891)

FUNCTIONALISM/MODERNISM



J.P. Stok
(1862 - 1942)



Hulstkamp building
(1890)



Santos
(1901)



Hotplein Station
(1907)



Office Goudriaan
(1909)



Maassilo
(1911)



Koninklijke maatschappij de
Schelde (1913)



Steenkolen Handelsvereniging
(1914)



W. Molenbroek
(1863 - 1922)



Het Witte Huis
(1897)

ART-NOUVEAU



H.P. Berlage
(1856 - 1934)



verzekeringsmaatschappij
(1895)



Beurs van Berlage
(1903)

J.H. de Roos
(1875 - 1942)

W.F. Overeijnder
(1875 - 1941)

ECLECTIC



Office Van Uden
(1910)



Petrolea Office
(1925)

J.J. Kanters
(1869 - 1920)



Santos
(1901)



Jobsveem
(1911)



Katoenveem
(1920)

INFLUENCED BY

CONTEMPORARIES

ARCHITECT J.P. STOK

The end of the 19th century forms a transition period from an eclectic style to a contemporary-/modern architecture. The architects searched for a more simple and pure style. They thought that architecture should be honest and removed all unnecessary 'fake' decorations. (Graafland, 1917).

J.P. Stok has played a big role in the architecture of Rotterdam at the end of the 19th/start of the 20th century. His oeuvre and that of other contemporaries have shaped the developing port city. Stok originally started building in an eclectic style, which is visible in the Hulstkamp building. From 1895, he starts searching for a more individual/original/contemporary architecture and moves away from the common traditional style. The influences of the Art Nouveau appear. Besides that influences of the American architecture become visible in his work. At the time other architects from Rotterdam were influenced by the American architecture as well. America was the country of progress and advanced techniques and formed therefore a beloved role model. The most famous example of these influences can be found in the Witte Huis (1898) by Willem Molenbroek. (Vrieze, Vliet, & Mellegers, 2008).

Especially at the end of the 19th century, the neo-Romanesque architecture of Henry Hobson Richardson was very well appreciated. In 1907 Berlage meets with Louis Sullivan (1856 – 1924). After that Sullivan becomes more famous in the Netherlands. From that point on, the developments in the US were closely followed. Characteristics of this style were applied to the new modern commercial architecture like office buildings and warehouses. Not only in the work of Berlage but also in Rotterdam's buildings like the Remonstrantse Kerk (1895) and Pakhuis Santos (1901).

From 1910 the new American Functionalistic architecture became influential in the Netherlands. This was visible in the use of new forms and construction techniques like reinforced concrete. At this time Stok started using a more formal approach of architecture. For example, he stopped using the arched window frames that he had been using in his earlier buildings (Berends et al., 1994). Stok had just started working on the Maassilo (an American type of building). Built using the latest construction methods. The Maassilo illustrates an important shift in architecture. The division in the façade is here visible as well.

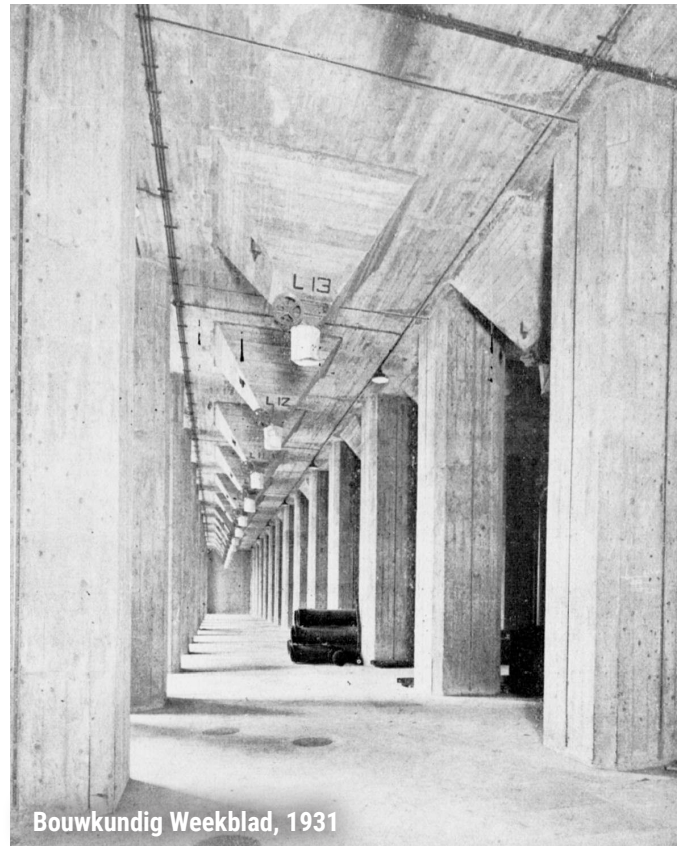


Bouwkundig Weekblad, 1931

MAASSILO 1930 BY BRINKMAN & VD VLUGT

Shortly after the N.V. Graansilo Maatschappij was taken over by the Graan Elevator Maatschappij (GEM), the company decided to provide extra storage capacity for the harbour and expanded the Maassilo towards the West. The assignment for J.A. Brinkman en L.C. van der Vugt was to build a silo as big as possible on a rather small site. Besides that the loading and unloading of the ships had to go as fast as possible and therefore the transport systems had to be extended. The result was a 66 meter long, 37 m wide and 48 high building with 44 000 tons extra storage. Tripling the capacity of the original building.

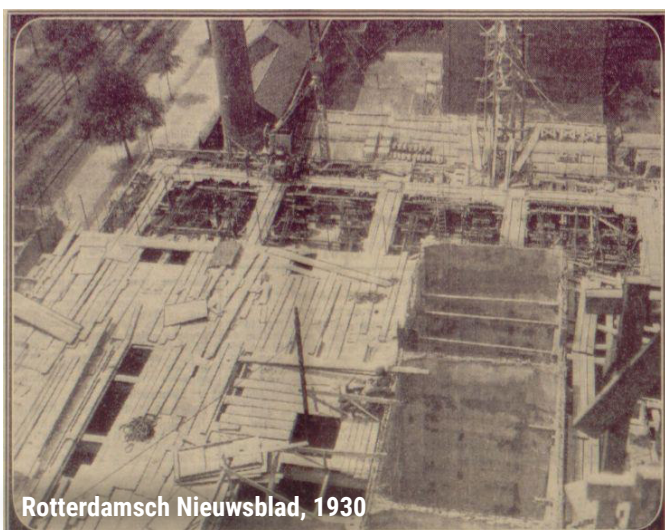
The available building site was 44 meters wide and extended towards the south. However the new part had to connect its transport system to the existing part. The only way to do this was to put both systems in line with each other. When the new building would cover the entire width of the site, an extra conveyor would have been necessary. Besides that there wouldn't have been any room left for a connection to the railway. This



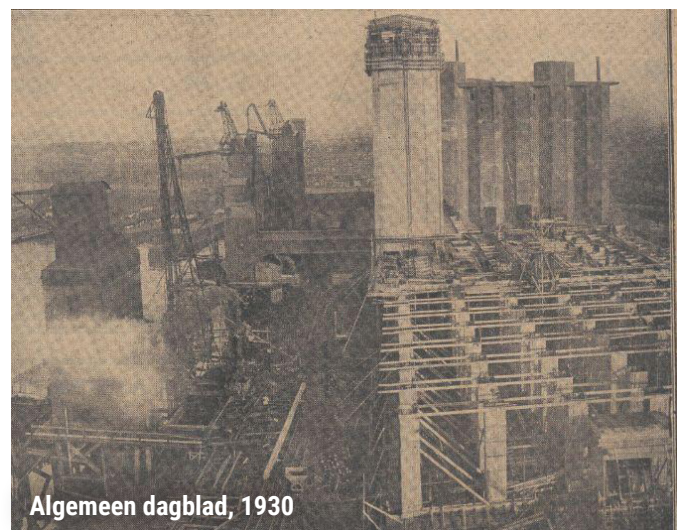
Bouwkundig Weekblad, 1931

connection was necessary to quickly load and unload the goods. The rail way tracks could have gone through the building. This however would have made the silos above the tracks too small, which would have made the construction too expensive. The silos are cantilevering over the street to maximize the capacity of the building and to ensure that the columns on the outer side are centrally loaded (Brinkman, 1931).

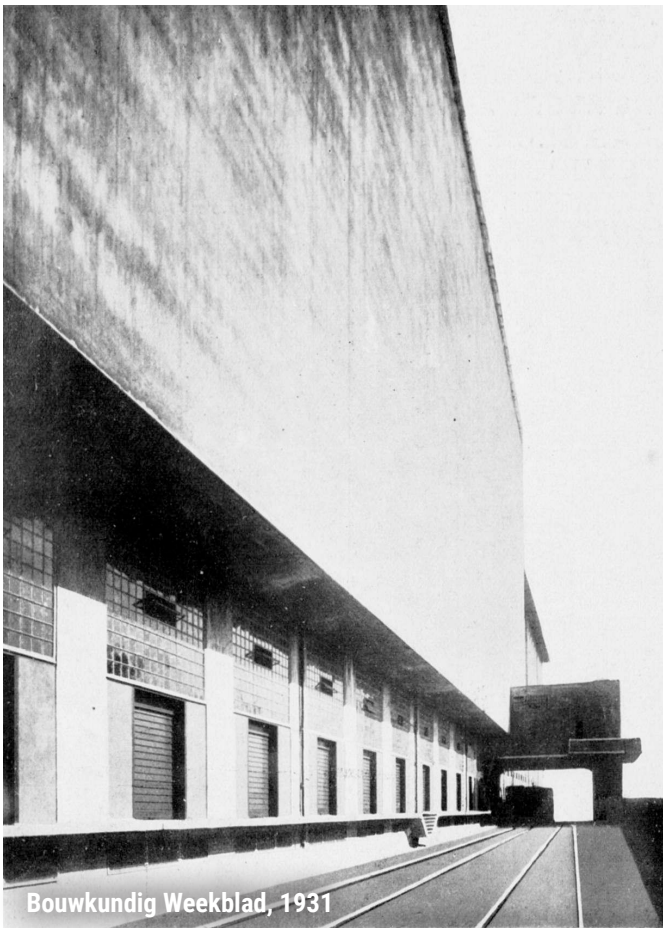
The 1370 special 18 m long foundations poles (Sprengr system) had a thickened point to increase the load bearing capacity from 40 to 60 tons. For the first time in the Netherlands the method of sliding form work was used. The elevator tower was built in 29 working



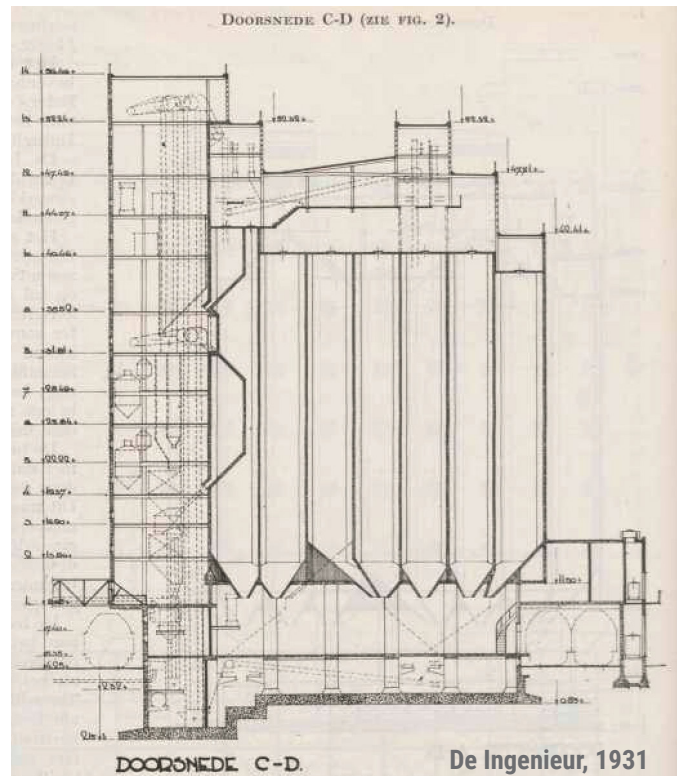
Rotterdamsch Nieuwsblad, 1930



Algemeen dagblad, 1930



Bouwkundig Weekblad, 1931



DOORSNEDE C-D.

De Ingenieur, 1931



B Bronswijk, 2016



Bouwkundig Weekblad, 1931

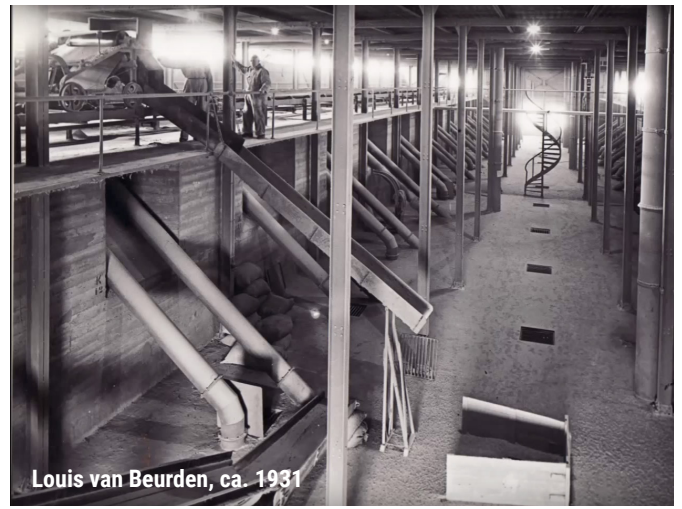
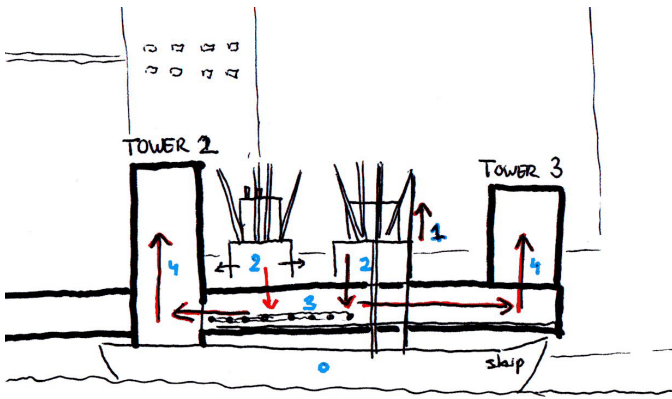
days and both halves of the silo were completed within 22 working days. On top of the silos there was an attic where the grain was transported to the different silos using conveyors. The top part of the building had to be as light as possible and is constructed out of steel. The lightweight structure meant that the foundation had to carry less weight of the building and more grain could be stored. The ground floor is 1.10 m above the street level, the same height as the loading docks of the railway next to the building.

The elevator tower is 14 storeys high and contains shafts, stairs and elevators as well as a scales and cleaning machines. Because of the construction method of Mac Donald system (Gleitbau/glijbekisting) the windows had to be kept quite small (Brinkman, 1931).

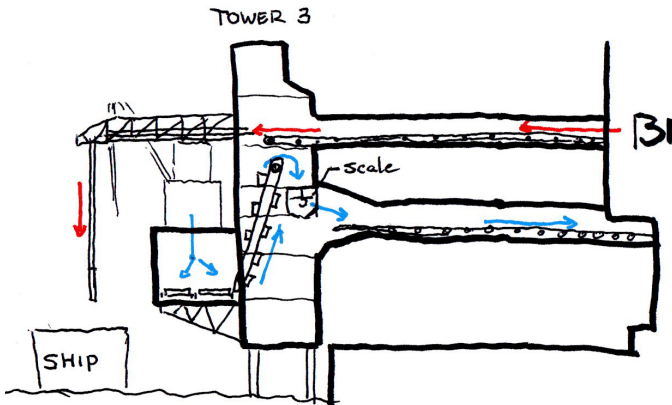
The existing transformer room of Stok had gotten to small and at the south side of the building a new transformer building was built. It was designed in such a way that all transformers were placed in one row of 2,20 m wide. The switch room (schakelruimte) was built over the train tracks, so the trains could pass underneath.

The transformers converted the high voltage to 380 Volts, which powered the enormous airpumps in the basement of the Maassilo. These airpumps were used to pump the grain through the building. (Brinkman, 1931).

Jan 1929	Commission foundation
Jun 29, 1929	Start piling
Oct 1, 1929	Commission of top part
Aug 15, 1930	Completion building
Sept 11, 1930	Test run of process and storing
Oct 15, 1930	Building official in use



Louis van Beurden, ca. 1931

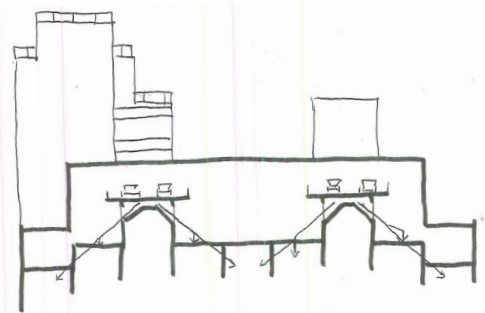


Logistics Elevators, B Bronswijk

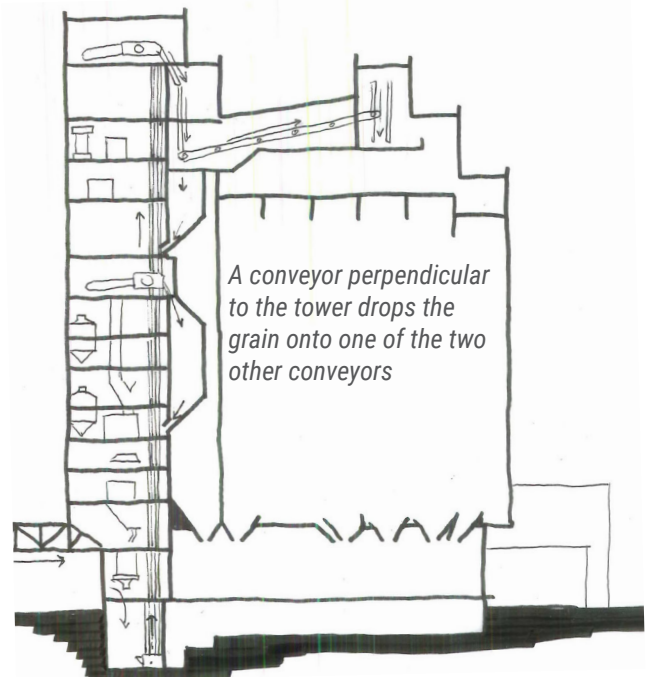
With the extension of the building the elevator towers on the quay were improved as well. Portable elevators unloaded the grain from the ships and transported the grain into the silo building.

The incoming grain was transported by conveyors in the basement to the central tower of the new silo. In the tower four big elevators (beker-elevatoren) brought the grain to the top floor. A conveyor perpendicular to the tower dropped the grain onto one of the two conveyors which distributed the grain over the 146 silos.

Besides the four grain elevators the tower contains stairs, elevators, automatic scales, machines to process the grain and water filters to filter the air before it was pumped through the building.

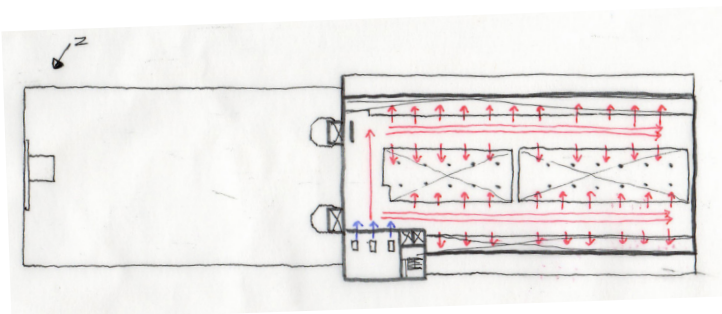


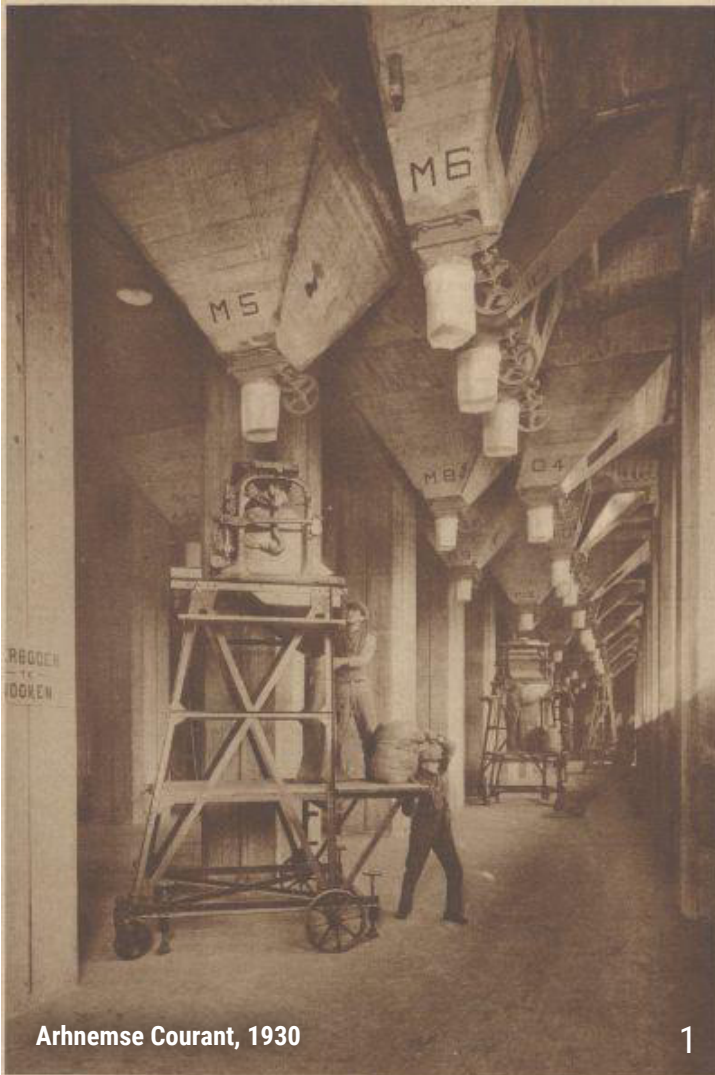
In the attic two conveyor cover the length of the building and distribute the grain.



A conveyor perpendicular to the tower drops the grain onto one of the two other conveyors

Studying the section of the building we see two characterizing silos adjacent to the elevator tower. These silos were supposedly used to temporarily store the grain before it was being processed.

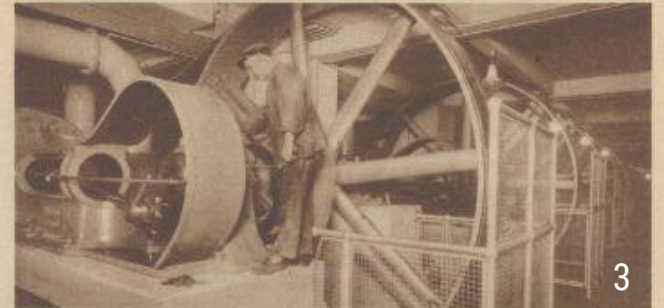




Arnhemse Courant, 1930



Links een aantal waterfilters, waarin de lucht, voordat ze door de pompen gaat, wordt gezuiverd. Rechts een weegschaal, die bij elke kieping 2250 K.G. graan in- of uitbrengt. Per uur kiept deze schaal automatisch 270.000 K.G. graan.



De machiniekamer waarin vijf luchtzuigpompen, elk met een capaciteit van 175 P.K., die het graan uit de schepen zuigen.



Links een zakkentransportband; rechts twee transportbanden, welke per uur 250 ton graan in- en uitbrengen.

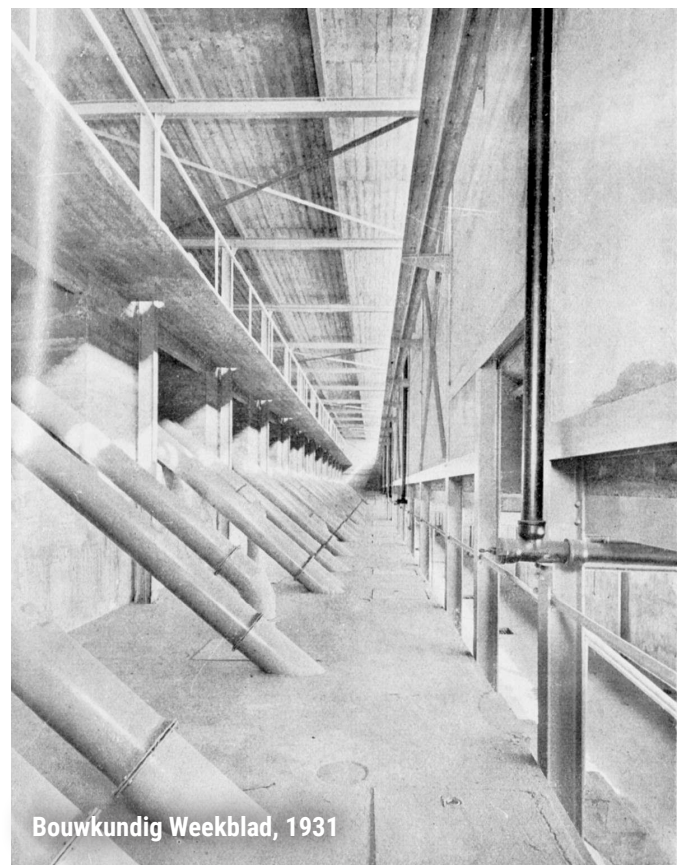
Overzicht van de uitlopers der silocellen. Vóór en achter eenige automatische weegschalen, die het graan wegen, waarna het in de zakken wordt gestort.

1 The groundfloor of Brinkman and van der Vlugt. Two automatics scales weight the grain and put it into bags. All silos had the same valves, so the grain could be put in bag using portable scales opzakschalen). It was also possible to drop the grain trough gaps in the ground floor onto the conveyors in the basement using telecope tubes.

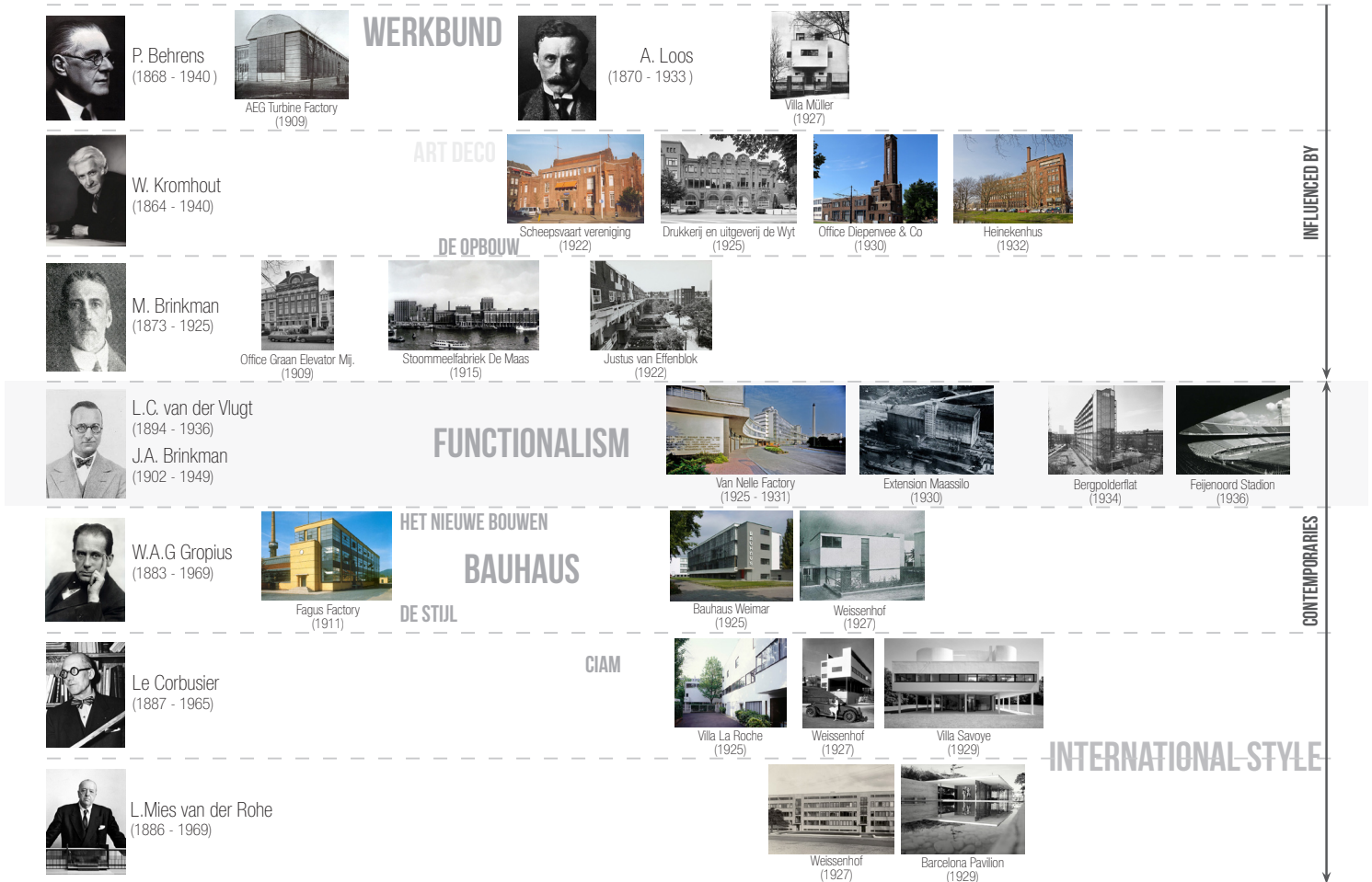
2. The interior of the elevator tower. At the left waterfilters which clean the air for the airpumps. At the right there is a automatic scale.

3. The machineroom with five airpumps which suck the grain out of the ships in the basement of Brinkman and van der Vlugt. Because of hygiene this room is cladded with tiles.

4. At the left a conveyor for bags of grain. At the right two conveyors which are able to transport 250 tons of grain per hour.



Bouwkundig Weekblad, 1931



ARCHITECTS BRINKMAN & VD VLUGT

Brinkman and van der Vlugt stood at the cradle of Het Nieuwe Bouwen, the Dutch version of the early International Style and formed the beginning of the modernistic era. This style had a functionalistic approach and strived for more space and light in architecture, using cheap and efficient construction methods and removed unnecessary ornaments.

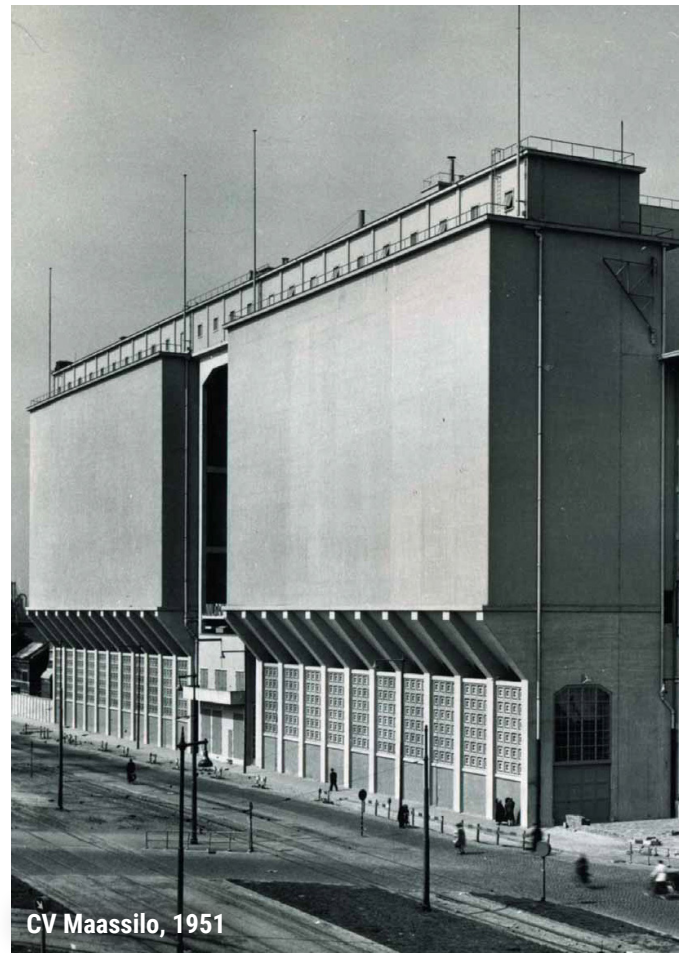
In 1920 van der Vlugt becomes member of the architect group de Opbouw, where he meets Michiel Brinkman. This functionalist group is a reaction on the expressive style, like the Amsterdamse School. After his father Michiel Brinkman (1873-1925) died, J.A. Brinkman takes over the firm. He invites van der Vlugt to succeed his father as the new head architect of the firm. The firm becomes internationally known with the van Nelle fabriek (1925). After that they make the design for the Feijenoord soccer station and they work together with Willem van Tijen on the world's first gallery flat the Bergpolderflat.

The style which started the modernism in Germany was the Deutsche Werkbund (1907). The association was founded by Peter Behrens. The style committed to industrial production without ornaments. It formed the basis of functionalism in Europe and distanced itself from the neo-classicism and jugendstil/Art Nouveau and Arts & Crafts. Arts & Crafts was the english version of Art Nouveau which rejects the industrial production of the 19th century.

The extension of the Maassilo forms a sharp contrast with the van Nelle Fabriek. The gigantic concrete surface of the silos and the tiny windows in the elevator towers make the building seem very introvert. However, strips of windows in the transport attic and big windows above the loading docks on the ground floor allow lots of natural light to enter the building.



CV Maassilo, 1951



CV Maassilo, 1951

MAASSILO 1951

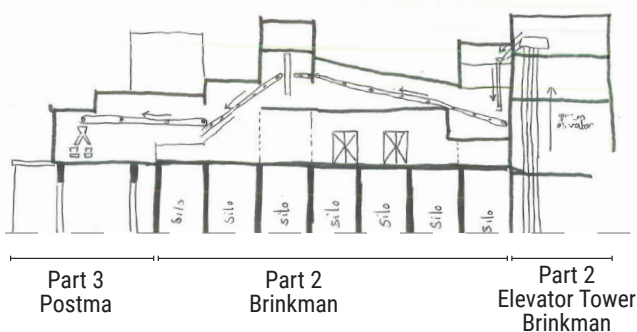
BY A.G. & J.D. POSTMA

The third part of the Maassilo was one of many silos the architecture firm Postma has built. This part has characteristics of the post-war reconstruction architecture. Striking is the suggestion of symmetry on the south part of the ensemble. Two silos nearly 40 meters high are placed on both sides of the existing transformer building. The extensions is 100 meters long and had a capacity of 22 ton. It was separated from the rest of the building to increase the flexibility during storms. This parts has the same type of foundation of 464 Frankipalen connected by an solid concrete slab.

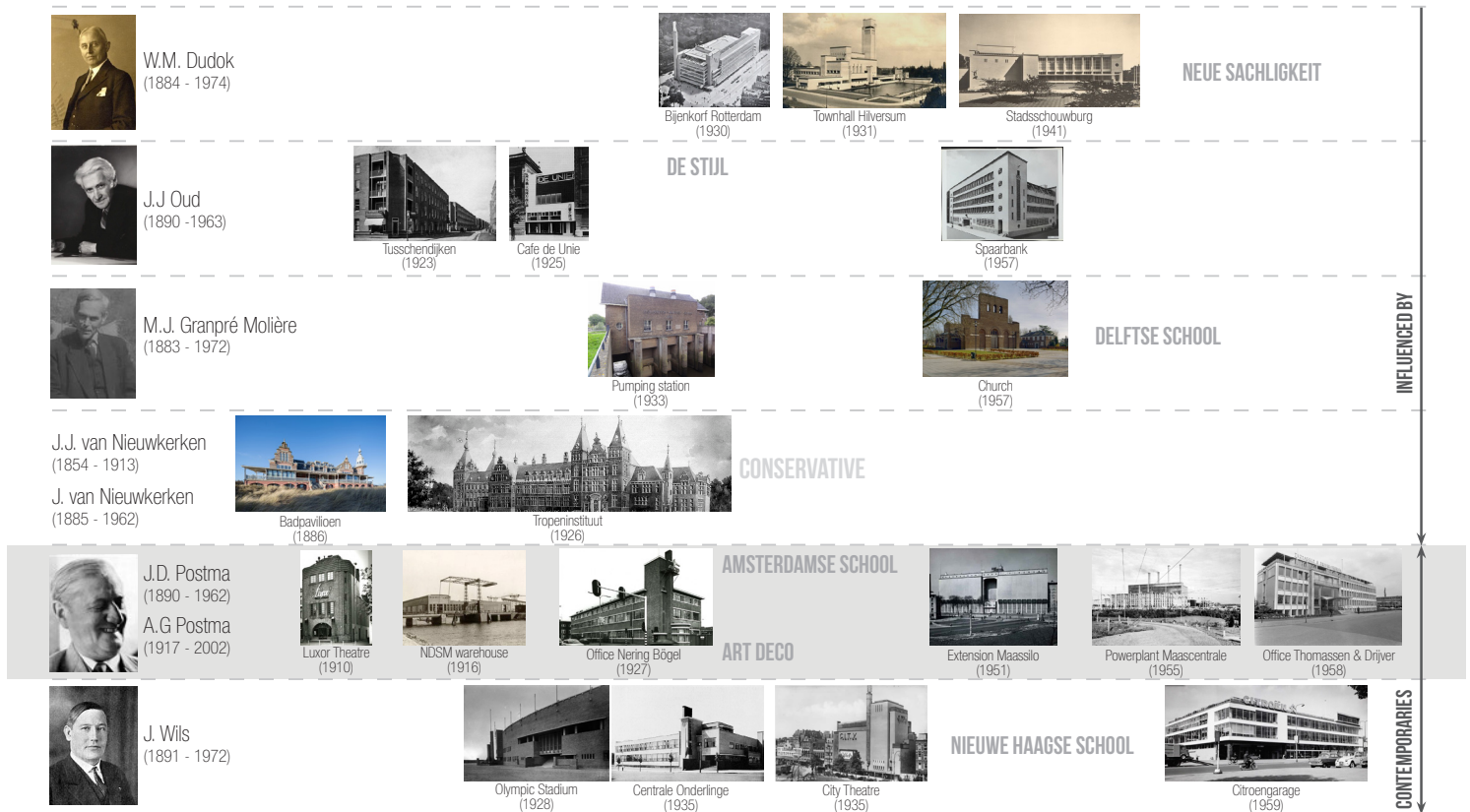
The outer silos cantilever over the railway next to the building. The façade at the Brielselaan was filled with brick up to a height of 3.20 m, with on top a decorative ornamental concrete raster. The east past contained 2 rows of eleven silo cells, the west past contained 3 rows of 10 smaller cells. The silos are 23 meters high. On top of the building there is a transport attic which are connected by a bridge forming a niche underneath. The façade of the silos are completely closed and rendered (Vrieze et al., 2008).



CV Maassilo, 1951



The transport system of the third part is very straight forward. The existing horizontal conveyor perpendicular to the Brinkman elevator was extended and the grain was dropped onto one of the two new horizontal conveyor. Each conveyor covered one side of the Postma silo. From this conveyor the grain was dropped into the silos below.



ARCHITECT A.G. & J.D. POSTMA

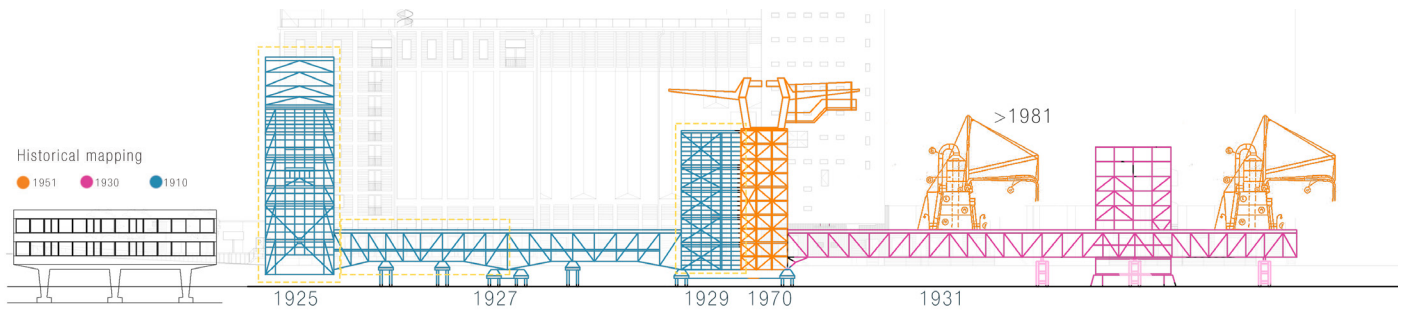
J.D. Postma started his architect firm in Deventer in 1919. Over the years his firm developed as one of the most important/influential firms in the industrial sector. The firm was with more than 150 employees the second biggest firm at the beginning of the 1950's. Broek en Bakema (successors of Brinkman & vd Vlugt) was the biggest and had 200 employees at the time. The firm had offices in Amsterdam and Rotterdam. Postma's son, Ae.G. Postma, becomes head of the office in Rotterdam in 1954. The bureau has an own construction department which was specialized in large concrete silo's and factory halls. The innovative use of materials is characterizing for the oeuvre of Postma (Wezenberg & Weijer, 2000).

In his early work in 1910 influences of the Amsterdamse school and Art Deco are visible. At the end of the 20's he built followed the functionalistic principles of Het Nieuwe Bouwen. During the 30's he used the Delfse School for the representative buildings. Postma used for each program a different style. For example, in the offices the influence of the Delftse school was visible. For the more industrial buildings, like the Maassilo, Postma choose for the more sober style of the Haagse school.

Where the first generation of modernism was a reaction of the decorative eclectic styles, the Nieuwe Haagse – and Delfsche school were a reaction on the expressive Amsterdamse School style from the early 20th century.

During the 50's, after World War II the influence of the material shortage was visible. The sober architecture of Postma is compensated with references to the classical architecture. He uses for instance an architrave, frieze and sima (cornice), in the office building of the DAF-factory, which refer to the Greek temple. In the Maassilo the symmetry and the repetitive rhythm of the columns at the Brielselaan could be interpreted as a reference to the classical era.

J.D. Postma had a functional, financial feasible and aesthetic view on architecture. Even after his death in 1962, these were characteristic for the work of his firm. According to Postma the function of the building is more important than the appearance of the building. Even in the post-war decade he was able to create sober but stylish building, with a characterizing appearance.



With the extension of 1930 the existing transport system had to be improved as well. A new 65.5 meter long bridge was built, to increase the range of the portable pneumatic elevators. To make room for the new and longer bridge, the third tower had to be moved backwards onto the quay. The bridge is made of steel beams and columns covered with corrugated sheets of metal.

The existing portable pneumatic elevators with a capacity of 125 tons/hour were replaced by new ones. Two conveyor covers the total length of the bridge, which transported the grain to the elevator tower. From here it was transported into the building.

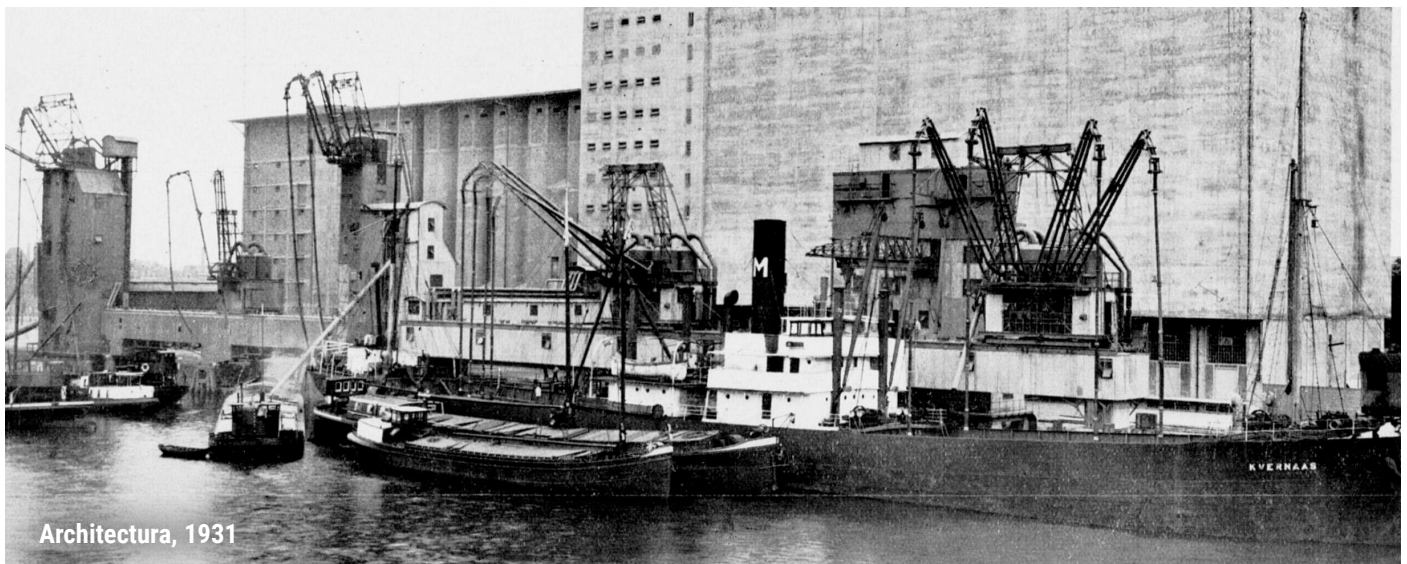
GRAIN ELEVATORS

Due to technical innovations and a demand for a higher capacity the elevator towers on the quay have changed multiple times over the year.

Originally two grain elevator towers were built in 1910. However, on photographs from 1917 a third elevator is already visible. In 1925 these traditional elevators were replaced with more advanced pneumatic systems. In 1927 the three towers were connected by bridges. On top of these bridges, portable elevators were placed to better be able to reach the ships (Vrieze et al., 2008).

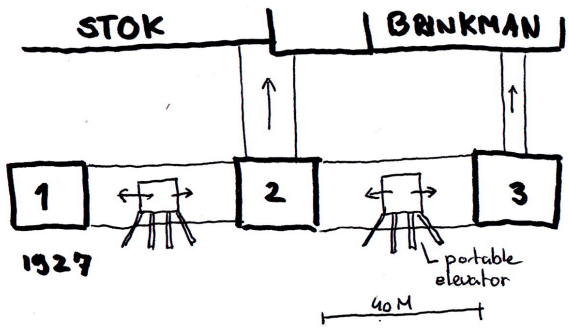
The under pressure needed for the pneumatic transport system was provided by four big air pumps in the basement. These air pumps were powered by four electric engines with big flywheels. The electric engines were cooled using water pumps with water of the Maas. The air was delivered using pipes. The pipes which covered the whole length of the bridge, could be connected to the portable pneumatic elevators.

The second tower had already been constructed in 1929 when a pneumatic system was integrated. In 1960 a new tower was constructed next to the original tower. This part was extended in 1970.





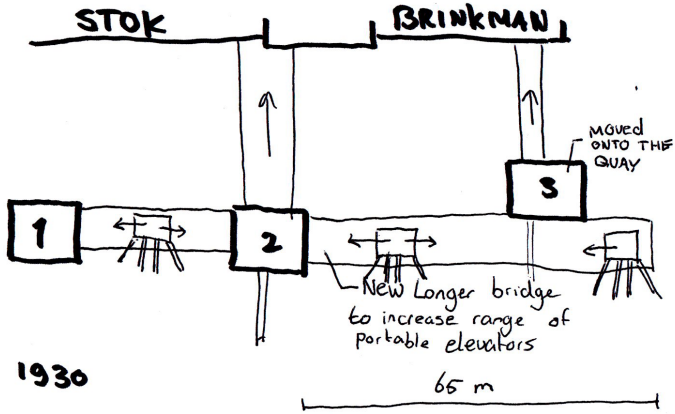
CV Maassilo, 1931



1927

portable elevator

40 M



1930

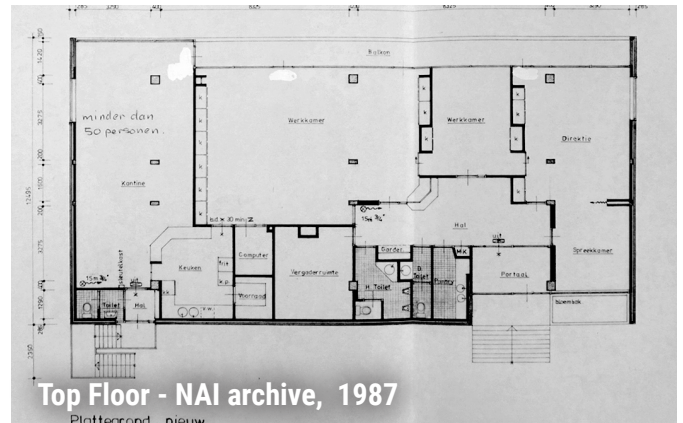
MOVED ONTO THE QUAY

New Longer bridge to increase range of portable elevators

65 m



CV Maassilo, 2008



Top Floor - NAI archive, 1987

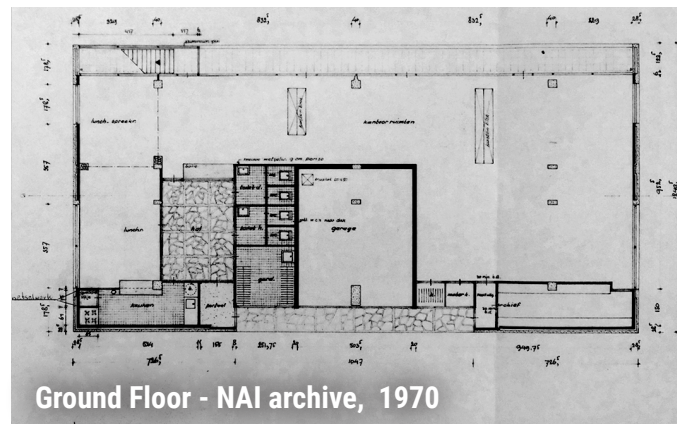
OFFICE 1964

BY H. HAAN

At the start of the sixties the former office building of the Maassilo had to move to make room for metro viaduct. Herman Haan got commissioned in 1963, the building was completed in 1964. Because there was no room on the quay, a new office building had to be built over the water. The rectangular two storeys building is standing on three pillars in the water. The dwellings were situated on the ground floor and the office part on the top floor. The concrete construction of the ground floor is tapered to enhance the floating character of the building. The prefab concrete façade and the anodized windows frames are chosen because of the anticipated pollution.

The grains which were caught by the wind during the transport process formed a roof garden on top of the office building. By placing the building on pilotis, the long strip of windows, the concrete gargoyles and the unintentional roof garden was this building Haan's most Corbusian design.

The dwellings on the ground floor were transformed into offices in 1970. In 1976 the building had gotten to small for the office and the GEM moved to a new location somewhere else at the Brielselaan (Vrieze et al., 2008).



Ground Floor - NAI archive, 1970



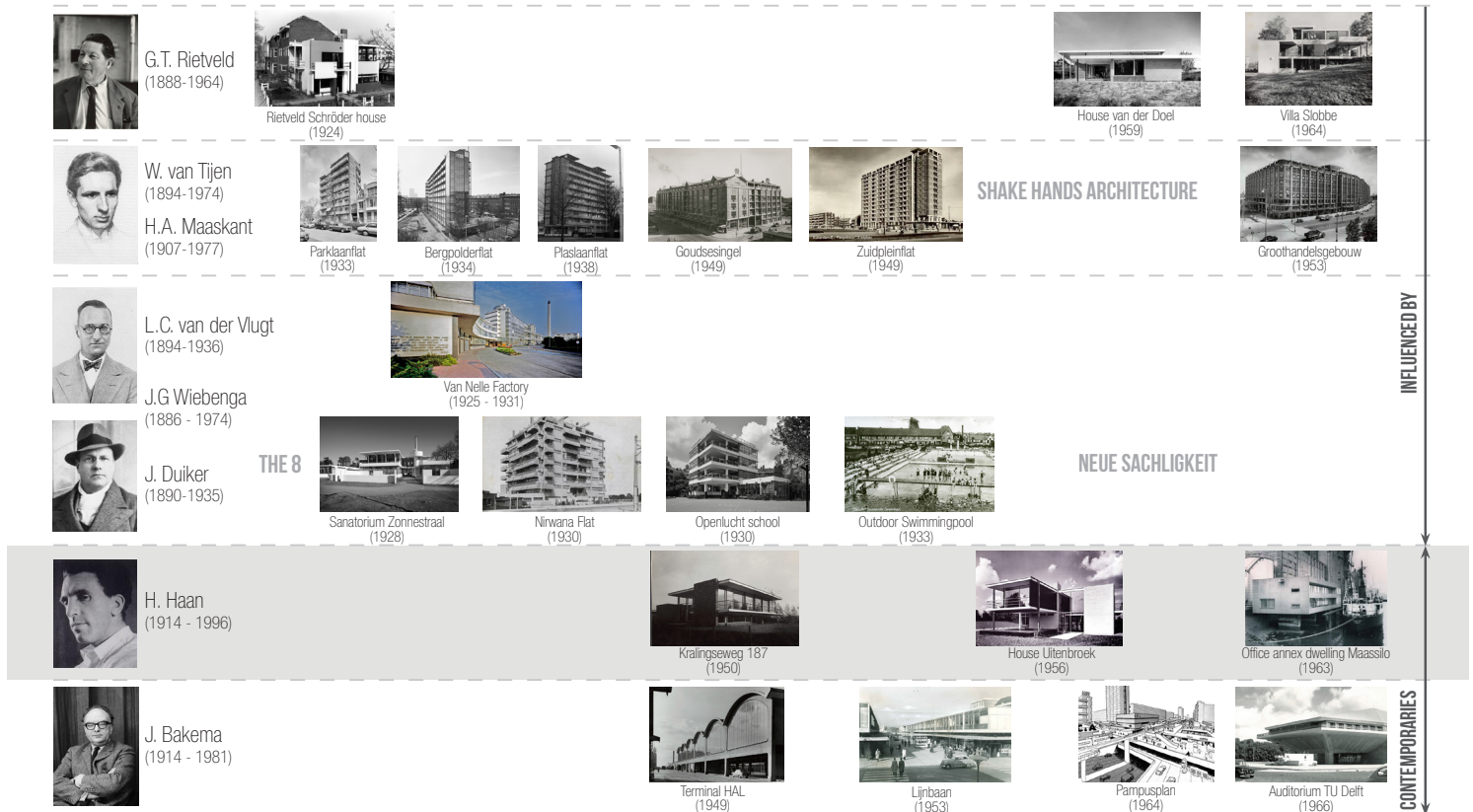
coen van Eesteren, ca. 1970



Johan Breur, 1967



Cees Schultz, 1965



ARCHITECT H.HAAN

H. Haan is part of the third generation of the Modernists. His oeuvre can be divided in three periods. During his first period, he is searching for his own position within the pre-war modernism. In the second period he mainly designs smaller dwellings, during the last period he did mainly large scale projects. The dwelling annex office building of the Maassilo is part of his second period (Vrieze et al., 2008).

He got influenced by Willem van Tijen who made the Bergpolderflat. Another influence was Gerrit Rietveld. Some influences of the American architect Frank Lloyd Wright were visible as well. The main principles of his work are the strong relationship with nature, the minimal use of elements and the sober use of materials. The houses he did design have big glass facades to improve the connection with the outside (Vollaard, 1995).

Haan designed his house which displays his view on architecture very well. Some people thought his designs were too open and transparent. He however, appreciated the contact with the nature outside. According to Haan, living spaces should proceed beyond the technical restrictions.

80's - Maassilo Company moves to the Botlek

Due to the Maashaven getting too shallow for the big ships and the new environmental laws the harbour activity moved away slowly from the Rijn- and Maashaven in the 80's. Improving the automation process of the Maassilo was hard with its three different structures. This led to a transition of the Maassilo company to the Botlek. After this the Maassilo remained functioning as storage only. The number of employees went from 68 in the 80's to a team of 8 men.

2003 - Redevelopment Maassilo

At July 31 2003 Ontwikkelingsbedrijf Rotterdam (OBR) becomes owner of the building. The company planned on demolishing the building and redevelop the location. However due to expensive demolishing costs, the cultural historic value and the potential monumental status OBR changes its plans. The spaces of the Maassilo were leased out.

The first tenant of the new owner was dance club NOW&WOW. They redeveloped the ground floor but tried to preserve the industrial characteristic elements. Most changes are semi-permanent or demountable. The most intrusive interventions the night clubs made, was removing the some of the columns on the ground floor. Some of the columns have been replaced by thinner steel columns.

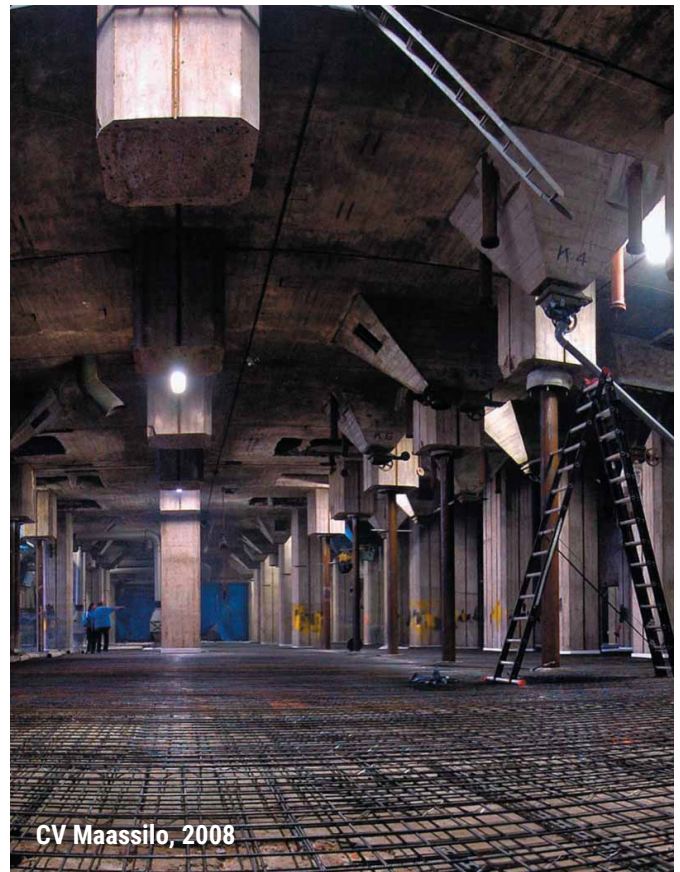
After a shooting incident the club got closed in 2007. After that the Maassilo went on as a event location under the name Factory 010.

The ground floor was designed as a very thin structure. During the redevelopment the floor was reinforced with an additional later of steel and concrete.

In May 2008 the Creative Factory moved into the building. The second to seventh floor were transformed into offices spaces for start ups.

The factory part of Stok contained some smaller silos. These silos were supposedly used to temporarily store the grain before it was being processed. After the redevelopment of the Creative Factory new floors were made and all the silo walls were removed. Only the funnels of these silos have been preserved and form now the entrance of the Creative factory.

In the distribution attic, walls have been added as well. However only the west half of the attic has been redeveloped. The east part is still original. In this part there are still a lot of tubes present which distributed the grain from the conveyor belts into the silos.



CV Maassilo, 2008

The ground floor was designed as a very thin structure. During the redevelopment the floor was reinforced with an additional later of steel and concrete.



<http://maassilo.com/zalen>, 2016

To prevent noise disturbance of the night club, the decorative raster of Postma has been covered with steel plates.

In the part of Brinkman and van de Vlugt air locks have been placed and the steel window frames have been replaces by masonry rendered with concrete plaster.

CONCLUSION

The end of the 19th century formed a transition period from an eclectic style to a modern architecture. The architects searched for a more simple and pure style. Architecture should be honest and they removed all 'fake' decorations.

Brinkman and van der Vlugt stood at the cradle of Het Nieuwe Bouwen, which formed the beginning of the modernistic era in the Netherlands. The functionalistic approach of this style strived for more space and light in architecture. Characterizing for their work is the use of cheap and efficient construction methods. This was clearly visible in the construction of the second part of the Maassilo, which was built in an amazingly short time.

Where the first generation of modernism was a reaction of the decorative eclectic styles, the Nieuwe Haagse – and Delfsche school of Postma's time were a reaction on the expressive Amsterdamse School style from the early 20th century. J.D. Postma had a pragmatic, financial feasible and aesthetic view on architecture as well. Even in the post-war decade he was able to create sober but stylish building.

Even though the different architects had all the same functionalistic view on architecture, the different part of the silo are clearly recognizable. The development of the construction methods are visible in the different parts. In Stok's building there are details like the cornice, the Maassilo sign and the columns. Due to new and faster construction methods, these details have disappeared in the building of Brinkman and vd Vlugt.

When the first part of Stok was build in 1911, it was the biggest reinforced concrete structure of Europe. 20 years later, Brinkman en vd Vlugt extended the silo, which was almost twice as high. The factory to process the grain of Stok covered almost a third of the building. In the part of Brinkman, this part became a much smaller part of the building. When Postma's part was built there wasn't even extra space required to process the grain.

After the third part was built the Maassilo kept changing. In the attic of the 10th floor you can clearly see that the building forms a addition of multiple extensions.

With the redevelopment of the Maassilo a lot of the characteristic elements have been covered. The light spaces designed for people have become dark and disconnected from their context.

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CONNECTIONS AND DISCONNECTIONS

The Maassilo ensemble has been developed in three main periods. The result is three separate building parts connected to each other, with each their own characteristics. Once you understand this it is quite easy to understand how the building is organized. However, when walking through the Maassilo, sometimes it is hard to navigate and position yourself in relation to the entire ensemble.

Because the Maassilo is such a massive building and many of the drawings we got are not very accurate it is not always clear how two individual spaces are connected. In this research I will focus on the Maassilo's spatial organization and the relation between the different spaces. This subject has in my opinion not been addressed enough in the group report.

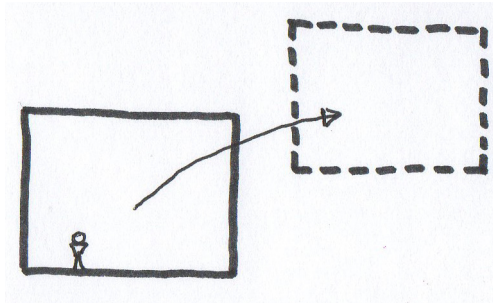
Research question

What are the connections and disconnections of spaces of the Maassilo

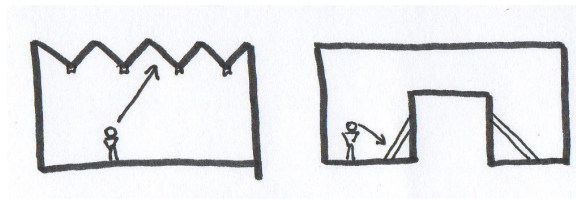
Relation between spaces

A relation or connection between spaces can be seen from different points of view. Characteristics in the building or in its surroundings can be used to position yourself. What are the characteristics of the space which can be used to relate the space to the entire ensemble? How does one move from one space to another. What does the border (disconnection) look like? How is the context of the space perceived?

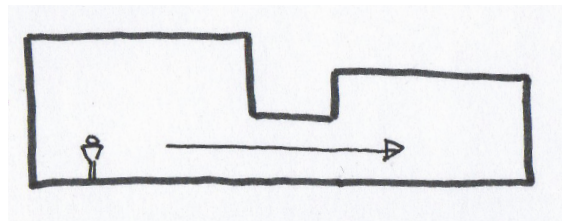
At first the global organization of the Maassilo will be described. Next the connection and borders of the building to its context will be researched. Next the characteristics which enhance the legibility of the spaces will be defined. The borders between the three different parts will be researched. Finally the different connecting spaces which will be explored. What are the disconnections and where do conflicts appear?



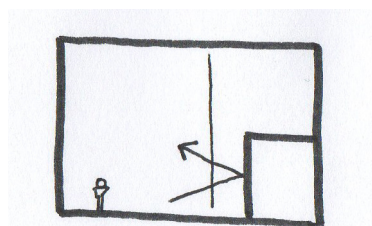
Position of space relative to the other spaces and the total ensemble



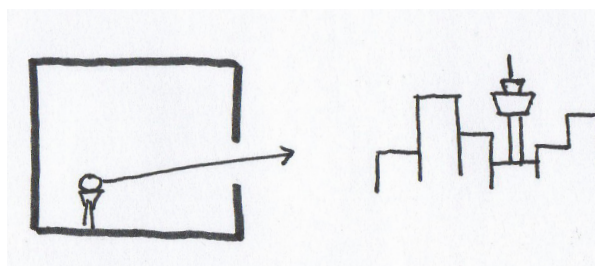
What are the characteristics of the space in relation to the other spaces



What does the transition from one space to another look like



What does the border look like?
(is it disorienting or very clear)

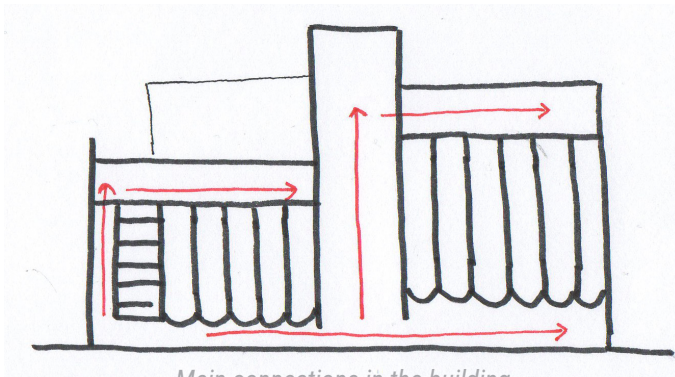


How is the context of the space perceived

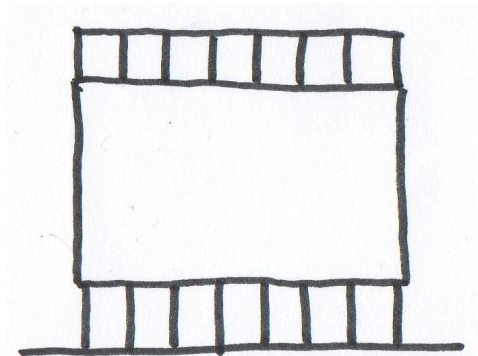
ORGANIZATION

Organization

As mentioned in the introduction of this paper the building consists of three main building parts. The organization of the building is strongly connected with the former logistics of the building. The ground floor and the attic are the two main spaces of the building. In between there are the vertical silos. The attic and the ground floor are horizontally organized. In these spaces the people, machinery and grain moved around. In between there are the enormous silo. The ground floor and the attic on the 10th floor are connected by a main shaft in the Brinkman building which formerly contained the grain elevators. A second shaft connects the ground floor and the attic on the 7th floor. These form the only between the attic and the ground floor.



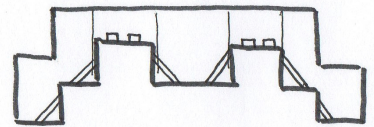
Main connections in the building



Main organization of the facade

Facade

From outside the functionalistic approach of the different architects is clearly visible. The different architects designed the facade in their own way, however they all share the same principle. There is clear distinction in the vertical organization of the facade. On the ground floor there is the plinth. Then the main part which contains the silos and then the top part of the distribution attic. Setbacks in the facade clearly mark the ground floor and the attic.



These spaces have due to their high ceilings a large scale. However the gigantic scale of the Maassilo you experience outside doesn't get perceived once inside.

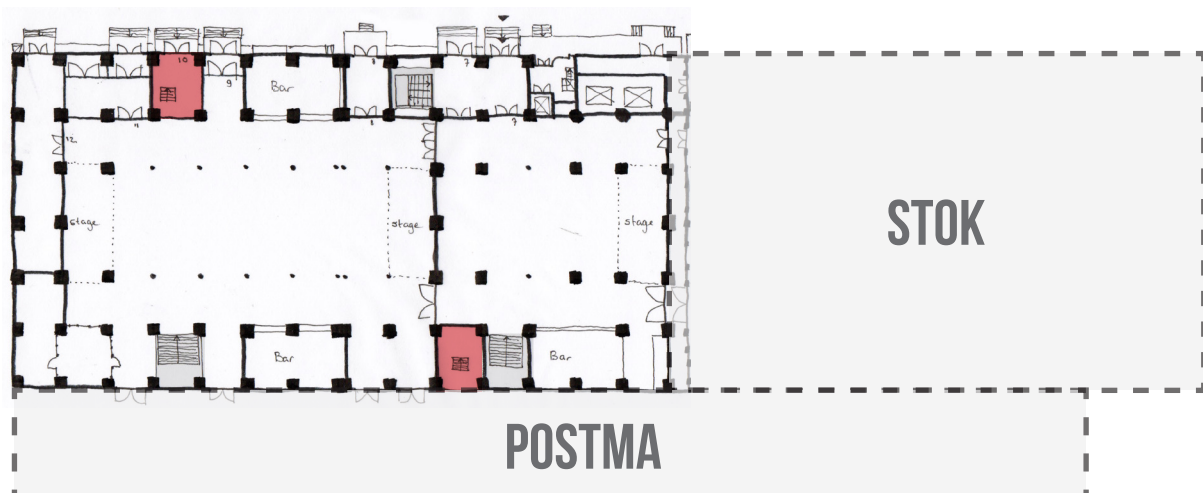
This effect may be increased due to the compartmentalization of the spaces and the stuff like the sound systems attached to the ceiling.



The building is perceived as two separate spaces

New connections

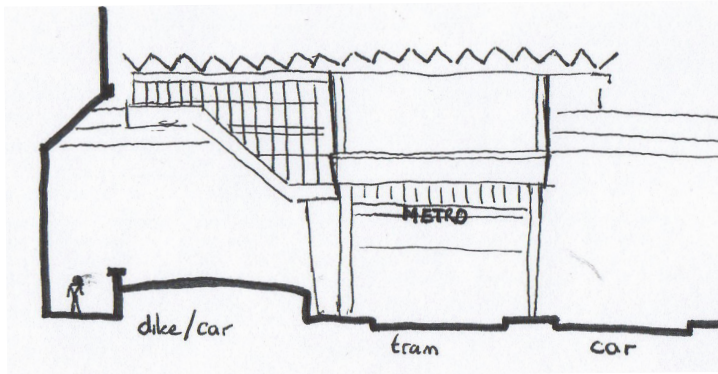
During the redevelopment two new connections between the ground floor and the attic have been made. Two silos in the Brinkman part have been cut open and an emergency staircase has been placed inside.



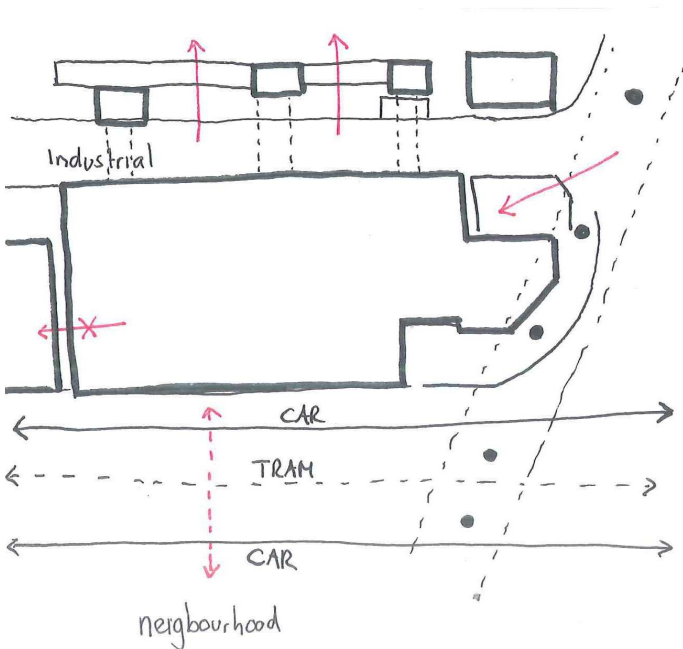
New vertical connections

BORDERS CONTEXT

How is the building connected to its surroundings?
What do the borders look like?



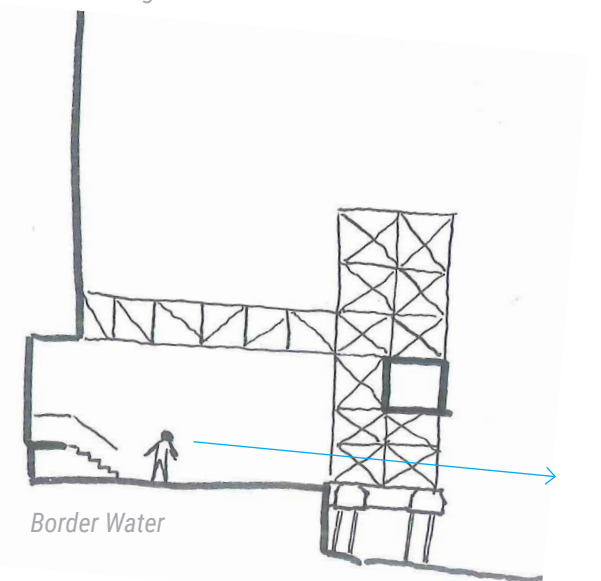
The tram line and the multiple roads on the south side of the building form the threshold between the Maassilo and the surrounding neighborhoods. The level difference of the dike enhances this border.



B. Bronswijk, 2016

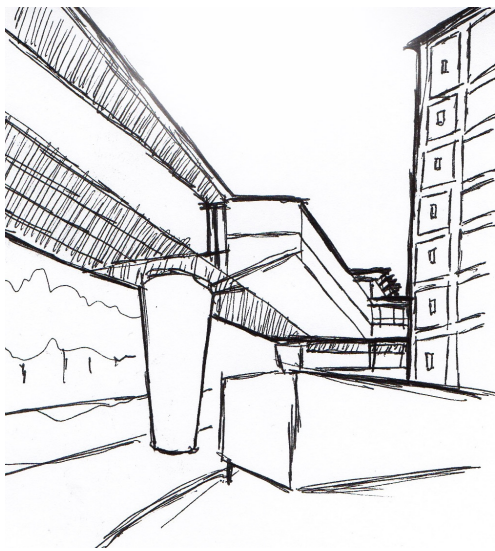


The building forms a barrier and disconnects the neighbourhood from the Maashaven.

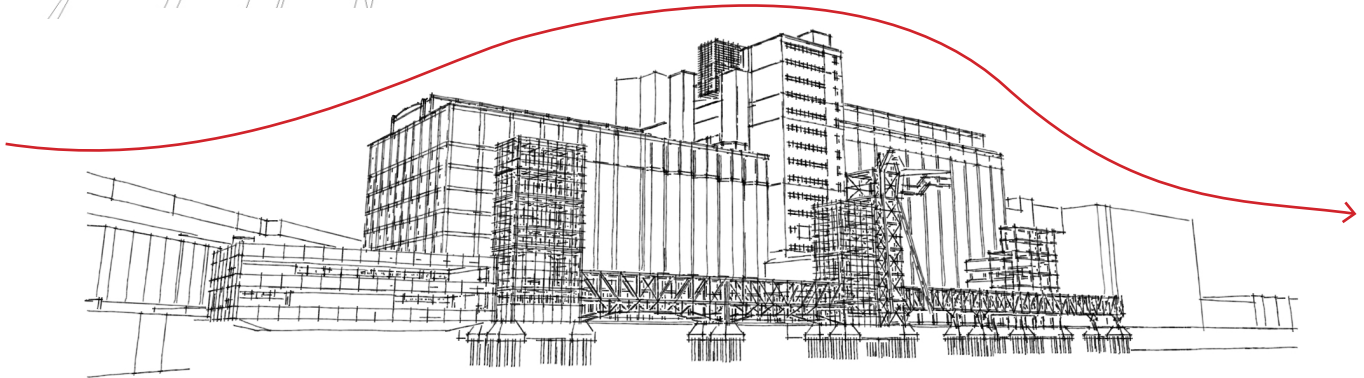
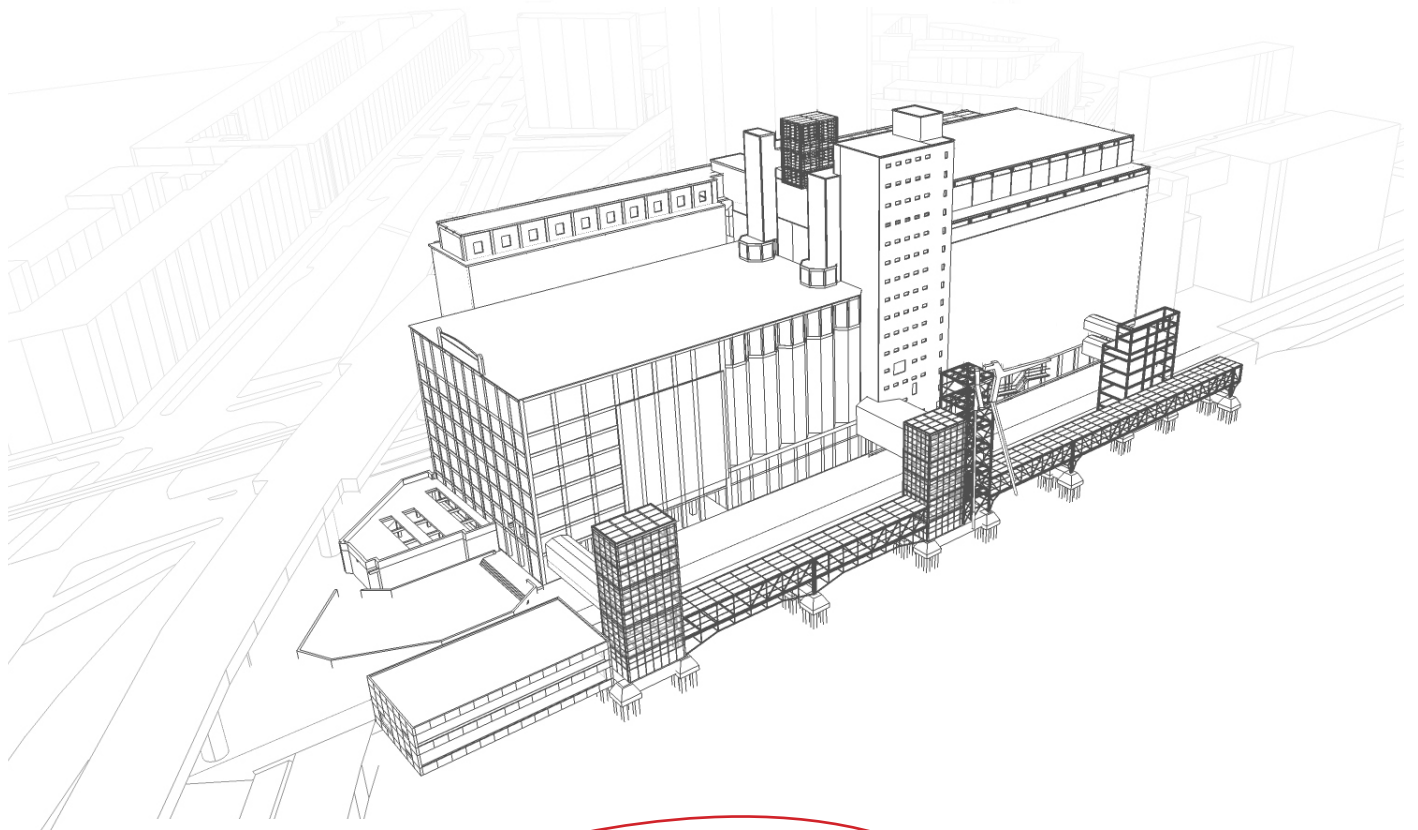
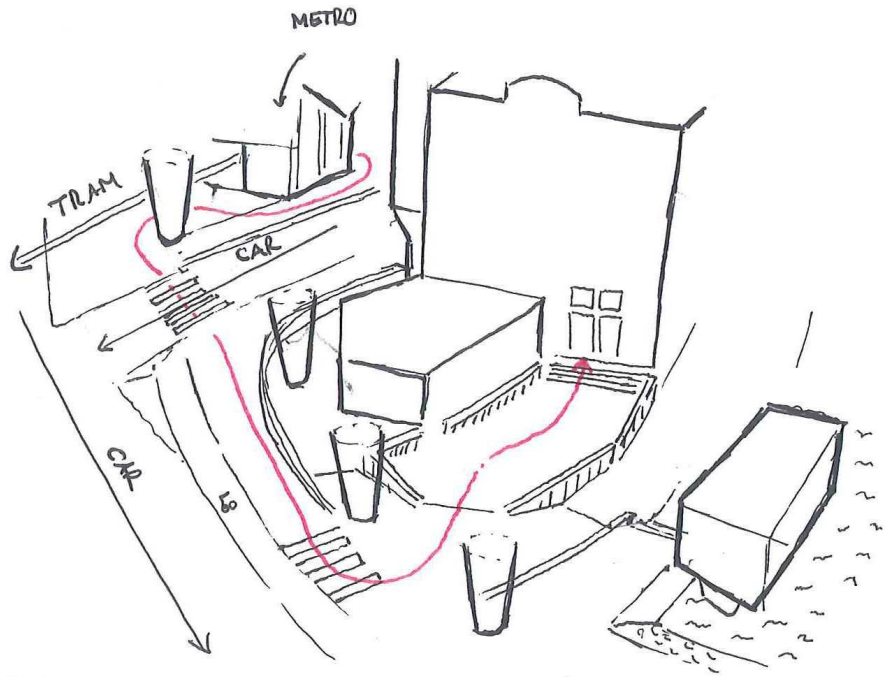


On the north side of the building there is a strong visual connection with the water of the Maassilo. The actual water level is about 2,5 meters below the quay.

The ground floor of the Maassilo building is about 1 meter above the level of the quay. The same height as the floor of the former train wagons, which made loading and unloading the goods easy. Multiple stairs form the entrances to the building. These stairs are built over the former loading docks.



The metro stations folds itself around the corner of the building. It looks like the Metro line goes into the building.



The Maassilo is as a Mountain. The structures of the grain elevators form the transition from the empty space of the Maashaven to the high silo building

The routing from the metro station towards the entrance of the Maassilo doesn't feel very natural. People have to walk on a very narrow pavement in the shadow of the Metro station and the Maassilo. The road can be crossed at the traffic light underneath the metro station. This is a humid and dark space. After that you have to walk around the work place.



B. Bronswijk, 2016



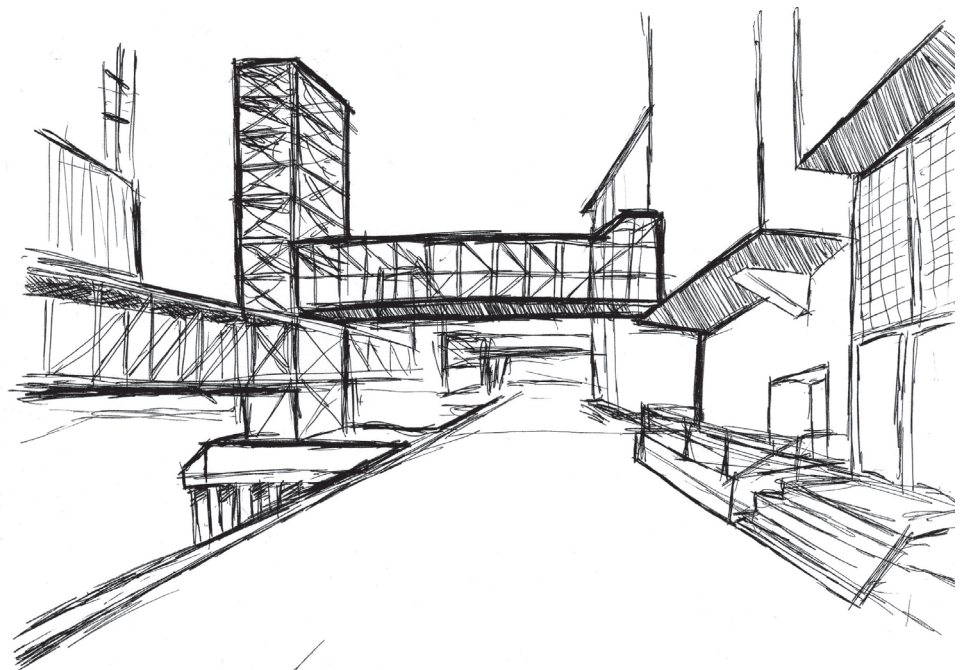
B. Bronswijk, 2016

The bottom of the metro station has been painted orange, probably to improve the attractiveness of the space below the station.



B. Bronswijk, 2016

From far away the Maassilo and the Quaker factory look as if they form one complex. When looking closer the both buildings are actually separated by a narrow alley.



The structures of the former grain elevators on the quay form a literal connection with the Water. The transport bridges, perpendicular to the quay, divide the public space into smaller parts.

LEGIBILITY OF THE GROUND FLOOR

To navigate through the building, the legibility of the spaces is an important aspect. When we got the tour through the Maassilo I was constantly trying to figure out in which of the three parts of the building I was walking. Characteristics in the building or in its surroundings can be used to position yourself. So what are the characterizing elements of the different spaces.

Equal characteristics

Unfortunately most of the floors and walls are renewed during the redevelopment. On the ground floor only the columns, ceilings and the funnels are elements which are still original. The new walls between the columns are very generic and not characteristic for the different parts of the Maassilo.

There is a clear distinction between the ground floor and the attic. At the ground floor all the services are attached to the ceiling of the building. In the attic all the distribution tubes are located on the floor. On the ground floor thick concrete columns are used. In the attic a light steel structure is used. Despite the compartmentalization, the spaces on the ground floor share the same characteristics and are well connected. The grid of the columns in those halls is the same. The height of the room is equal and the halls share a similar connection or border with the Postma building. The Stok hall with the hexagonal columns has a floor height and size funnels similar to the Brinkman building. This space feels more connected to the Brinkman building than to the other half of the Stok building. What defines the difference between those spaces? How can the different parts of the building be distinguished?

Different characteristics

The shape of the columns depends on the part of the building. In the east part of Stok the columns are square and positioned on a very narrow grid. There is a hierarchy in the narrow grid of the columns. Some columns are positioned closer together, providing extra space for the former transport system. Because the transport system laid in one straight line. The sight lines of these former transport system comply with the sight lines of the other parts of the Maassilo building. In the west part of the Stok building, large hexagonal columns bear the load of the 300 tons silos above. These columns approach an ideal structural round shape. These columns follow a different grid than the silos in the other half of the Stok building.

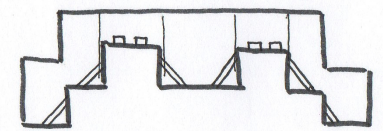
In the second building of Brinkman & vd Vlugt the columns have a square shape with rounded corners. These columns are placed in the same grid lines as the hexagonal columns of Stok.

As mentioned before some of the columns have been removed or replaced by thinner steel columns during the redevelopment. Originally the rooms had very linear sight lines due to the columns. After some of the columns had been removed a central space was created.

The Postma building has its own very recognizable characteristics. The narrow width of the building makes this spaces easy to read.

Each type of silos has its own typology of funnel. Meaning, from the ground floor you can determine the type of silos according to the typology of funnel. The typology of the funnels are just like the columns characteristic for each part of the building.

The whole Maassilo is constructed out of concrete. However the concrete hasn't been treated everywhere the same. In the Stok part of the building the raw concrete structure and the funnels have been rendered with concrete plaster. In the other parts of the building, there is no finish applied to the raw structure. This displays the change in the view into a more practical way of building a silo. Because of hygienic reasons the basement is clad with tiles up to about 2 meters.

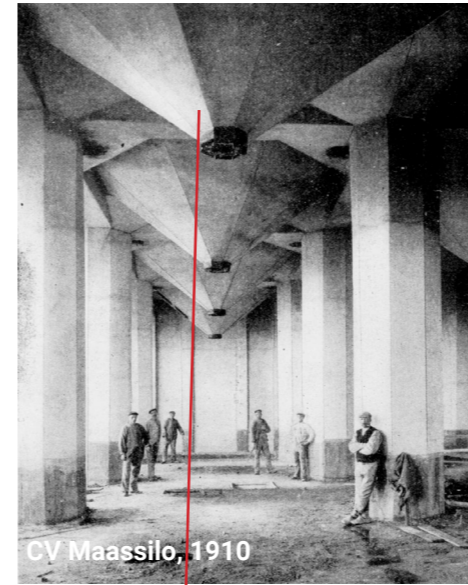
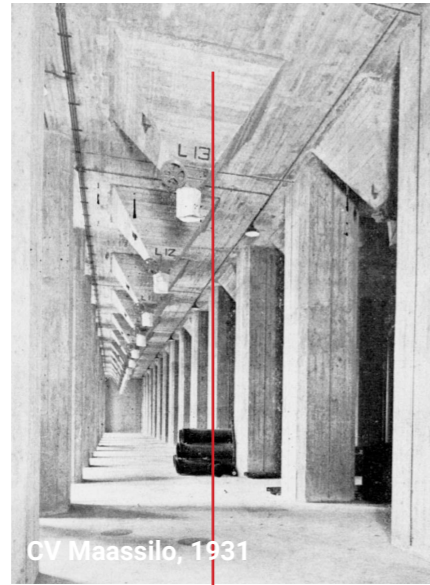


Services integrated with floor

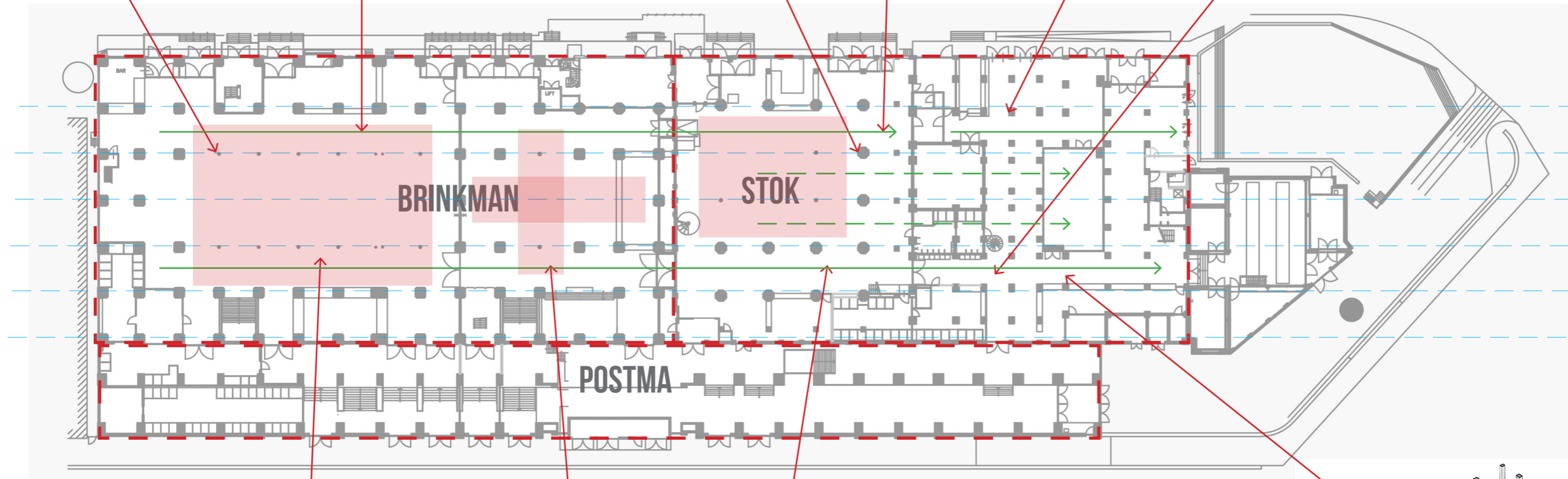


Services attached to ceiling

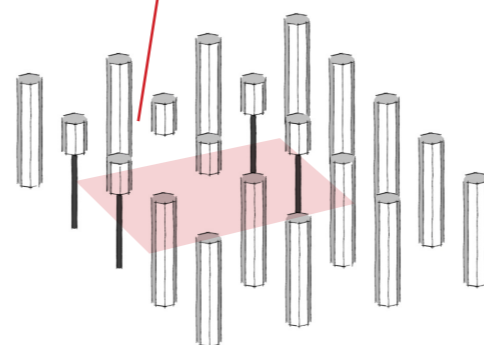
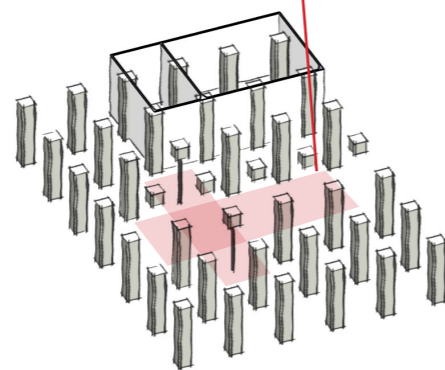
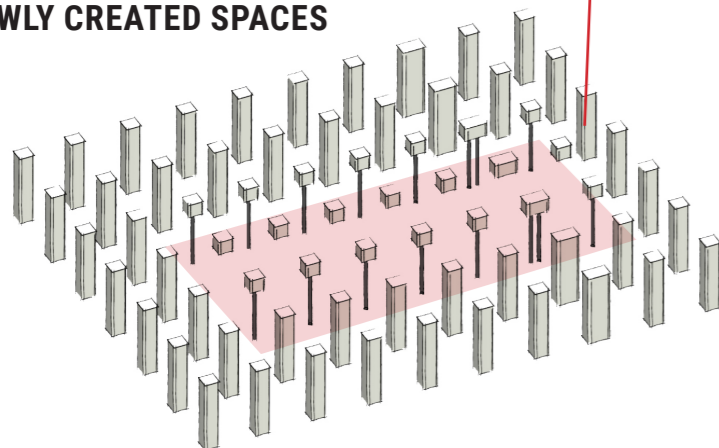
CHARACTERISTICS



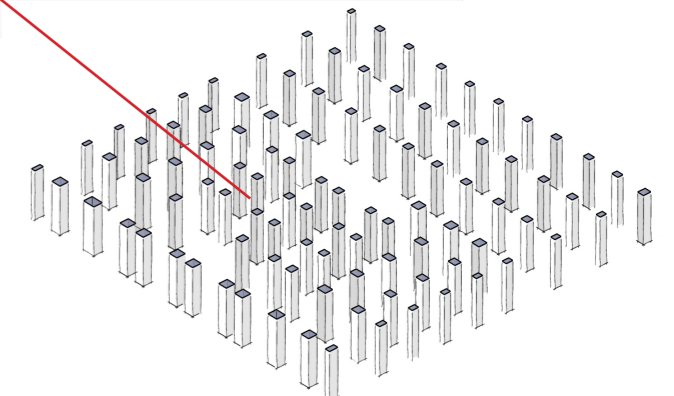
The concrete of the Stok part has been rendered with concrete plaster. In the other parts of the Maassilo, the texture of the original wooden form work is still visible.



NEWLY CREATED SPACES



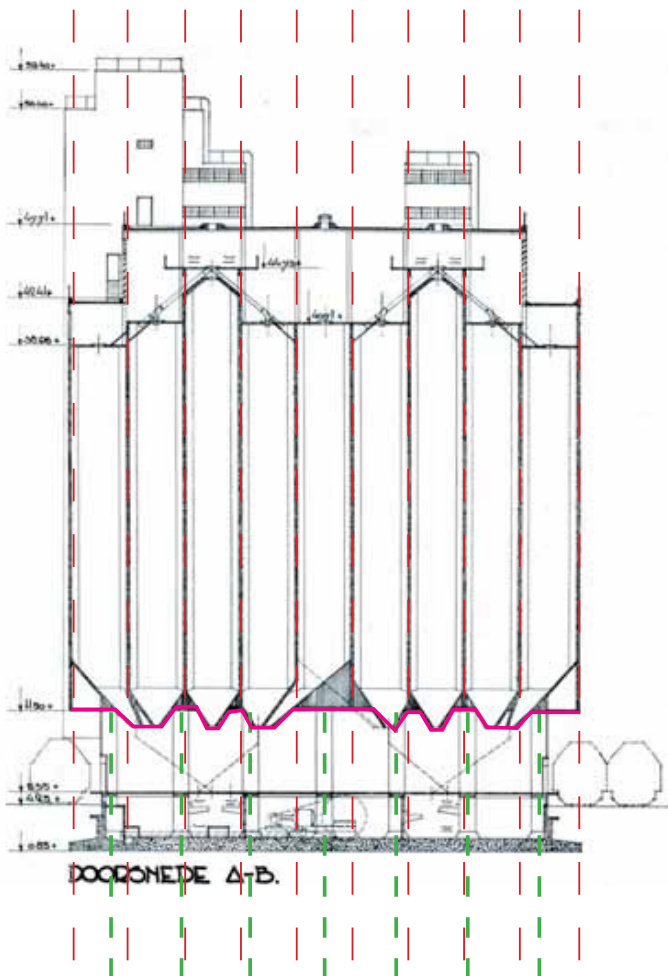
The new space between the columns of the Stok building is not located in the exact center of the room but positioned at the orth half of the floor plan.



TYOLOGY FUNNELS AND SILOS

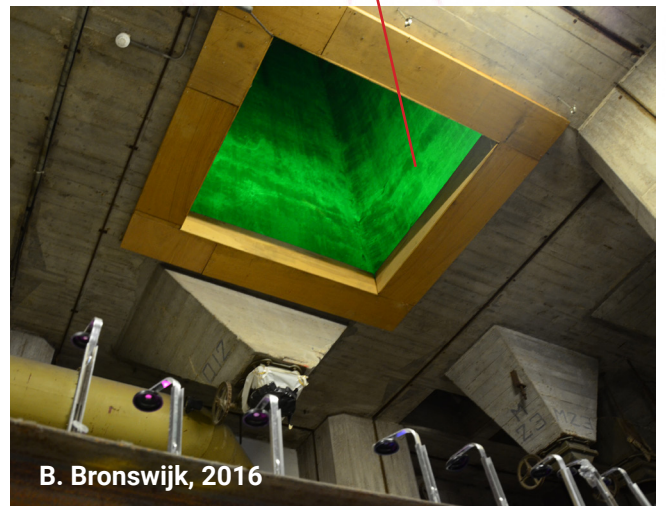
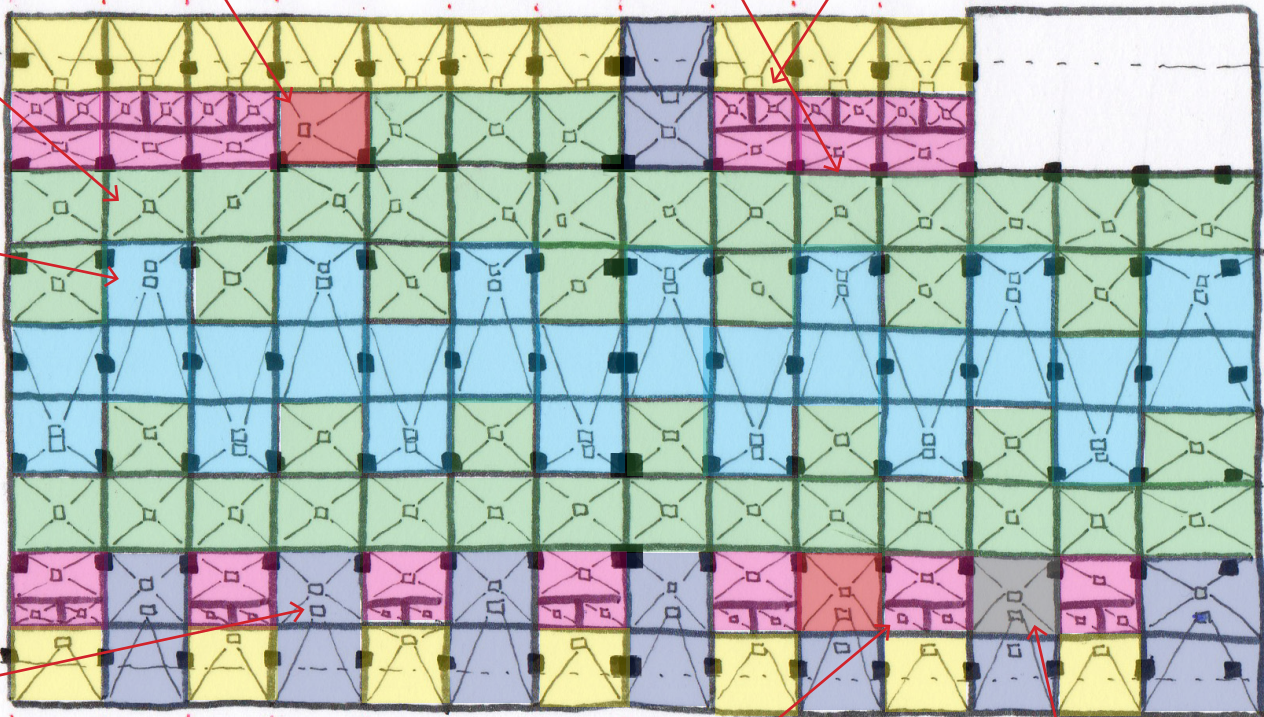
In most parts the funnels are logically positioned between the columns. However, in the Brinkman part, the funnels appear to be randomly distributed over the ceiling. The grid of the columns does not align with the organization of the funnels. The funnels are not positioned in the center between the columns, but sometimes are placed between two columns. When new interior walls were constructed during the redevelopment conflicts appeared. The funnels where cut in half by the new walls.

Besides that there are different kinds of silos, with different kind of funnels. In the floor plan of the silos, on the next page, the organization of the typology of the funnels is made visible. There appears to be a system.





New Emergency stairs in silos



BORDERS GROUND FLOOR

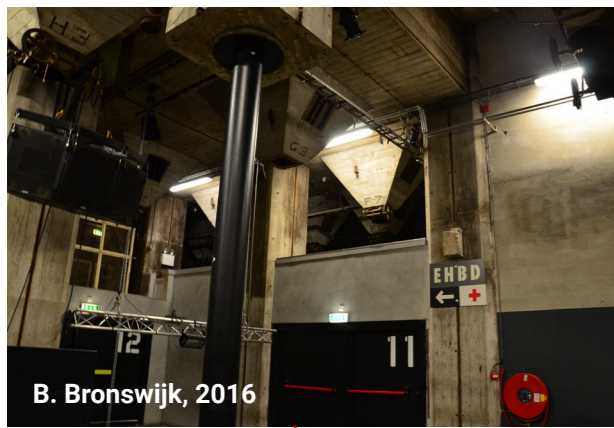
To prevent noise disturbance of the night club the decorative raster of Postma has been covered with steel plates. In the part of Brinkman and van de Vlugt air locks have been placed and the steel window frames have been replaced by masonry covered with concrete plaster.

The air locks in combination with the bars form the threshold between the interior and the facade. Because of these additional borders it is unclear where the actual facade is and decrease the legibility of the space.

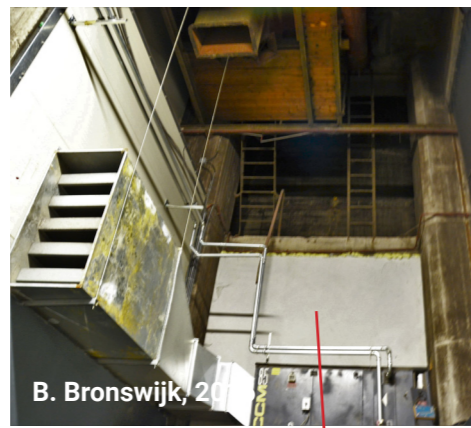
The available drawings do not comply with the current situations. On the next page borders of the Brinkman and Stok part are being researched. What does the border look like? What is the function of the space? Is there a connection with the original facade?



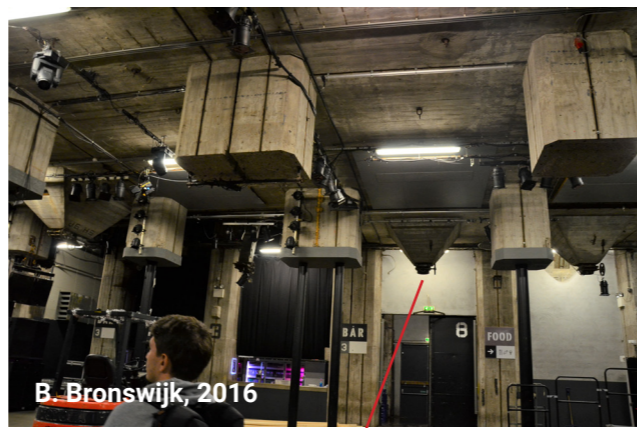
Left; New entrance - Right; closed facade with concrete plaster



B. Bronswijk, 2016



B. Bronswijk, 2016



B. Bronswijk, 2016

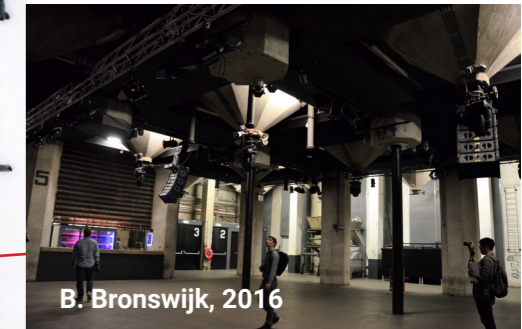
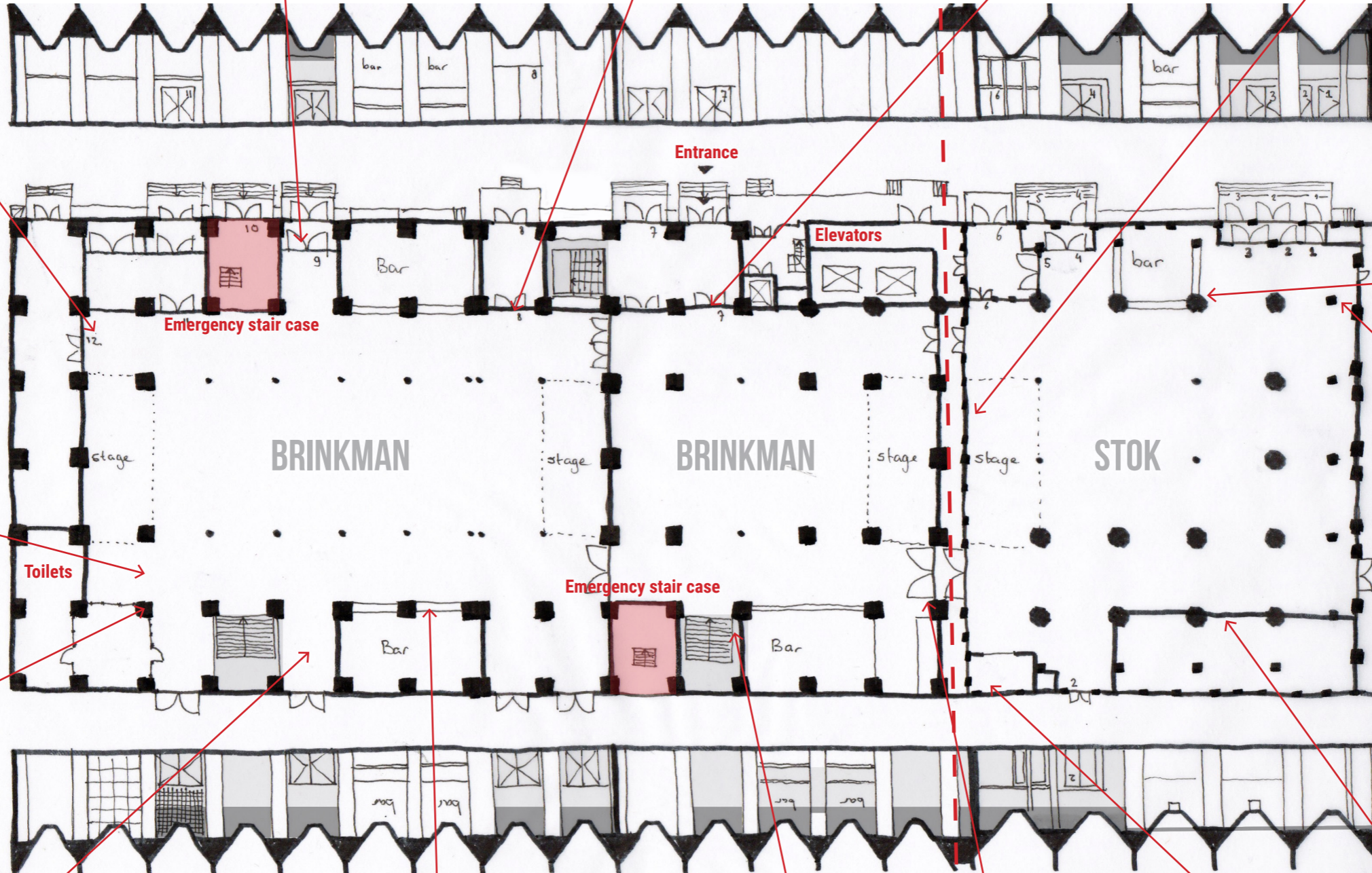


B. Bronswijk, 2016



B. Bronswijk, 2016

Sometimes the air locks are only half of the floor height.



B. Bronswijk, 2016



A. Belulaj, 2016



B. Bronswijk, 2016



B. Bronswijk, 2016



B. Bronswijk, 2016



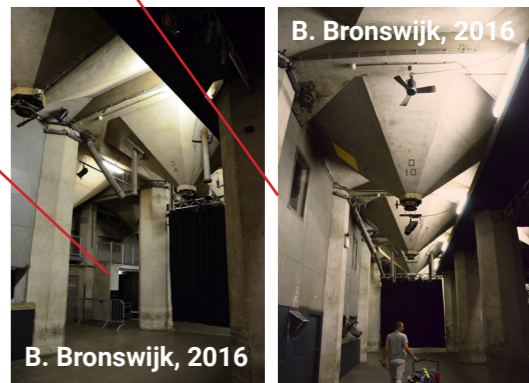
B. Bronswijk, 2016



B. Bronswijk, 2016



B. Bronswijk, 2016



B. Bronswijk, 2016



B. Bronswijk, 2016

RESTAURANT

Position

The restaurant is located in the far east part of the Stok building. Of this section of the building there are no current drawings available either. Before the redevelopment, the ground floor of Stok was one big open space. Because this part of the building is built onto a very narrow grid, this part was not suitable for the night club. Now a lot of walls have been constructed. This created a very specific character in this Part of the Maassilo and disconnected it from the rest of the ground floor.

Characteristics

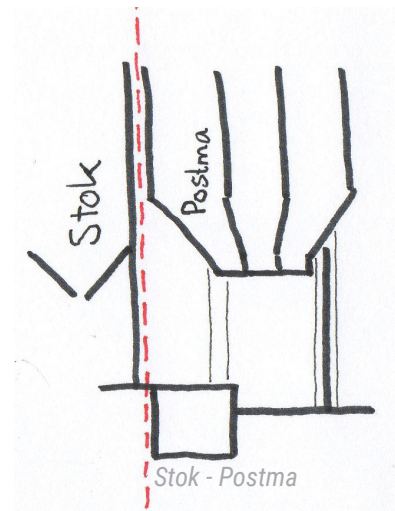
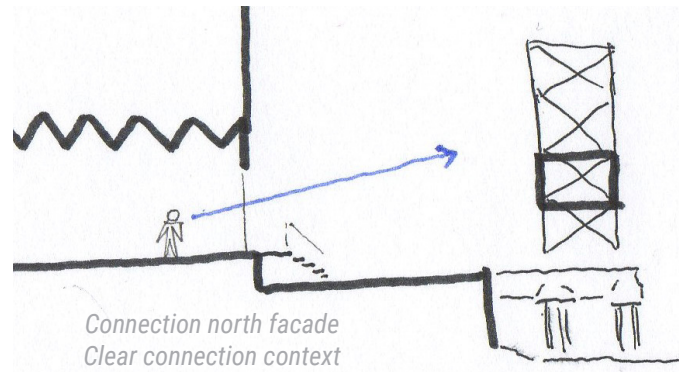
In this part the funnels of the smaller Stok silos are visible. The former factory part can be recognized at the flat concrete ceiling without any funnels. An exception are the four funnels above the current entrance. These were supposedly used to temporarily store the grain during the cleaning process.

Context

The doors in the north facade have been replaced with large windows [see page 21]. Creating a strong connection with the quay outside. These landmarks help the user navigate through the building.

Borders

There is a clear border with the other stok part and the Postma building. In the Postma building the characteristics like the columns and the funnels are clearly visible and are very different from the Stok part



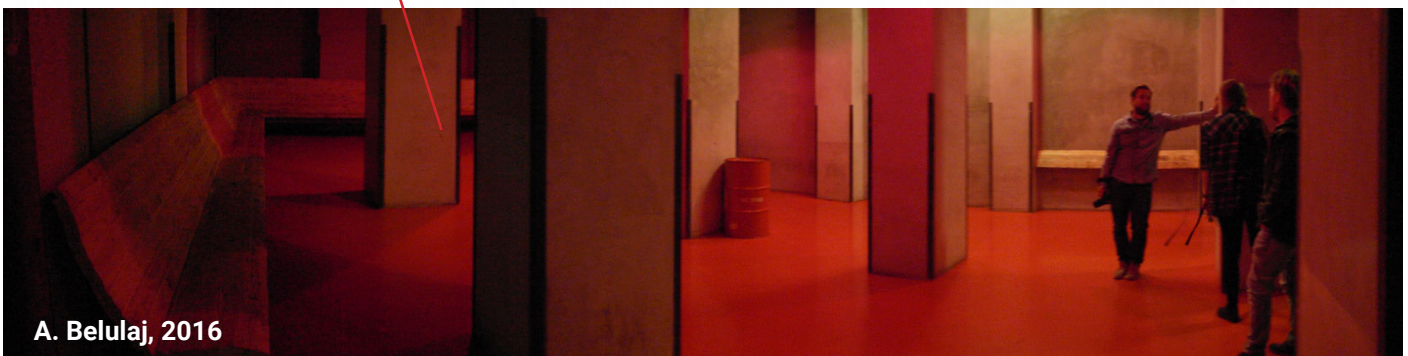
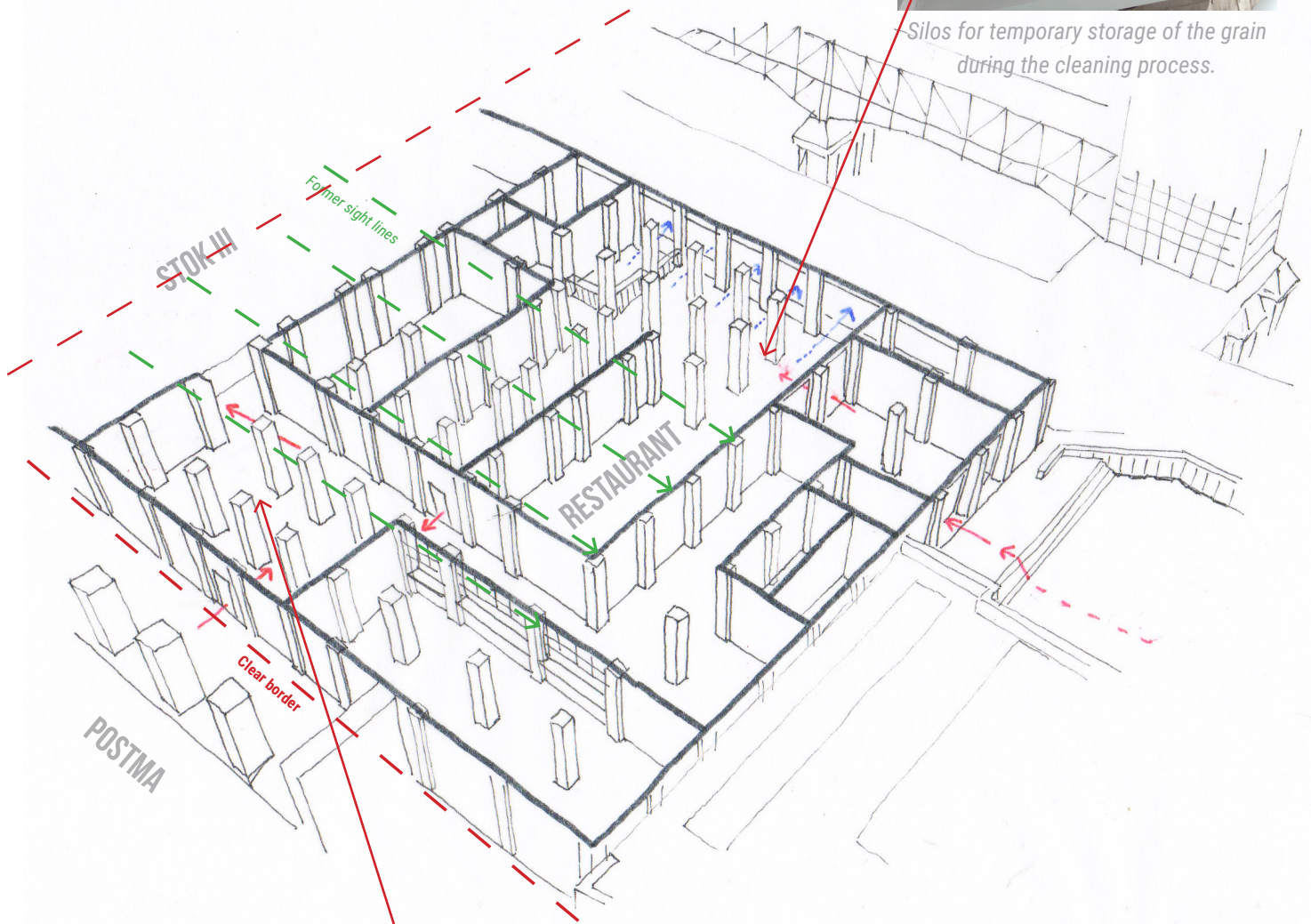


Hub Creative, 2008



B. Bronswijk, 2016

Silos for temporary storage of the grain during the cleaning process.



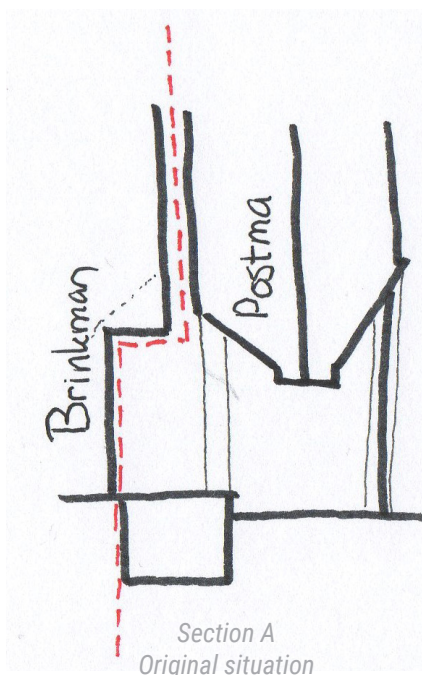
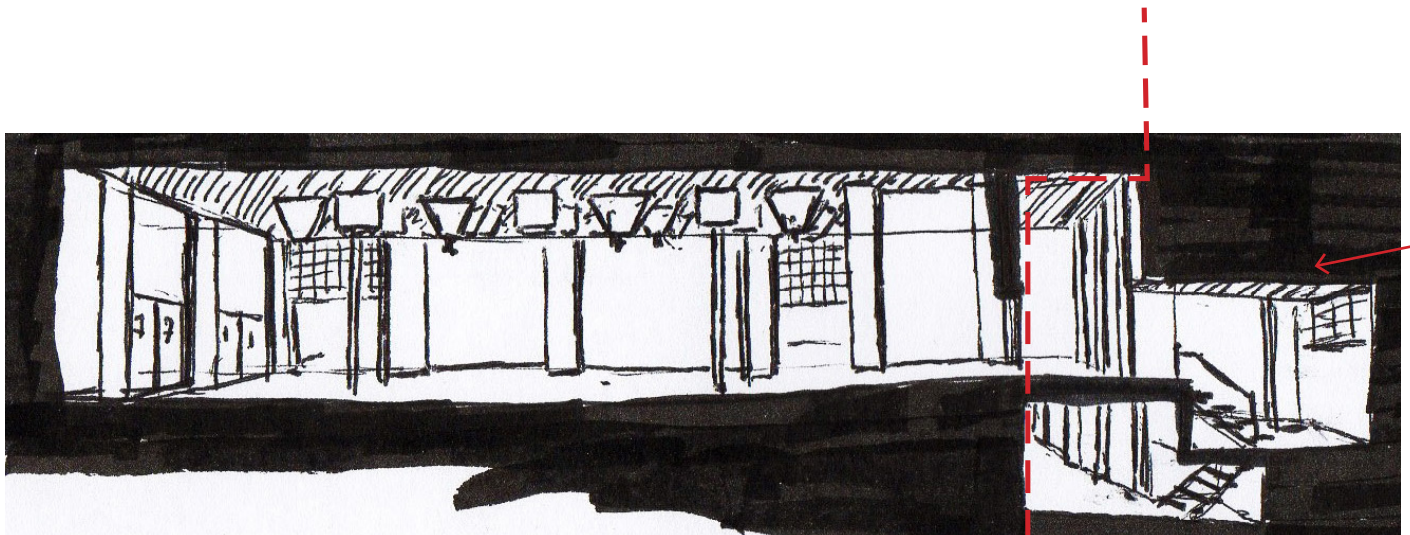
A. Belulaj, 2016

TRANSITION

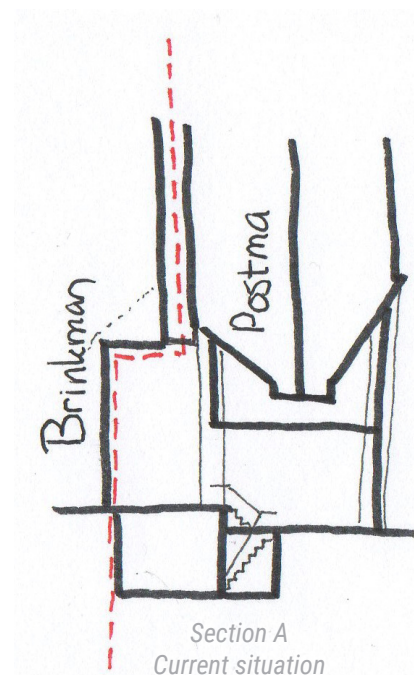
BRINKMAN - POSTMA

The corridor on the ground floor between the Brinkman building and Postma building forms the transition between the two buildings. It forms one of the entrances to the basement as well. When going down two flight of stairs the visitor arrives in a corridor in the basement. This corridor lacks characteristics of one of the silos parts. Its unclear in which part of the building this corridor is positioned.

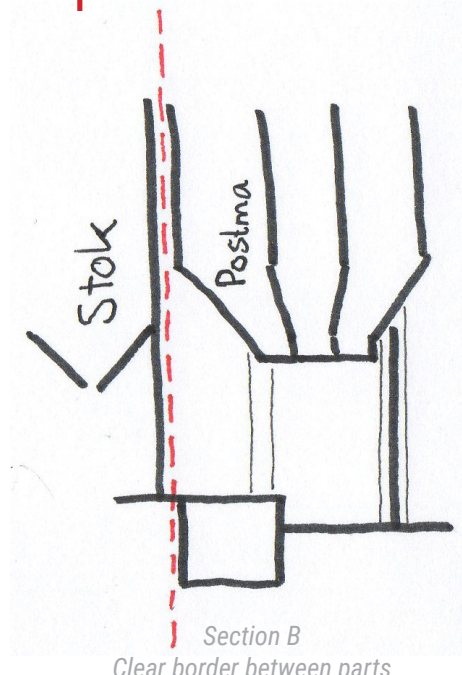
On the ground floor, a false ceiling has been constructed during the redevelopment. Because of this false ceiling the characteristic funnels of the Postma buildings are hidden. Multiple level differences and changing directions disorients the visitor. Because of the cantilevering silos of the Brinkman building, it is hard to distinguish where the exact border between the Brinkman building is.



Section A
Original situation



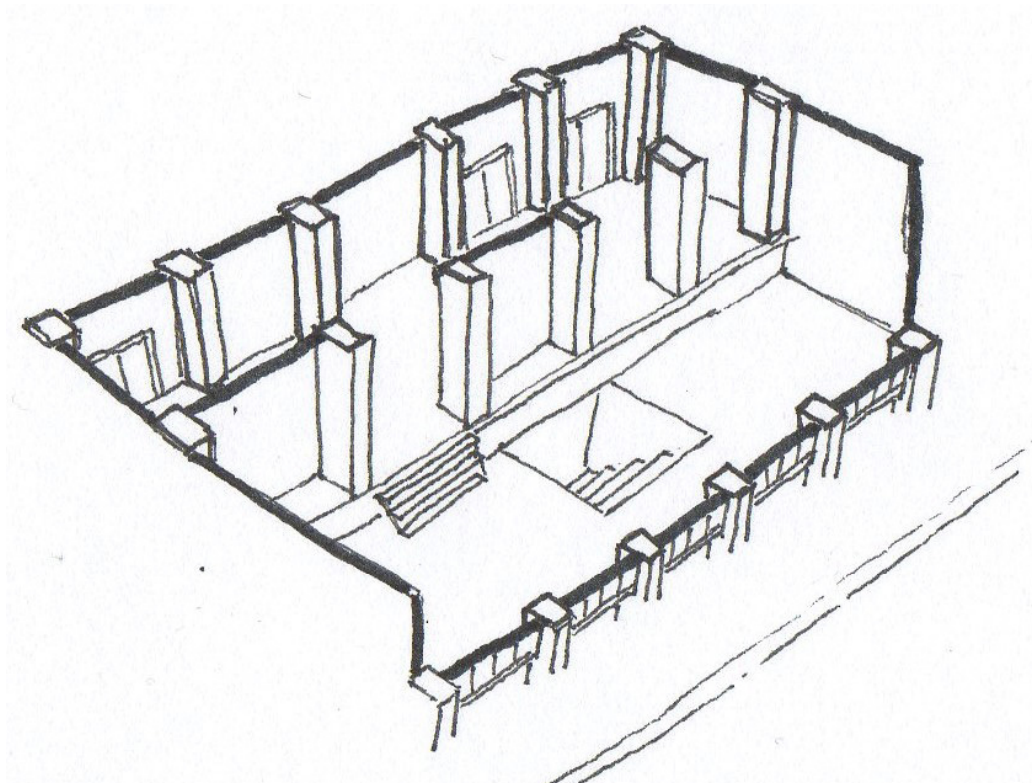
Section A
Current situation



Section B
Clear border between parts



False ceiling



TRANSPORT ATTIC

Characteristics

The space of the attic can be read according to the height of the underlying silos. Two rows of silos are higher and the two rows on the outside of the Brinkman building are lower. If one enters the main space of the transport attic one can quickly see how this space is organized.

The new walls constructed during the redevelopment disrupt the original level differences in the floor and compromise the legibility of the total attic. They also disconnect the different parts of the Brinkman Attic.

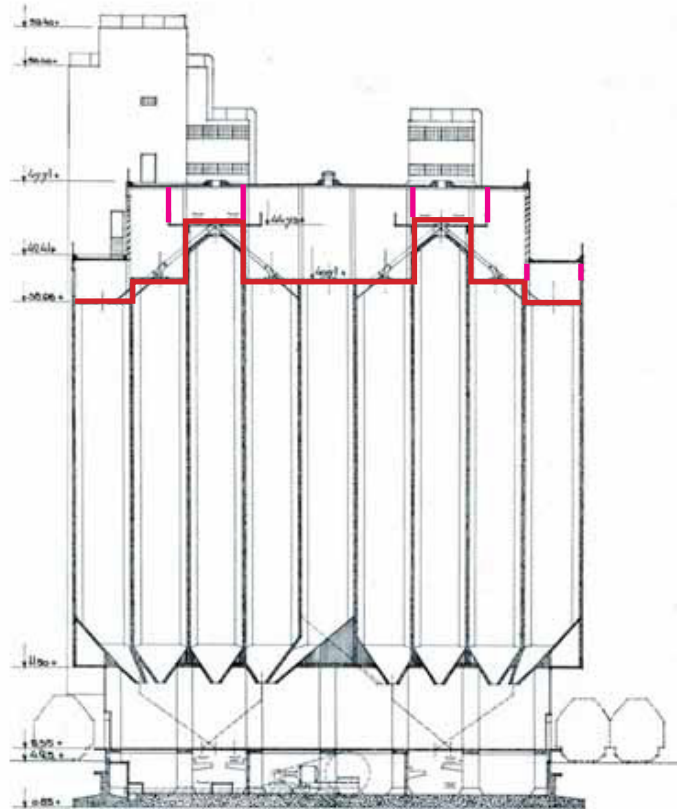
Transition

The corridor perpendicular to the elevator tower of Brinkman & van de Vlugt is the connection between the three different building parts. This corridor forms the transport zone and the core of the original transport system of the attic. The two grain elevators of the Stok building connect in this zone to the system of Brinkman. The transport system of Postma is connected in the corridor as well.

A lot is happening in this space. When moving from the elevators to the Postma building the height and the width of the space changes.

When arriving in the central space of the corridor. Your eye is directly guided towards the window which offers a view onto the roof of the Stok building of the 7th floor.

The Postma part can be easily recognized due to its longitude character. Windows in the border between the Brinkman and Postma Part provides a view on the surrounding and the outdoor connection between the two building parts.



Shape floor of attic and newly constructed elements

DISORIENTING CORRIDOR

The lower parts of the Brinkman attic form corridors, on the north side of this part is used as a room for lockers. Both sides form the entrance of a newly created staircase which runs through one of the silos.

The north corridor has windows, which offer a view on the skyline of Rotterdam. In the south corridor, these windows have been covered during the redevelopment. A interior wall between the higher part and the corridor has been constructed during the redevelopment as well.

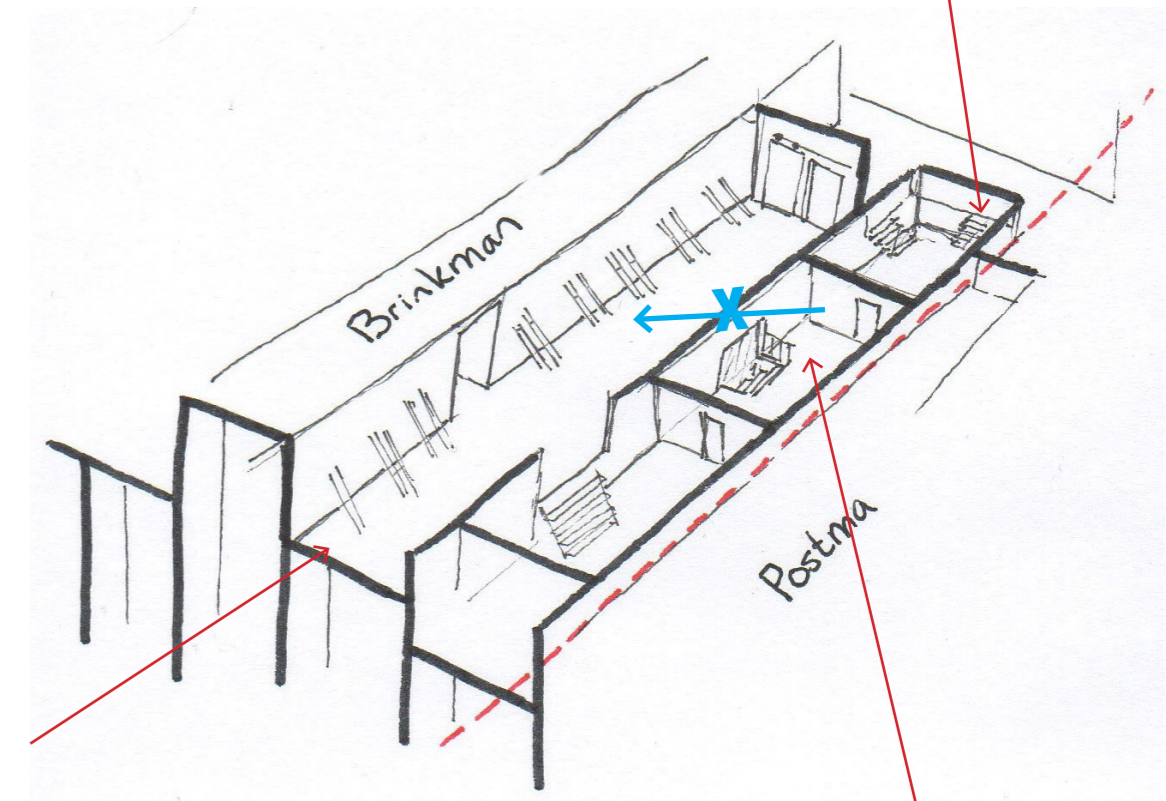
When moving from the attic to the corridor it is unclear if you are in the Brinkman part or the Postma part.

The diagonal tubes going into the silos are the main characteristic element of the Brinkman attic. The new interior wall blocks the view from the corridor on these characteristic elements.

The combination of absence of a view, going down a flight of stairs and turning a corner disorients the visitor.



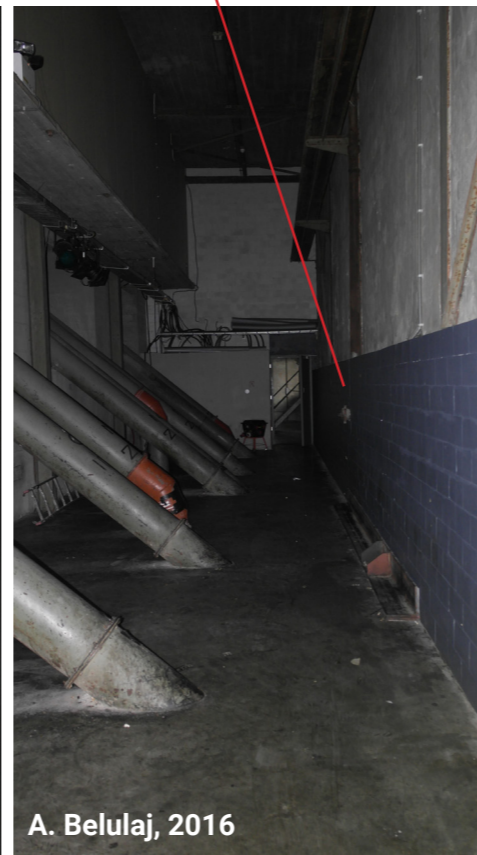
A. Belulaj, 2016



B. Bronswijk, 2016



A. Belulaj, 2016



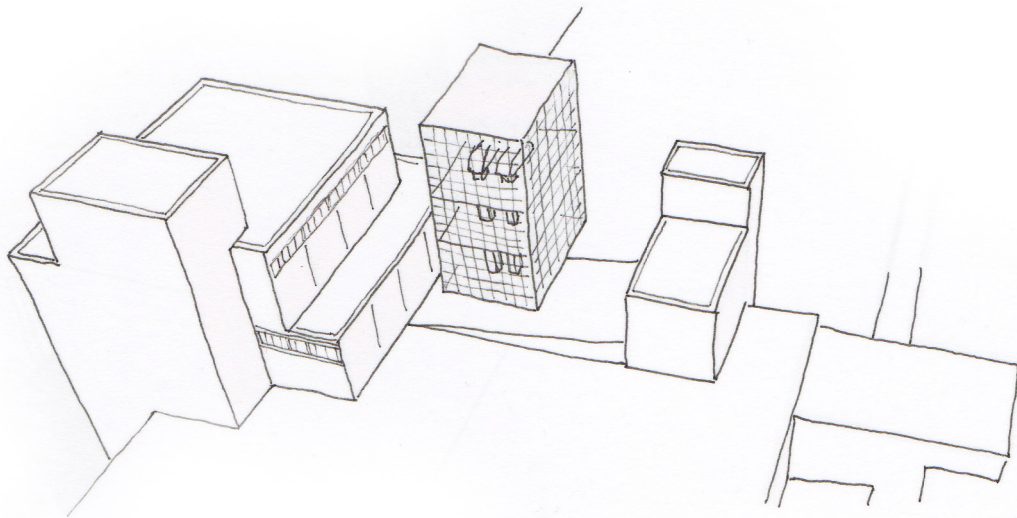
A. Belulaj, 2016

New interior wall (painted blue)

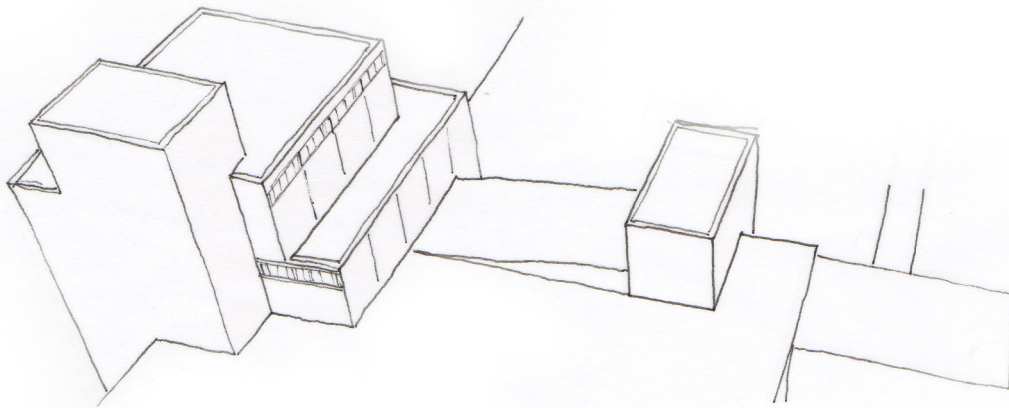


<http://ditiszuid.nl>, 2016

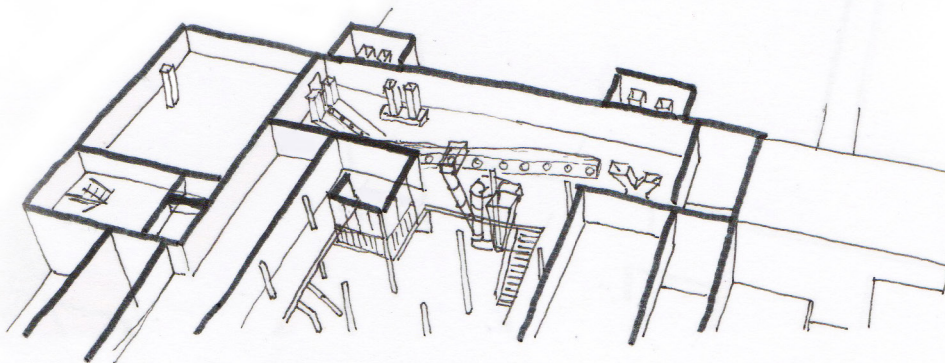
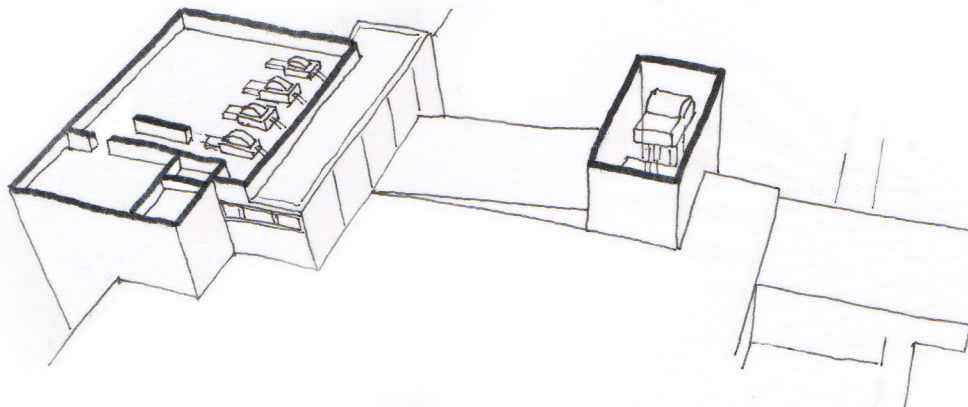
CULST PHOTOGRAPHY



Additions from 1958



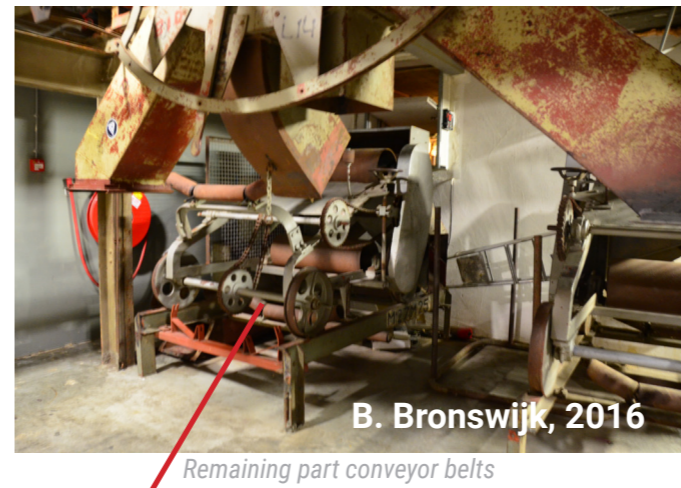
Situation 1951





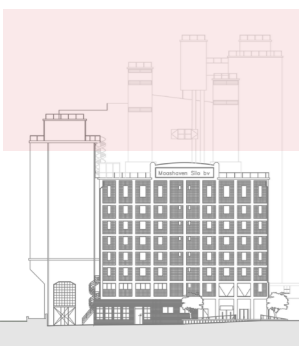
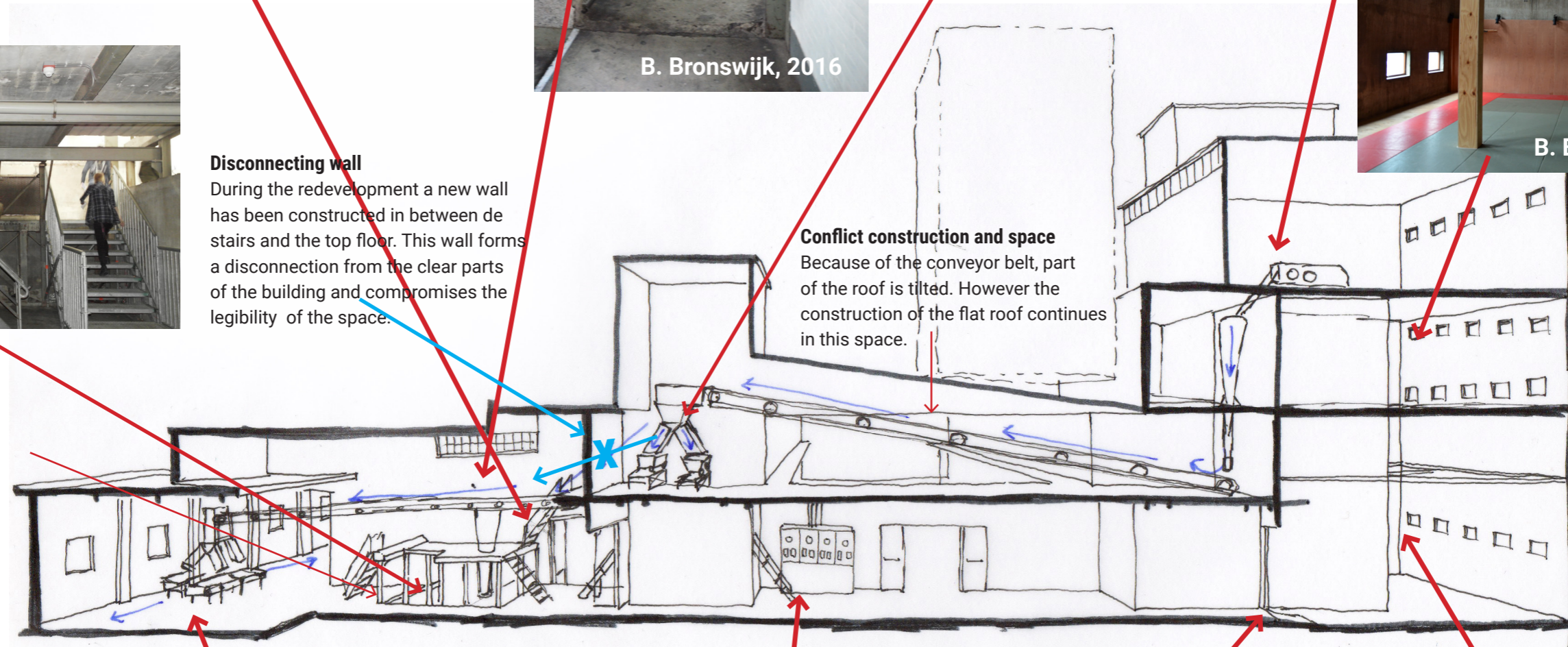
Conflicting volumes

In this part it is visible that the Postma building is a later connection which The corridor attached in conflict with the floor level.



Disconnecting wall

During the redevelopment a new wall has been constructed in between de stairs and the top floor. This wall forms a disconnection from the clear parts of the building and compromises the legibility of the space.



ATTIC STOK

Position

The Stok attic is the only accessible space on the 7th floor, because of this it's very clear in which part of the building you are.

Characteristics

The west part of the Stok attic, is in its original state. Just like the Brinkman attic all the services are attached to the floor. A new wall has cut the attic in half. The east part has been divided in different office spaces.

An structure which formerly supported the conveyor belt covers the total length of the building and connects the different spaces of the attic. Because of this connecting element the compartmentalization is not that bad.

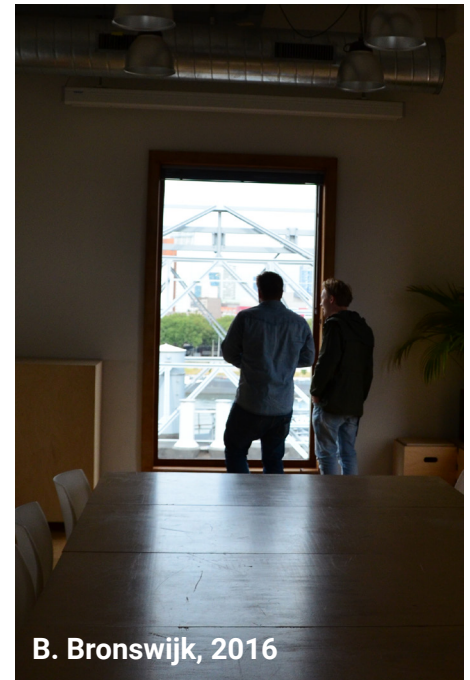
In the east part of the attic you can't experience the silos underneath the floor. In the west part the hexagonal silos can be recognized in the facade which follows the structure of the silos underneath.

Context

The entire roof is covered with sky lights, which explains that this is the top floor of the building. All spaces which currently function as office spaces have windows, and offer a view on the surrounding. In the part which is still original there were some small windows as well. These have been covered in the years that the building still functioned as a grains storage.

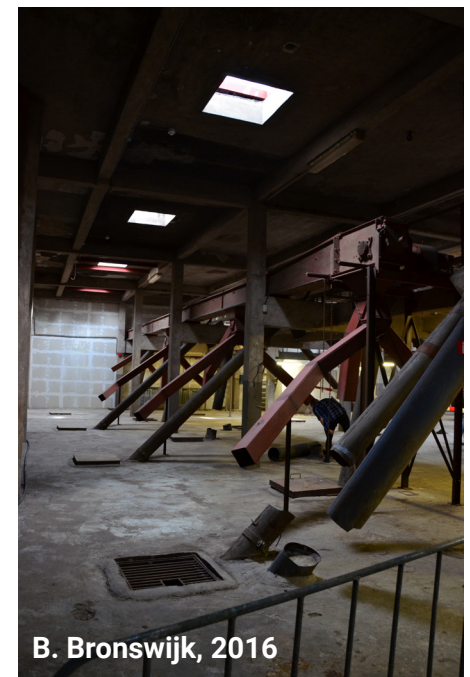
Transition

The attic is connected by a small door to the main shaft of the Brinkman building. This connection has been made during the construction of the Brinkman building in 1931.



B. Bronswijk, 2016

Windows offer view to context



B. Bronswijk, 2016

Sky lights in roof



B. Bronswijk, 2016

Connecting structure



B. Bronswijk, 2016

Characterizing shape of wall



B. Bronswijk, 2016

New wall dividing the two halves of the Stok attic



B. Bronswijk, 2016

Connection Stok and Brinkman 7th floor



B. Bronswijk, 2016

CONCLUSION

Because the building is such a gigantic building and there are no complete drawings of the current situation. It was not always clear how the different parts of the Maassilo are connected. My research question: What are the connections and disconnections of the spaces in the Maassilo. From this research question the following questions appeared. What are the characteristics of the space which can be used to relate the space to the entire ensemble? How does one move from one space to another. What does the border (disconnection) look like? How is the context of the space perceived?

The Maassilo is located on a small plot, on one side there is the Maashaven on the other side the neighbourhood. The infrastructure surrounding the complex forms a border. The Maassilo, on the other hand, disconnects the neighbourhood from the Maashaven.

Once the visitor understands that the building has been built in three main periods, you understand the basic organization of the building. However, when walking through the building it is not always easy to understand your position in one of these three parts. Because there is almost no relation between the spaces in de Maassilo and the surroundings, recognizable elements in the surrounding cannot be used as a tool to navigate through the building. The visitor depends completely on the relation between the different spaces and the recognizability of the three parts.

Because the spaces in the silos are inaccessible, the silos themselves form a strong threshold between the attic and the ground floor. In general there is a clear distinction between the attics of the different building periods. The Stok attic is the only attic located on the 7th floor. The other attics are located on the 10th floor. The spaces in the Postma building are very clear. The actual border in the attic between the Brinkman- and Postma building is very clear as well.

The separation between the different parts on the ground floor is less clear. Compartmentalization of the Stok and Brinkman building makes it harder to recognize the different parts. The spaces on the ground floor of the first and second part share similar characteristics and are strongly connected. Large parts of the original sight lines are still there.

Interventions made during the redevelopment destroyed some of the beautiful characteristics of the Maassilo and transformed it into a very introvert building. Many of the interventions done during the redevelopment form conflicts and disconnect the different spaces. They cover the characteristic elements which are used to navigate through the building.

There are a few problem areas where the user gets lost. There is the corridor in the attic. The absence of a view, level differences and turning a corner disorient the visitor. Besides that there is the corridor between the Brinkman- and Postma building and the basement. There is no hard border between the Brinkman and Postma building. This transition is more gradually. Also the absence of recognizable characteristics disorients the user.

In the new design the separation of the different parts should be enhanced. The characteristic elements like the funnels and parts of the transport system are used to navigate through the building and should be dealt with carefully.

VALUE ASSESSMENT

What is the tolerance of change?

The Maassilo is a colossal building on the south side of the Maashaven. The building has a very industrial character due to the raw concrete façade and the steel structures of the grain elevators on the waterside. The Maassilo reflects the developments of the harbour, the technical evolution and the construction methods of that time. It shows the industrial architectural tendencies and that of that time. The complex had an important role in the social economic development of the port and the surrounding neighbourhoods during the 20th century. The Maassilo is more than a visual landmark, it is an integrated part in the history of Rotterdam Zuid.

The Maassilo consists for more than 60% out of unused space and the building needs to be redeveloped. The grain silo company has for always left the Maassilo and the building should get a new use.

In this chapter I will talk about the elements which define this character of the Maassilo. some elements definitely need to be preserved, other elements can be altered after careful considerations and last there are elements which disrupt the original character of the Maassilo.

The aspect matrix (Brand & Riegl) is a tool to value the building from different approaches. The matrix allows you to give a nuanced evaluation of the different values. I will describe the different parts of the Maassilo ensemble according to the different values of this matrix..

The main question of this chapter is

Which values are essential to preserve the industrial character of the Maassilo?

We already used matrix of Riegl and Brand during our group work. At the end of this chapter I will present my own interpretation of this matrix. There will be some overlap with the group work. Each intersection in the matrix represents a way of looking at the building. If I think there is any value from this point of view, I placed a sketch or a photograph on the intersection of the grid. The grid forms a summary of the value assessment. On the page after the grid I will explain what I exactly value on each intersection.

Value Maps

The value maps I made for the value assessment are colored according to the traffic light code. The most valuable elements are colored red. These elements should definitely be preserved. The elements with a low value are colored green. These elements compromise the character of the original Maassilo and could be replaced. In this case I try to explain in what way they could be improved. The elements with a medium value are mostly original, however I from my point of view not essential to be preserved.

● high value ● medium value ● low value

We made these value maps in the group report as well. The value maps in the group work, are a combination of the historical mapping and a value map. Because a lot of elements have been discussed in the group work, I will only discuss the important elements and the elements which are valued different in the group work.

MAASSILOENSEMBLE

Site - Commemorative

The quay was a very active and crowded place. The grain got unloaded from the boats by the grain elevators and got transported into the Maassilo via the transport bridges over the quay. On the quay itself there were train tracks with constantly arriving and departing trains. Bags of grain were dropped from the transport bridges or carried from the loading docks onto the train wagons. The big doors from the Maassilo were opened and one could see the activity inside.

After the Maassilo got redeveloped in 2007 the quay has become very quiet. The railway tracks have been removed (1958). The structures of the grain elevators are the only remnant of the activity on the quay. The new closed concrete façade forms a disconnection between inside and outside. Occasionally there is a truck which unloads supplies for the nightclub. Kids found a hang out to smoke cigarettes.

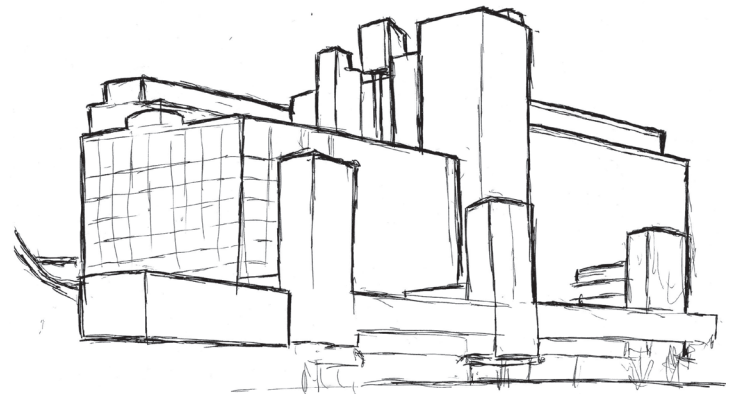
Site - Historical

The Maassilo ensemble has been developed in four main periods between 1910 and 1964. The silhouette forms the expression of the historical development of the building. How the building has been developed is strongly related to the available site.

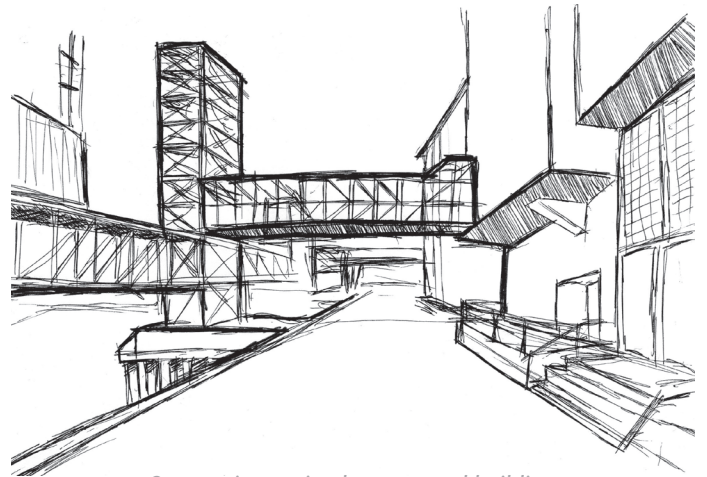
The different extensions of the development of the building are still clearly visible and play an important role in the oeuvre of the different architects. The differences in scale, detailing and construction methods reflect the technical development and the growth of the Rotterdam harbour. The three main parts are structurally completely separated and each part could be removed without the other parts falling down. Because of its historical value and the readability of the building the recognition of these parts have high value.

Site - conflict

There is not a lot of public space surrounding the Maassilo. The infrastructure surrounding the building forms a border which is hard to cross. The space in between the metro viaduct and the building is a complicated space. There is the dike, the concrete weir (waterkering), the metroline and the sheet piling. I personally like the image of a postcard from 1934. The space next to the Maassilo is much clearer.



Volumes of the ensemble visible from the Maashaven



Connection grain elevators and building



WORKPLACE



B. Bronswijk, 2016

The workplace of Postma constructed in 1956. Unfortunately we do not have any pictures from the interior or original drawings of the building. The building hasn't played a very important role in the development of the Maassilo, neither has it a great architectural value.

Skin - Age / Skin - Conflict / Skin - Newness

The masonry in the facade certainly has an age value. Despite the surprisingly large amount of windows in the south and east facade of the workplace, the facade is not very transparent. The windows are dusty and some of the windows have been covered with plywood. The platform of the metro line offers a view onto the roof of the workplace. The roof is in a bad shape. The skylights had to be covered by a steel raster to prevent people from throwing stuff through the windows. The workplace had been connected to the office annex dwelling of the Stok building till 1981. When this office building was replaced by two oil silos, the former connection with this building was covered with corrugated sheet of steel.



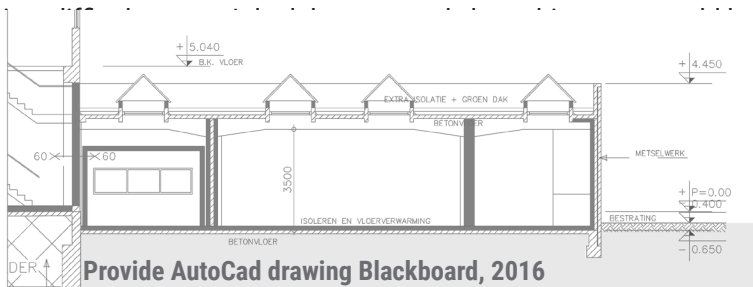
B. Bronswijk, 2016

Services - Age / Services - Commemorative

Supposedly there are still some control panels left in the building. These services are valuable just like all the other services in the Maassilo. Besides that the AutoCad files provided at the start of the studio, showed a beautiful concrete structure.

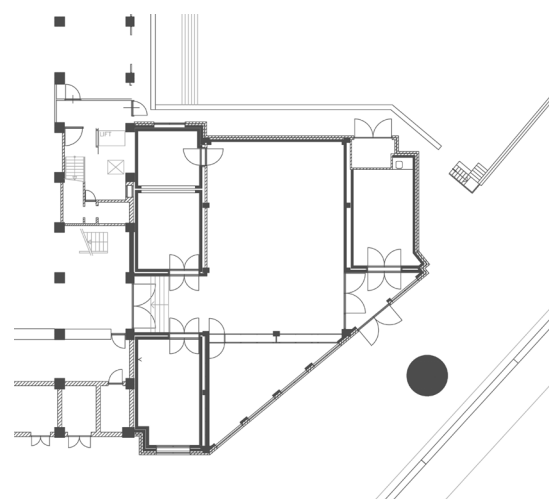
Site - Use

The building frames the public space in front of the building and guides the visitor to the entrance. The space in front of the Maassilo



Provide AutoCad drawing Blackboard, 2016

Connections and disconnection in the maassilo



Provide AutoCad drawing Blackboard, 2016

OFFICE



B. Bronswijk, 2016

Skin - artistic

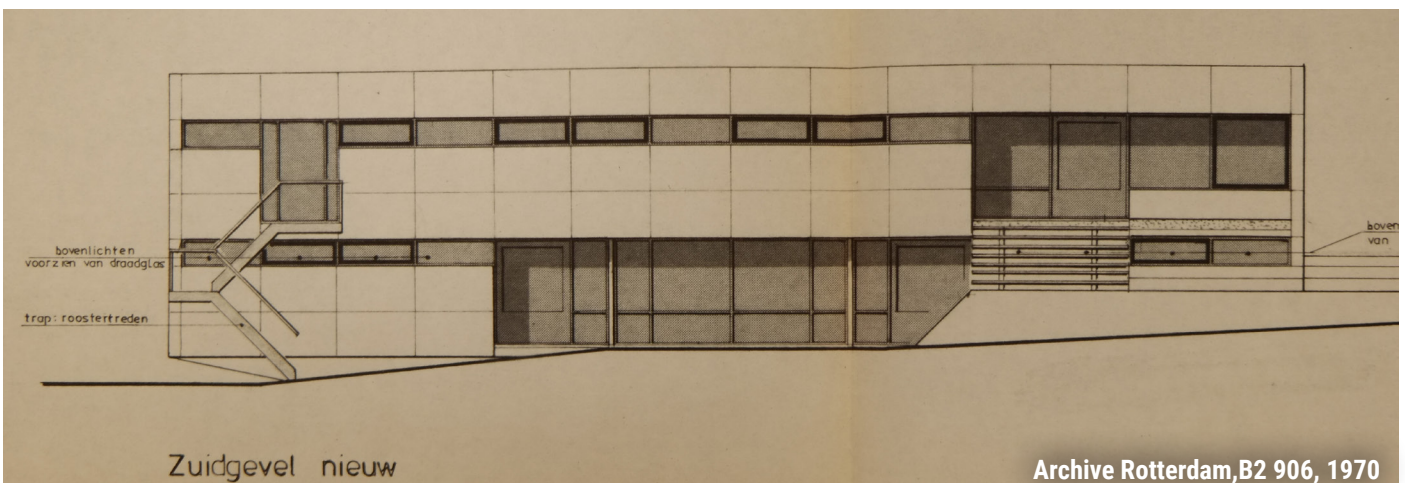
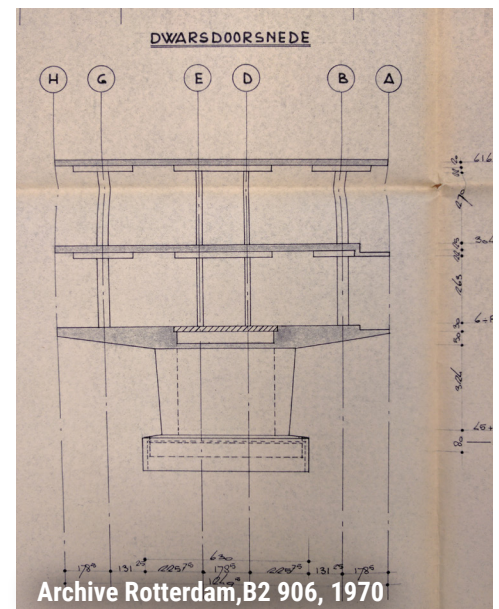
The north facade of the building offers a beautiful view on the building.

Skin - conflict

As can be read in the group report. The building has undergone some transformations. As discussed the transformations of the facade conflicts with the original design. Even though the material of the facade is still original and matches the color of the facade of the Maassilo, I find the concrete panels very ugly. Especially the gravel concrete of the stairs to the entrance are hideous. Opposed to what the drawings from the archive suggest, the concrete of the facade looks really gray next to the white garage doors.

Structure - artistic

The three pilotis which support the building are beautiful but cannot be seen from the quay.



GRAINELEVATOR TOWERS

Structure - commemorative / story - commemorative

As mentioned in the group report, the structures on the water front, have a great cultural historic value and show clearly that the Maassilo functioned as a machine.

Structure - Artistic

The structures form the connection to the water and should definitely be preserved. The transport bridges between the elevators and the Maassilo are essential elements to understand the transport system. The structure of the facade of the towers isn't uniform but has a randomness. These imperfections are very important.

Services - Commemorative

Most of the services in the structure, like the conveyors and elevators have been removed. The once left have a high value. One of the grain elevators in the first tower offers a unique view inside the canal. The portable elevators on top of the second bridge have a great value as well.

Structure - Historical

In the group report I made clear that the structures have been developed over different periods of time. However, from my personal point of view, the difference in age doesn't matter and all the structures have the same high value.

Skin - Newness

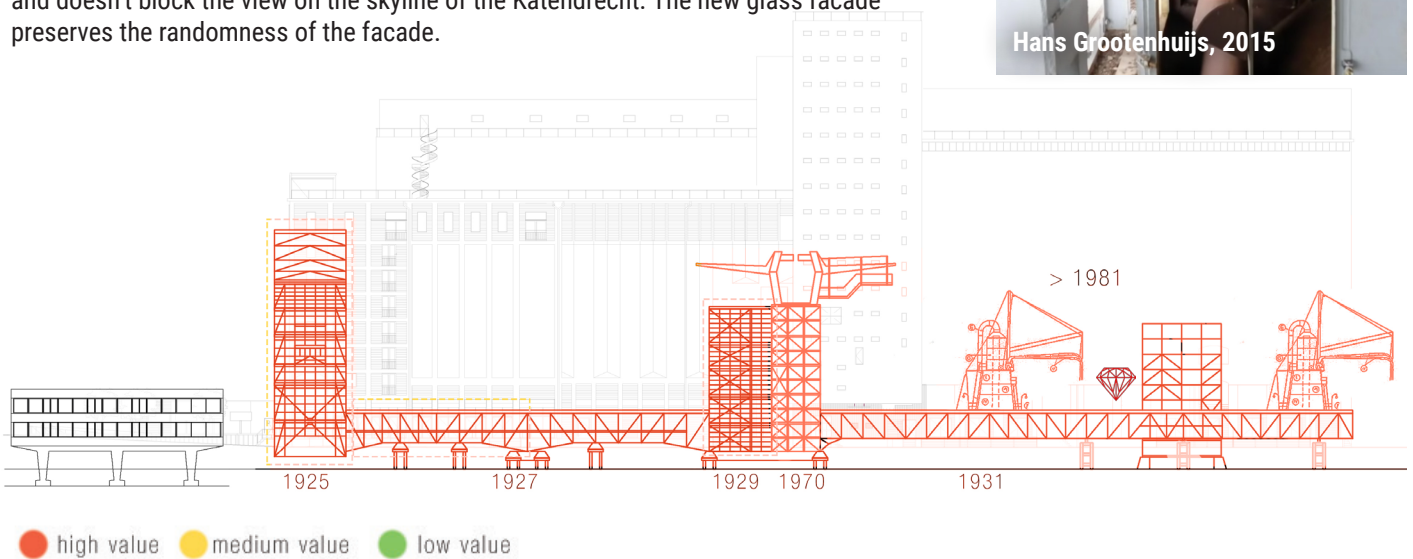
Now that the cladding of the corrugated sheets of steel has been removed (2010) they form a nice contrast with the Maassilo itself and the enhance the solidity of the building. 30% of the structure has been redeveloped. The first and part of the second tower have gotten a curtain wall which preserves the transparency of the structures and doesn't block the view on the skyline of the Katendrecht. The new glass facade preserves the randomness of the facade.



B. Bronswijk, 2016



Hans Grootenhuijs, 2015



B. Bronswijk, 2016

Structure - Age

The rusty structure has been painted. This has compromised part of the age value. However, the thin structure and the kind of messy, random looking, connections between the beams preserve a part of the age value.

Stuff - Artistic

The 400 kilo diamond that has been attached to the third elevator tower in 2016 is horrible. The artistic idea behind the diamond (contrast with the raw building and a gift for the city) is kind of shallow in my opinion.

EAST FACADE

In my opinion the different volumes are very characteristic for the Maassilo. In the value maps of the facade I gave the important volumes a red border.

Story - historical

From this side of the building all the different volumes are visible. The different volumes which each have their own characteristics show that the Maassilo has been developed over time and that the building is a sum of multiple additions.

Services - Commemorative

The elevators on top of the building show that the Maassilo was a machine. There is still some of the original machinery present in these structures. These have a high value should be dealt with carefully.

Structure - Artistic

The grid in the façade of Stok is very characteristic and has a high value. The columns of the Postma building have a high value as well. The structure is the expressive part of the facade. The material like the concrete bricks have certainly a historical value. However in my opinion these are not essential for the main character of the facade.

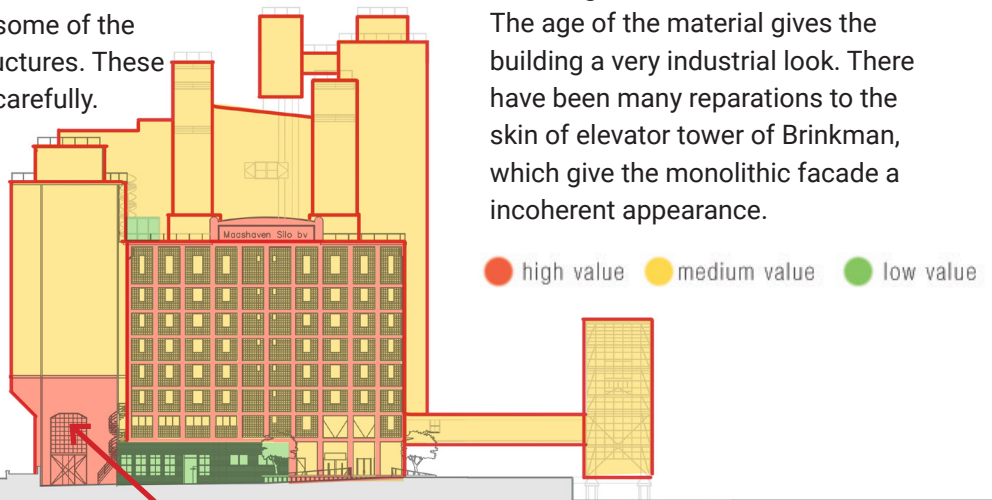


B. Bronswijk, 2016

Grain elevators on top of roof

Skin - Age

The age of the material gives the building a very industrial look. There have been many reparations to the skin of elevator tower of Brinkman, which give the monolithic facade a incoherent appearance.



● high value ● medium value ● low value



B. Bronswijk, 2016

Stuff - Newness

The Maassilo sign (Art Nouveau) on top of the Stok building, has already been restored and should be preserved. The door of the Postma part is restored as well, according to the original design. Both restorations are done well and justify the original character of the building.

Skin - Newness

The new entrance is one of the few interventions of the redevelopment which has been done well. The new entrance fits the scale of the Maassilo well. The windows in the upper floors have been replaced conform the original design.

Stuff - Conflict

On left side of the roof a small structure has been placed to provide access to the roof. This structure disrupts the symmetry of the front façade of Stok.

Site - Conflict

The metro line blocks the view onto the east facade and disconnects the Maassilo from the surrounding neighbourhood.



Hans Grootenhuys, 2007

Situation 2007: Corrugated steel plating in front of current entrance
Connections and disconnection in the Maassilo

SOUTH FACADE

Skin - artistic

The symmetrical façade of Postma is very characteristic, this symmetry should definitely be preserved. During the 90's a painting has been made on the left façade by the artist Lisa Lux. This painting compromises the symmetry of the façade.

The decorative raster are a great example how Postma created aesthetic appealing building using only simple building materials during the Post War decades. The raster and the masonry of the ground floor introduces a human scale to the building. Almost all the elements are in good shape. The cornice are nice details which enhance the readability of the different volumes.

Structure - artistic

The repetitive rhythm of the columns on the ground floor and the attic are an essential characteristic of the facade.

Story - Artistic

The transformer building has an important role in the development of the building. Without this building it is hard to explain the symmetry of the original building. Above the transformer building there is a steel beam, originally there was a sign of the Maassilo attached to this beam. The beam has no further structural purpose.

Skin - conflict

The inside of the elements has been covered by steel plates to prevent noise disturbance of the nightclub. These plate block the incoming natural light and should be removed. This doesn't compromise the character of the exterior.

● high value ● medium value ● low value

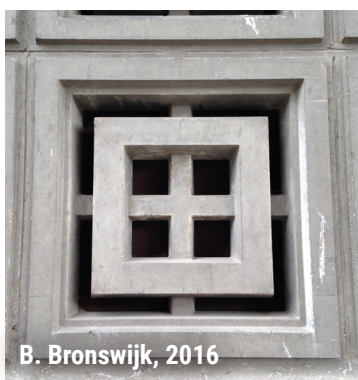
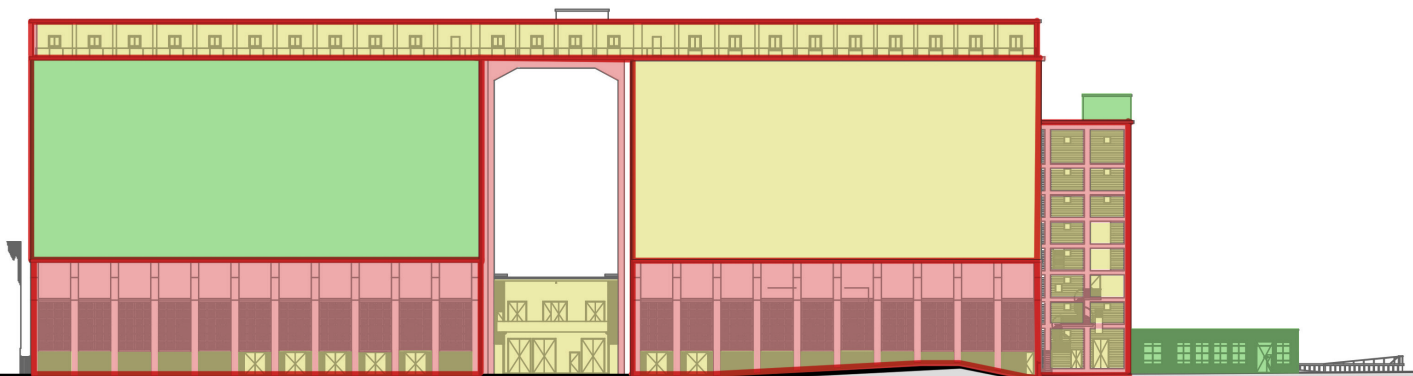


B. Bronswijk, 2016

Steel beam above transformer building



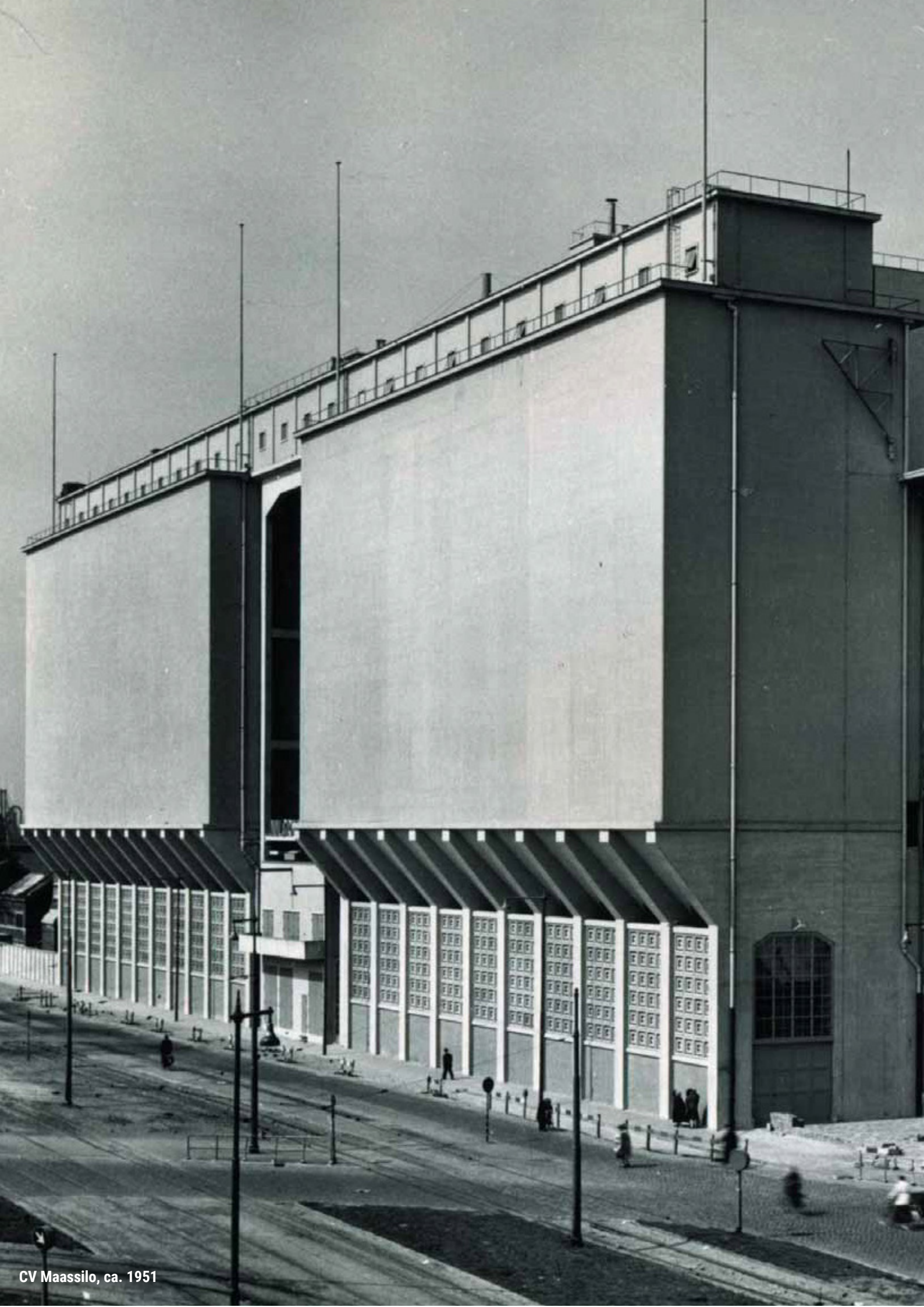
B. Bronswijk, 2016



B. Bronswijk, 2016

Story - history

The transformer building is currently not visually appealing. However it can't just be removed. The transformer building is an essential part to understand the south facade of the building. The same applies to the gap between the two silos.



CV Maassilo, ca. 1951

NORTH FACADE

● high value ● medium value ● low value



Structure - Artistic

The structure of the Stok facade is the most expressive of the whole Maassilo, The structure divides the facade into three characteristic zones (vertical and horizontal) which have a high value and should remain visible. These horizontal and vertical zones show the original organization of the building. The relief in the facade of the hexagonal silos is the only part in the facade where it is possible to perceive the silos.

Skin - Artistic

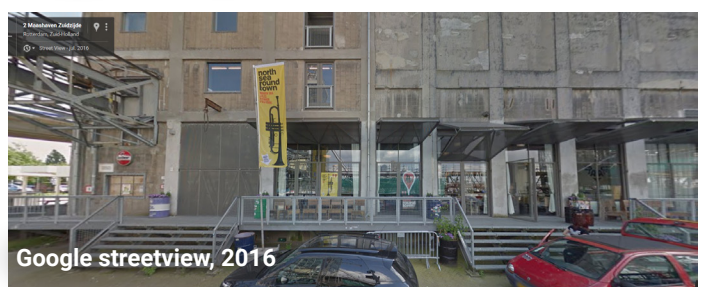
The three vertical zones in the Brinkman façade. The enormous monolith concrete surface is quite unique and should be handled carefully. The material however is in a bad shape.

Skin - Newness

The windows above the doors in the Stok and Brinkman part have been replaced with concrete facades. This blocks the incoming light, in the formerly well lit spaces and turned the interior space into a very dark room. The interventions on the ground floor where glass facade were added, are in my opinion good interventions. The size of the glass facades fits the scale of the total Maassilo well. These interventions have respect for the original rhythm of the facade.



New entrance and new concrete facade
Connections and disconnection in the Maassilo



Transformation facade stok ground floor after redevelopment
B. Bronswijk | 58

WEST FACADE



Google streetview, 2016

The west facade shows clearly that there is a border. From this side it looks like the building has been cut in half. The facade has a low value.

The facade has been covered with corrugates sheets of steel during the redevelopment. The concrete underneath the steel facade has probably some age value.

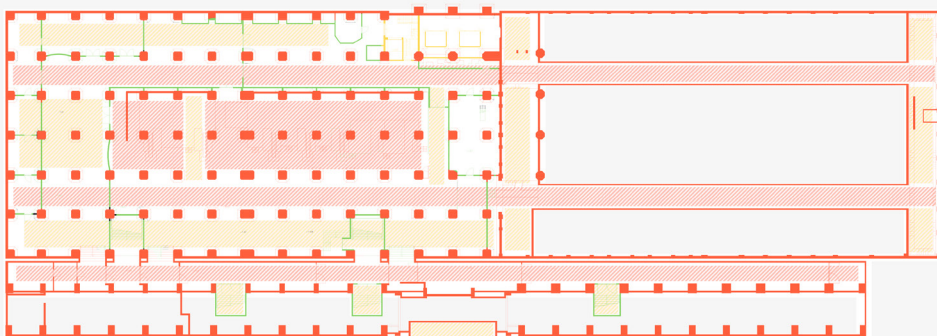
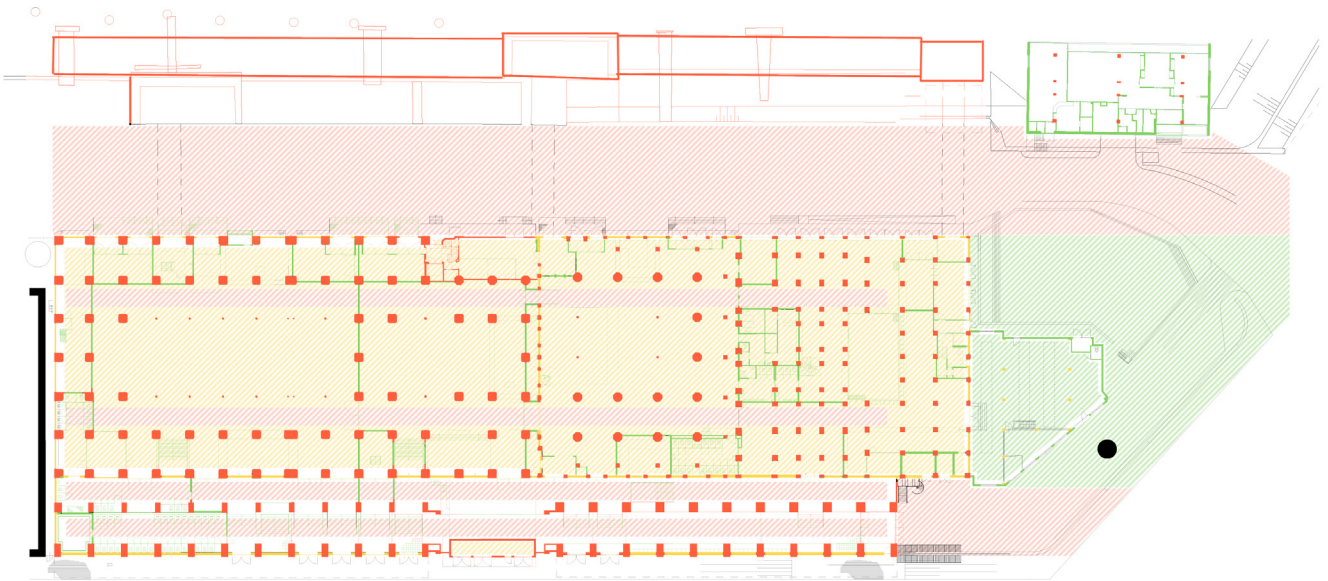
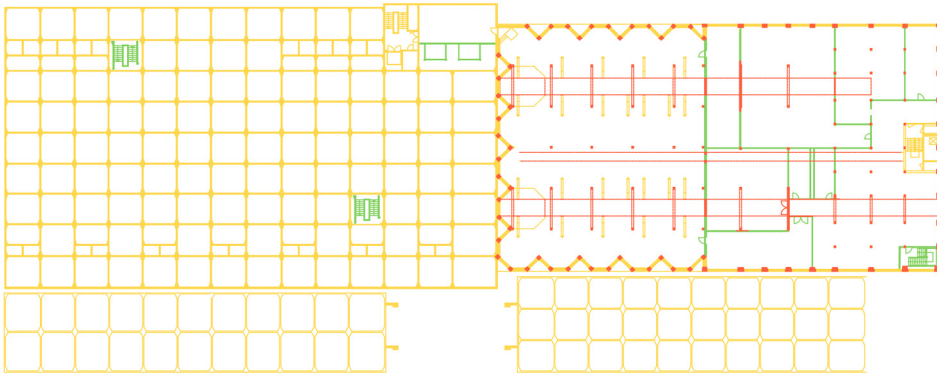
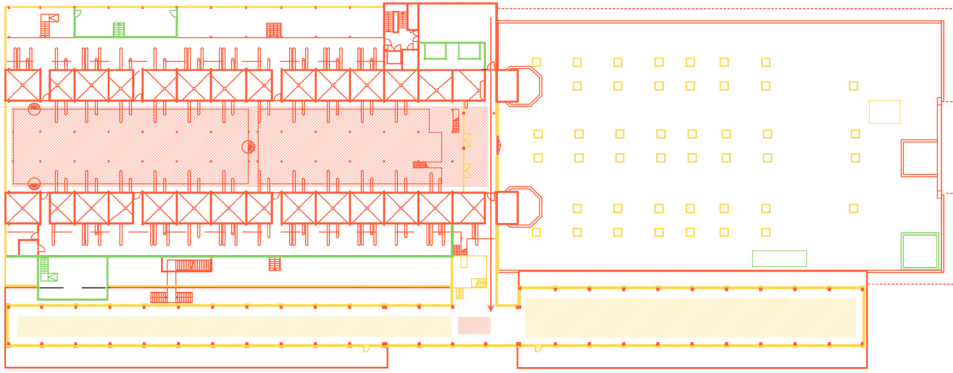
If the Quaker factory wasn't there this probably would have been the first location where the Maassilo would be extended.



B. Bronswijk, 2016



serc.nl, ca. 1931



● high value ● medium value ● low value

STRUCTURE

Structure - Artistic

The structure of the Maassilo is visible everywhere. It is the core of the expression of the building. The structure is the most valuable element of the building.

Silos

The Maassilo can be perceived as two separate buildings. On one hand there is the ground floor and on the other hand there is the distribution attic. When inside one of those spaces you do not experience the silos in between. The only location where you can see the internal structure of the silos is in the north façade of the part of Stok.

The big hexagonal silos of Stok are the largest silos in the Maassilo, and in my opinion the most beautiful. Even though the silos have a hexagonal shape for purely structural reasons, the shape of these silos (and the funnels underneath) are the most ornamental.

We understand the structure of the silos has a value, however the structure can't be perceived right now. There should be a connection between the silos and the adjacent spaces. The spaces inside the silos are currently hard to use. When intervening in the uniform structure of the silos, the original rhythm of structure, should remain visible.



MACHINERY

What to do with the transport system?

Story - historical

The Maassilo is built around the transport system from a very practical point of view. The logistics of this system explains why the building is shaped like it is.

Services- Age

Elements of the transport system, like the conveyor belts, funnels, grain elevators or tubes have definitely value as they contribute to the industrial character of the building. These elements can only be altered or removed after careful consideration.

Services - Commemorative and Services - Use

The same goes for the portable machines, like the automatic scales, which are spread all over the complex. Those machines were part of the process of grain storage and have a historic value as well.

In some part of the building there is an abundance of machinery. In my opinion it is not necessary to preserve all machinery. For instance, only a small part of the conveyor system in the attic of Postma has been preserved. However, this small part explains how the original system functioned and what the removed parts would have looked liked.



B. Bronswijk, 2016

Remaining part conveyor belt attic Postma



B. Bronswijk, 2016

Tubes into silo attic Brinkman



A. Belulaj, 2016

Portable machinery (automatic scale) ground floor stok



B. Bronswijk, 2016

Tubes ground floor stok, presumably for the former oil silos



A. Belulaj, 2016

Control panel attic brinkman



B. Bronswijk, 2016

Grain elevator on top op roof



B. Bronswijk, 2016

Air pumps Brinkman basement



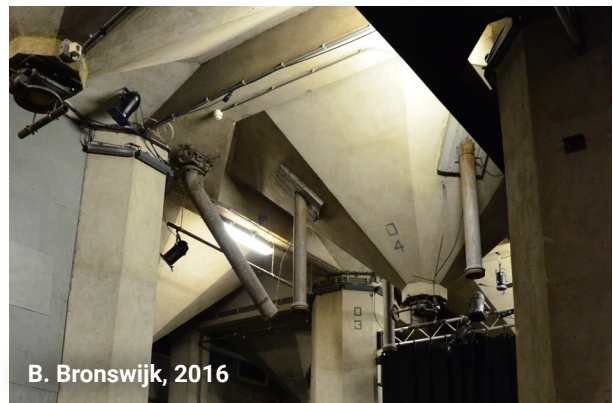
B. Bronswijk, 2016

Tubes distribution system attic Stok



A. Belulaj, 2016

Electric boxes attic elevator tower brinkman



B. Bronswijk, 2016

Funnels Stok



B. Bronswijk, 2016

Top part elevator installations attic tower brinkman



B. Bronswijk, 2016

Remaining part conveyor belt attic Brinkman

REDEVELOPMENT INTERIOR

We already touched upon some redeveloped elements. Besides the changes in the facade there have been some changes in the interior as well. Most of the floors have been reinforced and new interior walls have been constructed. The interventions made during the redevelopment of the Night Club compromise the original vivid character of the Maassilo and turned it into a very introvert building.

Skin - Conflict

To prevent noise disturbance of the night club the decorative raster of Postma has been covered with steel plates. In the part of Brinkman and van de Vlucht air locks have been placed and the steel window frames have been replaced by masonry covered with concrete plaster. The small windows above the doors in the Stok part have been covered as well. These interventions disconnected the inside from the outside and should be restored to their original state if possible.

Space plan - conflict

The continuous open space of the ground floor has been compartmentalized. This compromises the generous character of the building and makes the spaces feel smaller.

In the distribution attic of Stok, walls have been added as well. The compartments divide the attic in roughly the same compartments as the underlying silos. The structure of the conveyor belts, which cover the total length of the attic, are very characteristic and enhance the readability of the total space. These structures connect the different spaces in the attic and are essential for the experience of attic as one space. Because of this connecting structure the compartmentalization of the Stok attic is in my opinion less disturbing than on the ground floor.

In the attic of Brinkman and van de Vlucht the horizontal conveyor belts which covered the total length of the building have been replaced by air handling units. The conveyor belts were located on top on the highest silos of the attic. Walls have been constructed on both sides of these former conveyor belts. The new walls totally block the incoming natural light. They also compromise the readability of the shape of the silos below the attic.

In the attic of Postma, walls have been placed as well. These walls are less intrusive and don't block the readability of the space. However, they are not original and have no value.

Structural - Newness

We can't change the fact that some of the columns have been replaced during the redevelopment. We have to deal with the structural consequences and the fact that the original uniform character has been destroyed. Removing some of the columns doesn't compromise the industrial character of the building. It breaches the uniform structure and introduces sight lines towards a central space. The cut in the concrete column shows the beautiful texture of the raw concrete. The steel column and the detail of the connection fits the character of the Maassilo well. Some of the connections have been covered using plywood. This should be removed in my opinion.

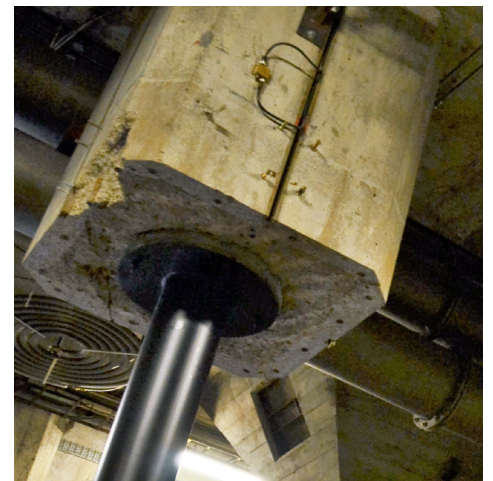


B. Bronswijk, 2016

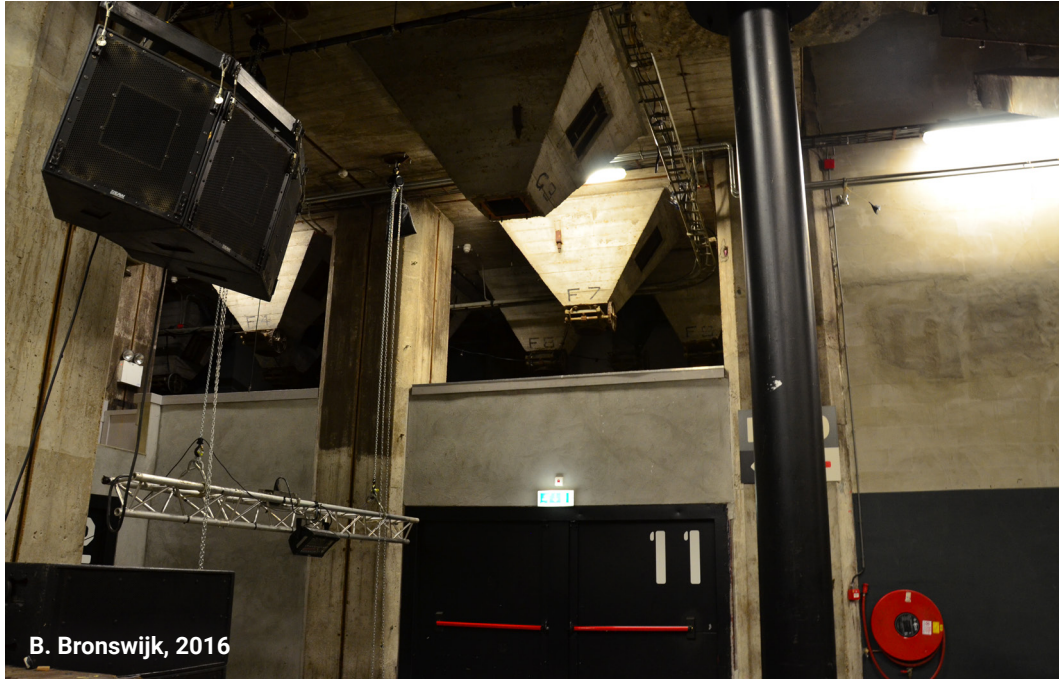
Covered windows in Stok ground floor



Connection covered with plywood



Connection steel column



B. Bronswijk, 2016

Air locks in Brinkman part



B. Bronswijk, 2016

New entrance nightclub and new concrete facade



B. Bronswijk, 2016

Conflict wall and funnel

Age

Historical

Artistic

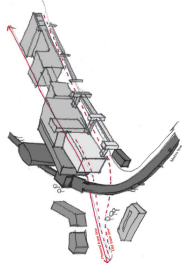
Commemorative

Use

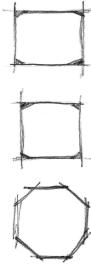
Newness

Conflict

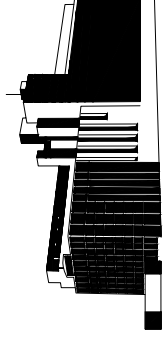
Site



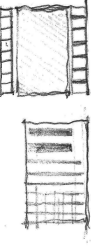
Development of complex on site



Development sizes silo



Rhythm and organization of facade

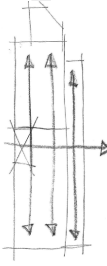


Approaches for facades



Degradations of concrete

Space plan



Axis according to transport system



Relics of former machinery

Services



Rhythm of columns



Rhythm of tubes

Stuff

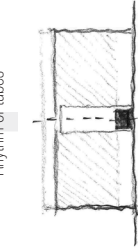


Relics of former machinery

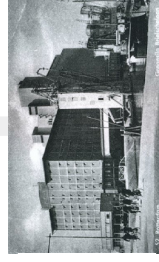
Story



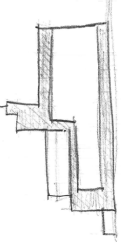
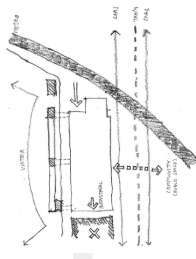
Scale of grain storage to empty building



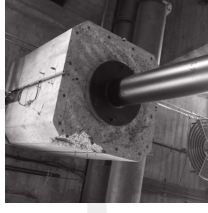
Adjustment to site



Once upon a time



Used parts of structure



New facade elevator tower



Closed facade



Compartmentalized



Funnel cut by wall

Use of former silo



Stuff on the ceiling



From industry to night club and offices

Age

The oldness of the material

Historical

Story of development

Artistic

Architectural expression

Commemorative

Memory of people

Use

How it was/is used

Newness

Elements of redevelopment

Conflict

Conflicts in previous subjects

Site

The site surrounding the building

Not all traces from the former Maassilo have been preserved. Their tracks for instance rarely appeared. The different buildings like the Postimaworkplace or the Grain elevator tell each apart of the story of the development of the Maassilo.

The scale and construction methods of the silos. The first silos had very thick layers, and the largest silos of the Stok building needed a hexagonal shaft to evenly distribute the weight to the grain. The later silos have a more practical quarter shape with thin walls, which was possible due to the technical advances of reinforced concrete.

The approach on the architectural expression of the facade changed over time. In the first silo building there is a clarity of form in the facade. In the second building there is only the vertical division visible in the facade.

The axis and sightlines show the original position of the transport system.

The site of the Maassilo has not a lot of available space. The site is surrounded by borders of infrastructure.

Removing some of the columns breaches the uniform structure and introduces a lightness towards a central space. The cut in the concrete column shows the beautiful texture of the raw concrete. The steel column and the detail of the connection fits the industrial character well.

The construction only allows the use of the ground floor and the attic of the building.

The top floor and the ground floor were the people's spaces. These spaces were originally well lit by the incoming natural light. The space in between was for the grain and was very closed.

The big open spaces are enormous and fit the scale of the Maassilo very well. The large open spaces are very unique and should be exploited in the new design.

Many of the large spaces, especially on the ground floor, have been compartmentalized. This compromises the unique large scale of the spaces.

Services

Installations fixed to the building

The original machinery of the Maassilo like the conveyor shafts are oldness. The metal frames are rusty. These explain how the original building worked as a machine.

Stuff

Stuff that can easily be moved around

See age-services

The building tells a narrative on how it developed. It increased in size up till the building stopped functioning as grain storage and became a largely vacant.

Story

The overall story of the building

The Maassilo and the grain elevator has been a central mountain in the centre of the surrounding neighborhood since the start. It is a memory of the industrial activity in the Maassihaven.

The construction creates a nice rhythm in the facade. Besides that there is a vertical division in the facade as well. This vertical separation is the only architectural expression in the facade. These are very characteristic for the building.

The rhythm of the larger number of columns are very unique and fit the scale of the building quite well.

Rhythm of tubes.

The tubes explain how the original building worked and have a nice rhythm.

The expression of the facade of the Postimabuilding tells a story of its own. The Postimabuilding clearly responds to the context of that time and the building was built around the existing transformer building.

The Maassilo played a large part in the history of the development of the industrial harbor of Rotterdam. The building forms the remnant of the industry of the Maassihaven.

The stuff attached to the ceiling like the disco balls and the construction for lighting and the sound system of the night club compromises the height of the ceiling and makes the spaces feel small.

This is where my view differs from the group work. In my opinion the night club hasn't been a good chapter in the story of the Maassilo. The redevelopment destroys some of the beautiful characteristics and if the traces of the night club should be removed, the view would be improved.

CONCLUSION

What are the opportunities for transformation?

The main question of this chapter was: Which elements form the character of the Maassilo and are essential to preserve character of this monumental industrial building?

Concluding this chapter there are the following guidelines for the transformation of the Maassilo:

- The different building periods and the three main parts should remain visible
- Industrial character should be preserved
- The original function as grain storage should remain visible.
- The historical transport system should be able to be traced

The different parts of the represent the story of development of the Maassilo. These have a big cultural historical value. The original function as grain storage and the transport system should remain visible.

The industrial character of the Maassilo is formed by the scale of the building, the imperfections and oldness of the material and the suggestion of randomness in the structure. The structure of the Maassilo is visible everywhere. The rhythm of the structure is the core of the expression of the building. The structure is the most valuable element of the building.

The scale of the Maassilo is very unique. The scale of the building should be preserved or enhanced. The new program should be designed with generous amounts of space.

The interventions made during the redevelopment of the Maassilo into the nightclub compromise the original character of the building. The spaces which were designed for people and which had lots of incoming natural light, are now disconnected from their context and very dark. The unique scale of the spaces has been compromised.

Not all interventions of the redevelopment are bad. Removing the corrugated sheet of metal from the grain elevators on the quay revealed the beautiful steel structure. The new glass facades enhanced the connection between the inside and outside.

In some parts of the ensemble the transport system has been removed. For instance, most part of the machinery in the grain elevators have been stripped. In other parts there is an abundance of machinery. The machinery which is still there should be dealt with carefully. Not all machinery needs to be preserved. Sometimes only a small parts of the system is enough to explain how the rest of the system worked.

Remarks

The values we have today could not apply to the future generations. We have to be careful removing things. Once an element has been removed it won't come back. Conservation of the building should be the main goal.

Finally there are some questions about intangible values which need to be answered.

In the Maassilo you experience a clear separation of the ground floor and the attic. Is this separation something to be valued?

As mentioned many times before the building has become very introvert after the redevelopment. The Maassilo transformed into a maze where it is hard to orientate and where people get lost. This introvert character was valued as negative, however it gave the building also something mysterious. Could this character be used in the new function of the Maassilo?



Position Paper

Commemorative value of industrial heritage as methodology of positioning redevelopment

Remove or preserve machinery in the Maassilo Rotterdam

Commemorative value of industrial heritage as methodology of taking a position in redevelopment

Remove or preserve machinery in the Maassilo Rotterdam

INTRODUCTION

With the current rising awareness of sustainability and the new appreciation of industrial heritage, former warehouses, power stations or silo buildings get redeveloped. Stewart Brand distinguishes different layers in a building¹. The structure is the essence of the building which lasts 30 up to 300 years. The layer of services, like air conditioning and plumbing, however, has a much smaller lifespan. In many modern buildings these services have been hidden inside the walls. In this case one wonders, if the services an essential part of the architecture of the building.

In the case of industrial heritage, this is different. The machinery and the former production processes form a central element of these buildings. The industrial building derives its character, organization and shape from its former production process. As a result of this, a lot of space is sacrificed for the machinery and there is not a lot of space for people. Hence, the demolishing of the systems when these buildings are being transformed. This paper discusses the value of the machinery in industrial heritage.

RELATION ORIGINAL BUILDING AND NEW PROGRAM

Industrial heritage are currently beloved pieces of architecture. Most of the time new programs entirely unrelated to the former history are located in these old building. Often there is a disconnection between the new function and the history of the building. The industrial buildings form the theatrical scenery for the new program as in a theatre or a theme park. The term Disneyfication² comes to mind. As Alan Bryman wrote in his book *The Disneyization of Society* about theming.

“Theming - Clothing institutions or object in a narrative that is largely unrelated to the institution or object which it is applied.”³

The negative value of Disneyfication begs the question if a relation between the existing building and the new program of the building is necessary.

Nevertheless, examples of this disconnection are not received negatively. For example: the former Stork engine factory in Hengelo has been transformed into a school. The gigantic cathedral-like hall gave the complex immediately an identity.⁴ This new program didn't have a relation with the former building either. However, the building is very well appreciated. Why do we love these objects so much, despite this missing relation? What are the values we assign to these buildings?



Fig. 1 – Main Hall ROC Twente, W. Borre

¹ Stewart Brand, *How buildings learn: what happens after they're built* (New York: Viking, 1994).

² Alan Bryman, like to use the term Disneyization. Because the term Disneyfication could also refer to the other definition of Disneyfication which means the transformation of products into something superficial and simplistic to fit to the theme of the Disney company.

³ Alan Bryman, *The Disneyization of society* (London: SAGE Publications, 2004): 2.

⁴ "Uzergjeterij Stork in Hengelo," accessed December 22, 2016, <http://www.kennisbankherbestemming.nu/projecten/uzergjeterij-stork-in-hengelo>.

COMMEMORATIVE VALUES

In his work 'The modern cult of monuments', Alois Riegl (1858 - 1905) defines two categories of values; commemorative values (age-value, historical-value, deliberate commemorative-value) and present-day-values (use-value and newness-value). In this paper I will discuss the different commemorative values. Riegl states the following: "Age-value is revealed in imperfection, a lack of completeness, a tendency to dissolve shape and colour, characteristics that are incomplete contrast with those of modern, i.e., newly created works."⁵ According to this approach the building should be preserved in its current appearance.

Opposed to the Age-value there is the historical value. This historical value is derived from the fact that everything from the past is a result of unique circumstances which cannot be reproduced. Making the result irreplaceable. "The historical value of a monument is based on the very specific yet individual stage the monument represents in the development of human creation in a particular field... A monument's historical value increases the more it remains uncorrupted and reveals its original state of creation..." (p. 75). The historical value is thus concerned with preserving the most genuine version of the object for future restoration and historical research. It is about the authenticity of the monument. This is where a monument distinguishes itself from a theme park.

Riegl describes these values as the extreme opponents of each other, excluding one another. The historical approach is based on the clear recognition of the original form, the removal of all the subsequent additions and restoration of the building in its original state. As where the age value is about the natural degradation of the material of the building. We see, even though the age value and historical value are both commemorative values, they diverge on the issue of monument preservation.⁶

One can distinguish two types of monuments, the deliberate monuments (memorial column) versus the historical monuments which are unintentional. In case of the deliberate monuments the commemorative value is dictated to us by the former creator, while we define the value of unintentional monument ourselves⁷.

The third commemorative value Riegl describes is the deliberate commemorative value, which is supposedly only applies to deliberate monuments. "Whereas age value is based solely on decay, historical value seeks to stop the progression of future decay, even though its entire existence rests on the decay that has occurred to the present day. Deliberate commemorative value simply makes a claim for immortality, an eternal present, an unceasing state of becoming."⁸

In case of industrial heritage I think it is necessary, to place the values of Riegl in the current day context and refine these commemorative values a bit further. Deliberate monuments and industrial heritage have been developed in a different way. Therefore the values of Riegl should be approached in a different way as well. Riegl supposes that the commemorative historical value is about the integrity and the historical authenticity of the monument. However, what Riegl doesn't mention in his work is that the unintentional monuments could also be a representation of a historical event, a remnant of the past, even when all the historical traces have been removed. Industrial heritage as unintentional monuments are often appreciated for the era it represents without being fully intact. Therefore unintentional monuments could have a commemorative value as well. The main difference between the commemorative value and the historical value is that historical value is about the integrity of the building and the deliberate commemorative value is about what it represents.

⁵ Alois Riegl, "The modern cult of monuments: its essence and its development," *The Conservation of Cultural Heritage* (Los Angeles: Getty Conservation Institute, 1996): 73.

⁶ Alois Riegl, "The modern cult of monuments: its essence and its development," 75.

⁷ Alois Riegl, "The modern cult of monuments: its essence and its development," 71.

⁸ Alois Riegl, "The modern cult of monuments: its essence and its development," 77.

ORIGIN POSITIONING IN HERITAGE

The century old discussion of conservation and restoration can be lead back to John Ruskin (1819-1900) and Eugène Viollet le Duc (1814-1879). Conservation is preserving the current state as it is, whilst restoration is the act of bringing the building back to a certain point of time. Viollet le Duc saw restoration as a form of recovery of the past. He puts emphasis on the integrity of the original design and the scientific method of historical accuracy (historical-value)⁹.

Ruskin advocated caring and maintaining a building so as effectively avoid restoration. As a historian he was interested in the archaeological remains as a remnant of bygone culture. To repair these buildings was dishonest as it was always subject to once interpretation. More important the restoration of a building interrupted the natural life and evolution of its material (age-value).¹⁰ Just like Ruskin, William Morris (1834-1896) felt that the changes a building endured through time are part of the history of the building. To demolish these traces would remove the past of the building and therefore impoverish the present.¹¹

Camillo Boito (1836-1914) was the first to introduce restoration as a matter of taking a position. It was the responsibility of the architect to assess the different values and take a position in preserving them or not. He argued that a restoration project should respect and reveal all the historical layers involved, even those less successful and what was ever new should complement them. For Boito, the question of an architectural intervention in a preservation culture was not an either/or matter but a moderate acknowledgement of both sides. An interweaving of fabric that supported both the new and the old¹².

The previously mentioned approaches can be illustrated according to the following contemporary examples. In their redevelopment project of Sint Jobsveem, MEI architecten, used the existing characteristics of a building and embraced the imperfections of the buildings (age-value). They used what was there and gave the building a new purpose without a strong relation to the former function and its architecture. In other projects like the van Nelle factory, restored by restoration architect Wessel de Jonge, the building got restored to its original state. As if the building went back to the day of completion (historical value)¹³. One has to say that in this particular case this is not only a matter of personal taste but the approach differs from project to project. The van Nelle Factory had a much larger cultural historical impact in the architectural history than the warehouse Sint Jobsveem.

GENIUS LOCI – SPIRIT OF THE PLACE

The architectural aspects of a building defines the characteristics of their surroundings. Norberg-Schulz states that, every place is a space with an individual character. Since ancient times, the Genius Loci, or “spirit of the place”, is recognized as a concrete reality that man has to deal with. According to Nordberg-Schulze that norm still applies today. Furthermore taking the Genius Loci into account could be a cure for the unsettling feeling Modernistic architecture gives us.¹⁴

This is why, architects look for leads in the context to connect the building and its identity to its surrounding. Indeed, the practice of turning difficult constraints to advantage almost

⁹ Ellen Soroka, “Restauro in Venezia” Journal of Architectural Education, vol. 47, no. 4 (Taylor & Francis, 1994): 225.

¹⁰ Ellen Soroka, “Restauro in Venezia,” 226.

¹¹ Peter Davey, “What’s the point of the past,” *The Architectural Review* (1997), accessed January 1, 2017, <https://www.thefreelibrary.com/What%27s+the+point+of+the+past%3F-a019330776>.

¹² Ellen Soroka, “Restauro in Venezia,” 226.

¹³ Oscar Langerak, Rini Biermans & Wilmavanderwilt, “Hergebruik in architectuur,” accessed January 1, 2017, <https://youtu.be/151002-34MY>.

¹⁴ Roel Griffioen, “Genius loci – archipedia,” accessed January 1, 2017, <http://www.architectenweb.nl/aweb/archipedia/archipedia.asp?id=14400.t>

invariably produces more ingenious interventions than the tabula rasa¹⁵ approach to a redevelopment.¹⁶ Preserving as much of the original character of the original building honours the Genius Loci and maintains the identity of a place. This is partly related to the architectural aspects (I.E. rhythm, expression, transparency) of a building, but it relates to the degradation of the material (age-value) as well.

COMMEMORATIVE VALUES AND THEIR DEGREE OF CONSERVATION

Alois Riegl noticed that his different commemorative values are in a hopeless conflict.¹⁷ The values of Riegl guides us towards the different approaches of conservation or restoration. The age value is about the identity or character of the place (Genius Loci), which needs to be. This approach freezes the building in its current state, guiding to a conservative approach. The historical value is about the authenticity and the integrity of an object. Removing parts diminishes the history¹⁸. The historical value guides towards restoration. The commemorative value is about the memory of a place, about what it represents and the cultural historical value. This approach relies on the memory of people and is less conservative. This allows for a bigger tolerance of change.

The commemorative values are not as absolute as Riegl describes them. Just like Camillo Boito said, it is a question of a moderate acknowledgement of the different sides¹⁹. So, apparently it is possible to take a position between those values, deciding the degree of conservation towards a redevelopment project.

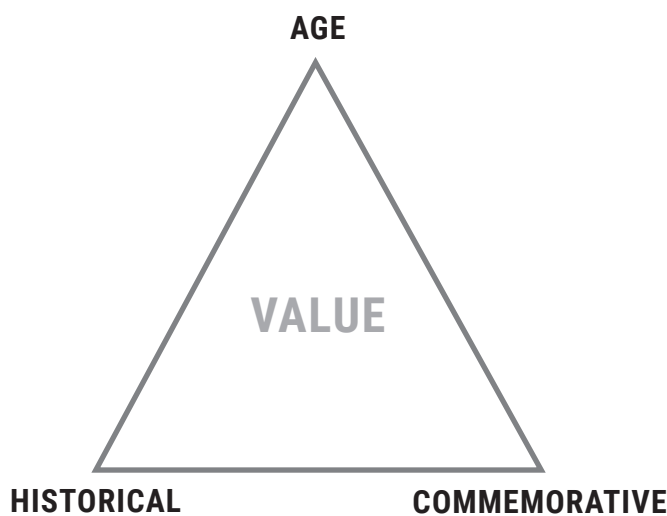


Fig.2–Positioning commemorative values, B. Bronswijk

¹⁵ Tabula Rasa: An opportunity to begin again with no record, history, or preconceived ideas

¹⁶ Martin K. Meade, "Architectural and urban heritage: dead weight or dynamic asset for future?" accessed January 1, 2017, <http://whc.unesco.org/archive/websites/valencia/us/conference/pgs.conf/conf.meade.htm>.

¹⁷ Alois Riegl, "The modern cult of monuments: its essence and its development," 81.

¹⁸ Peter Davey, "What's the point of the past?" *The Architectural Review* (1997), accessed January 1, 2017, <https://www.thefreelibrary.com/What's+the+point+of+the+past%3F-a019330776>.

¹⁹ Ellen Soroka, "Restauro in Venezia," 226.



Fig. 3 - Tate Modern art, M. Leith

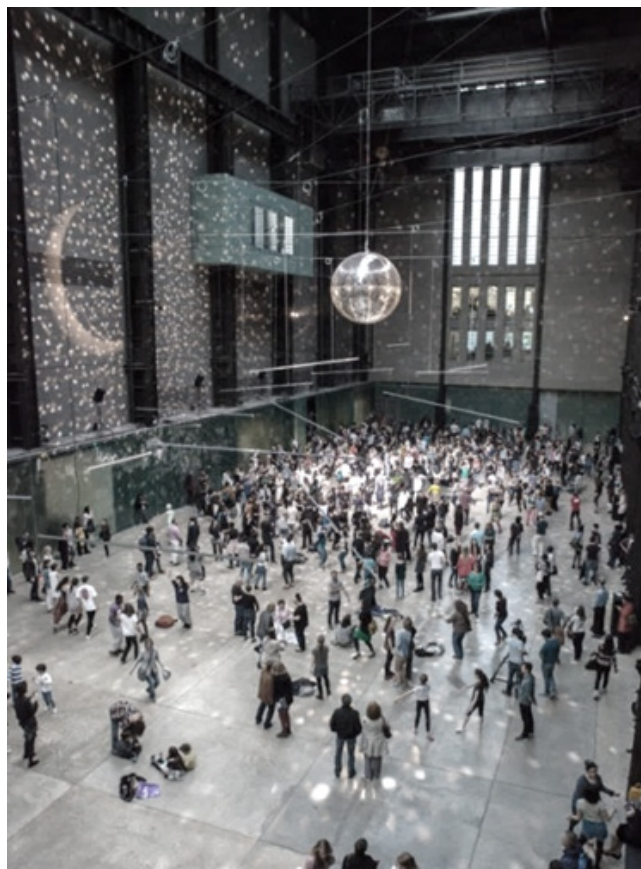


Fig. 4 - Tate modern art, L. Schiefer (2015)

CASE STUDIES

To conclude the previous discussed theory, redeveloping heritage is a matter of taking a position. The resulting position has consequences for the degree of conservation of the machinery. In the next three projects different approaches towards the existing machinery will be researched. This will show what opportunities the former machinery offers when the building is being redeveloped.

The following aspects will be discussed: did the function adapt to the building, or was the building adapted to the new program? What was the approach for preserving the machinery regarding the different commemorative values? How does the machinery and the character of the building contribute to the Genius Loci? Is there a relation to the former - and new function.

TATE MODERN ART

Tate Modern is a museum for modern art, located in a former power station in London. In this case the building was adjusted to fit the new purpose of a museum. There is no connection between the former function and the current function.

The architecture of the building was exploited for its unique scale of the former engines hall [Figure 4]. Unfortunately all of the beautiful original engines have been removed [Figure 3].

One could argue that building itself is mainly appreciated for its age value. The building itself is a remnant of the industrial era, but all the historical traces in the interior of the original function has been removed.

ZOLLVEREIN KOHLENWÄSCHE

The former coal mine Zeche Zollverein in Essen, an area of 100 hectares, was declared a World Heritage Site by UNESCO in 2001. There are a lot of mining museums in the Ruhr-Area of Germany. I.E. Zollern II/IV²⁰, the Zinkfabrik Altenberg²¹ and the German Mining Museum in Bochum²². The machinery is the centre of attention in these buildings. The machinery are presented as artefacts. The Kohlenwäsche, a former factory for sorting coal, has been transformed into a visitors centre and museum. The new program has been adapted to the existing building. Roughly 80 percent of the machinery, which dominated the building has been preserved [Figure 5].²³ The result is an industrial monument that combines modern use with historic context. Despite the changes that have been made, this impressive industrial monument is not just a container for the objects on display. In a sense, it forms part of the exhibition itself. This project has been approached from a historic value but also from a commemorative point of view.²⁴

LANDSCAPE PARK DUISBURG-NORD

Many of the industrial areas in the Ruhr-Area (Germany), have been transformed into landscape parks [Figure 7]. A beloved example is the landscape park Duisburg Nord. This project is appreciated both for its commemorative value and its age value. Most buildings have been adapted to a new function. For instance a former gas has been transformed into a diving tank.²⁵

²⁰ "Kathedrale der Industriekultur," accessed January 2, 2017, <http://www.lwi.org/industriemuseum/standorte/zeche-zollern/maschinenhalle>.

²¹ "Zinkfabrik Altenberg," accessed January 2, 2017, <http://www.industriemuseum.lvr.de/de/oberhausen/oberhausen.html>.

²² "Ruhrgebiet – Bochum," accessed January 2, 2017, <http://www.ruhr2010.nl/bochum.html>.

²³ "Ruhr Museum," accessed January 2, 2017, <http://www.detail-online.com/article/ruhr-museum-14210/>.

²⁴ "Zollverein Kohlenwäsche" accessed January 2, 2017, <http://oma.eu/projects/zollverein-kohlenwaesche>.

²⁵ "The fascination of the Landscape Park," accessed January 2, 2017, <http://en.landschaftspark.de/leisure-sport/>.



Fig. 5 – Zollverein Kohlenwäsche, T. Mayer



Fig. 6 – Zollverein Kohlenwäsche, T. Mayer



Fig. 7 Landscape park Duisburg Nord, LATZ+PARTNER



Fig. 10 – Maassilo Rotterdam, B. Bronswijk, 2016

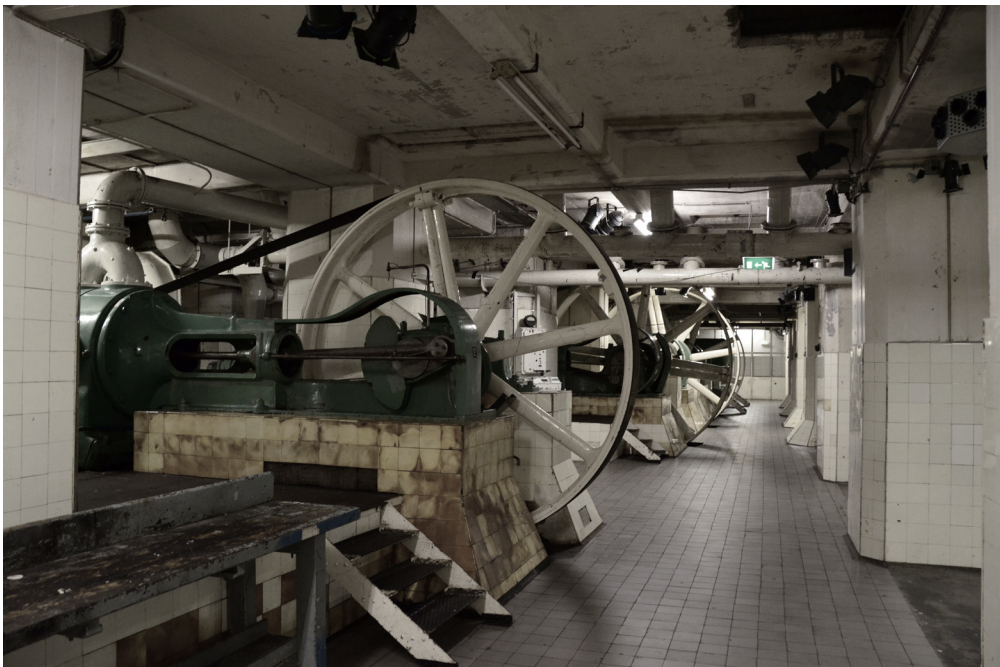


Fig. 9 – Air pumps in basement Maassilo Rotterdam, B. Bronswijk, 2016

MAASSILO, ROTTERDAM – PERSONAL POSITION

For my graduation project, the Maassilo in Rotterdam will be redeveloped. In this former grain storage there is still some machinery present in different shapes. There are the fixed services like the conveyor belts and tubes, but there are some portable automatic scales as well. All the machinery is visible and contributes to the architecture of the building [see figure 9].

We saw that redevelopment of heritage is a matter of taking position. The question right now is, do I value the Maassilo only because of the architectural aspects of the structure and other structural elements? Or are the machinery an essential part of the architecture of the building as well and does the machinery has to be preserved? In my opinion, yes.

I agree with William Morris. A rich history and its visible traces give the building its identity. The historical value introduces an authenticity in this project. The machinery is an important part explaining the buildings development and the way it worked. Removing these destroys part of the history of the building. However I think that people are capable of understanding the suggestion on how the former Maassilo would have work when only parts of the machinery are preserved. In this case it is more about the commemorative value of the building as a machine than the ability to trace the actual historical machinery.

Just like Ruskin I value the degraded appearance, and the identity the building provides (age value). The rusty machinery enhances this industrial character.

To conclude; commemorative value and especially the age value are the essential values for my project. This means the project leans towards development in a more conservative instead of a restorative approach on the redevelopment of the project.

I think the building tolerates a quite some change to be adjusted to the new function. However, the new function should be able to fit in a former industrial building. An old-fashioned conveyor-belt in the centre of a medical operating room wouldn't be very sanitary. But then again a medical centre or hospital in an old industrial building may be not the right choice.

I would like to apply the approach of the Landscape park Duisburg Nord to my future program. The machinery will be used enhance the industrial character of the building (age-value), using its historical authenticity. I have to look for a balance between preserving the existing machinery and creating space for the new program. I think this has been done very well in the Zollverein Ruhr Museum of OMA.



Fig. 10 – Tubes contribute to rhythm of the space, B. Bronswijk, 2016

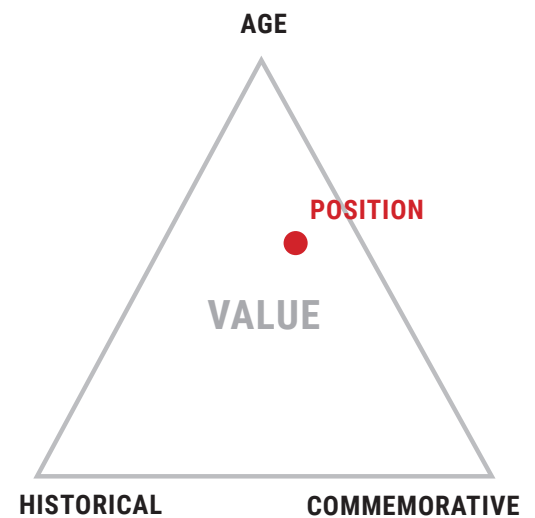


Fig. 11 - position, B. Bronswijk, 2016



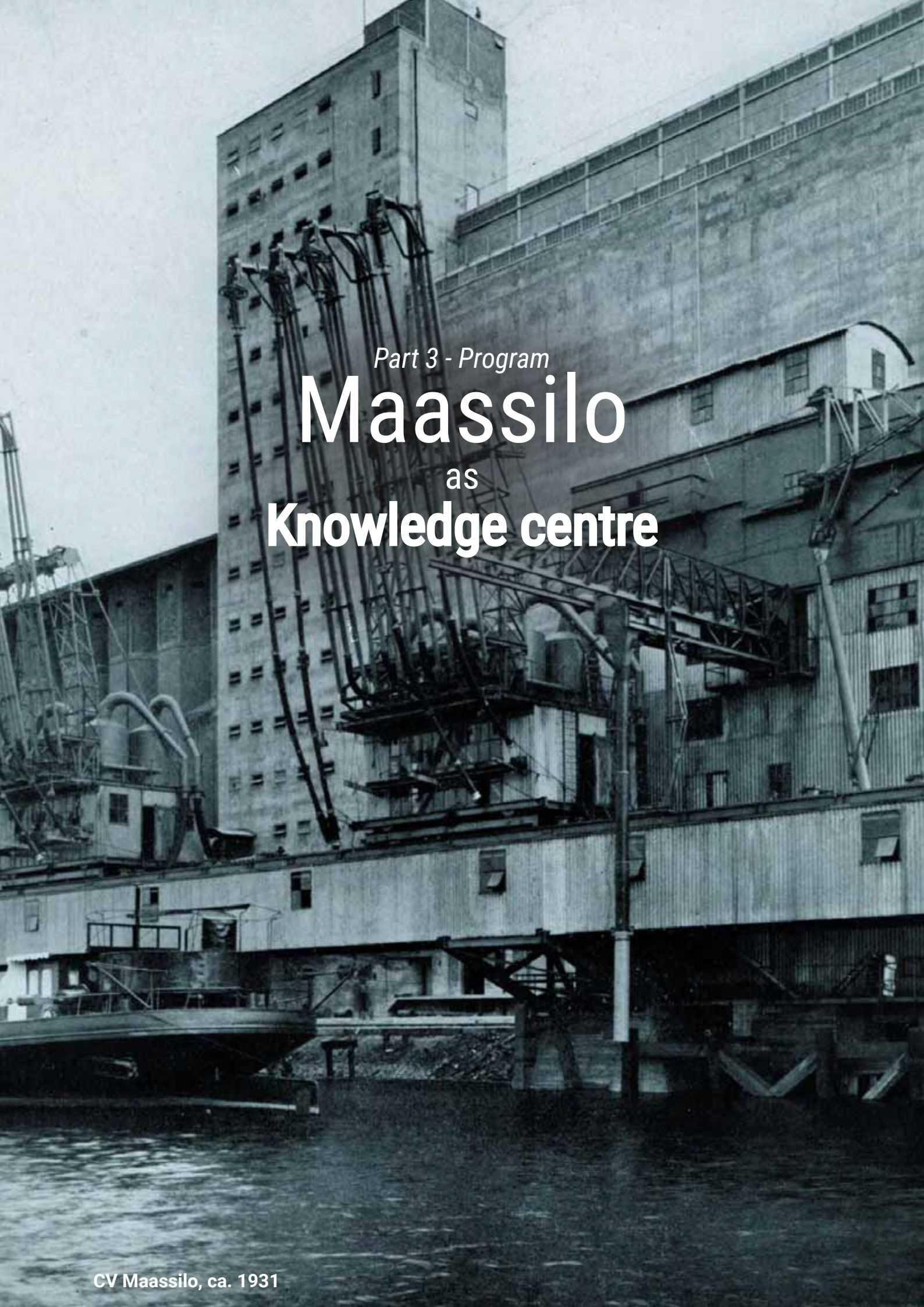
Fig. 12 - B. Bronswijk, 2016

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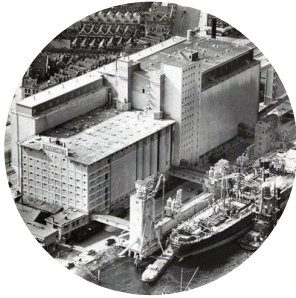


Part 3 - Program
Maassilo
as
Knowledge centre

STARTING POINT

Guidelines for transformation

As discussed before the analysis results in the following guidelines for transformation.



THREE BUILDING PERIODS
SHOULD REMAIN
VISIBLE



INDUSTRIAL CHARACTER
SHOULD BE PRESERVED



THE ORIGINAL FUNCTION AS
GRAIN STORAGE SHOULD
REMAIN VISIBLE



THE HISTORICAL TRANSPORT
SYSTEM SHOULD BE ABLE TO BE
TRACED

As discussed in the value assessment the following aspects are important to achieve the goals defined by the above guidelines. These aspects will play a important role in the design of the building.



UNIQUE SCALE



OLDNESS MATERIAL



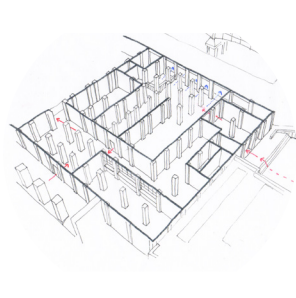
MACHINERY



RELATIONSHIP WATER



INTROVERT CHARACTER



STRUCTURE SILOS



RHYTHM FACADE

PROGRAM

Scale of future program

Because of its enormous scale, the Maassilo has the potential of becoming an internationally known landmark. It would fit well in list of famous Rotterdam buildings like the Markthal, the Rotterdam and the Rotterdam Central station.

The former Maassilo had impact on different scale levels. Ships came from over the whole world to the Maassilo to deliver their grain. The grain was then transported to the inland by train or riverboats. On the smaller scale, the building provided employment for the people of Rotterdam.

With the new program the building should influence different scale levels like the former Maassilo did as well. On the neighbourhood scale the building will form a catalyst for the redevelopment of the area. The industry on the south quay of the Maashaven will move to away and this side of the Maashaven be redeveloped just like the current developments in Katendrecht. The adjacent neighbourhoods Bloemhof en Tarwewijk are the most unsafe neighbourhoods of Rotterdam according to the Security Index of 2010 (Bart Zuidervaart, Trouw, 2012). The city is working hard to improve these neighbourhoods. Those neighbourhoods could profit from the positive impulse of the area.

On the city scale the building should provide functions for leisure. Maassilo should be the reason to take the Metro to Rotterdam Zuid. On a national (and to some extend) international level the Maassilo should function as an interesting example of re-use of large scale industrial projects (Just like Tate Modern Art London). People should want to visit the building because this.

Laat niemand dit nog het getto noemen

BART ZUIDERVAART – 08/03/12, 00:00

Tarwewijk krabbelt op en is niet meer de slechtste wijk van Rotterdam

DOS

BART ZUIDERVAART, Trouw - 08/03/12 <http://www.trouw.nl/tr/nl/5009/Archief/article/detail/3222070/2012/03/08/Laat-niemand-dit-nog-het-getto-noemen.dhtml>, accessed at November 21, 2016



Social trends and social purpose program

The new program should meet the current trend of decentralizing services and the movement of bottom-up initiatives. There is an increase in Freelancers, who can work anywhere. They move from the offices to public accessible places like Starbucks.

With the Maassilo I want to provide a platform for this trend and offer a place for social gathering. The new function should provide a platform for start-ups and smaller companies. The Maassilo should form a place for social gathering. This social platform contains functions like public workplaces, workshop rooms, educational functions (tutoring), study places, access to multimedia, auditorium and conference rooms.



Important is to create a durable program which still is valid when this trend of decentralization gets out of fashion. How flexible is the program and for what period of time will it exist? A platform just for start ups is probably not enough to give a positive impuls for the area. This social platform needs a central program, a public function which would combine all the different function into a coherent whole. I think that a library would fit well in this context. It forms a public function which allows visitors to enter the building and experience the Maassilo.

Right now the municipality of Rotterdam is replacing old houses with more expensive houses in deprived neighborhoods. A library has a strong social connection to the community. Instead of forcing many people to move. A library gives a positive impuls to the neighborhood by providing an inspiring place where information and ideas can be exchanged.

In this project the functions of the traditional library will be extended and the program will serve a social and cultural purpose as well. I want to redevelop the Maassilo into a place for social gathering, a knowledge centre.

A library is actually a quite old-fashioned program. With current access to the world wide web and digital multimedia, physical books become less and less important. The area with actual books in modern libraries becomes smaller and smaller.

Different functions attract people on different scale levels. The daily functions attract people from the surrounding area. For things like expositions, interesting presentations or conferences people from a larger range will visit the Maassilo

I like the definition of a modern library of Helene Blowers:

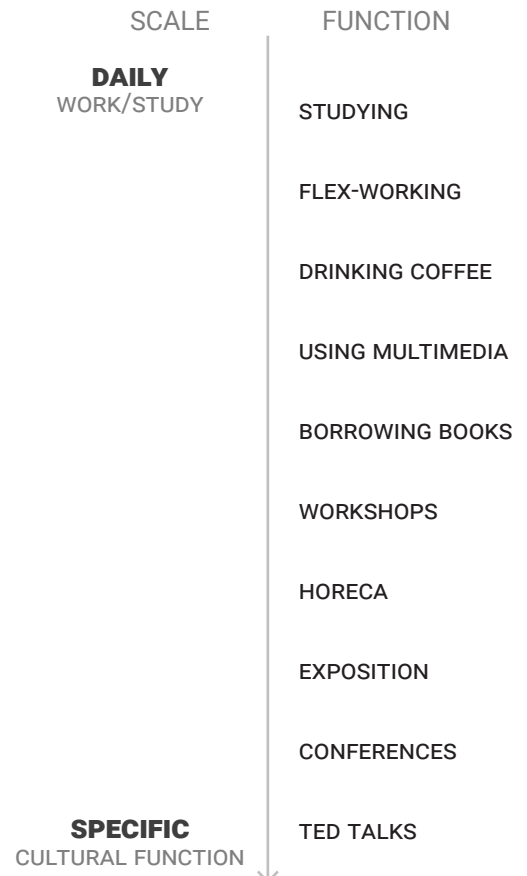
“Modern library services promote knowledge creation rather than knowledge consumption. Unlike the library services of the past that focused on distributing books and research materials and a one-sided provision of information and resources, the modern library creates a space where people engage with information—process it, reflect on it, have conversations about it, and develop new ideas, conversations, and opportunities as a result of it. “

Achterstandswijken maar weinig gebaat bij ‘hippe’ start-ups

Initiatieven om achterstandswijken met de import van hippe creatievelingen op te leuken zijn goed bedoeld, maar halen economisch weinig uit voor wijkbewoners. Dat is een belangrijke conclusie van het proefschrift van Jeannette Nijkamp.

December 9, 2016 M. Nieuwenhuijsen, accessed at Dec 10 '16
<http://www.elsevier.nl/economie/achtergrond/2016/12/achterstandswijken-maar-weinig-gebaat-bij-hippe-start-ups-414117/>

MAASSILO



DEVELOPMENT OF THE LIBRARY

2500 BC

Elba Library
Oldest library yet discovered



CLAY TABLET
Oldest dating 2600 BC

700 BC

LIBRARY OF ASHURBANIPAL
Largest significant library of ancient world. Mesopotamian era. Contained 30 000 Clay tablets

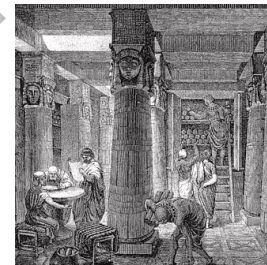


LIBRARY OF PERGAMUM 300 BC
Because the library of alexandria had a monopoly on the use of papyrus. Parchment rolls were used

300 BC



PAPYRUS/PARCHMENT SCROLLS



LIBRARY OF ALEXANDRIA
part of Museaum which contained lecture halls, meeting rooms, gardens

135 BC



LIBRARY OF CELCUS 135 BC
part of Museaum which contained lecture halls, meeting rooms, gardens

100



Introduction codex
Codex replaces scrolls, for easierr re-reading and searching. Providing radom access instead of sequensial access of the scroll

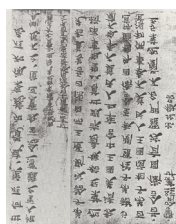
500

Handwritten books
100 First mentioned
300 Achieved numerical parity with the scroll
600 completely replaced scroll



Books chained to shelves
In the Early Middle Ages books were usually chained to the shelves, reflecting the fact that manuscripts were valuable possessions.

800



Paper
25 - 200 First paper made from china
800 Introduced to Islamic world
1100 To Medieval Europe were is was refined

Stall system

Fixed bookcases perpendicular to the walls and therefore to the windows in order to maximize lighting was characteristic of English institutional libraries. The rooms were sun-lit because candles were a source of fire.



Wall system

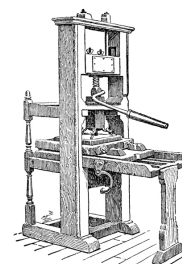
In European libraries, bookcases were arranged parallel to and against the walls. Which was first introduced on large scale in Spain's El Escorial (1563).

1212

Knowledge was made publicly available
The council of Paris condemned those monasteries that still forbade loaning books

1440

Invention of printing press
Originally developed in China but improved by Johannes Gutenberg. The invention of the printing press meant that books became easier to handle and more widely available, leading to the more familiar format of shelving stacks we know today.

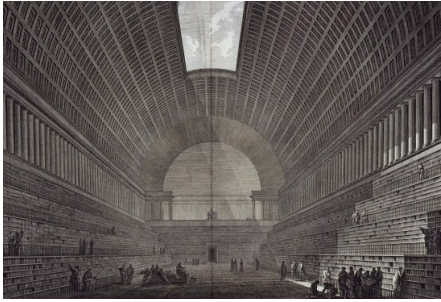




1571

Biblioteca Medicea Laurenziana

Built to emphasize that the Medici family were no longer mere merchants but members of intelligent and ecclesiastical society



1785

Bibliothèque du Roi (Boullée)

Enlightenment of the people through accessible knowledge



1868

Reading Room Bibliothèque Nationale

By Labrouste



1941

Publication Library of Babel

Written by Jorge Luis Borges. A story about the conceiving of a universe in the form of an endless library containing all possible 410-page books. The library consists of an infinite number of adjacent hexagonal rooms.

1732

1700 - 1800 centuries

Extensive libraries became a symbol of status for wealthy people. The design of the rooms that housed these collections changed to reflect this, with outlandish baroque designs.



Trinity College Library

The 65-metre-long (213 ft) main chamber of the Old Library, the Long Room, was built between 1712 and 1732 and houses 200,000 of the Library's oldest books.

1838



Bibliothèque St. Genevieve

Labrouste, A temple of knowledge and space for contemplation. Libraries become more public.

1874

Public library of Cincinnati

Originally intended to be an opera. Was unfortunately demolished in 1955



1928

1928 Stockholm Public Library

Sweden's first public library to apply the principle of open shelves where visitors could access books without the need to ask library staff for assistance



1931



Viipury Library

By Alvar Aalto. More than just books. A conferenceroom is added. Special attention paid to acoustics, lighting. Optimized for used. Began testing his ideas on natural lighting. These skylights also became an enduring ideal of other libraries.



1963

Beinecke Library Yale University

By Gordon Bunshaft, first free-standing book tower within a separate larger enclosure. Designed for the preservation of the documents within it. Challenge was to create pleasantly habitable space while limiting the amount of light that affects the stored volumes.



1971

Exeter Library

By Louis Kahn. "A place where the librarian can layout the books to seduce the reader" "Reading spaces should be near the "books and also to natural light"



1973

Roberts Library Toronto

A late brutalist building. The dark interiors reportedly make it an unpopular reading space among students, and its popular reputation as "ugly" is insufficiently offset by its value as an architectural artifact to earn it the respect it deserves.



1972

Huntington Beach Main Library by Richard & Dion Neutra

By Neutra, Brutalist building. Columns are part of the bookshelves to maximize flexibility. Central tower with floating platforms around it.



80'S

Computer

The development forms a new medium competing with the book.



1994

Gallica

The online collection of de Bibliothèque nationale de France. From 1997 publicly accessible from the web.

1991

WorldWideWeb

From August 6 1991 accessible for the public.

Bibliothèque Nationale de France
One of the largest and most modern libraries in the world. Using the most modern data transfer technologies, which could be consulted from a distance, and which would collaborate with other European libraries

1997

1995



Amazon starts selling books online



1999

The Royal Library, Copenhagen

Integration of other public facilities as 2 concert halls a book shop, exhibition space and 2 museums.

1998

First Commercial E-reader

2000

Smart phones

Since 2000 development of the smart phone.

2004



Start of Google books

Cottbus Technical University Library - IKZM
Sequence of individual spaces with their own specific characteristics.



Seattle Public Library

By OMA, Reaction on the conventional library, with generic floors. Applies flexibility within its own compartments. Effect of Library of Neuta applied in larger scale. The bookcases form a spiral to being able to expand. Only 32% of the program was reserved for books.

2010



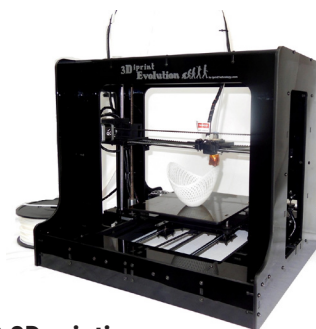
Philological Library, Berlin

By Norman Foster. The bookstacks are located at the centre of each floor, with reading desks arranged around the perimeter. The serpentine profile of the floors creates a pattern in which each floor swells or recedes with respect to the one above or below it, generating a sequence of generous, light-filled spaces in which to work.

Musashino Art University Museum

The library proposes a new relation between the user and the books, surrounded and sheltered by them. An infinite forest of books is created from the layering of 9m high walls, punctuated by large apertures.

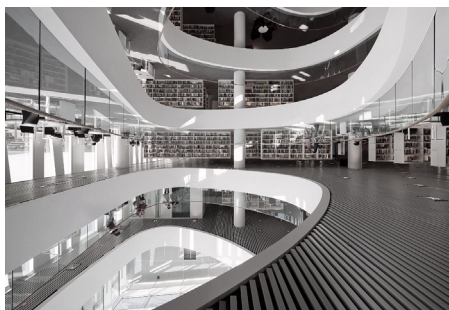
2010



2010 3D printing

Since 2010 3D printing has become available for the public. Some libraries have started developing 'MakerSpaces' with 3D printing equipment.

2011



Sir Duncan Rice Library

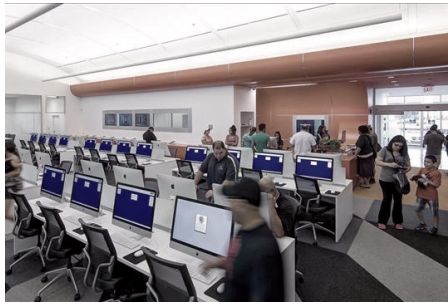
The University of Aberdeen New Library functions as a meeting place and a cultural centre for the students of the University as well as the Aberdeen community. The students come to study in the new library and to be a part of the social community of the University. Sustainability was a important part in this design.

2013



Hunt Library

The library uses 'Bookbots' to automatically retrieve books from a storage, reducing the needed space for conventional shelving with more than 88%. Allowing more space for collaborative learning environments.



Bexar County's Digital Library

BiblioTech is the first and only bookless, all-digital public library in the United States. It loans e-readers with a maximum of five books.

2013

2013



New York Public Library

The design of Foster, is a response to the cultural shift from traditional stacks to online resources, as the library has experienced a 41% decrease in the use of collections over the last 15 years. The design has been rejected in 2014 by the board of the library. Norman Foster's controversial plans forms the center of the discussion about the future libraries.



Urban Mediaspace

By SHL architects, designed as a big covered public space, which offers the flexibility needed for the new generation of libraries. The program is 30 000 m² and contains a theatre, library, media, offices, restaurants and parking spaces.

2014

2014



2014 Luxemburg National Library

The central room is designed as oasis-like garden for leisurely reading and casual meetings. The Skylights remind us of the Library of Aalto.

PRESENT

HULU for magazines

Hulu is an American subscription video on demand. The magazine industry is finally ready to announce that it is forming a joint venture to distribute and sell digital versions of its products.



2018 Calgary Library

Planned for a vibrant intersection, built on top of a metro line. The new library aims to fulfill the city's vision for a advanced public space for innovation, research and collaboration. Engaging public programs are organized at the ground and lower-levels, while quieter study areas occupy the library's uppermost floors.

2018

2018



2018 Hebei University Library

To improve the quality of the reading spaces along the facade, we created many "Loft" spaces where the ceiling was set back from the facade to generate double/triple height space. This not only adds more natural light for the reading area, but also moves the stacks further away from the natural light which is desirable considering the damaging effect of direct sunlight on books.

LIBRARY OF THE FUTURE

Due to technical innovations as well as changing cultural attitudes libraries have changed from the tablet storehouses of ancient Mesopotamia to today's multi-functional media centres. From the silent sanctuary of books of Exeter to the new public urban spaces like Urban Mediaspace.

Libraries are facing a challenge from the world of digital media, and many physical library buildings are seeing their usage decline. This has led to a shift in the functional purpose of new libraries. Many are incorporating extra functions as cafes, art galleries and theatres in an attempt to get the public to reconnect with the library's civic purpose.

Apparently there is also a lack of confidence in the word *library* resulting in names of projects such as Brandenburg University of Technology's *Information, Communications and Media Centre*.¹

Debate

There is currently an interesting debate going on about the future library which can be illustrated by the project of the New York Public Library. Norman Foster's redesign of the building has caused many controversies. The New York library has experienced a 41% decrease in the use of collections over the last 15 years. The design of Foster is a response to the cultural shift from traditional stacks to online resources. It proposes to transform seven floors of stacks, into an aesthetically, technologically and environmentally advanced public space that meets the needs of our 21st century society. The shelves of books will be moved to other locations of the New York Library.

According to Scott Sherman, the plan of Foster robs the library of its primary purpose: making resources readily accessible. Removing the books would turn the library into a glorified internet café.² A research library is devoted to the acquisition, maintenance and availability of collections of amazing range, rarity and depth, much of which will not be consulted for decades, have not been digitized and probably never will be.³

Francine Houben of Mecannoo, who has designed many libraries, dismisses the suggestion that digital technologies will see the end of libraries, explaining that the university library in Delft is still the most popular place of the campus. "We were always prepared that there would be less books in the future," she said. "The research machines will always be here, but to me the space is much more important."⁴

This is a question which should be answered in my project. Will the library be more like a archive or will it be function more as a social gathering place? Anyway, one can state that the library is a place for research and gathering knowledge. The easy access to information, even if the collections are not consulted every day. Removing the books from the library would be a shame as the endless stacks of books give the library its charm. As is visible in the Public library of Cincinnati [see timeline p.57].

¹ Will Pryce, *The Library: A World History*, Thames & Hudson, 2013

² Scott Sherman, "Upheaval at the New York Public Library," November 13, 2011, *The Nation*, accessed January 9, 2017, <https://www.thenation.com/article/upheaval-new-york-public-library/>.

³ Vanessa Quirk. "Alda Louis Huxtable Takes On The New York Public Library" 17 Dec 2012. *ArchDaily*. Accessed 9 Jan 2017. <http://www.archdaily.com/308134/ada-louise-huxtable-takes-on-the-new-york-public-library/>.

⁴ Francine Houben, August 29, 2013, interviewed by Amy Frearson, "Libraries are the most important public buildings" *DEZEEN*, accessed January 9, 2017, <https://www.dezeen.com/2013/08/29/libraries-are-the-most-important-public-buildings-francine-houben/>.

COLLECTION

If the silos in the Maassilo would be converted into usable floor and every 5 meter a new floor would be constructed, the Maassilo would have a total floor area of approximately. 35 000 m². If you compare this to other libraries like Centrale bibliotheek Rotterdam (28 000 m²) and Centrale Bibliotheek Amsterdam (28 000 m²) this would be the largest library of the Netherlands. The Library of Birmingham has the same size of 35 000 m².

Besides that the Centrale Bilbiotheek of Rotterdam is located just at the other side of the Maas. Is it necessary to relocate this library to the Maashaven? Or could the Maassilo library have an additional purpose for Rotterdam next to the Centrale Bilbiotheek. Apparently there is still a shortage of studyplaces in Rotterdam. In the building of Theater Zuidplein 250 new study places have been created. With the renovation of the University news study places have been made as well. However, to make room for these study places, a part of the collection had to be removed. The make room for these study places. So there is also a need for extra storage. Last, the university had stopped financing the unique Erasmus collection. This collection consists of 5000 books of which 30% dates from the era of Erasmus (1466–1536). The Maassilo could provide a storage for this collection as well.

This results in three types of collections in the library with different levels of publicness.

General open stack

Books which are often loaned and which are attractively displayed.

Archive

Storage of books and documents which are not consulted very often.

Special collection

The Erasmus with rare medieval books which should be kept in a special climate and should be handled very carefully



Bibliotheek Rotterdam: 250 studieplekken op Zuid

5 april 2016 om 15:24 door Job Halkes

Theater Zuidplein en Bibliotheek Rotterdam gaan samen 250 studieplaatsen realiseren in Hart van Zuid. Ze hebben daar een overeenkomst over gesloten. Eind 2018 moet het gebouw af zijn.

Lees ook: [Studeren 3.0: slapen in luxe Rotterdams penthouse](#)

Bij jongeren is grote behoefte aan een plek waar ze rustig kunnen studeren. Velen komen nu naar de bibliotheek aan de Binnenrotte, omdat thuis rustig studeren vaak niet mogelijk is. Nu zijn er wel enkele studieplekken op Zuid, maar dat is bij lange na niet genoeg. Net als in de bibliotheek in de stad hoeven bezoekers niet verplicht een consumptie af te nemen.

Het plan voor de 250 studieplekken is opgenomen in het meerjarenprogramma van de Bibliotheek Rotterdam.

Job Halkes "Bibliotheek Rotterdam: 250 studieplekken op Zuid", Metro - 5/04/16 <http://www.metronieuws.nl/nieuws/rotterdam/2016/04/bibliotheek-rotterdam-250-studieplekken-op-zuid>, accessed at January 11, 2017

BOEKEN IN DE AFVALCONTAINER

Ook de boekenkasten moeten eraan geloven. Ruim 200.000 boeken en tijdschriften belanden in de afvalcontainer. „Bij elk boek en tijdschrift hebben we ons afgevraagd: is de informatie digitaal beschikbaar, is het langer dan 30 jaar niet uitgeleend en in het bezit van een andere bibliotheek? Zo ja, dan kan het weg."

De nieuwe Universiteitsbibliotheek gaat begin 2017 open.

Eva de Reus "Rotterdamse universiteitsbibliothek gaat digitaal", Metro - 08/08/15 <http://www.metronieuws.nl/rotterdam/2015/08/rotterdamse-universiteitsbibliothek-gaat-digitaal>, accessed at January 11, 2017

WETENSCHAP EN ONDERWIJS 11 NOVEMBER 2013

Erasmus Universiteit gooit erfgoed te grabbel

Eeva Liukku 7 Reacties delen: [f](#) [t](#)

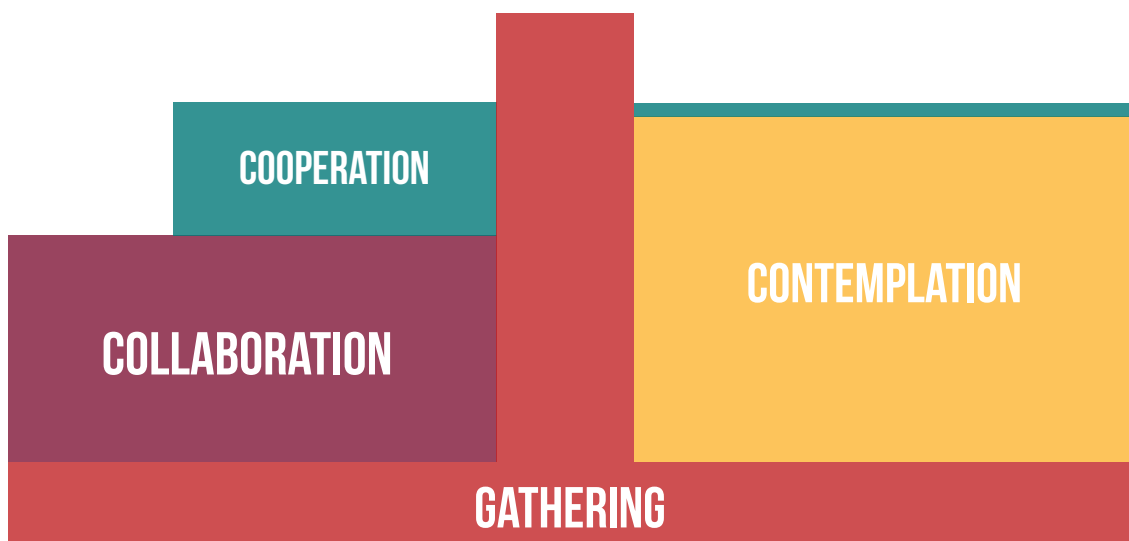
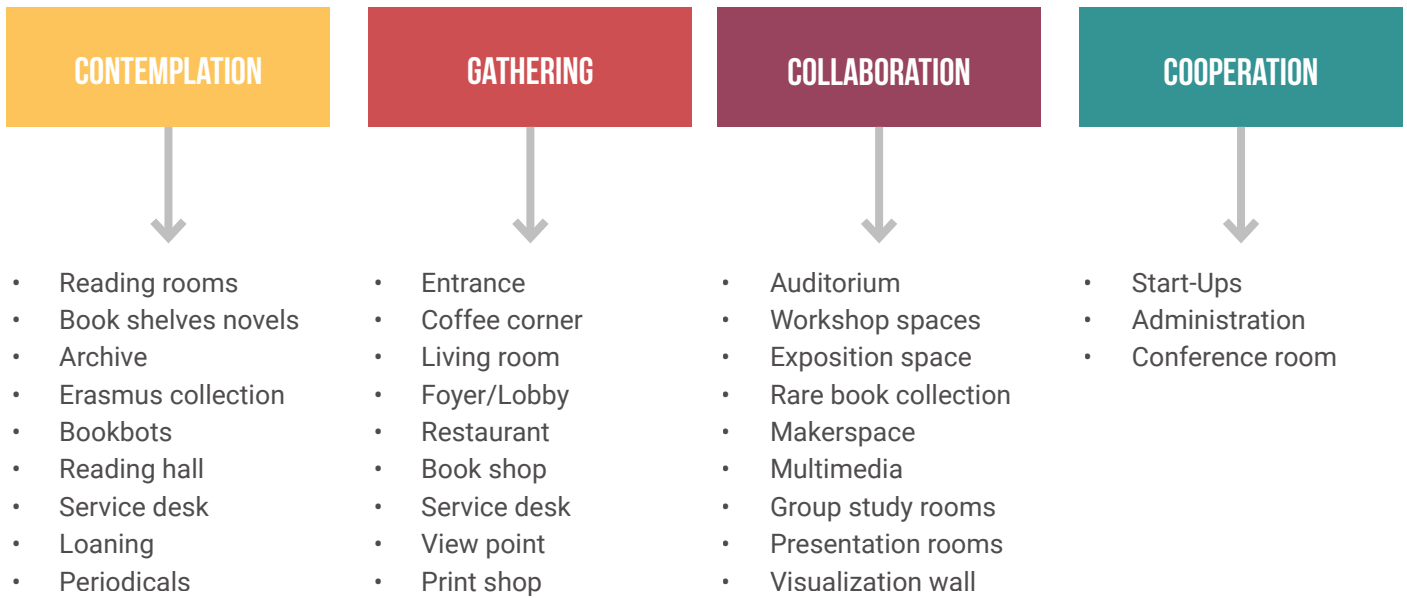
De Beste Stuurlui bespreken het wel en wee van de Rotterdamse actualiteit vanaf de wal. Vandaag: de Erasmus Universiteit stopt met de financiering van de Erasmuscollectie van de Centrale Bibliotheek. En dat op de honderdste verjaardag van de universiteit. Schande, vindt Eeva Liukku.

Eeva Liukku, Versbeton - 08/03/12 <https://versbeton.nl/2013/11/erasmusuniversiteit-gooit-erfgoed-te-grabbel/>, accessed at January 11, 2017

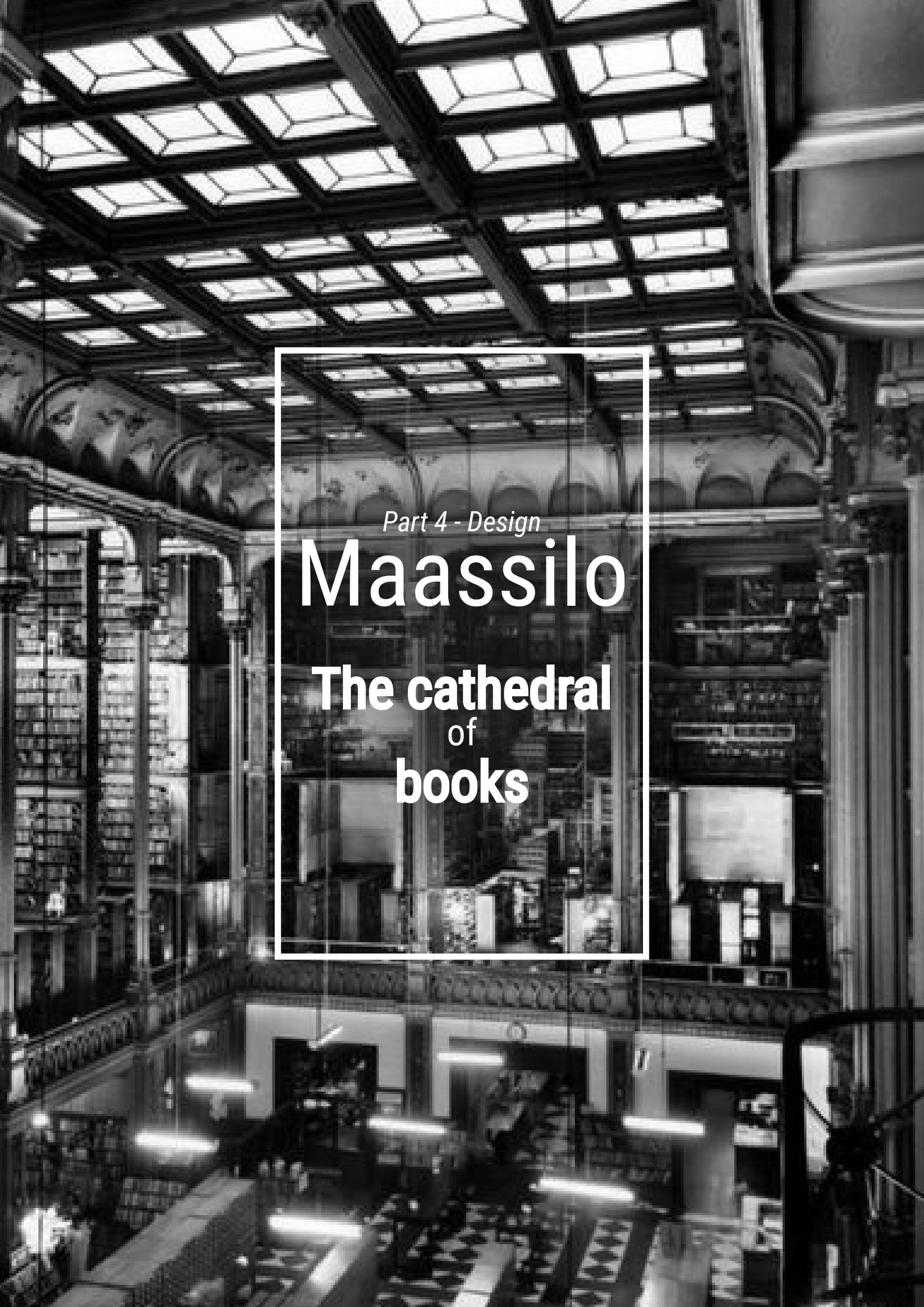
CONCLUSION

To conclude the Maassilo should provide a platform for start-ups, form a place to gather and work and to easily consult and exchange knowledge. This results in the following 4 themes: cooperation, collaboration, contemplation and gathering. These four themes contain each different parts of the program.

In the late 80's and early 90's not everybody had their own PC at home. The library was a place where people had access to these kinds of multimedia. Nowadays everybody has their own laptop. However, new kinds of multimedia, like visualization wall and 3D printing, have been developed. The library of the future should provide these kinds of technologies for people.



Each part of the maassilo will contain one of the four parts of the program



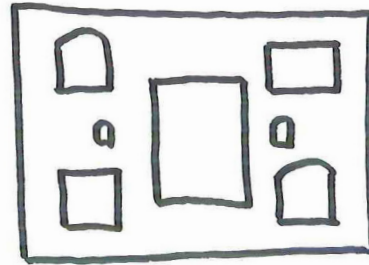
Part 4 - Design

Maassilo

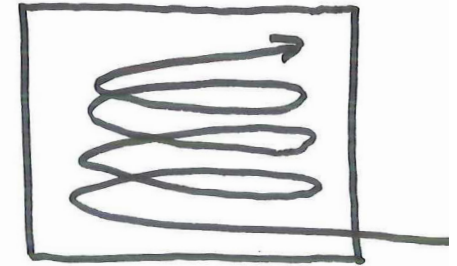
The cathedral
of
books



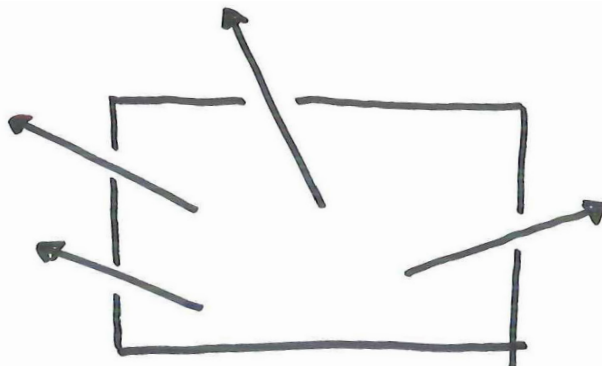
Uniform vertical structure of silos



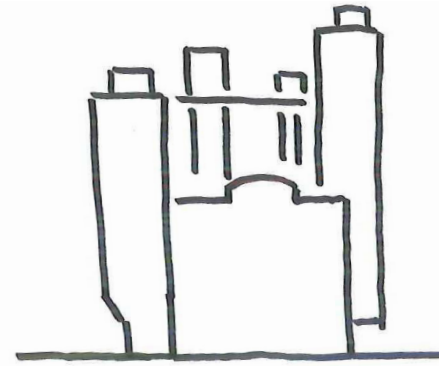
Carving rooms, which form relief in dense structure with a specific character



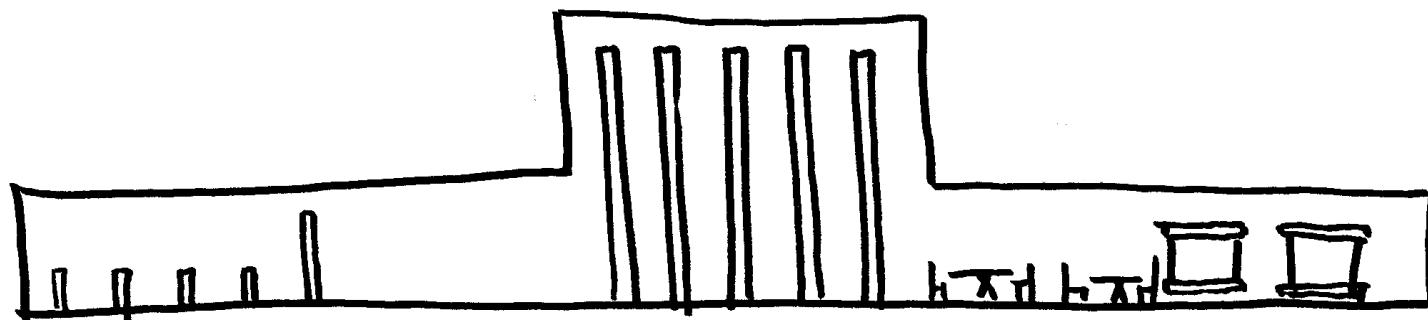
Route connects different spaces.



Different parts of the route offer a specific view and highlight different parts of the context as a tool to orientate

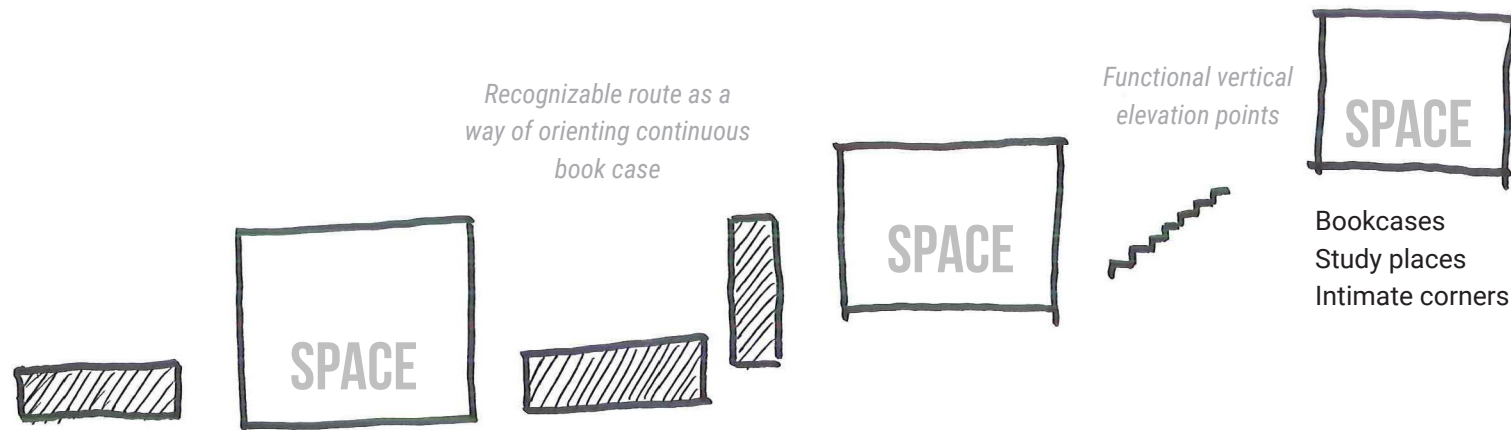


Clear borders separate the different parts and are used for finding your way in the building



In history's most successful libraries there is a combination of open and intimate spaces.

From the generic floor to specifically designed floors.
establishing well organized floors for different users and purposes.



The connecting route consists of a sequence of spaces. The smaller darker spaces form a introduction for the larger spaces. The contrasting transition enhances the effect of the spare amount of natural light of the larger space.

6TH FLOOR
READING ROOM
Floor height 6.5m



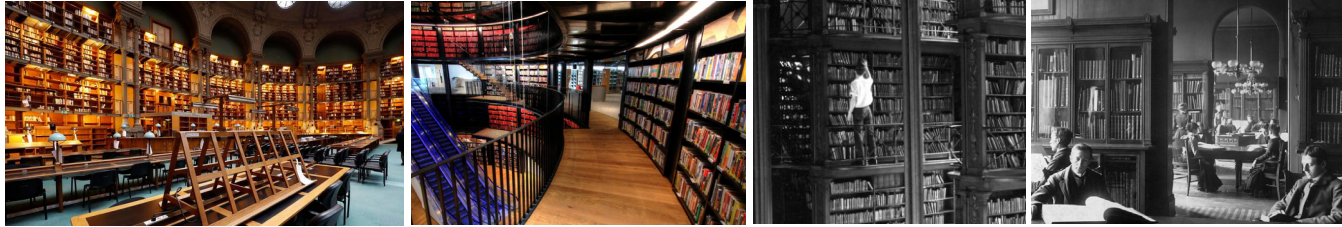
- Natural Light
- Reading desks
- Many people

5TH FLOOR
ERASMUS COLLECTION
Floor height 6.5m



- Special collection
- Treasure room
- Raw materials

4TH FLOOR
RESEARCH
Floor height 6.5m



- High book shelves
- Desks and chairs
- Spare natural light

3TH FLOOR
STUDYING
Floor height 6.5m



- Individual desks
- Light

2TH FLOOR
NOVELS
Floor height 6.5m



- Low shelves
- Occasional couches

1TH FLOOR
LIVING ROOM
Floor height 6.5m



- Couches
- Lounge chairs
- Low furniture

LIGHT

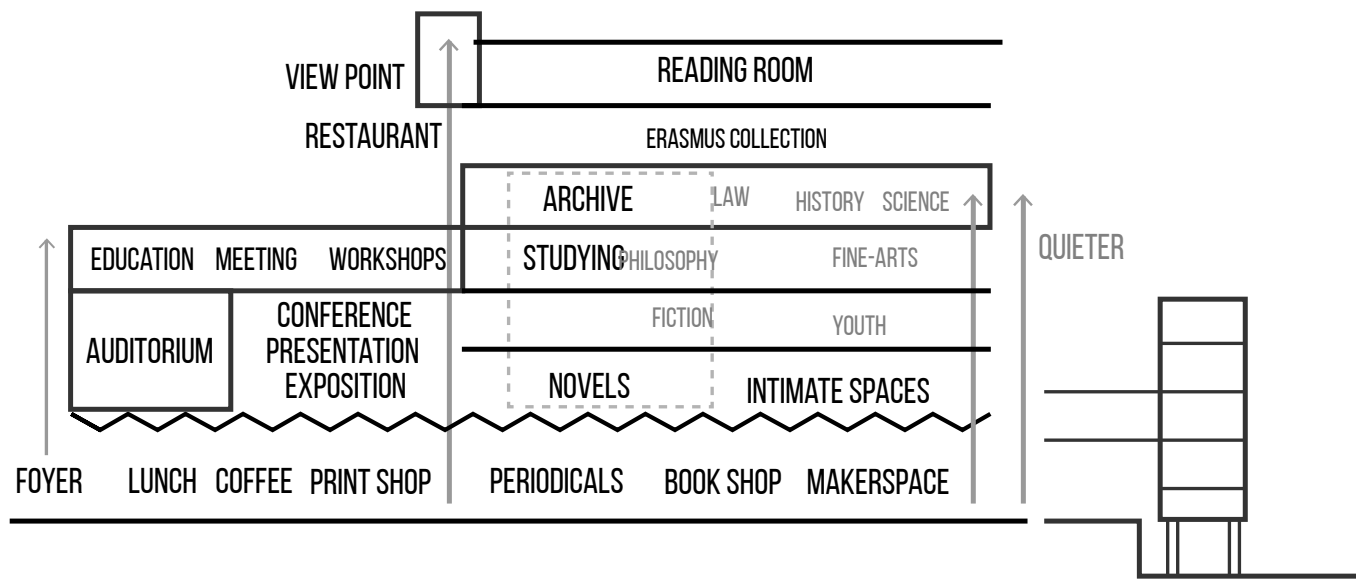
DARK

LIGHT

NON-FICTION

FICTION



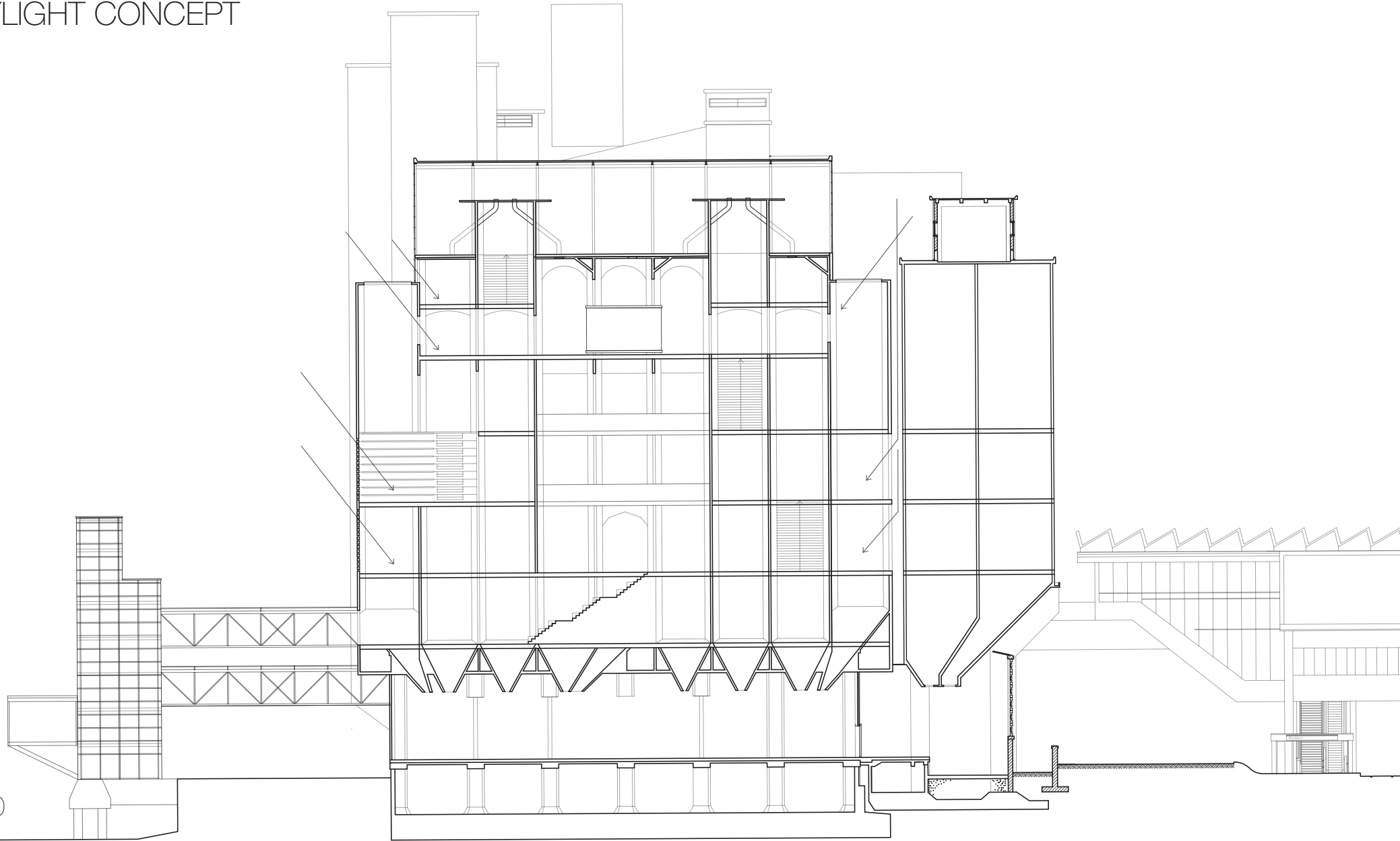


The 'plinth' represents fast movement and transience and has a public nature,

whereas the 'centre' – which houses the books – symbolizes tranquillity.

The 'top', where the view point located, is the place where people can relax and meet others.

DAYLIGHT CONCEPT



rsnede D

CHARACTERISTICS



