

MAASSILO

P1 INDIVIDUAL REPORT

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1518518

HERITAGE & ARCHITECTURE
ROTTERDAM HARBOUR HERITAGE
GRADUATION STUDIO AR3AR111

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ANALYSIS

Individual report

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Preface

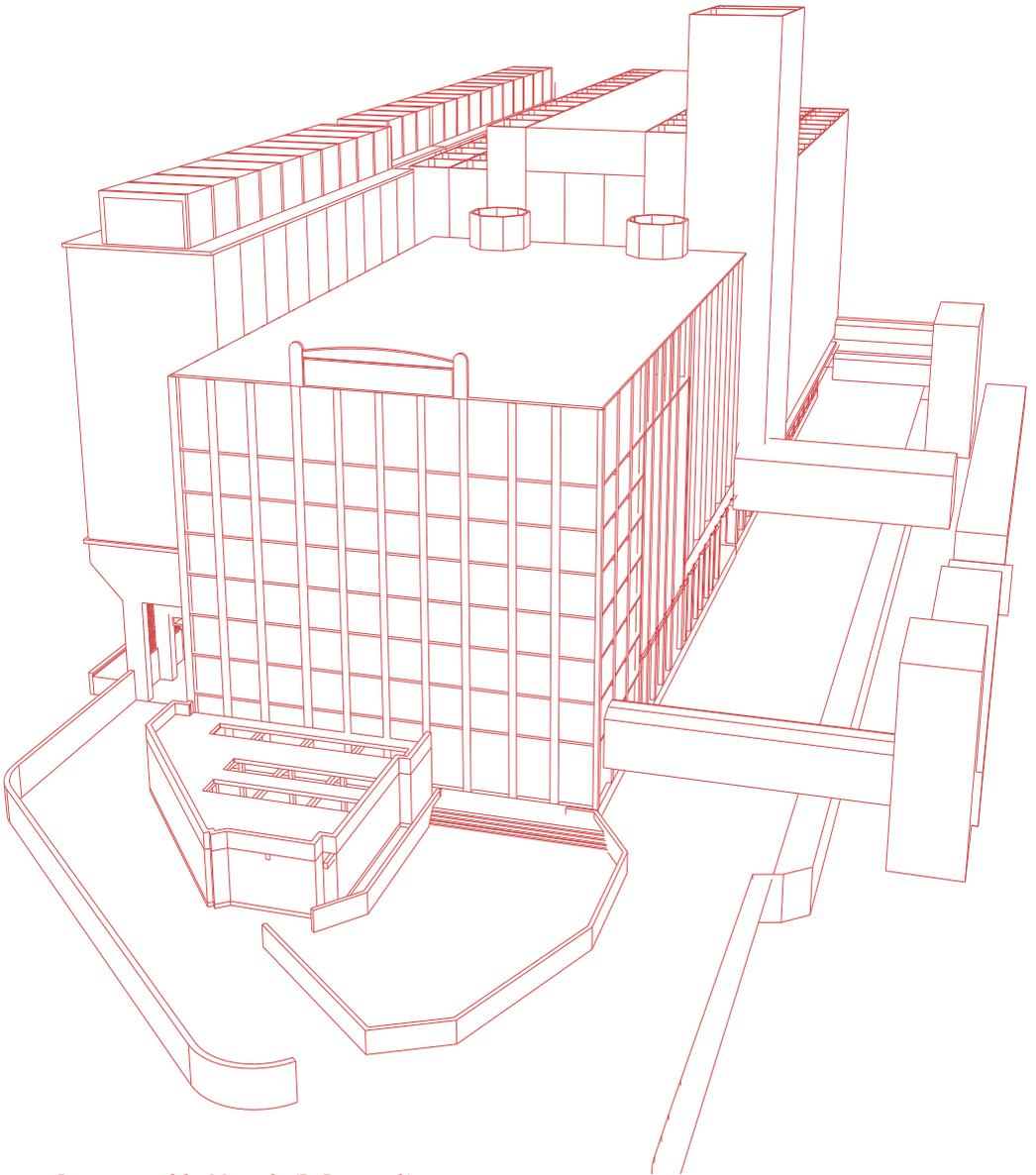
This document is part of my graduation design project. The project is part of the Masters studio 'Heritage and Architecture' of the Technical University of Delfts faculty of Architecture and the built environment. The subject of this redevelopment project is the Maassilo building in Rotterdam, a former grain-silo now functioning as a dance club and creative offices.

The aim of this analysis is to get as much information on the Maassilo building as possible so there is a maximum understanding of the buildings context, its history and its inner workings to create a firm base of knowledge at the starting point of the design phase.

This studio is focusing on the Rotterdam harbour and its industrial heritage. Apart from the Maassilo seven other industrial buildings related to the Port of Rotterdam could have been chosen to redesign. My choice for the Maassilo is based on the connection I did feel with this building and missed in the others. Although the challenges seem bigger, to me the opportunities are also much bigger. The fact that I already knew the building as a dance club may have influenced that feeling.

I hope the analysis is insightful and pleasant to read.

Bart Kuipéri



Impression of the Maassilo (B. Bronswijk)

Introduction

In this report I will try to give an inside to the value that the Maassilo building in Rotterdam has in my personal view.

The aim is to approach this value assessment from the point of view of the narrative of the building. This means that the focus will be on the story behind choices that have been made, the public opinion of the building throughout time and the more intangible qualities of the Maassilo.

Klaske Havik is an architect/writer who has written a lot about the narrative in Architecture. She states that the description of rooms and spaces in non-architectural literature is often much more accurately described and detailed than in professional architectural writings. (Havik, 2009)

She proposes to use this literary (storytelling/narrative) way of describing architecture as a means of architectural research. By using the narrative as a starting point of the research you stay close to the way architectural choices make people feel. After this is established these feelings are translated to architectural concepts. These concepts form the basis for the design. In this way the narrative is used as a tool to translate emotions behind a design.

This approach will help me to determine why certain design choices were made and how this relates to other choices and how this relates to the city of Rotterdam.

Research question:

‘What is the narrative of the Maassilo?’

This research question will be answered by first looking at the city of Rotterdam and its story. Its history, the current-day situation and the issues it has to deal with in the foreseeable future. So the Maassilo and its story can be seen in the relationship with its surroundings.

The next step is to focus on the intangible qualities and inner workings of the building itself. Looking at its history, the functions it once had and now has, focusing on the silo typology and trying to find-out what makes this building unique. Another point of focus will be how people over time felt about the Maassilo and how this changed over time.

Based on this research the more tangible qualities of the building will be explained. The more technical elements of the Maassilo will be addressed. To finish the research the research question will be answered in the conclusion.

After the answering of the research question a value assessment of the separate elements of the building will follow culminating in a value assessment map and a written SWOT analysis.

Chapter 1: The urban story

History of the city and the harbor

The history of Rotterdam is intertwined with the history of the harbor and the two can not be seen separately.

Construction of a sea-dike started on the north shore of the Nieuwe Maas (back then called Merwede river) in 1270 to protect the lower situated land behind the dike. At the point where the river the Rotte flowed into the Merwede a dam was constructed. To get goods up and down the river transshipment of goods came about at the dam. This transshipment of goods created trade and people settled at the dam, Rotterdam was born. In 1340 Rotterdam was granted city-rights and as a harbor was competing for trade with the close-by harbors of Schiedam and Delfshaven.

What this shows is that Rotterdam came about because of harbor activities. (P. van der Laar, 2006)

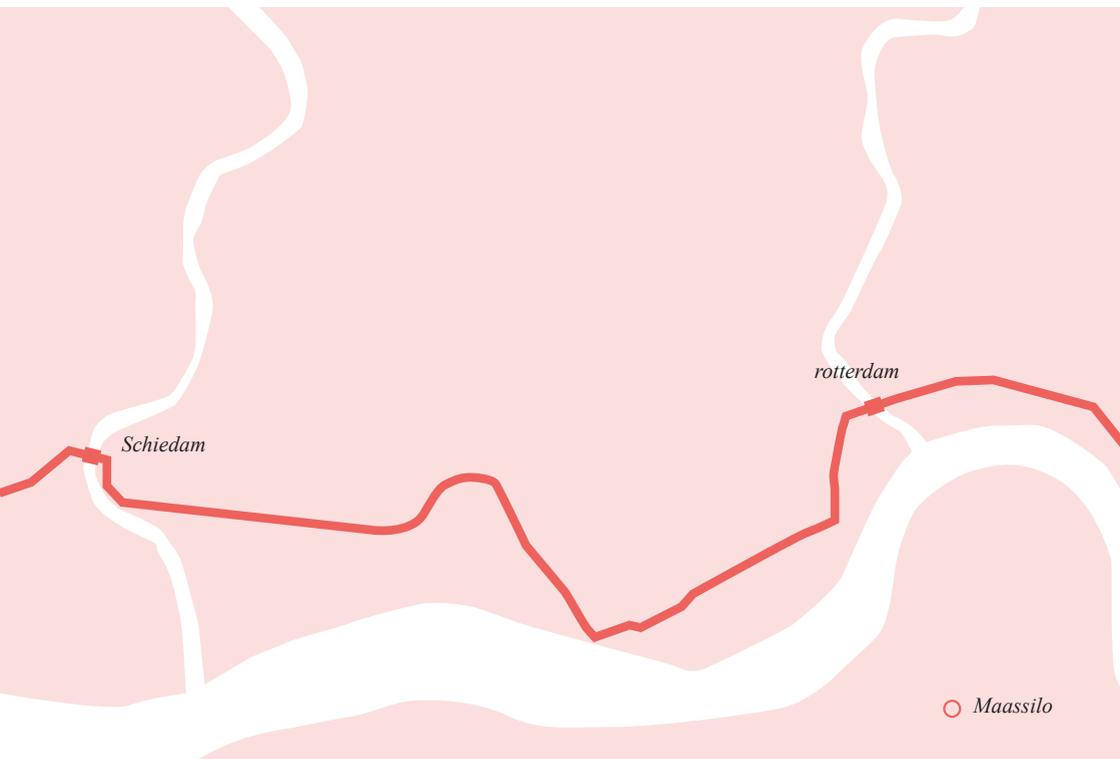
The harbor of Rotterdam knows 4 periods. In between which, the relation with the city changed:

period 1: >1340 Merchant port

period 2: >1850 Industrial transit port

period 3: >1970 Main port of Europe

period 4: >2000 Distribution port



Northern sea dike constructed in 1270 (B. Kuipéri)

The urban story

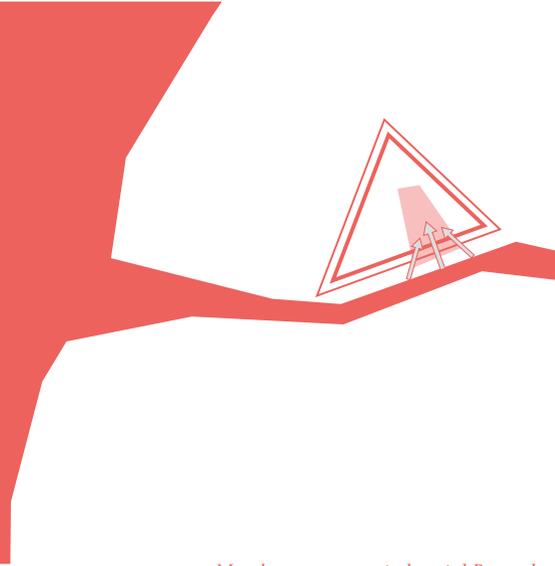
With every new development of the harbor into a new period the harbor and city got a little bit more detached from each other.

As a merchant port the harbor activity was in the middle of the city center. The city was the harbor. Merchants had there warehouses in the city where lived and stored goods in the same place. The rate of growth of the city and the harbor was the same. Expansions of the harbor were relatively small.

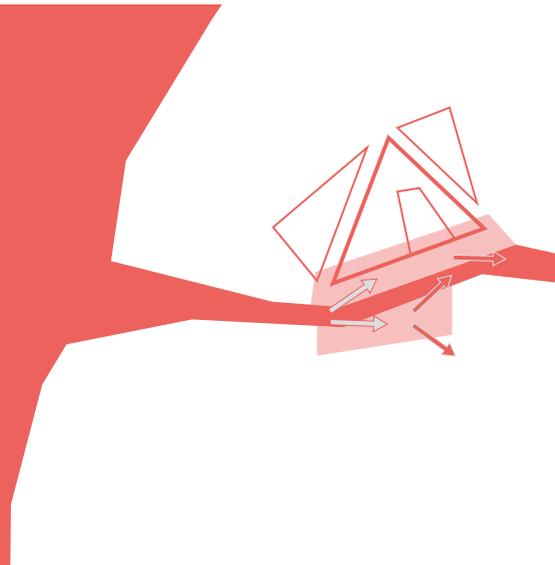
This all changed in the second half of the 19th century. Trade with Germany along the Rhine river was rapidly expanding because the Ruhr-area was industrializing . As a trading partner Rotterdam profited from this industrial revolution and soon Rotterdam, and thereby Holland, was in an industrial revolution of it's own.

This industrialization instigated change in the harbor. Bigger demand meant a larger scale of production and storage. The merchant setup, of living and storing goods in the same place, was no longer efficient enough. The leap to the south bank of the Nieuwe Maas was made to expand the harbor. Harbor activity left the city center and moved to the edge of the city. Transshipment and storage of goods was the main business. Sea vassals came to the harbor; goods were transhipped to inland ships and brought to it's destination. (H. Meyer; 2006)

During the 2nd world-war Rotterdam was bombed on may 14th 1940. The complete city center was destroyed and had to be rebuild. Because of this there are not a lot of historical buildings left in Rotterdam.



Merchant port, pre-industrial Rotterdam (H. Meyer 2006)



Industrial port and the pre war Rotterdam (H. Meyer 2006)



The urban story

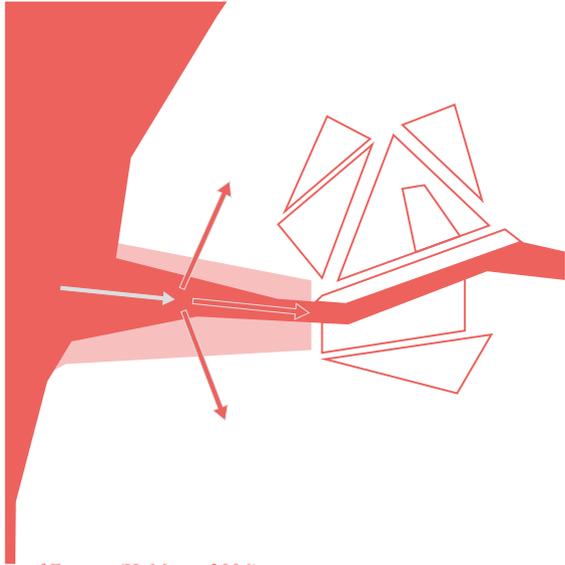
The harbor was destroyed in the war as well. Together with rebuilding the existing port the government launched enormous expansion plans for the port to provide work and to jump-start the Dutch economy after the war. These expansions was the ports first move out of the city. (H.Meyer, 2006)

In the 1970's the Port of Rotterdam (port authority) changed it's strategy. The new goal was to become the main port of Europe with all logistics going through, and being controlled from, Rotterdam. With this strategy the industrial labor slowly got replaced by logistical office work. In this period the harbor expanded outside the city. With these expansions the port and the city got disconnected. And the traditional industrial labor in the city harbor slowly died out and factories lost there industrial use.

In the beginning of the 21st century the Port of Rotterdam, as the main port of Europe, started to focus on collaborating with ports close-by like Amsterdam, Dordrecht, Middelburg and Antwerp to create a network of ports. This strategy is necessary to compete with fast growing Asian ports. Like Shanghai, Singapore and Tianjin. (P. van der Laar, 1996)

Looking at the current-day situation of Rotterdam the city is the second largest city of the Netherlands with a population of 629.606 people.

The harbor is the eighth largest port in the world and the largest in outside of Asia. Employing 94.000 people and spanning more than 12.600 acres of land and water. Thereby the port of Rotterdam is the backbone of the Dutch economy. (M. Steenhuis, 2015)



Mainport of Europe (H. Meyer 2006)



Distribution port, Rotterdam as an network city (H. Meyer 2006)

The urban story

The port authority is called The Port of Rotterdam. It was founded in 1932 as a branch of the municipality. The Port of Rotterdam privatized in 2004. 70% of the shares are still owned by the municipality of Rotterdam. The other 30% is owned by the state. This construction detaches the port from red tape delaying decision making, costing the port money, but still gives the city council a say in the decision making of the harbor.

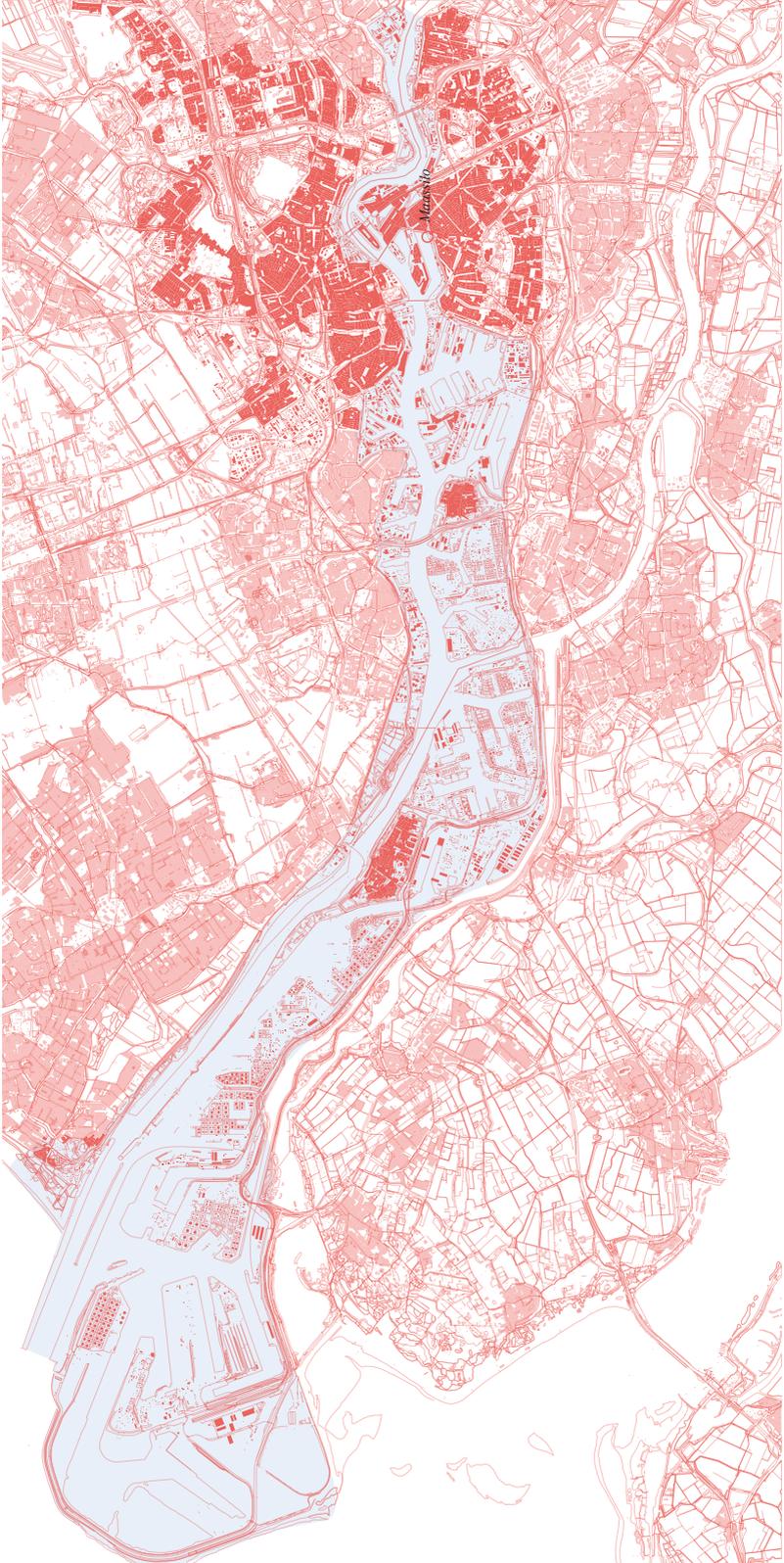
The story of Rotterdam is, for a large part, the story of it's harbor. The city arose because of harbor activity and it's industrialization was the turning-point of the cities growth. You could say that industry is the identity of Rotterdam specially after it lost a big part of it's history in the II world-war bombings. In this perspective change seems to be the only constant in the history of Rotterdam and the city seems to cope with it. (P. van er Laar, 1996)

Why is the building here

The Maassilo is situated in the south of Rotterdam. Till the 19th century the city never ventured out to the south banks of the Nieuwe Maas, but with the industrialization rapid expansion of the port was a necessity. First Feyenoord was annexed because it was closest to Rotterdam. The Willemsbridge was constructed first to connect the north and south. Soon new ports like the Spoorweg-harbor Binnen-harbor and the Entrepot-harbor were build.

More to the west of Feyenoord was the workers village of Katendrecht. In the craze of the industrialization the port still had to expand. Plans to built the Rijnharbor and Maas-harbor that together were unprecedented in size meant that the village.

next page: Rotterdam and the Port of Rotterdam in its current situation (B. Kuipéri)



The urban story

of Katendrecht was to be demolished. To me this illustrates very clearly the spirit of the time and the importance that was given to the expansion of the harbor.

The Rijnharbor was opened in 1895 and was the largest with a surface of 28 acres. In 1898 the construction of the Maas-harbor began. The new Maasharbor was twice as big as the Rijnharbor with a surface of 60 acres of port to accommodate the transshipment of goods from sea vassals to inland ships. The port was completed in 1908. In the same year the Maassilo was build by J.P. Stok. G.J. de Jongh, the city-planner of Rotterdam in this period had relocated the old inhabitants of the demolished Katendrecht directly to the south-east of the Maas-harbor in a newly constructed neighborhood bearing the same name as the old village. (P. van der Laar, 1996)

As a grain-silo the Maassilo supported the transshipment business by storing and cleaning grain to be transshipped at the desired moment so the price of the product could be controlled.

Important to the location of the Maassilo was the direct connection to the water just as much as the accessibility by land so the product could be transported by train. With the only bridge connecting the north and the south being to the east of the Maas-harbor the logical location of the silo-complex was on the south-east. In between the port and the newly constructed railway connecting the Maas-harbor to the rest of the Port of Rotterdam.



Maasharbour, Rijnharbour and Feijenoord in 1903 (P. Van Der Laar 1996)



*Mobile elevators in the Maasharbour
(Katendrecht imagebank)*



*Mobile elevators in the Maasharbour
(Katendrecht imagebank)*



*Mobile elevators in the Maasharbour
(Katendrecht imagebank)*



*Mobile elevators in the Maasharbour
(Katendrecht imagebank)*

The urban story

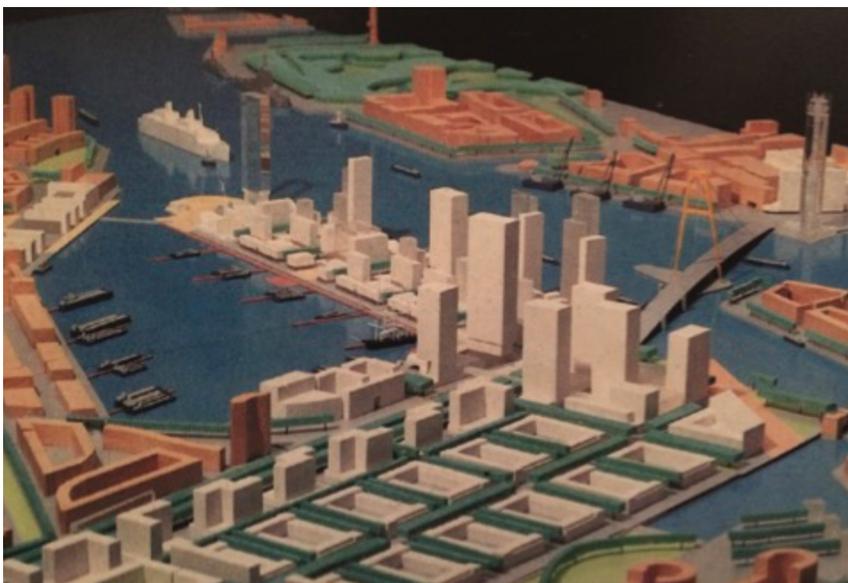
The Maassilo as a part of the Rijnharbor/Maasharbor expansion can be seen as one of the catalysts that helped the south of Rotterdam to grow during the 20th century as source of labor for its inhabitants.

Nowadays the harbor activities, for a large part, have left this area. This started in the 1970's. With the 1974 city-council elections a more socialist-democratic council came to power. They broke with the city-planning vision of rebuilding the city by building new neighborhoods but focusing more on reviving existing parts of the city. In this period the port was seen as a negative element to the city who's only goal was profit (of which the destruction of Katendrecht can be seen as a good example). In respect to the Port and its importance as a provider of labor the city-council came back on its vision during the 80's but there was no more room for harbor related industry in the city itself. This moved out of the city to the new harbor areas of Botlek, Europoort and Maasvlakte to make place for plans like the 'Kop van Zuid' project creating offices and housing in the former ports of the south of Rotterdam that were built only ninety years earlier. (H. Meyer, 2006)

The city-councils shift in approach played a part in the harbor industry moving out of the city but was definitely not the only factor. Stricter regulations concerning pollution and the environment made it increasingly difficult to operate within the city limits. Also the advances in technology and the change in strategy of the Port Authority made the need for the traditional manual labor decrease. Although the change in strategy probably was influenced as a result of the other changes.



Rotterdam-south 1937. City harbours industry domination the landscape (www.Beneluxspoor.net)



Redevelopment of the south of Rotterdam's Kop van Zuid in the 1980's (H. meyer 2006)

The urban story

With the demise of the city harbor the supporting infrastructure in form of the train tracks connecting all parts of the harbor has also been lost. (H. Meyer, 2006)

The Maasharbor today

Looking at the current situation the Maassilo is one of the few industrial buildings that has survived in the south of Rotterdam. It lost its use as a grain silo only in 2002, a lot later than most of the industry in the south of Rotterdam. But looking at the Maasharbor the silo is not the only exception. The Maneba grain factory is still in use and so is the waister treatment facility next to it making the south bank of the Maasharbor a place where industry is still the main program.

If you compare this to the north bank of the Maasharbor or the whole of the Rijnharbor where almost all industry has been re-developed into apartments, offices and commercial programs the south bank of the Maasharbor can be seen as an exception.

With the arrival of the Erasmus bridge in 1996 a new connection between Rotterdam South and the city center was established. This created a new axes in the south linking the Ahoy-complex (important entertainment complex) to the city center along the Maasharbor making this the main route in and out of the city. Directly to the west of the Maasharbor the Maastunnel surfaces on the Boelelaan. This makes the Maassilo very well connected with direct links to the city center towards the northeast and to the west. The route towards Ahoy is directly connected to the Vaanplein highway junction of the A15 and A29 highways.



● Housing function
 ● Industrial function
 ● Cultural function
 ● Public function
 ● Mixed use

Rotterdam-south functions (B. Kuiperi)

Rotterdam-south public transport (B. Kuiperi)

→ direction PT
 ● Maassilo
  Bus
  Night bus
  Subway
  Tram



-  Bus stop Afrikaanderplein line 77
-  Nightbus stop Maashaven line B7 and B11
-  Subway station Maashaven line D and E
-  Tram stop Maashaven line 2

The urban story

In respect to public transport the Maassilo is situated even better with a subway station in front of the building and a tram and bus stopping in front of the Maassilo. Metro line D and E, tram-line 2 and bus-line 77 all stop at the Maassilo. The closest train station to the Maassilo is station Rotterdam South at 1.2 km. Transportation over the water in the form of ferries and water-taxi's is also a part of the public transport system. The Maasharbor has no ferry or water-taxi stopping in its waters. So from the perspective of public water transport the Maassilo could improve.

With the industry leaving other functions came in its place. The area surrounding the Maassilo can be seen mainly as a living area with the majority of the buildings being dwellings.

To the north of the Maasharbor thanks to redevelopment Katendrecht has become a living area again. Further up north the Wilhelmina pier is a mixed area with apartments, offices, a theater and several hotels as well as a couple of high rise buildings making it more part of the City center than part of the south of Rotterdam. To the east the Afrikaanderbuurt is a predominantly housing area just like Bloemhof and Hillesluis to the southeast, Tarwewijk and Carnisse to the South and old Charlois as a annexed old village. All predominantly housing areas with shops along the main roads as mixed use buildings. Further to the south Ahoy as an entertainment area has more public functions but is still lacking in proper supporting functions to fulfill its potential. (H. Meyer; 2006)

To the southeast 'De Kuip' is the countries second biggest football stadium with a capacity of 51.000 people.

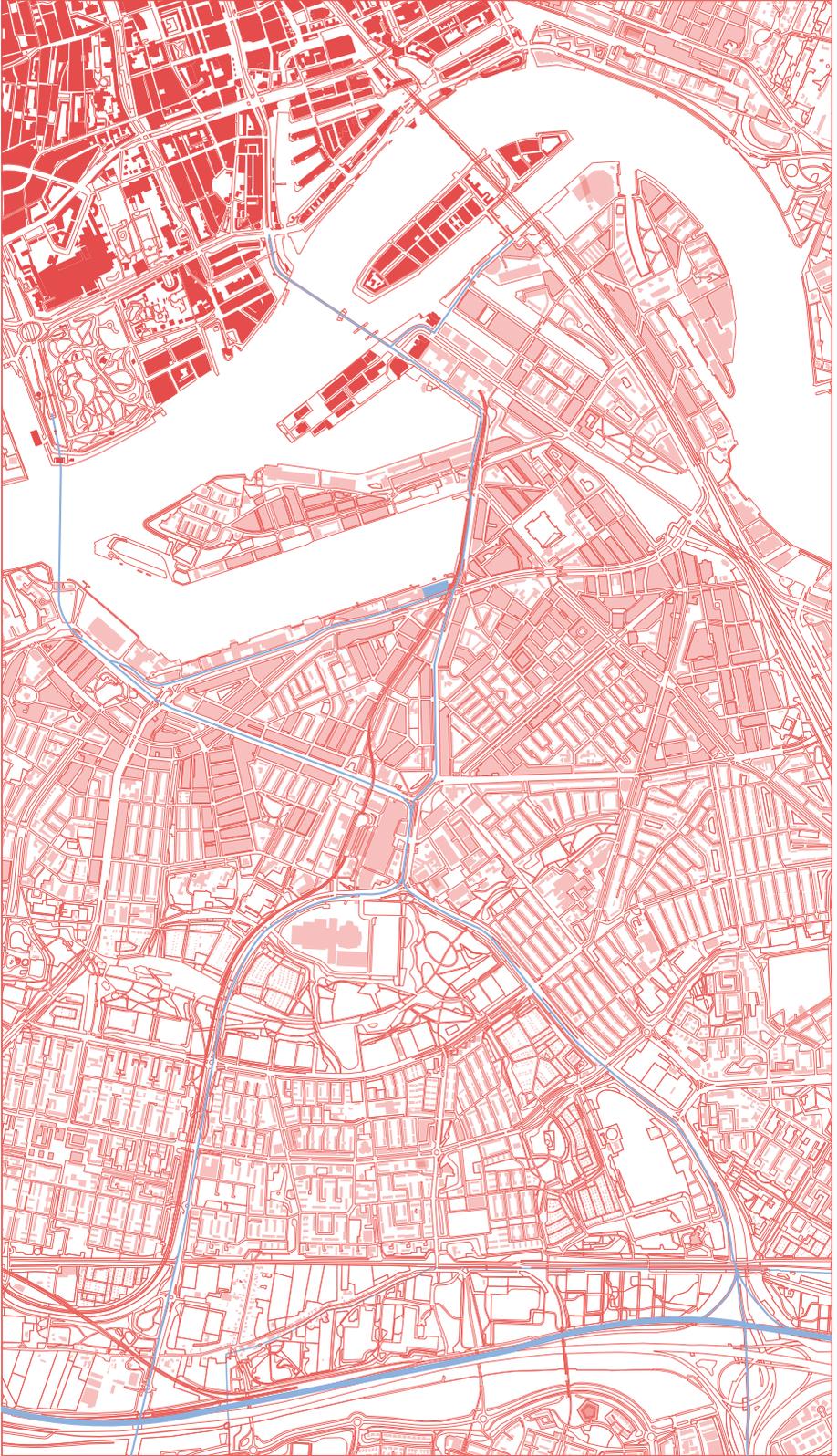
next page: Rotterdam-south accessibility (B. Kuipéri)

 Main access route

 Highway

 City center

 Maassilo



The urban story

De Jongh's successor as city planner was W.G. Witteveen in 1924. His main task was creating new houses keeping up with the population growth in south of Rotterdam in that period. The plan Witteveen had was based on making the south of Rotterdam a city on its own rather than being dependent on the city. At the time it was predicted that the south would have a population of 300.000 within fifteen years making it the 4th largest city in Holland.

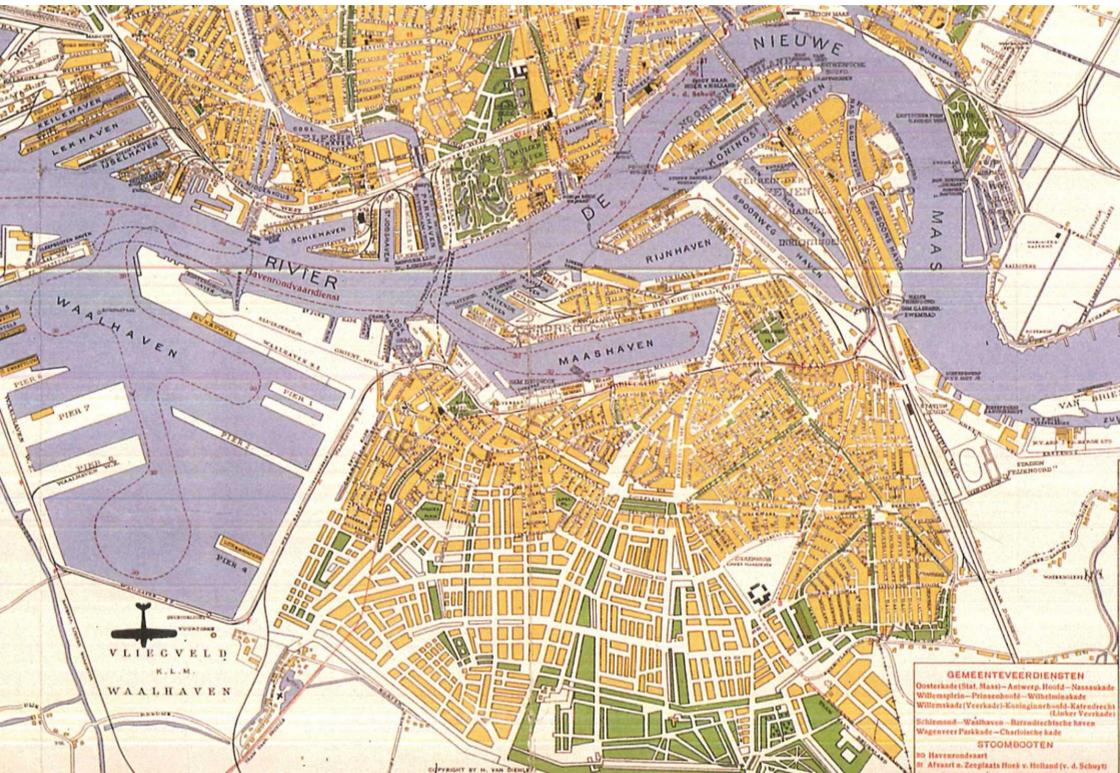
By creating all necessary functions it would create a city center of its own. The second world war and the destruction of the city made an end to these plans and focus was shifted to rebuilding the city.

Right now it can not be said that the south is a city of its own but looking at the future plans for the south of Rotterdam this concept of being a independent city again spring up.

Called 'Hart van Zuid' the city council, the port authority and major private investors back this plan to make Ahoy the center of the south of Rotterdam by improving the area with supporting functions that are needed to create a city center.

With all these planning on an urban scale it is important to ask the question what the role of the Maassilo is in all this. From the perspective of function there are many directions the Maassilo can go into looking at the direct neighborhood. The industry, the surrounding housing or the plans to boost the Ahoy area and the south to be a city on its own.

In perspective of its relation to the city center the distance to the city center interesting to me.



Rotterdam-south 1938 (P. van der Laar 1996)

The urban story

To me the Wilhelmina pier can be seen as the continuation of the city center on the south bank. In that case the Maasharbor must be seen as 'almost part of the city center but it's not'.

With this being the case, a good question to ask your self is: What type of buildings and functions are common in these parts of a city? What are common functions? And just as important, what is missing in the case of the Maasharbor.

Judging by the last couple of paragraphs it seems the main function is as a living area supported by a good infrastructure and with several cultural hubs providing entertainment. Although it must be said that the culture provided is not of the same level as the culture on offer in Rotterdam (north bank). High culture is not provided in the south of Rotterdam.

Another effect that the exact distance of the Maassilo to the city center of Rotterdam has is the view it creates. From the ground floor to the top floor every window in the building provides you with a view of an icon of the Rotterdam skyline. The view from the rooftop is because of its closeness/distance to the city center the perfect location to experience the complete panorama of Rotterdam with views of the Maas, De Rotterdam, the Erasmusbridge, the Euromast, Nationale Nederlanden building, and Hotel New York.

The problem with the location of the maassilo on the other hand is the fact that it has been build outside of the sea dikes. This means it is not protected by the sea dikes and in case of flash floods the Maassilo and other buildings outside the dike-systems protection are the first buildings at risk of being damaged.



Panorama view from the top floor (B. Kuiperi)



View of 'De Kuip' football stadium (B. Kuiperi)



View of the Rotterdam building (B. Kuiperi)



View of the Euromast tower (B. Kuiperi)

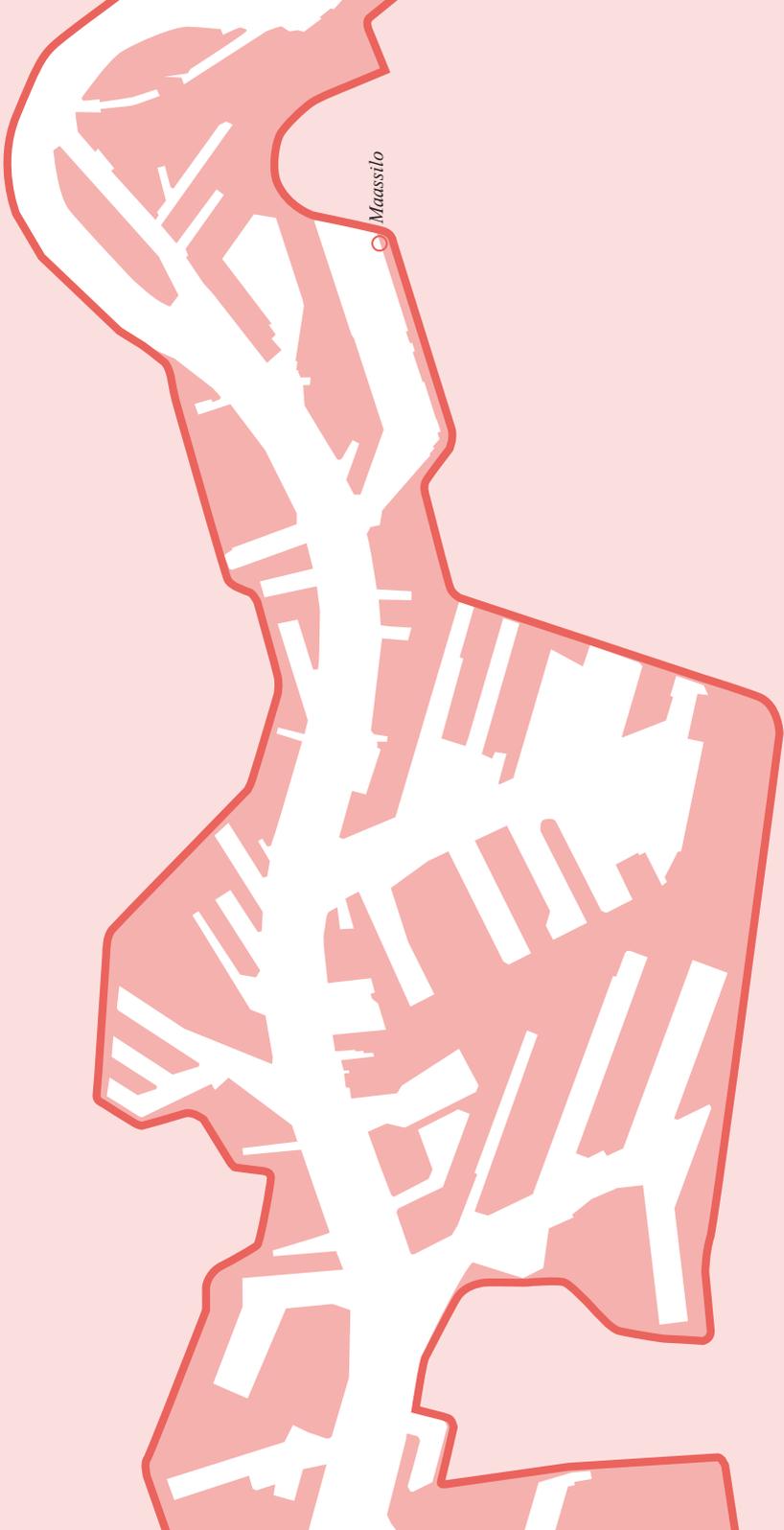
The urban story

The future of Rotterdam-south

The flooding of the areas outside the sea dikes is a real problem for the south of Rotterdam. It is predicted that the water levels in the worlds oceans will keep rising. This means that flooding will occur more often in Rotterdam, putting a large part of the south and it's population at risk with the complete Willhelmina pier, Feyenoord, Rijnharbor, Maasharbor, and Waalharbor being positioned outside the sea dike.

This means that protection against flooding plays a vital role in the future plans of the city. The municipality already started to replace 80% of the quays of the port as a preparatory measure. Another measure that needs to be taken is that flooding areas need to be appointed that can take in water in case of flash flooding. This is means big changes need to be made to the port of Rotterdam in the future to keep it safe.

Focusing on the Maasharbor the flooding risk is also very real. This should always be considered in the future plans. Although most industry has left the harbor the Maasharbor the inland trade is still a big part of the harbor activities. Both the municipality and the port authority plan to increase the inland trade. The Maasharbor can play an important role in this plan. With the Rijnharbor having lost all it's harbor activity and because it has been closed of by a pedestrians bridge the Maasharbor is the first alternative. This is why plans are being made to increase the amount of inland ships that can dock in the Maasharbor. In the same plans a bridge connecting the south bank of the Maasharbor directly to the hart of Katendrecht in the middle of the north bank is suggested to bring the two closer together.



Maassilo

The urban story

The third plan presented by the municipality for the future of the Maasharbor shows a 'tidal park' on the eastern quay. With high tide the park is a beach where people can recreate. With low tide a range of plants and other natural structures become visible and a pedestrian route in between the plants reveals itself. The plan is that the park will help to make people aware of the flooding problem of the Port of Rotterdam.

Conclusion

The urban story of the Maassilo is the urban story of Rotterdam and its port. Looking at the history it is clear that the history of the port and the city are completely interrelated. A defining period in the city is the second half of the 19th century in which the port industrialized. In this period the Maasharbor was built. When the harbor was completed the Maassilo was also completed in 1908 as a grain silo. Since the 1970's the industry slowly started to leave the city harbor to move to the new expansions outside of the city due to environmental regulations, political changes and as a result of the strategy of the Port of Rotterdam (port authority).

Nowadays the Maassilo is uniquely situated in regard to its accessibility, relationship to the city center and the views this provides. With a great connection to the public transport system with a subway line, trams and buses stopping in front of the building, car accessibility from the city center by the Maastunnel and Erasmusbridge and close to the A15 and A29 highway the Maassilo is easy to reach.



*Bridge crossing the Maasharbour
(rotterdam.nl)*



Flooding of the Maas



Tidal park (rotterdam.nl)

**HART
VAN
ZUID**

Logo 'art van zuid' plans(www.hartvanzuid.nl)

The urban story

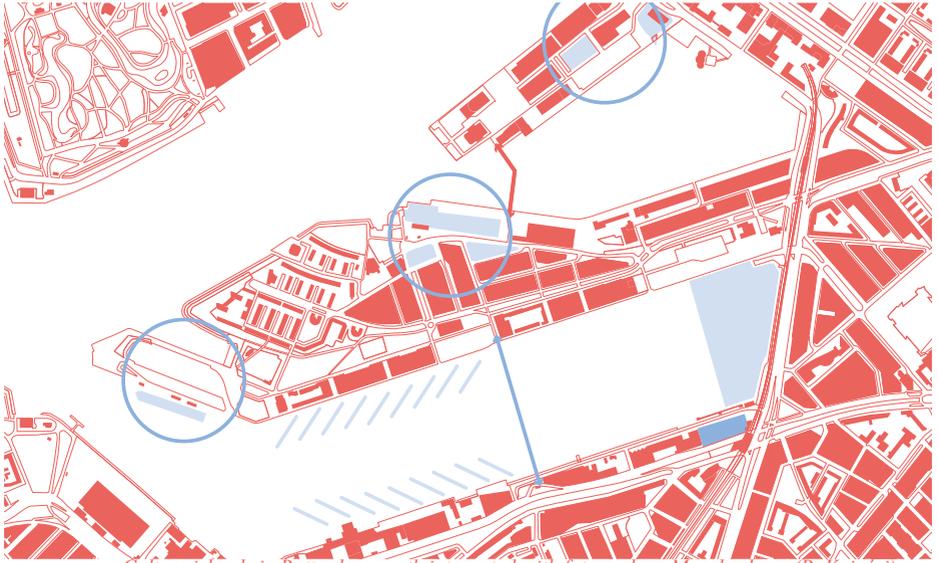
In relation to the city center the Maasharbor can be seen as almost part of the city center but it's not'. In regard this it is good to see what defines these places in a city like Rotterdam. In This case it seems that the neighborhood is prominently a living area with some industry still active in the harbor with sufficient supporting public functions and an variety of cultural entertainment with football in the Kuip and the Ahoy as an entertainment area. In my opinion the south is missing a location for high culture like a museum diversifying the entertainment on offer.

In my opinion the Maassilo can play a part in connecting the individual entertainment hubs of the Ahoy/Zuidplein area and the Wilhelinapier/Katendrecht area. Creating a cultural route in the south of Rotterdam.

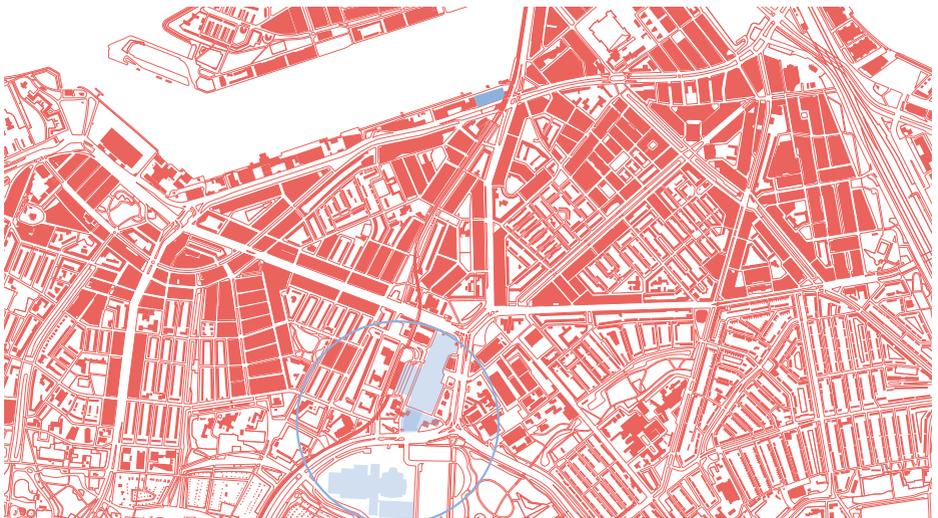
I personally don't believe in the plans of Rotterdam south to be a city of it's own but I do think that adding functions to the south, and thereby upgrading that part of the city, is beneficial to the whole city decentralizing a bit. Culture can play a big part in this vision.

Looking at the future of the Maasharbor the rising sea-levels must always be considered in the planning. The Maassilo is situated outside the sea-dike system and risks of flash flooding and its consequences are getting bigger.

For the Maasharbor the municipality has a couple of plans. The inland trade is still a vital part of the harbor activities and this is why the amount of inland ships that can dock in the Maasharbor is planed to be increased. Other plans for the Maasharbor include a bridge connecting the south bank directly to Katendrecht and a plan for a tidal park on the east quay.



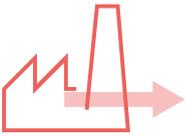
Culture islands in Rotterdam-south integrated with future plans Maasharbour (B. Kuiperi)



Ahøy/Zuidplein area in relation to the Maassilo (B. Kuiperi)

The urban story

All this information leaves you with a lot of options. There are possibilities to stay part of the industry in the area, to connect tot the housing needs, to connect to the harbor, the connect to the Ahoy entertainment, to connect to the city center and to connect to the needs of high culture in the south of the city. An integrated plan that takes all these elements into consideration is possible because of the uniqueness of the location ans all elements should be taken into account.



Industry has left



Rising water levels



Culture islands

Chapter 2: The story of the Maassilo

As told in the urban story the Maassilo was built as the Maas-harbor was completed in 1908 being part of the activities of transshipment and storage of grain but this is only a small part of the information needed to judge this building. In this chapter the history of the building, the function of the Maassilo as a machine and the story of the silo typology will be dealt with so to get a deeper understanding of the story of the Maassilo.

The history of the Maassilo

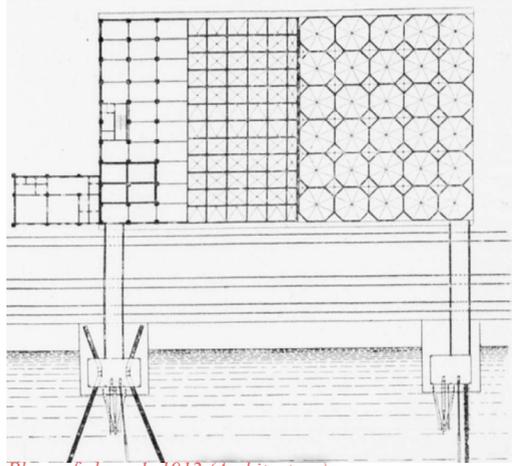
It is important to know that the Maassilo as it is now is completely different than the original building. The building has gradually been expanded with more and more silos. Different architects were responsible for different parts of the building being built in different times making the building a composition of styles and advances in technique.

The first phase of the Maassilo was commissioned in 1906. Rotterdam architect J.P. Stok designed this phase. The seven story building has a basement and can hold 20.000 tons of grain in its silos. The 20 meter high building was one of the biggest silos of Europe and the first reinforced concrete silo in the world.

This phase consists of three distinguishable parts. Two different types of silo designs and to the east facade a part that has seven levels and was used to sort and clean grain before storage. The silo parts only have a basement, ground floor level, tall silos and a top level to fill the silos. (Group report, 2016)



J. P. Stok (Rotterdamsch nieuwsblad)



Plans of phase I, 1912 (Architectura)



Phase I 1912 (Bouwkundig weekblad)

The story of the Maassilo

On the water in front of the north facade a crane-system houses two elevators that are an integral part of the process by transshipping the grain from ships into the building.

In Stoks design the three different parts of the phase are visible in the facade showing the way the building is divided. It also gives an idea of what is happening inside with the width of the silos of the most western part showing. Revealing the scale and size of the silos.

The building was built in under a year. It is almost completely made out of poured concrete and functionality was the main priority. It shows in the fact that hardly any decoration is added to the facade except for the company name on the top of the east facade.

Stok was off-course influenced his contemporaries. The modernist movement was evolving and specially American architecture had an impact. A building like L.H. Sullivans Wainwright building looks to be an influence. Although it has a completely different function the size, scale and build-up of the facade of the building seems to follow the same basic guidelines creating a similar volume. (Group report, 2016)



Plans highlighting phase I (B. Kuiperi)

The story of the Maassilo

In 1929 the N.V. Graansilo Maatschappij was taken over by the Graan elevator Maarschappij. Shortly after they commissioned architects Brinkman and Van der Vlugt to extend the silo building and enlarge its capacity with 44000 extra tons of storage space inside 146 newly constructed silos. This extension was to become the second phase of the building as we know it today.

With a length of 66 meters, a width of 37 meters and a height of 48 meters the extension of the second phase was much bigger than the first phase tripling its capacity. This massive building was built in little over 1,5 years and was taken in to use on October 15th 1930.

The design was built on to the west facade of the first phase and was completely built as a collection of silos. With the exception of a staircase on the north-eastern corner of the building. This phase has a basement that houses the enormous engines that power the transportation systems in the building. The ground floor has an open floor plan where the funnels of the silos can be opened. The 10th story of the phase is the top floor. The distribution of grain into the silos takes place here. The space in between the tenth and ground floor is all silos making the setup of the storage system the same as the system of the first phase although both production lines at the time were completely separated although a connection was made on the top floor of the first and second phase to ship bags of grain from one part of the building to the next.

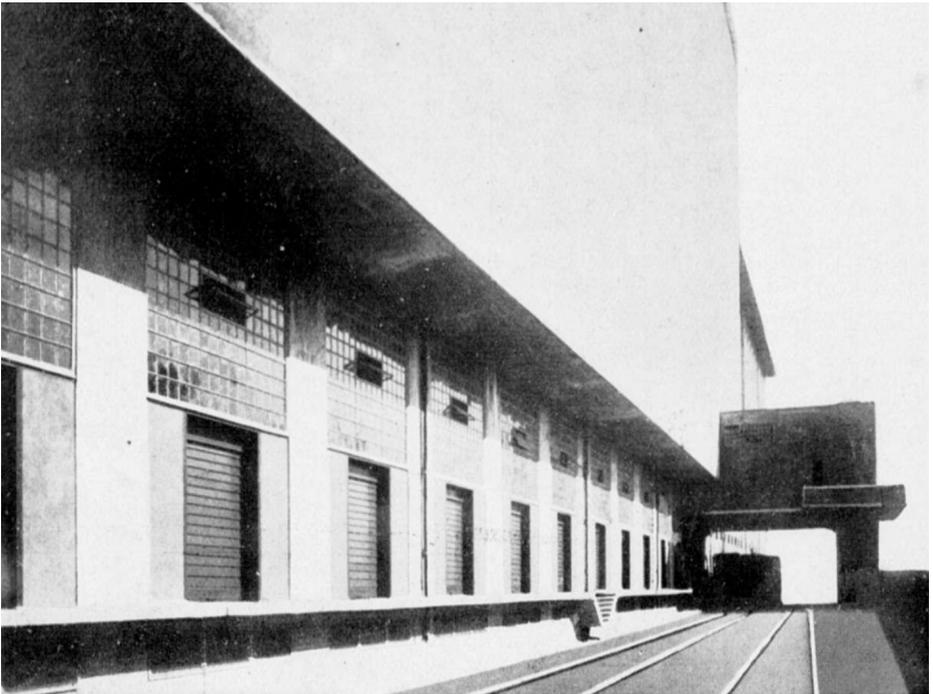
During this time the crane system was also extended and all three separate towers were connected with each other. (Group report, 2016)



J. A. Brinkman



L. C. van der Vlugt



North facade ground floor 1931 (Bouwkundig weekblad)

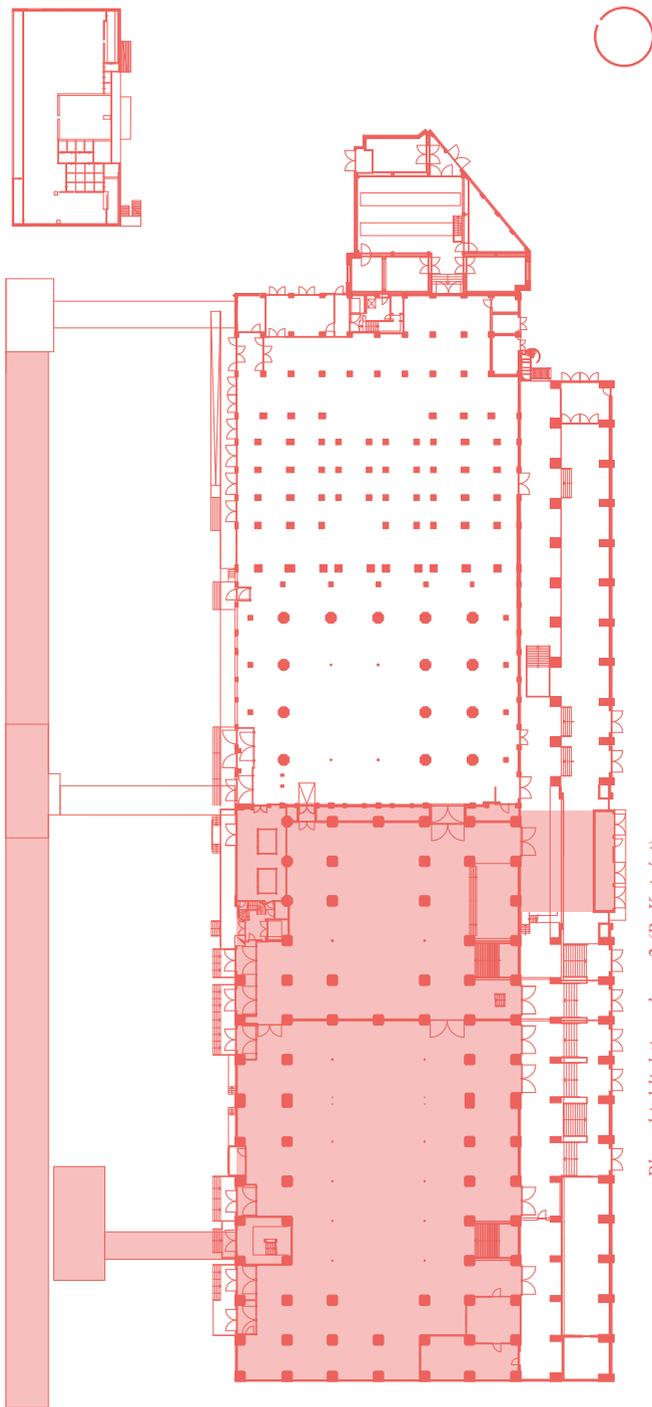
The story of the Maassilo

Looking at the second phase in relation to the first phase to me it is remarkable how they work together as a composition. To me an extension of a building sounds like a small extra part is added but the second phase is almost twice as big dwarfing the original building. If you didn't know better, you could think the original part is the extension just because of this difference in size.

Where the first phase articulates in its facade what is happening inside with the three separate parts visible, the new phase does not reflect that. Although functionality was the main priority in both building parts the outcome is different, Brinkman and v/d Vlugt could have chosen to take elements of the original building and incorporate these into the new phase and still have functionality as the main goal but chose not to.

To me this lack of attempt seems to be deliberate and seems logical with them wanting to break with the traditional way of building which can be seen in the Van Nelle factory built five years earlier:

Compared to the Van Nelle factory, seen as a textbook example of functionalist architecture in the Netherlands, where daylight penetration is crucial to the concept of the building the Maassilo as a much more introvert building. The function as a silo-complex doesn't allow for daylight to penetrate the building in the same way but also in respect to the appearance of the facade with the small windows in the staircase and the huge plain surface making up the biggest part of the facade the second phase of the Maassilo does not reflect its function in the facade and looks to be a much more closed introvert building.



Plans highlighting phase 2 (B. Kuiperi)

The story of the Maassilo

The last edition to the ensemble of phases is the third phase that was built in 1951 by architecture firm Postma and can be seen as a classic example of post-war reconstruction architecture in the Netherlands.

The third phase was built in front of the south facade of the main building along the Brielselaan. This extension was built over the already existing railway and was meant to unload directly on to the trains.

The 52 extra silos added to the Maassilo are divided over two buildings that look identical in the facade but the setup and amount of silos is different. The two volumes are separated by the transformer building (electrical powerhouse). The top floor on the other hand connects the two separate volumes creating a bridge on the 10th floor of the third phase.

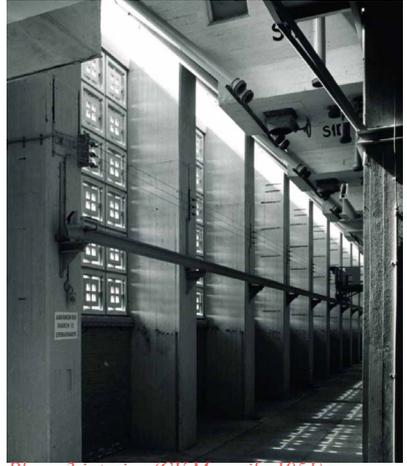
The setup of the production system is the same as the other parts with distribution on the top floor, silos underneath and the collecting for distribution on the ground floor.

The difference to the other phases is that the third part does not have its own staircase. To reach the top floor of this part of the building a connection had to be made between the staircase and elevators of the second phase and the top floor of the third phase.

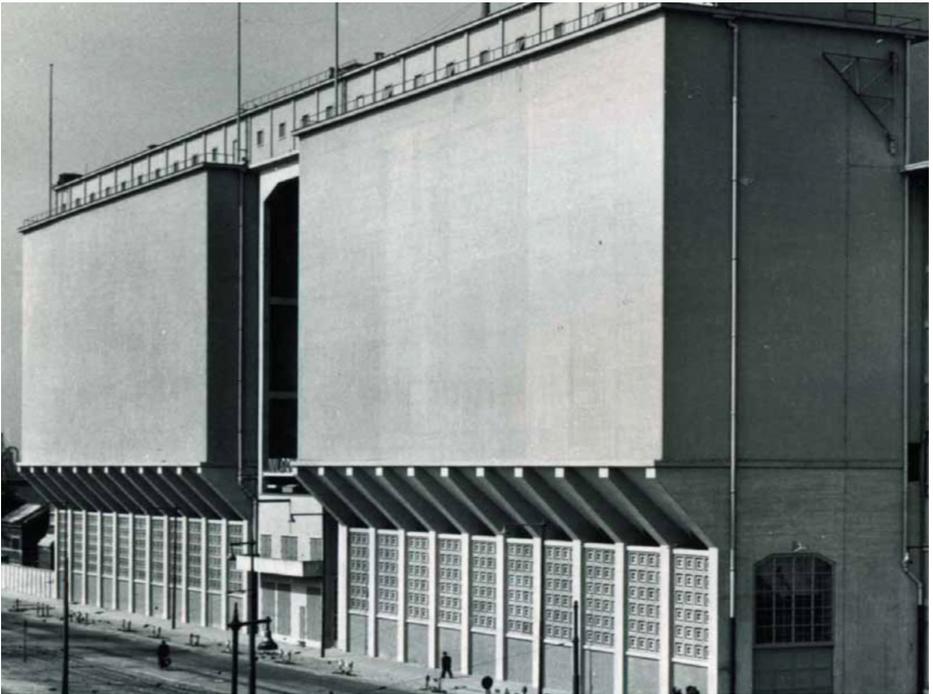
Although symmetry is suggested in the facade this is not the case. The western volume is a full grid-size longer and the width of the eastern volume is slightly bigger. (Group report, 2016)



J.D. Stok



Phase 3 interior (CV Maassilo 1951)



Phase 3 facade (CV Maassilo 1951)

The story of the Maassilo

Looking at the facade the biggest eye catcher are the two plain surfaces that form the body of the silos. These surfaces look a lot like the plain surface on the north facade from the Brinkman and v/d Vlugt phase.

Towards the ground floor the funnel mouths are partly visible in the facade underneath them decorative windows give daylight a chance to penetrate the building creating a unique lighting effect in this part of the building.

The Postma edition is a completely different building than the other two phases in that it does not follow the grid or general size of the first two. It is long (over 100m) and in comparison very narrow this due to the fact that there was no more space on this side of the plot.

It can be seen as the connecting factor between the two other buildings finishing the composition of different times and styles.

With this edition to the Maassilo the main building as it is was constructed. Through the years a couple of developments still changed the site the Maassilo was standing on though.

To increase the transport capacity an extension of the grain elevators was added in 1958 also done by Postma.

Because of the plans to construct a subway station on the Maassilo plot right in front of the eastern facade the original offices that had to move. Because there was no room on the quay the architect decided to build the offices and dwellings on the water to the north-east of the main building. (Group report, 2016)



Plans highlighting phase 3 (B. Kuiperi)

The story of the Maassilo

Dwellings were made on the bottom floor and the offices above that but in 1971 the dwellings were also changed into offices.

The last part I want to focus on is the square in front of the east facade. This used to house a small office that was transformed and expanded a couple of times but it had to be demolished for the construction of the subway. In the 80's two oil silos were added.

To me this place is a strange place, there is no clear destination for it. It doesn't seem to play a part in the industrial process and has changed so much over the years that no original piece is left. With the edition of the subway station the this it has become mess and in later works no effort seems to have been made to improve this part of the building.

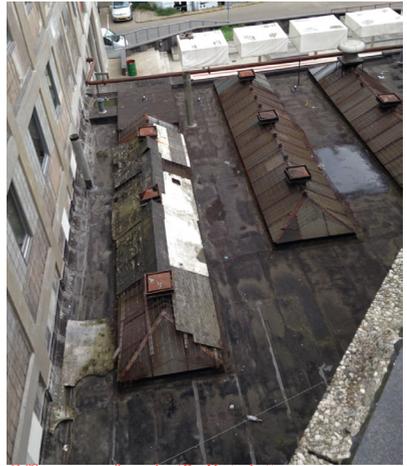
Although the industry bit by bit left the city harbor to be relocated outside of the city the Maassilo kept its original function of grain silo till 2003. Keeping the ensemble and composition in tact.

After it stopped being a grain silo a dance-club moved into the ground floor. With this new public function the building was seen in a completely different light. Instead of a place of harbor industry it became a place for recreation and that gave it a new image to a younger generation. Gaining notoriety and therefore staying a part of the city.

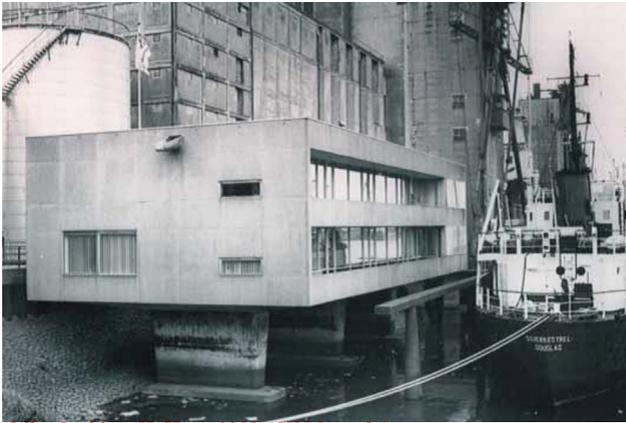
This led to the 2008 transformation of the Maassilo. Raaf creative offices moved in with workspaces for small creative businesses. (Group report, 2016)



H. Haan



Offices east facade (B. Kuiperi)



Office building H. Haan 1998 (CV Maassilo)



Plans highlighting the office buildings (B. Kuiperi)



The story of the Maassilo

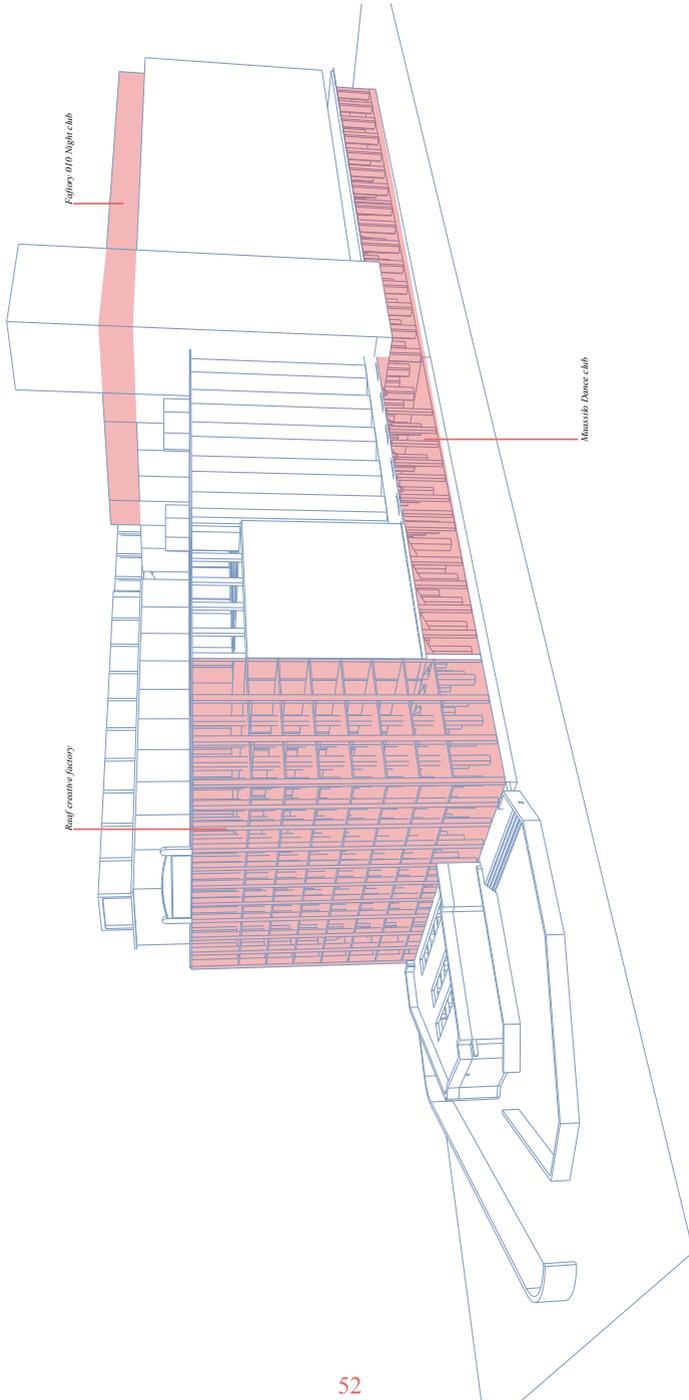
Also an extra club was added on the 10th floor of the Brinkman and v/d Vlucht building. Therefore the building (except for the silos) was for a large part in use again But this is still less than 25%

I think it should not be underestimated how important it is that the silo was still in use till 2003. Taking into account that the knowledge about industrial heritage was very limited in Holland till 1990 the chance that the value of the building as the first reinforced concrete buildings and the largest silo building in Europe at the time would have been overlooked as has happened to so many other buildings in the harbor.

In 2003 people had a completely different idea of how to handle vacant industrial buildings compared to ten of twenty years earlier increasing the chances that redevelopment can take place.

Because of the specific use as a grain silo it also didn't change much. The process was simple and stayed relatively the same and technical advances to the system are the only real changes needed keeping the building as a structure in tact. Only the demand and thereby the capacity of the grain silo increased and that has shaped the ensemble of volumes that is the Maassilo the way it is now.

To me the story of the Maassilo is how these separate volumes work together separately, each built according to the technical limitations of the time. Built by different architects with their own inspirations and background creating their own style. It is incredible that all these ingredients together form such a harmonious and functional building. In my opinion this could have never been designed in one time for it would have been not historically and technically correct to build this way and have functionality as the main objective, making the building unique.



Functions in the current building (B. Kuipéri)

The story of the Maassilo

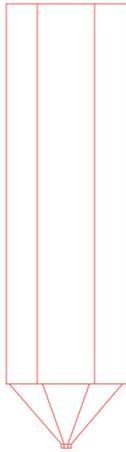
The typology of silos

The idea that the Maassilo is unique as a silo building is enhanced if we take a closer look at the typology of silos.

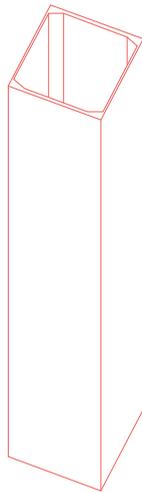
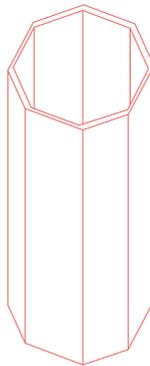
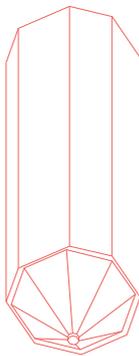
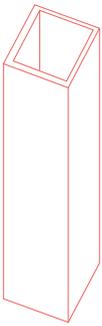
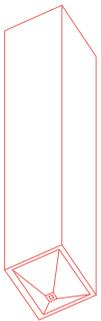
The typology of silos is a very old one. Dating back to 2000 years back with Chinese, Egyptian and Roman civilizations using the typology all in their own way. With the shift from hunting and gathering to farming a set piece of land farming crops became a big part of society. With the need to store crops for later times the need for storage space of these crops arose. In different parts of the world these storage spaces developed differently as can be seen in the pictures but the need was universal.

Although the typology has an agricultural background storage of corn was also part of the urban life in pre-industrial times with storage in warehouses like the Amsterdam canal houses. The Dutch had been importing products like corn ever since the 17th century but a big shift for the typology took place in the 19th century with the industrial revolution.

The typology was influenced by the American style silos because America at the time was the biggest producer and exporter of corn as it was much cheaper than European corn. So much cheaper that importing it was cheaper than producing it yourself. Storage took place along traffic routes on the edge of farmlands like train tracks or roads and the tall narrow shape of the typology became the standard here due to the mechanics involved. To transport the product after it was stored. The ground floor was used to collect the corn after it was stored to transport to its destination. The grains were loaded into the silo at the top.



Three silo types (B. Kuipéri)



Three silo types (B. Kuipéri)

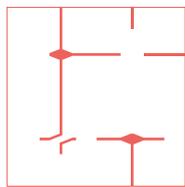
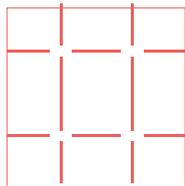
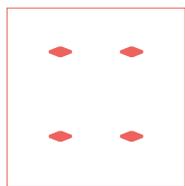
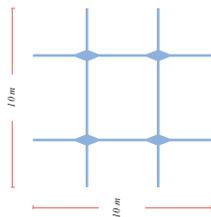
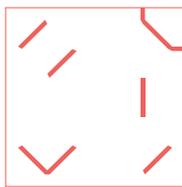
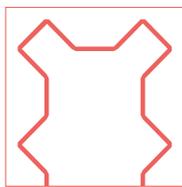
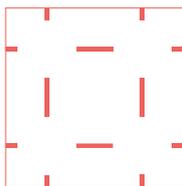
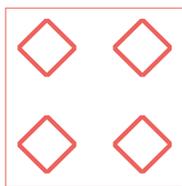
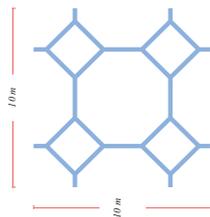
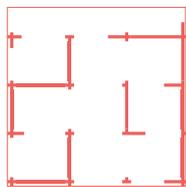
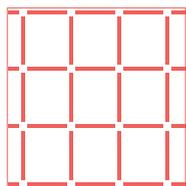
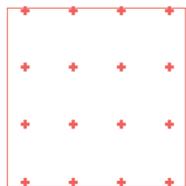
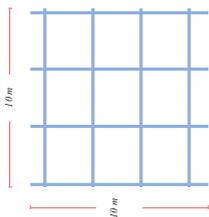
The story of the Maassilo

To do this the corn first needed to be brought to the top of the silo, for this machinery was needed in the form of elevators. Elevators transported the grain from the bottom up to the top of the silo and as a machine has since then become a part of the silo typology setup. As will be explained later in this document this basic setup is used in the Maassilo with elevator and all.

Looking at today's silos it is this method of getting the grain in and out of the silo that has changed due to technological advances, not the actual storage itself. But because of this change the typology has changed a lot. No people are needed in the physical process anymore and all that is left is the machine. To me it has changed so much that I no longer see the typology of silos as a part of architecture.

If the relationship between architecture and building is seen as that architecture is the element that is added without any structural or other functional needs except for style, expression of culture or aesthetics as defined by B. Hillier than to me silos nowadays do not comply with that definition anymore. (Hillier; 2007)

The prefabricated round silos are the same all around the world and the difference between a silo in Ireland and China is not visible anymore so any form of cultural expression is excluded. Aesthetics is not part of the conversation anymore. All choices seem to be made on the basis of functionality and technical changes rather than cultural or stylistic ones. Silos are not designed by architects anymore, not that this defines the benchmark of architecture but to me it does show that style



Diversity possible in the plans of the different silo types (B. Kuipéri)

The story of the Maassilo

is no longer involved. How do nowadays silos relate to the modernist, functionalist or post-war reconstruction architecture?

Silos to me are functional buildings but do not represent any form of architecture to me. Knowing that the typology is this old and that the window in which silos worked and were constructed in this way is relatively so small makes the Maassilo even more special. Was the primary building built just a couple of decades earlier it would have not looked the same, for instance the reinforced concrete probably would not have been used. Was on of the extensions built later they might have been prefabricated round plastic silos like the oil silos in front of the eastern facade put there only thirty years after Postma's third phase, which is nothing compared to the 2000 years the typology has been part of architecture.

Another conclusion that one can draw from this is that if silos were again needed in the city harbor the Maassilo in the way the building worked as a machine will not be used in the same way ever again.

Not that this is a reality but it is good to know that the former original function of the Maassilo will never return the way it used to function.



Agricultural 20th century grain-silo in America (Google image)



Modern grain-silos (Google image)

The story of the Maassilo

The building and the machine

The Maassilo in its original function was part of the Maasharbor and therefore part of the industry of the port of Rotterdam. But how did the building exactly function? What is the story of the grain that was stored in the Maassilo from entering the port to the transshipment, the processing, storing and then transport to its destination this story will show how the building functioned as a grain silo.

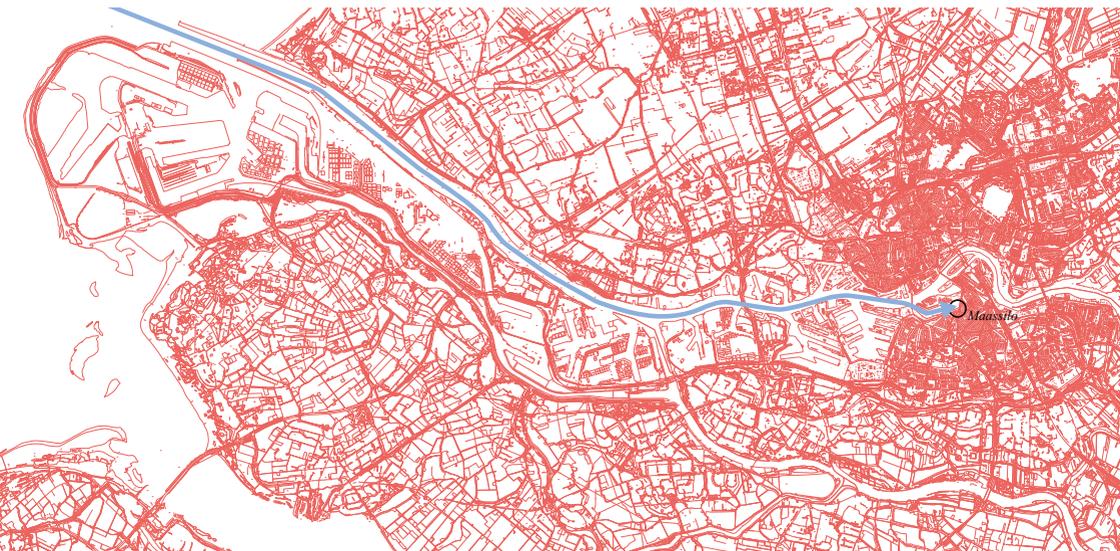
During the second half of the 19th century the America industrialized and this had a great effect on its agricultural production. Because of the production rate the Americans started producing more than they needed for their own market. This over production made the American grain cheap. What to do with this surplus? America started to export their grain to Europe flooding the European market with grain so cheap that they couldn't compete. This was not good for the farmers in Europe but it was good for trade. For this imported grain the Port of Rotterdam was the first destination in Europe.

Ships transported the grain by sea from ports like Boston, New York and Baltimore over the Atlantic ocean to Rotterdam.

Arriving at the Dutch coastline ships had to go inland to Rotterdam. The in 1872 constructed Nieuwe Waterweg (canal) was dug to shorten the inland trip by a significant amount so the ships could go straight to the Maasharbor on Rotterdams south bank. For these sea vessels this is where the journey ended. They unloaded there freight at the Maassilo.



Grains journey to the Maassilo crossing the Atlantic ocean (B. Kuiperi)



Grains journey to the Maassilo from sea to the Maasharbour (B. Kuiperi)

The story of the Maassilo

Docking along the crane system the ships were unloaded on both sides of the ship. On the one side floating elevators directly transshipped the grain from the large trans Atlantic sea ships to smaller inland ships to transport the grain further up the river to other ports more inland along the Maas river.

On the other side of the ship the fixed elevators of the maassilo unloaded the ship to store it or to directly bag it and put it on trains to further transport it by train. The most eastern elevator was specially constructed for bagging the grain and readying it for transport by train.

The second elevator (the middle one) was constructed to load and unload the grain of ships for storage in the Maassilo.

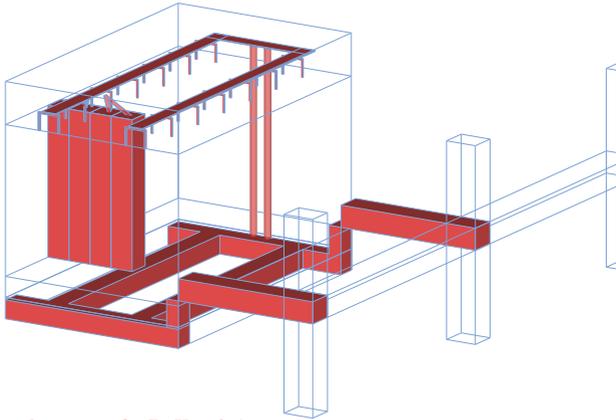
The elevators got the grain out of the ships and on to conveyor belts for the horizontal transport of the grain into the building.

During this process the grain was automatically weighed as well.

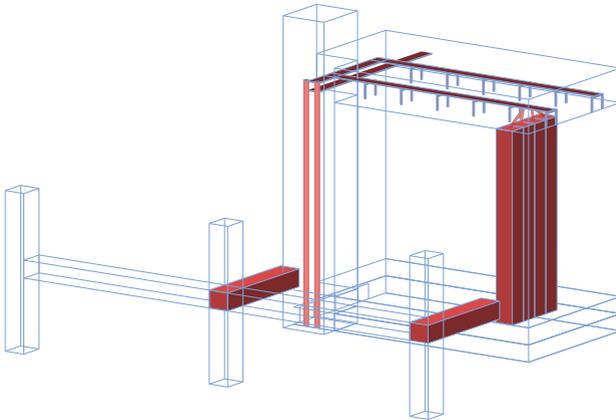
Upon entering the building the grain would go to the basement. Again being transported by conveyor belts the grain was transported to two fixed elevators that are part of the building in the most western part of the first phase of the building.

These elevators take the grain to the top floor of the silo. In case of the first phase this was above the 7th floor. Here it was dropped onto the horizontal transport system that distributed the incoming grain by karts to the silo that was to be filled.

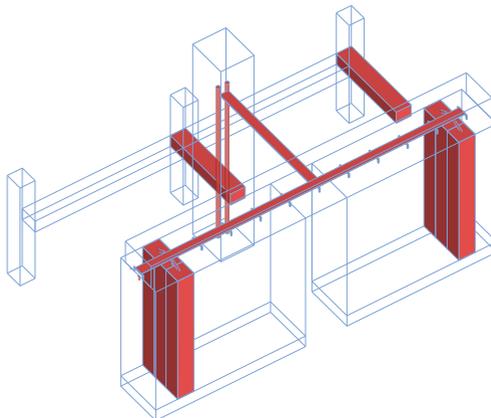
The distribution system was elevated above the silos to get the grain in every silo from just two distribution lines. (Group report, 2016)



Phase 1 grain cycle (B. Kuipéri)



Phase 2 grain cycle (B. Kuipéri)



Phase 3 grain cycle (B. Kuipéri)

The story of the Maassilo

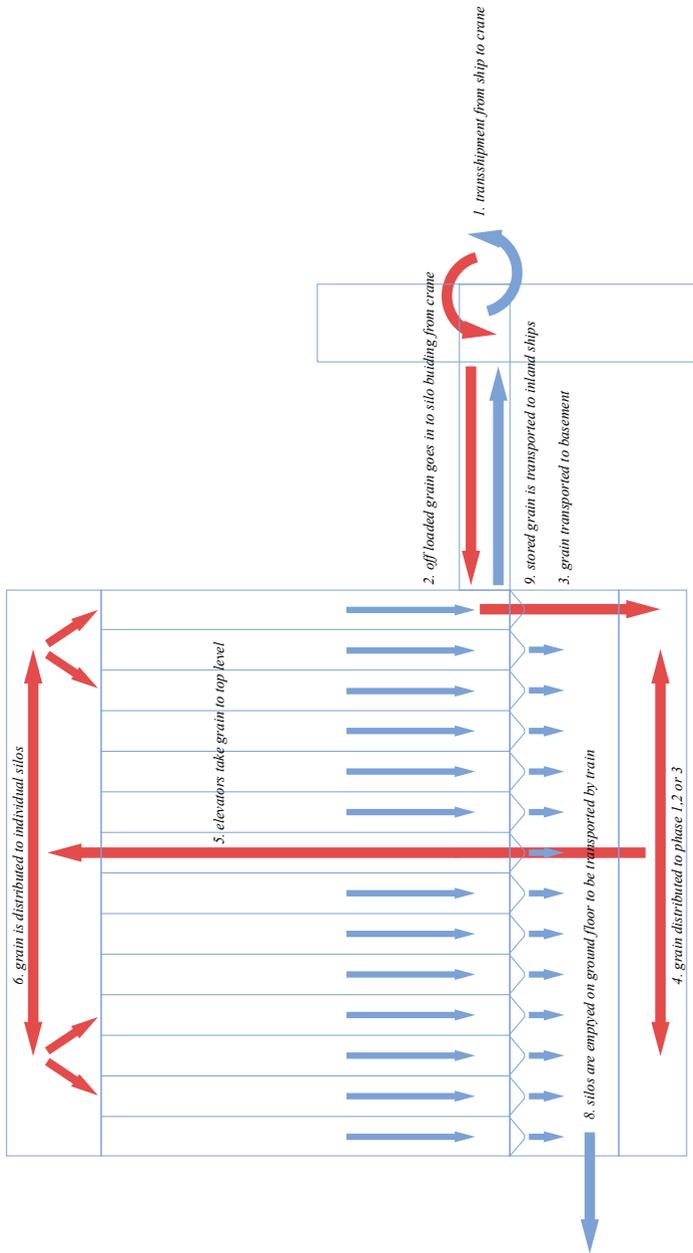
In the second phase the system was the same with the exception that the silos directly underneath the distribution system were taller running all the way tot the hight of the system, enlarging the capacity of these silos. To get the grain to the 10th level of the Brinkman and v/d Vlugt building elevators were built next to the staircase.

With the third phase the story was different because of the distance to the existing elevators and the fact that distribution in the basement was not an option because of the train tracks underneath the silos. This is why the horizontal distribution system of the Brinkman phase was adjusted to accommodate the horizontal transport to the third phase. The fact that this Postma phase was only 10 meters wide meant that only one distribution line was necessary to accommodate these silos.

Ones in the silos the grain was stored. The grain was sprayed with water to get it to the perfect humidity to preserve the grain and prevent it from rotting. The spraying also made sure the amount of grain-dust was minimized.

The silos worked together in taking up the load there own weight created. By not filling one silo to the brim and than the other but filling a group of silos all to the same hight the weight was equally divided over the silos and thereby the columns of the building. But the major thread of not dividing the load evenly is to the walls of the silos.

The Maassilo was on the edge of technology at its time in the fact that reinforced concrete was used making the silo wall stronger. It is clear to see in the silo-designs and sizes that



grain cycle principle (B. Kuipéri)

The story of the Maassilo

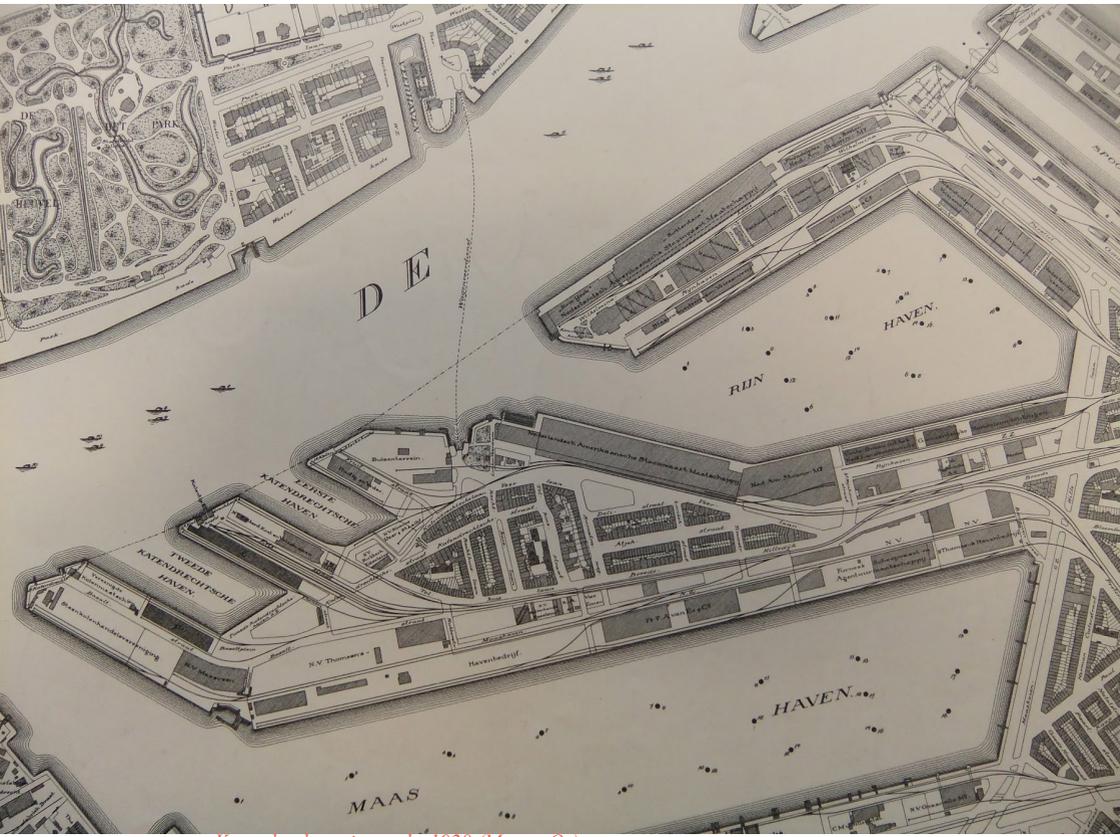
change in the first phase and are different in both other phases that the advances in concrete techniques and understanding of this technology advanced.

Reaching the bottom of the silo the grain would be collected on the ground floor. Karts on the ground floor would collect loads of grain and transport them to the train tracks. On both sides of the Maassilo tot the north on the quay and to the south first next to the building along the Brielselaan and later under the Postma extension had train tracks. These tracks were part of the track system that connects every single part of the port of Rotterdam.

This train-system was a vital part of the logistics of the port. It not only connected individual buildings like the Maassilo to other parts of the harbor it also was the connection to further transport over land to other countries.

In case of the Maassilo part of the grain was transported to the Meneba factory next door, to the west, that further processed the grain for the Dutch flower market.

Knowing the grain process is vital in understanding the building, its relation to the Maasharbor and the Port of Rotterdam in general. Looking at the process to me it is clear that the shape and position of the building is completely determined by the process and a facade covers the this machine like a cloth is draped over it. Still knowledge of the process is needed to see that this is the case.



Katendrecht train tracks 1928 (M. van Os)

The story of the Maassilo

The process it not made visible making the building look introvert, but in the end it is better to call the appearance of the building functional than introvert because this was the main goal of the Maassilo. Also, it is not right to talk about one process because it shows that the separate phases of the Maassilo all work within there own system of collection and distribution of the grain only partially working together.

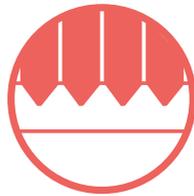
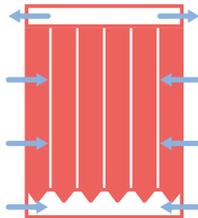
Looking at the shape of the building the silos definitely determine most of the vertical elements but articulation of the facade takes place on the upper and ground level of the Maassilo with the decoration and use of bricks in the Postma phase and the windows on the north facade, giving scale to the composition.

The overall shape of the silo complex is based on the maximum exposure to the waterfront and the limitation the plot has because of the Brielselaan to the south.

Conclusion

Taking in account the history of the Maasharbor and the Maassilo's development over the years with all the expansions and additions done to the building ad on to the uniqueness of this complex building.

Not only is its history unique the history of the typology makes it even more special. With the typology having left the realm of architecture explains why a collection of silo's would nowadays not result in the same setup or come close to the building that stands in the Maasharbor today.



The story of the Maassilo

With the building as a collection of three semi-separate machines working together the shape can be explained. With the facade draped over this machine like a cloth and functionality always being the decisive factor in decision making of the architecture.

It is the composition of the building that reflects all of this and therefore embodies the story of the Maassilo in its composition

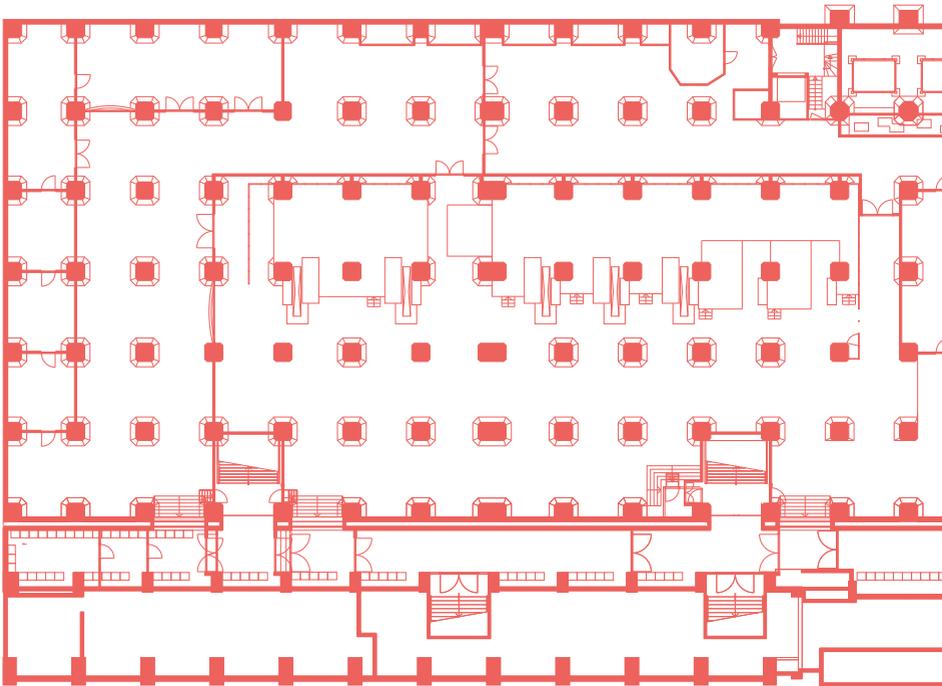
To me the composition is a testimony to the history, as well as the machine and the silo typology even though different architects with different points of view in completely different times have worked to make the Maassilo what it is today. An quintessentially industrial introvert building.



Maasilos north facade composition (Google image)

Chapter 3: Explaining the building

In this final chapter the building will be explained by looking at the plans, sections and elevations. We will be looking at the Maassilo in its current state so it is clear what the situation is at the start of the design process.



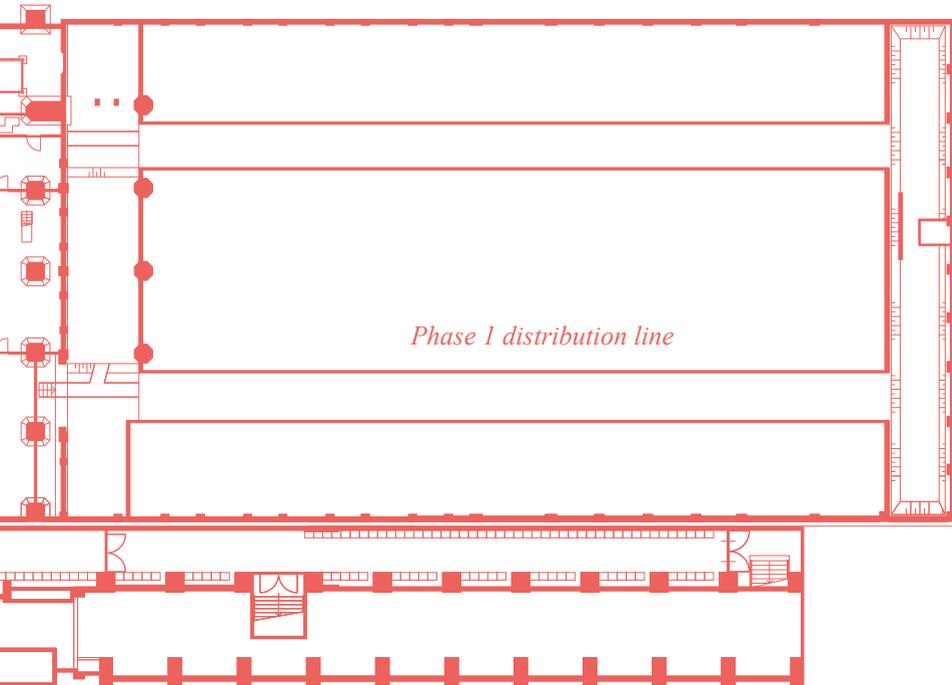
Basement is used for the Maassilo dance club for storing lockers and other supporting functions.

Machinery in the basement of phase 2 is original but is not in use anymore.

Plans - basement

Because for a large part the story of the building and its surroundings has already been told the drawings play a more dominant role in this chapter; text is just added to clarify elements of the drawings that stand out or have been changed.

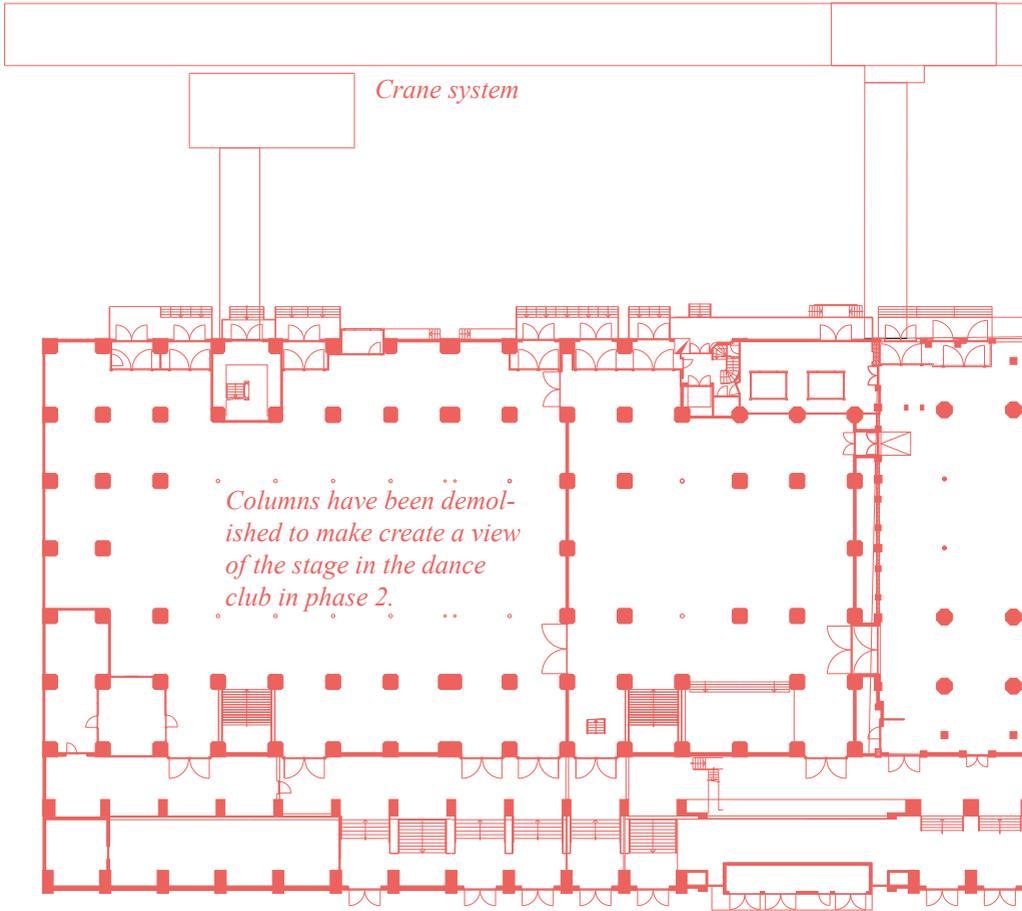
*Elevator tot the top floor
night club.*



*Phase 3 would have trains
enter the building. Now it
is a smoking area and a fire
escape.*



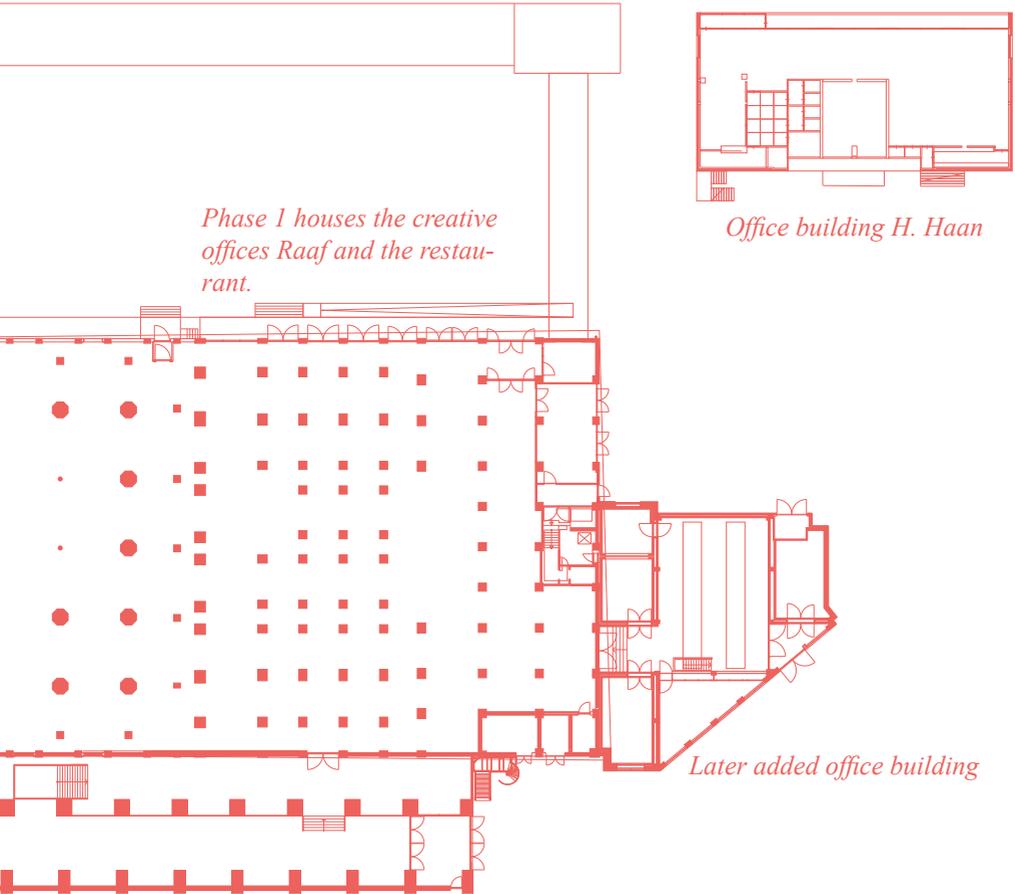
Explaining the building



Columns have been demolished to make create a view of the stage in the dance club in phase 2.

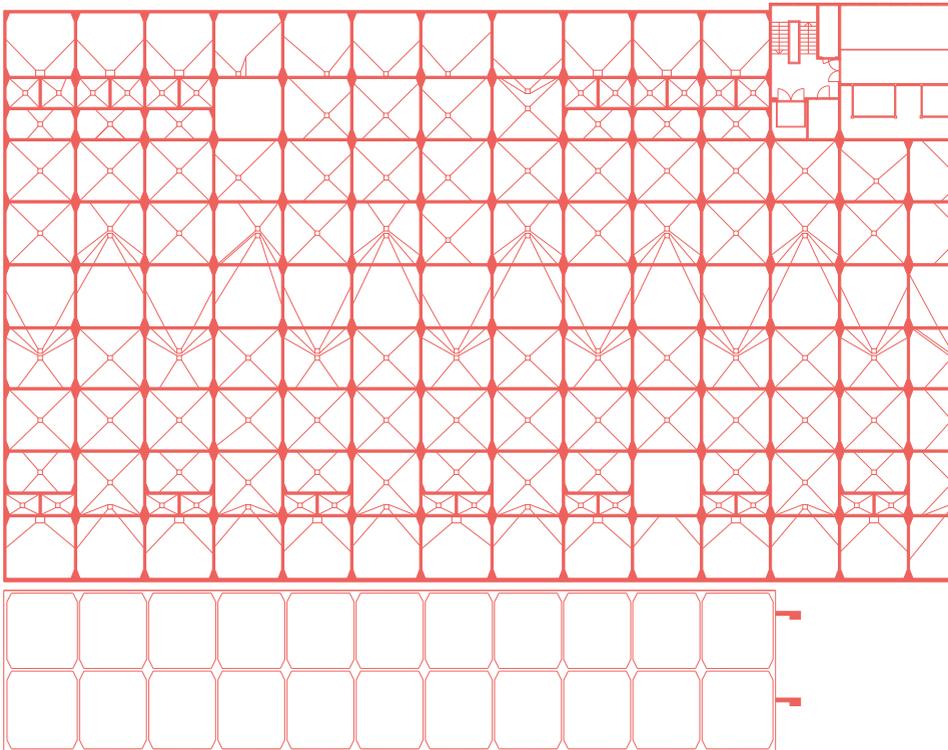
Transformer house divides the 3rd phase in two volumes.

Plans - ground floor



Explaining the building

Phase 2 type silos



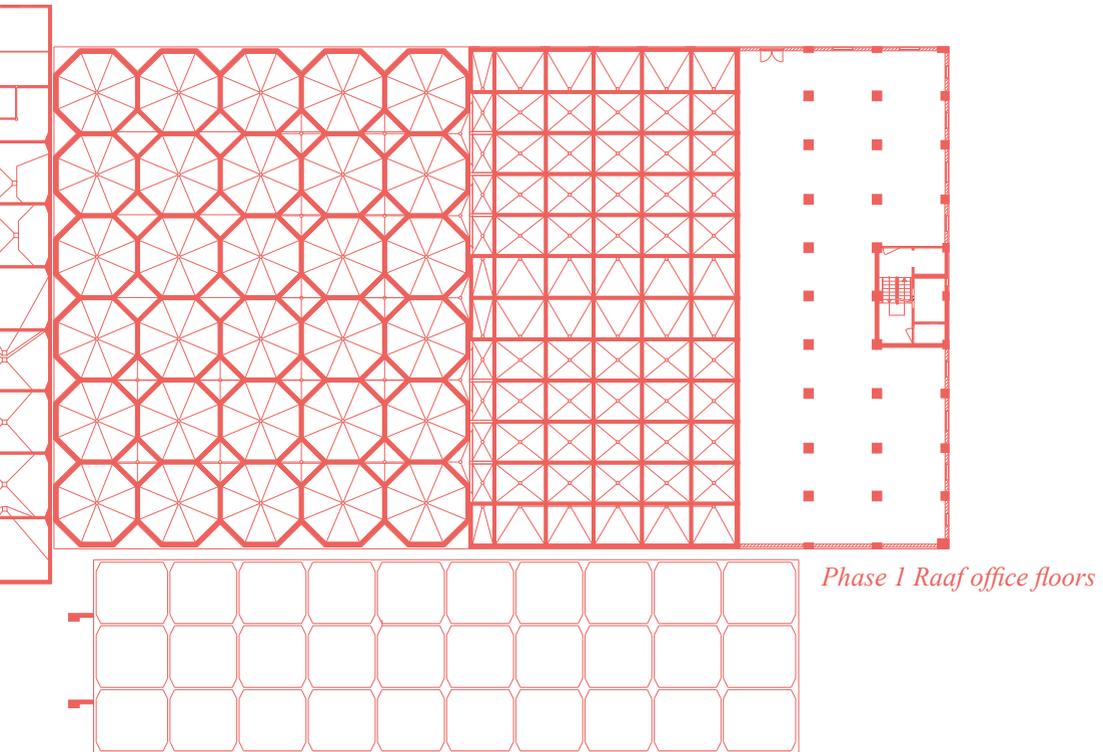
Phase 3 type silos have the same shape as the phase 2 type but are bigger.

Gap because of the transformer building

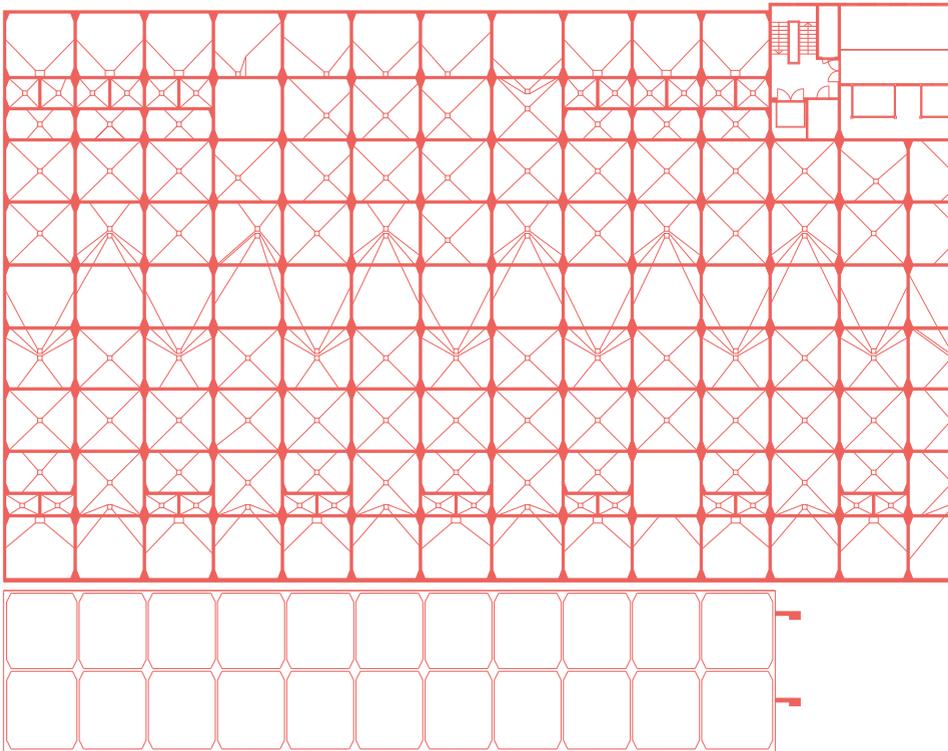
Plans - silo floors

Phase 1 type 2 silos

Phase 1 type 1 silos



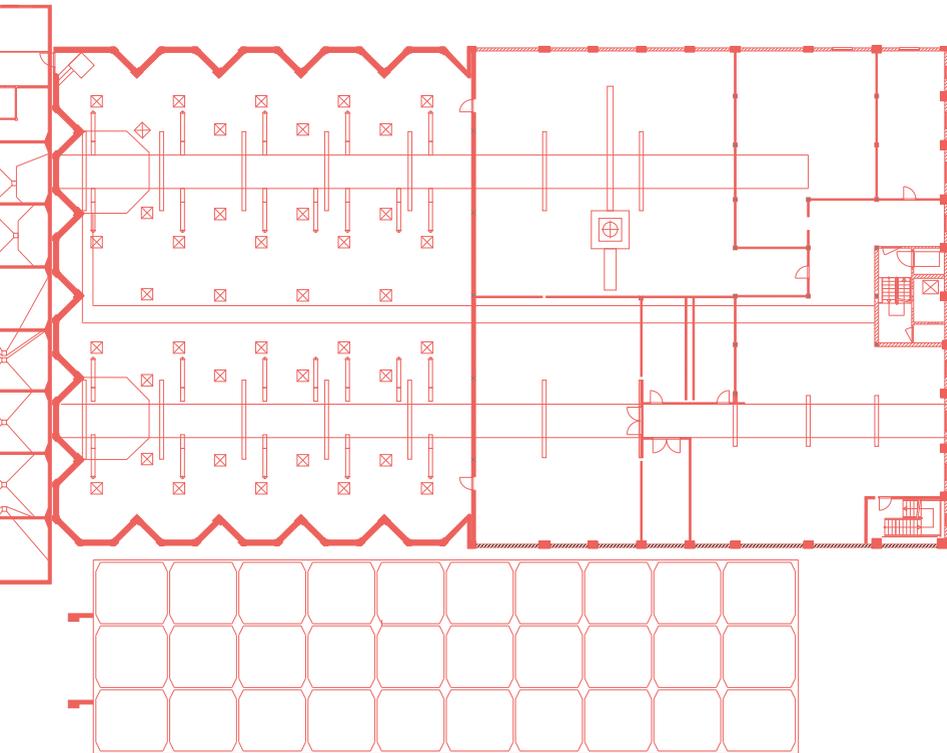
Explaining the building



Plans - 7th floor

*Phase 1 distribution system
with its own secondary
structure.*

Phase 1 offices

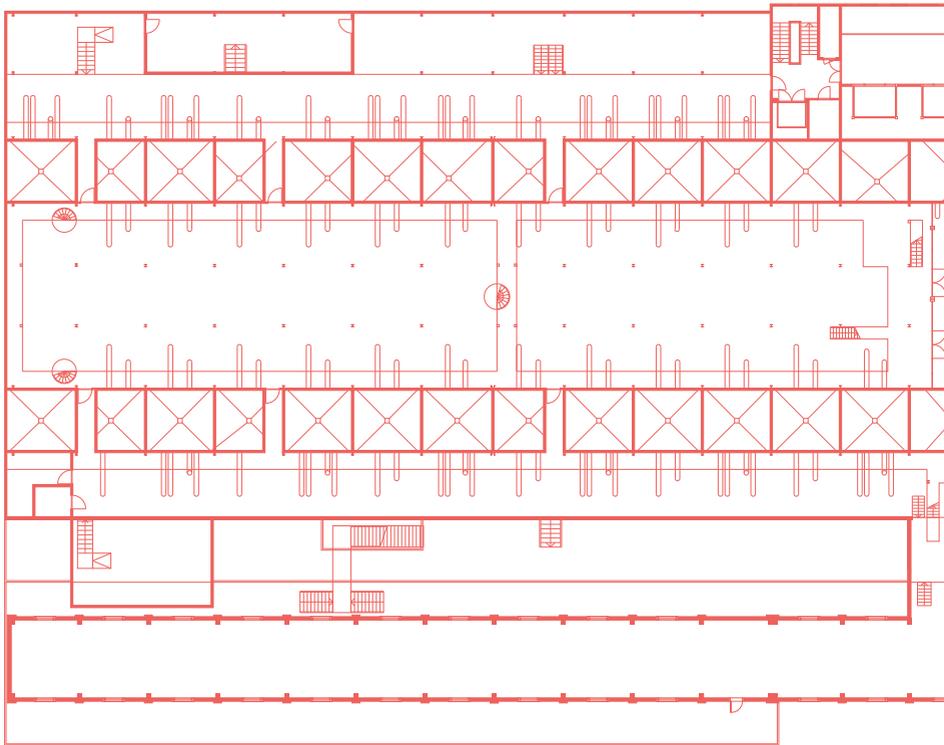


*The roof construction is a lightweight structure because
of explosion and fire risks. In case of a explosion the roof
would be the first element to collapse releasing pressure
saving the rest of th structure.*



Explaining the building

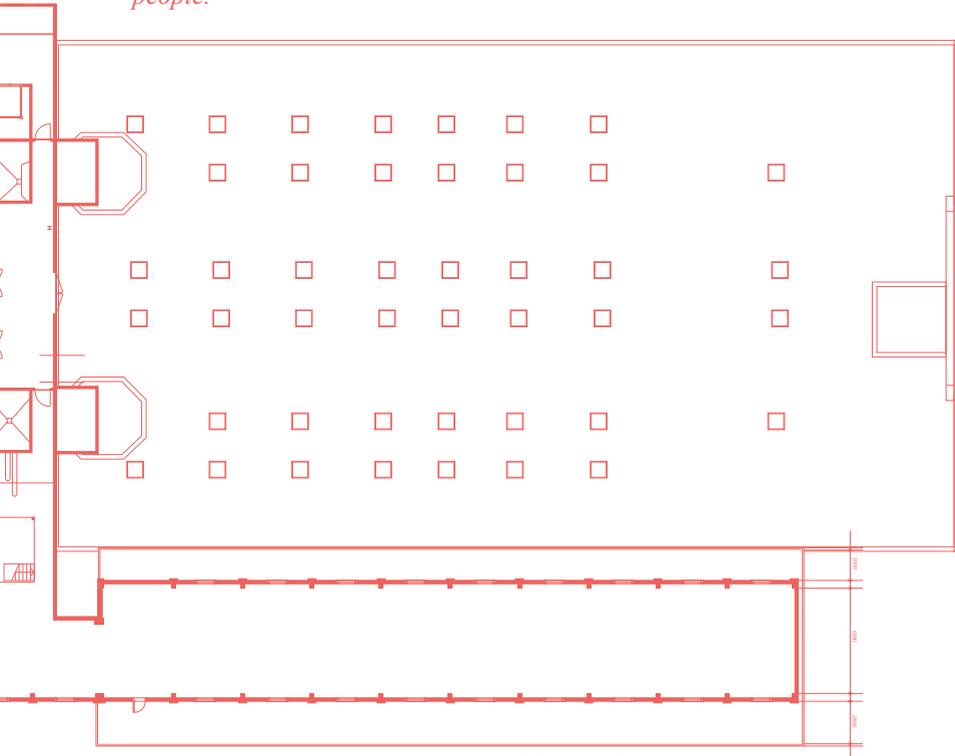
*Top floor used as night club Factory
010.*



*Now sporadically in use for fashion
shows or photo shoots.*

Plans - 10th floor

Roof is not accessible because the lightweight structure can not support people.



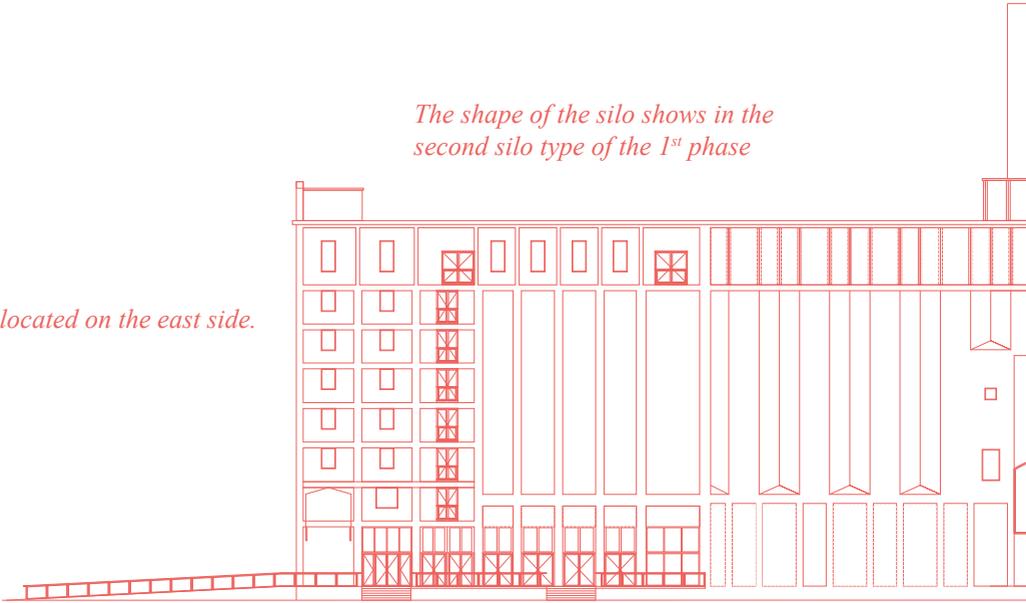
great views of the city from this part of the building.



Explaining the building

The shape of the silo shows in the second silo type of the 1st phase

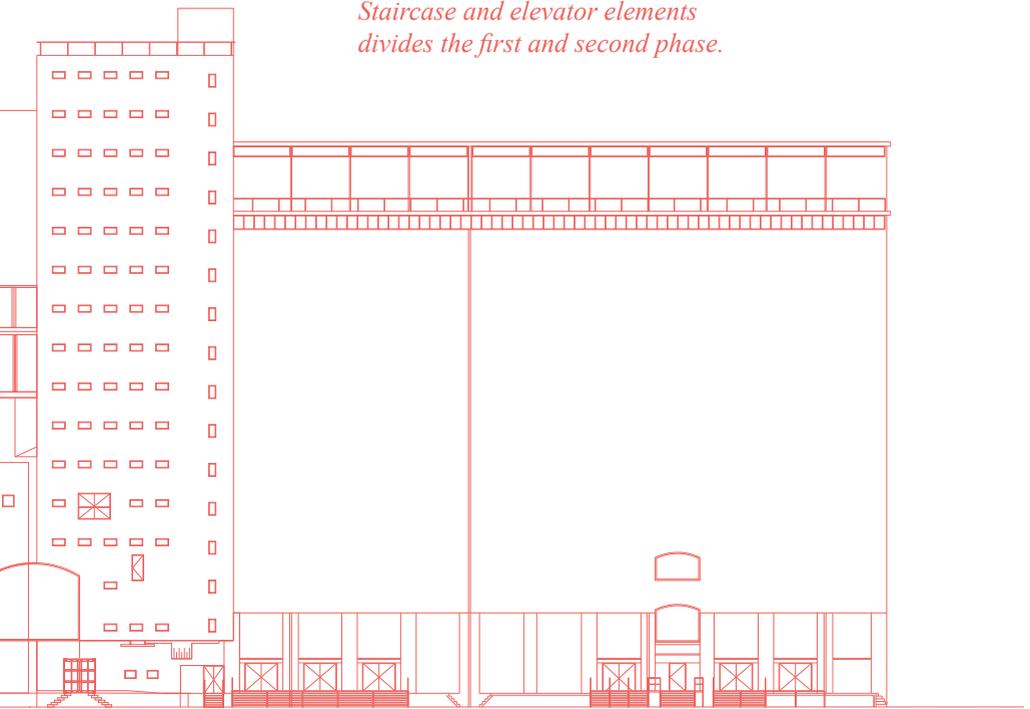
Raaf located on the east side.



Restaurant facing the water.

Elevations - north facade

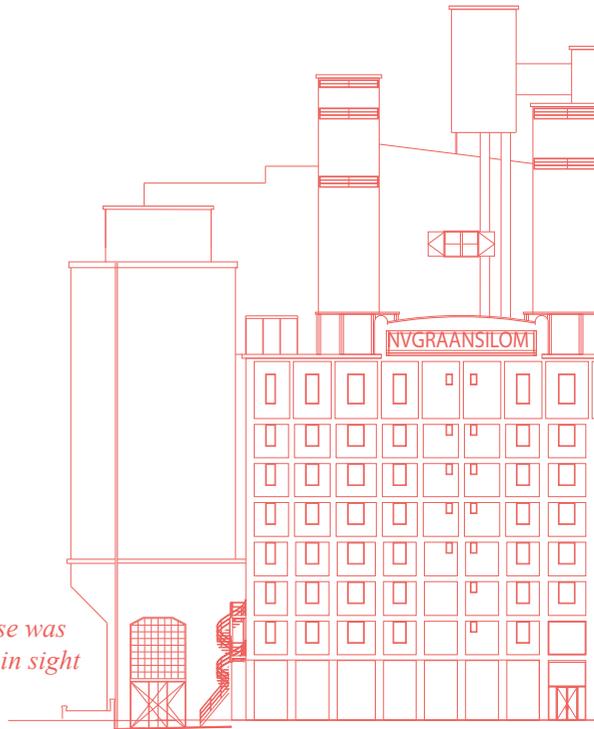
*Staircase and elevator elements
divides the first and second phase.*



*The crane system penetrates the
north facade four times in total.*

Explaining the building

Train door in the 3rd phase was covered but is now back in sight and use.



Elevations - east facade

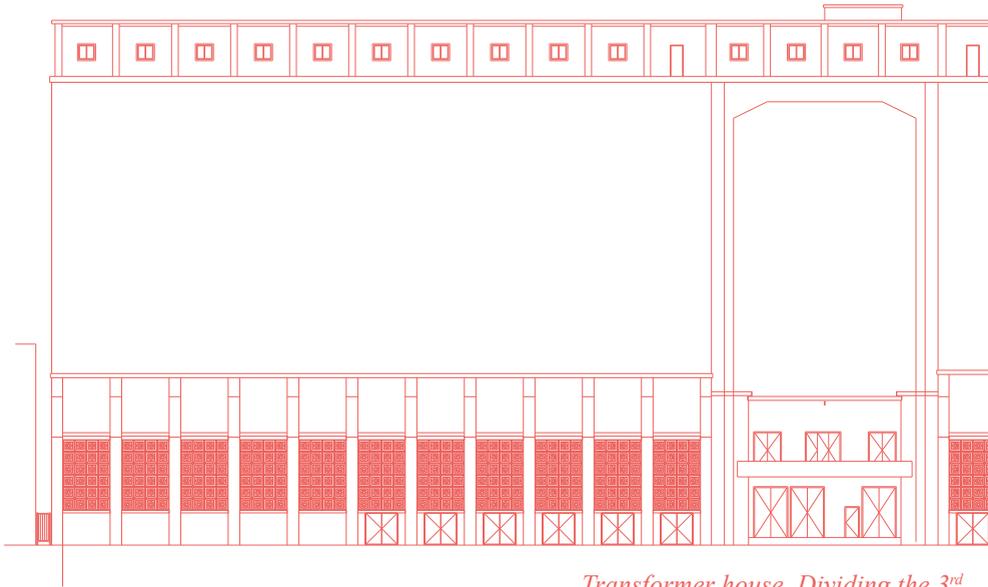


The setup of the east facade is mirrored along a line in the middle of the facade

Crane is not in use. Art the moment it is being painted and covered in glass to protect it.

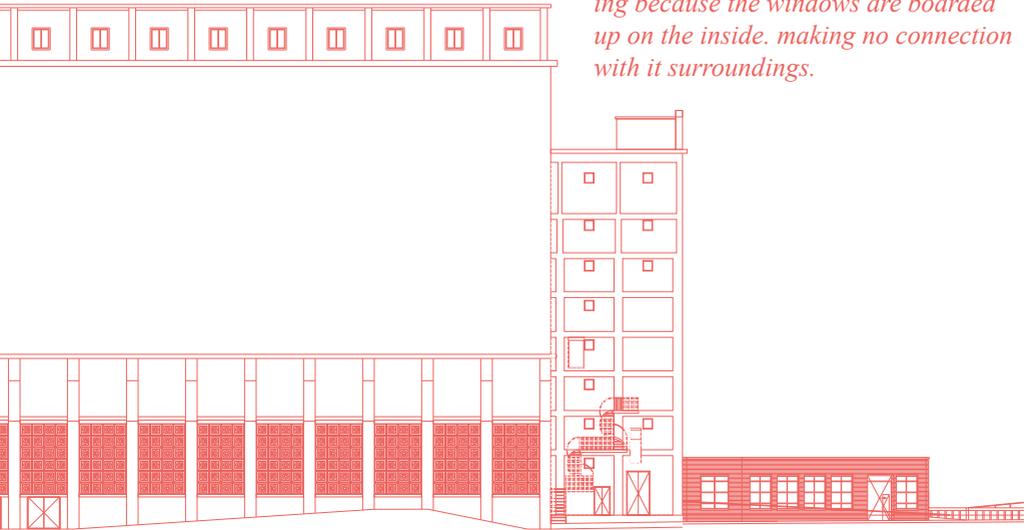
Explaining the building

To big massive volumes cover the silos of the 3rd phase. Creating big empty surfaces. The left one is covered with an art piece.



Transformer house. Dividing the 3rd phase. Creating a bridge effect on the top level.

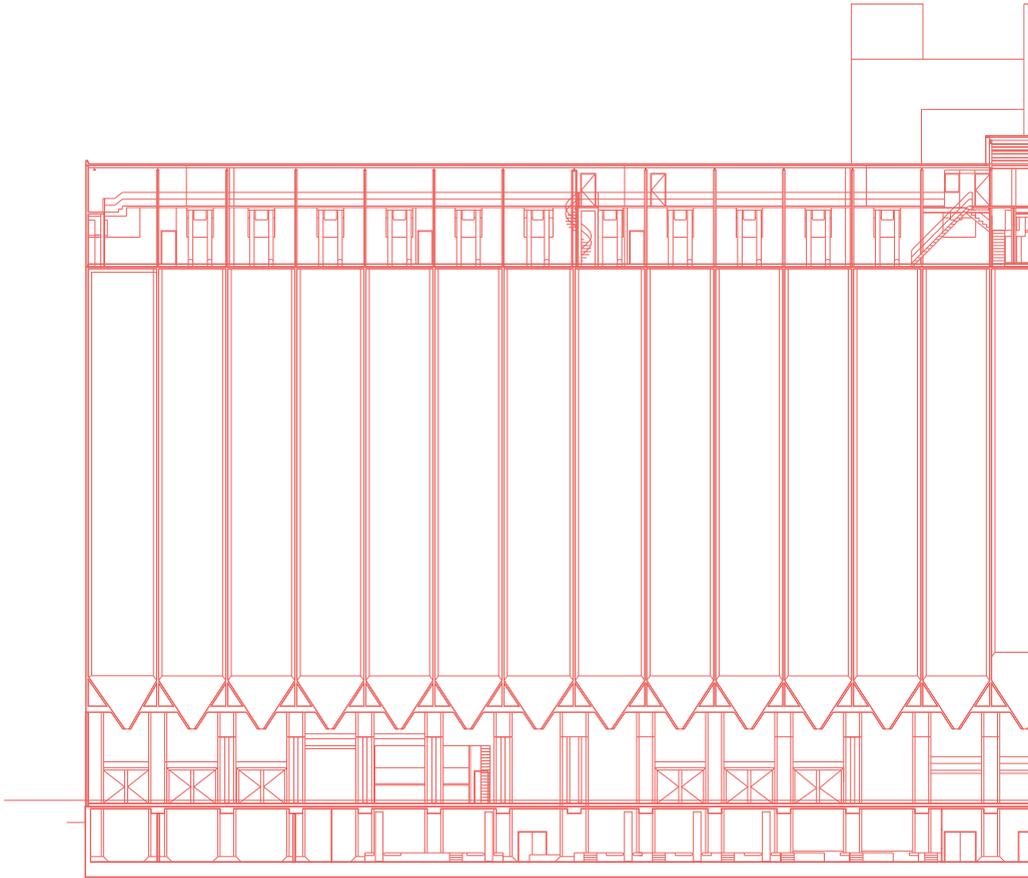
Elevations - south facade



Window decorations are not functioning because the windows are boarded up on the inside. making no connection with it surroundings.

Window decorations are not functioning because the windows are boarded up on the inside. Making no connection with it surroundings.

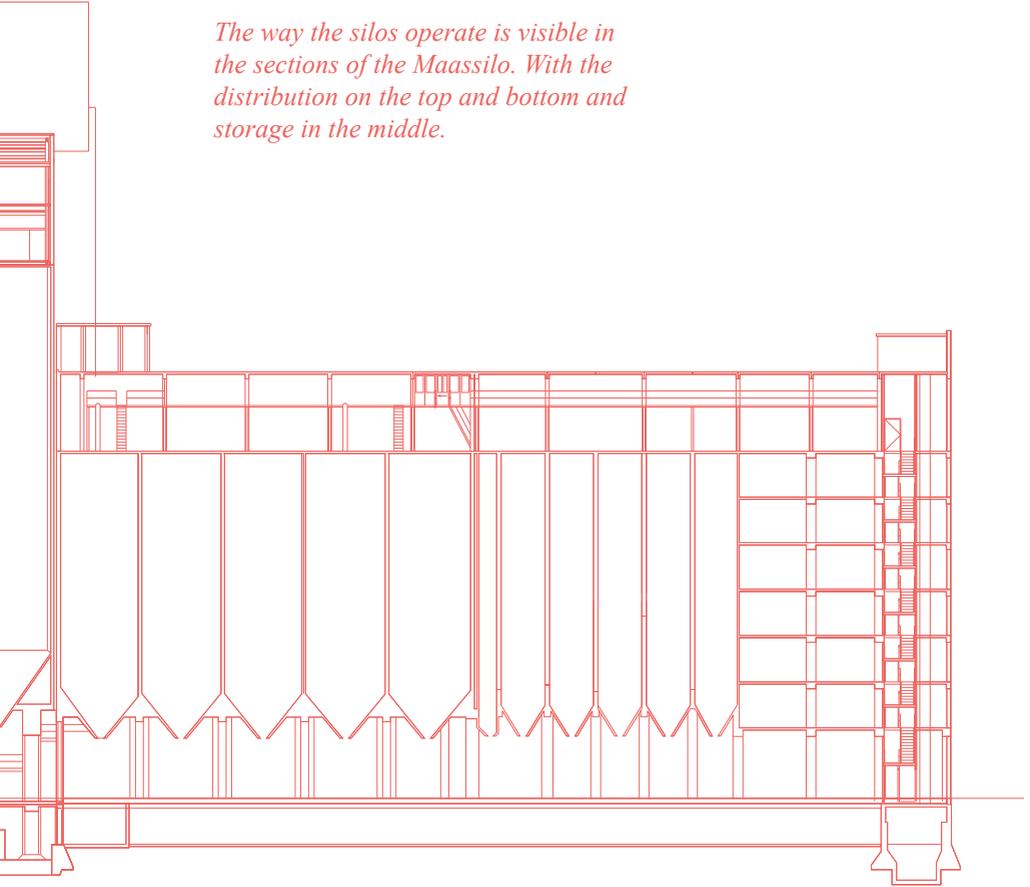
Explaining the building



Capacity of phase 2 is much bigger than phase 1. This extra capacity is accomplished in the height of the silos.

Sections - longitudinal

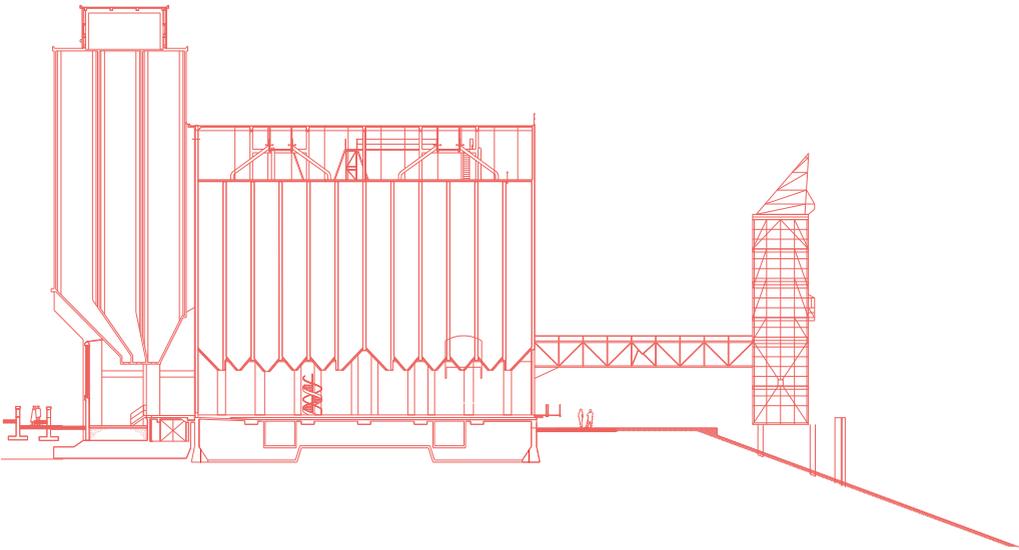
The way the silos operate is visible in the sections of the Maassilo. With the distribution on the top and bottom and storage in the middle.



Characteristic for the Maassilo are the silo mouths creating a unique ceiling on the ground floor.

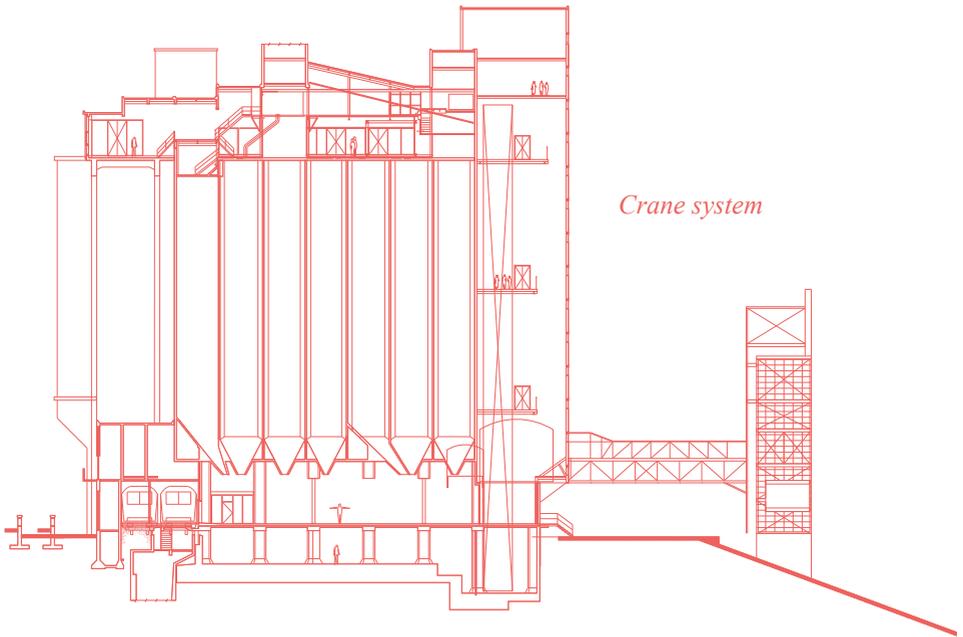
Explaining the building

Phase 3 has a unique view of the city because it is higher than phase 1.



Sections - cross

*Distribution of the grain from phase 2
to phase 3*



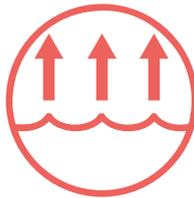
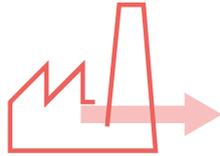
Chapter 4: Conclusions

Having looked at the history of Rotterdams harbour, its context, its direct surroundings and the Maassilo building itself it now is time to relate this back to the research question which is the backbone of this analysis.

What is the narrative of the Maassilo? This question is not easy to answer in one sentence. That's why I have decided to answer the question separately in the context analysis and the building analysis.

Context conclusion

The story behind the context of the Maassilo begins with the industrialization of the Rotterdam harbour in the middle of the 19th century. This was the impulse to expand the port to the south bank of the Maas. The Maasharbour was built as a part of this expansion and was meant to be a catalyst for the development of the south of Rotterdam. The industry started leaving the city in the 1970's due to political changes and a change of vision with the port authority. Housing is the main function in the old city harbour now supported by public and cultural function. Because this part of the city used to be piers of the harbour they now lack a direct relationship between each other. The cultural functions that are there now are not interconnected creating culture islands in the south of Rotterdam like Ahoy/Zuidplein, the Wilhelmina pier and the Katendrecht, instead of being one cultural hub. The Maassilo is situated outside the sea-dikes making the building (and most of the former city harbour on the south bank) very vulnerable to the expected rising water levels making flooding occur more often in the future.



Conclusions

Building conclusion

Having analyzed the Maassilo to me the narrative of the building is told by the composition of the building itself. This to me reflects everything u need to know about it.

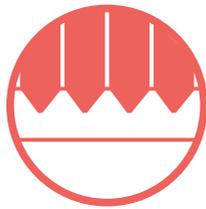
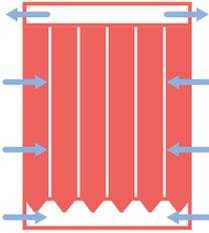
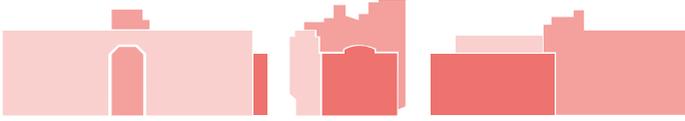
The composition tells the story that it was built in different phases. My different architect in different styles. It shows that it is a industrial building. It shows the way it used to work as a grain silo and it shows the typology.

Was this silo built in one time it would have never looked like this building does now. Making the composition unique and showing the advance in technology with the changing silo shapes and size.

Knowing how the building functioned as a grain silo back in the day is knowing the building because of the functional approach that all architects embraced. Functionality, efficiency and maximizing the amount off storing space have been the main theme in all phases and it shows in the small amount of decoration in and on the building. Giving the building a quintessential industrial character.

This character results in a introvert building. With the current function as a dance club on the ground floor has made this part of the building even more introvert which makes the building not react to its direct surroundings anymore. Only the top floors are not introvert. They are more open and because of the height these floors have an amazing view of the city of Rotterdam.

The building is located in a good position at a crossroads making it very accessible.



Value Assessment

Introduction

In this part of the analysis we assess the value of the Maassilo in its current state. By looking at separate elements of the building and finding out what does and what does not have value to me. These values are directly related to the conclusions drawn in the chapters before. Rating separate elements of the building according to these conclusions is what this valuation is based on. Apart from looking at separate elements a SWOT analysis and value maps are used to give an insight into this valuation.

Surroundings

The direct surroundings of the Maassilo like the building are mainly functional to the old grain process. There is no green structure and approaching the building it is hard to see where the main entrance exactly is. Its location at a crossroads on the other hand is valued highly because it makes the Maassilo easily accessible with subway, tram and bus connections. Although by water the public transport accessibility could still improve.

Historic value

When the Maassilo was built it was the first concrete reinforced building in the Netherlands and the first concrete industrial silo building of its size in Europe. These facts give historic value to the Maassilo and by itself should be a reason to consider redevelopment so this piece of Rotterdam's architectural history is preserved.

Cultural value

The cultural value of the Maassilo is directly related to its historic value but for the cultural value the emphasis is on the



Value Assessment

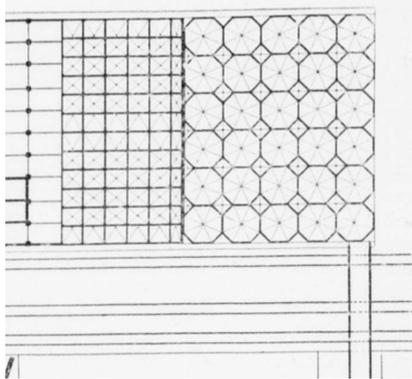
role the building plays in the bigger picture of the Port of Rotterdam. Although it just functioned as a grain-silo the Maassilo is part of a much bigger process and plays a part in the inland trade and transshipment of goods. And it is this process that is foundation and origin of the Rotterdam harbour. As an industrial building it now is part of the heritage of the old city harbour which has moved out of the city and by still being here reminds the city of this industrial past.

Typology

The typology of silos is a very old typology. Already seen in Roman, Egyptian and old Chinese architecture. First part of agriculture now also know in an industrial setting. In the last century a lot technological advances have changed a lot in the way silos work and this has had an impact on the typology. Having lost any form of cultural expression and not needing people in the process anymore the typology has changed so much that the question can be raised whether silos nowadays are still architecture or not. The Value of the silos in the Maassilo is that it showcases the way silos worked halfway during the 20th century.

Structure

Although the building was built in separate phases by different architects the basic idea behind the structure of the Maassilo is the same. A lightweight top level to cope with the dangers of explosions and fire. A massive concrete grid in the middle part supported by over dimensioned columns on the ground level. These columns are over dimensioned to cope with the added weight of the grain in case of full silos. The whole buildings is built on a foundation of concrete slabs on pillars.



Value Assessment

Materialization

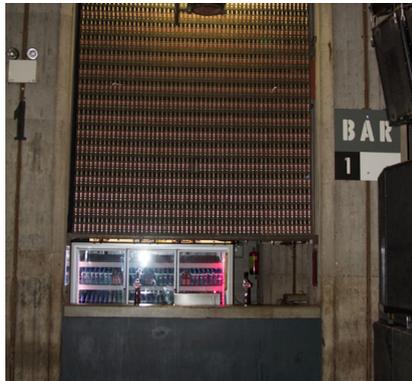
With functionality, efficiency and maximum storage space as the main themes for the design of the Maassilo there seems to be no room for a lot of decoration and artistic expressions. This results in a lot of bare unfinished concrete in the building. With the exception of the third phase in which the windows have been decorated giving of a unique lighting effect inside. Also besides concrete brick is used in this part of the building. The value of the materialization is that it sets the mood in and around the building giving it a distinct industrial feel with its roughness.

Exterior

The facades of the Maassilo is not in a good condition. All over the building the reinforcement of the facade has come in contact with rainwater due to small cracks and because of this the iron rods have reacted with the acid. This is the reason for the degradation of the facades. This brings the value of the exterior down. The large blank volumes that the building has are very characteristic for this building and therefore the volumes themselves do have a lot of value

Interior

Most of the values of the interior already have been talked about with the materialization, structure and typology. The rough interior makes it an introvert building that does not react to its direct surroundings and has limited daylight penetration. With the sloped space between the 7th/ 10th and ground floor having no floors in between the two have become separate entities. Connecting the two into one building is a challenge that needs to be addressed to come to a successful design.



Value Assessment

SWOT analysis

Strengths

- *composition*
- *location*
- *structure*
- *accessibility*

Weaknesses

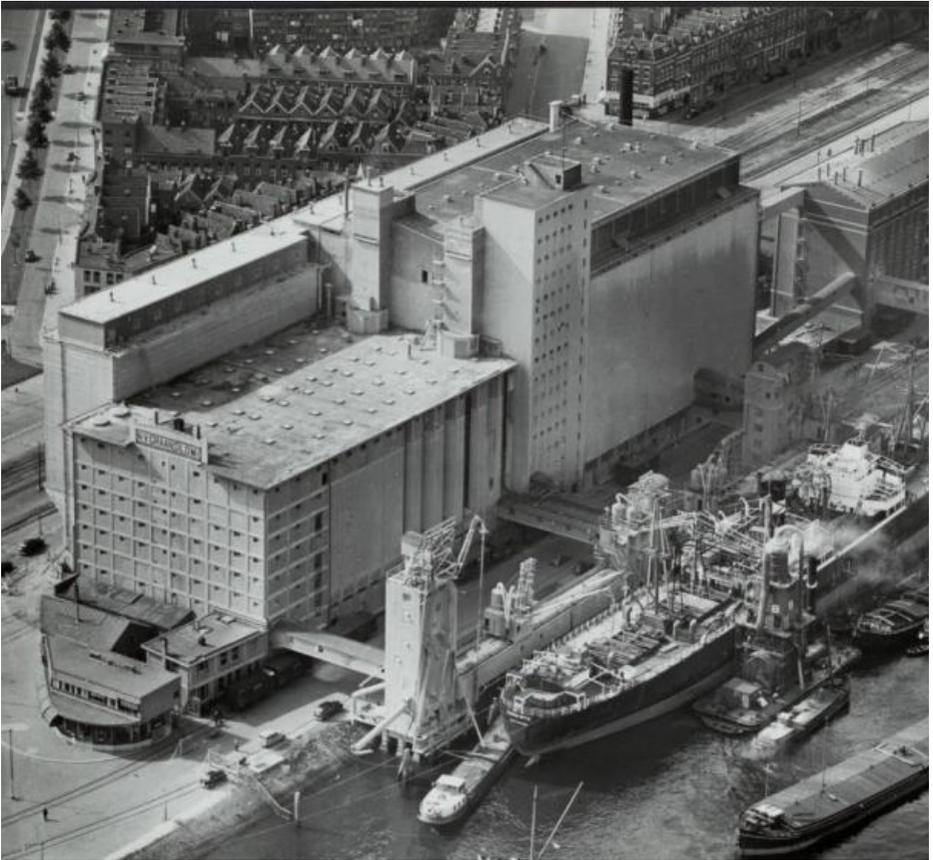
- *facade condition*
- *heating/cooling*
- *only 25% in use*
- *no relation with its surroundings*

Opportunities

- *getting more daylight inside*
- *improving public transport water*
- *connecting culture islands in Rotterdam-South*
- *making use of the view*

Threats

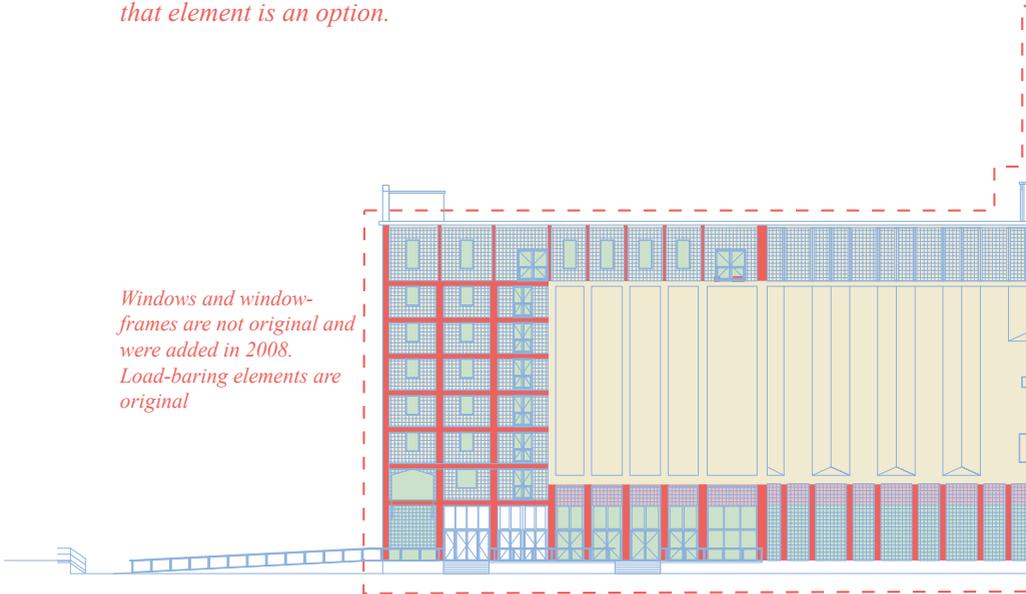
- *being outside the Sea dike*
- *rising water levels*
- *not connecting top levels and ground floor*



Value Assessment

I fully stand behind the value maps made for the group report. These value maps however show more my personal values in line with my personal analysis and its research question.

The values given are High (red), medium (yellow) and low (green) value with high value meaning that demolishing is not an option and low value meaning that replacing or demolishing that element is an option.

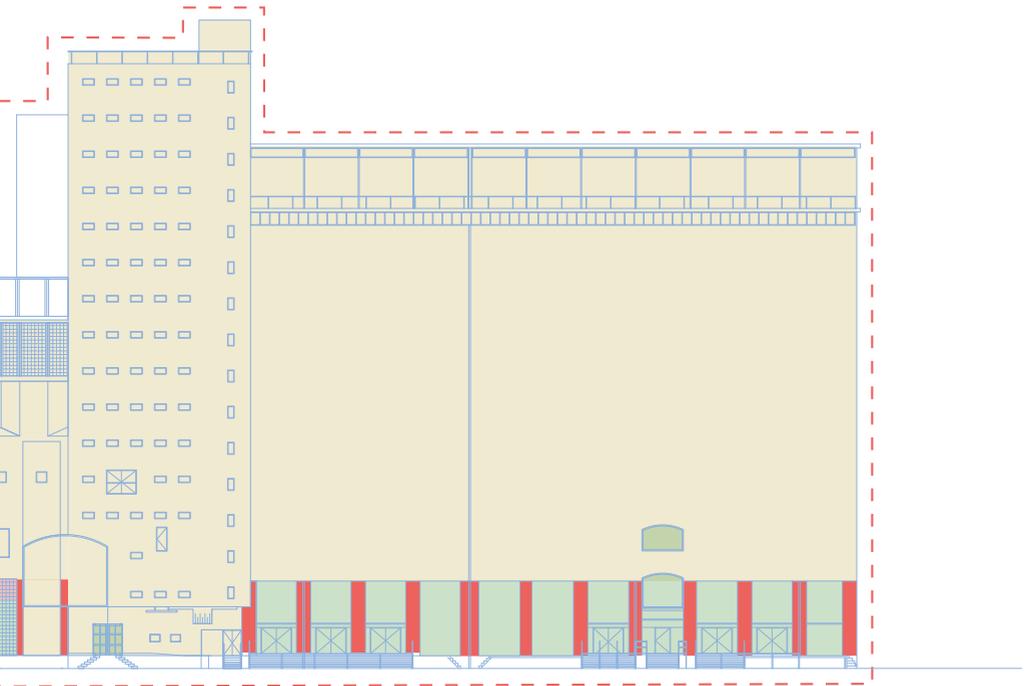


Windows and window-frames are not original and were added in 2008. Load-bearing elements are original

- high value
- medium value
- low value

Elevations - north facade

The composition of the volumes has high value (dotted line) the facade itself has deteriorated and does not have a high value but maintaining it as one piece is important

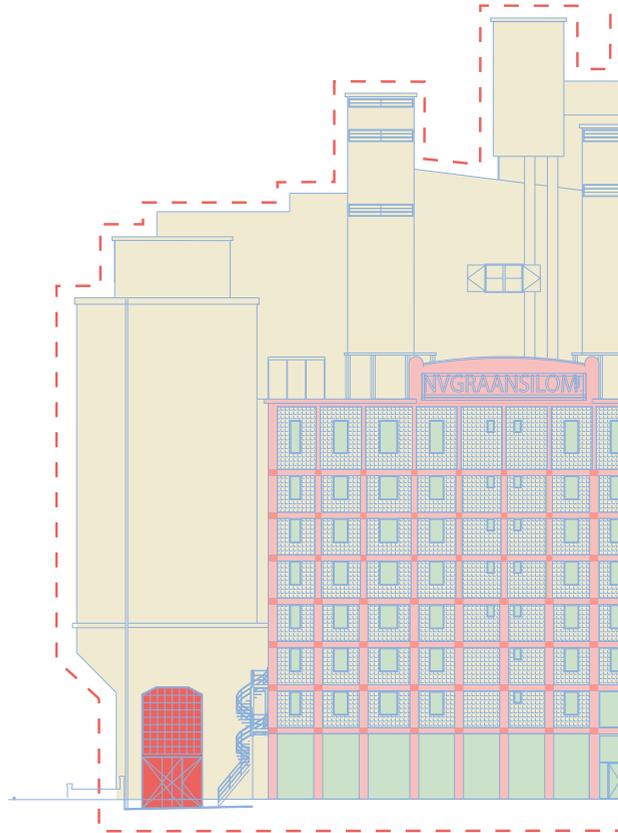


*Columns are original and valued highly.
On the ground floor everything in between the columns is not original and has low value*

Value Assessment

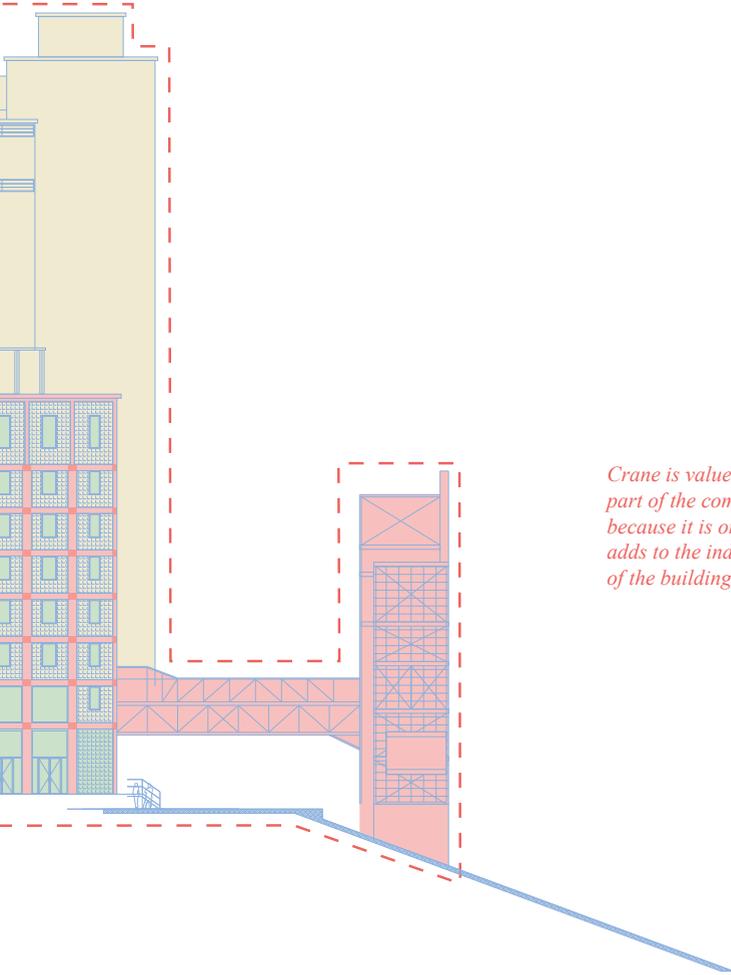
The sign on top of the facade is original

*Original door of phase 3
big enough to fit a train I
value high and is one of the
few decorated element of
the Maassilo*



- high value
- medium value
- low value

Elevations - east facade

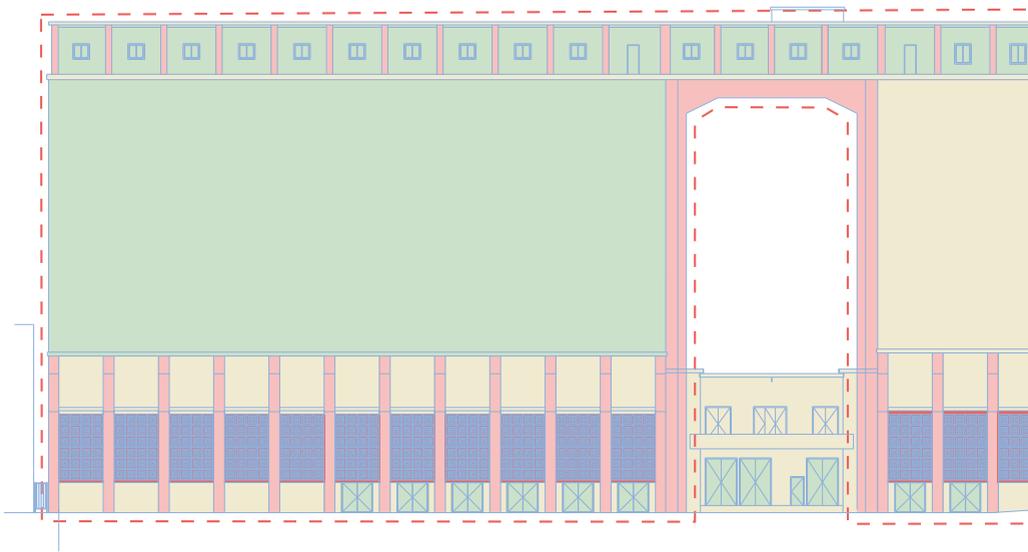


Crane is valued high as a part of the composition and because it is original and adds to the industrial look of the building

Value Assessment

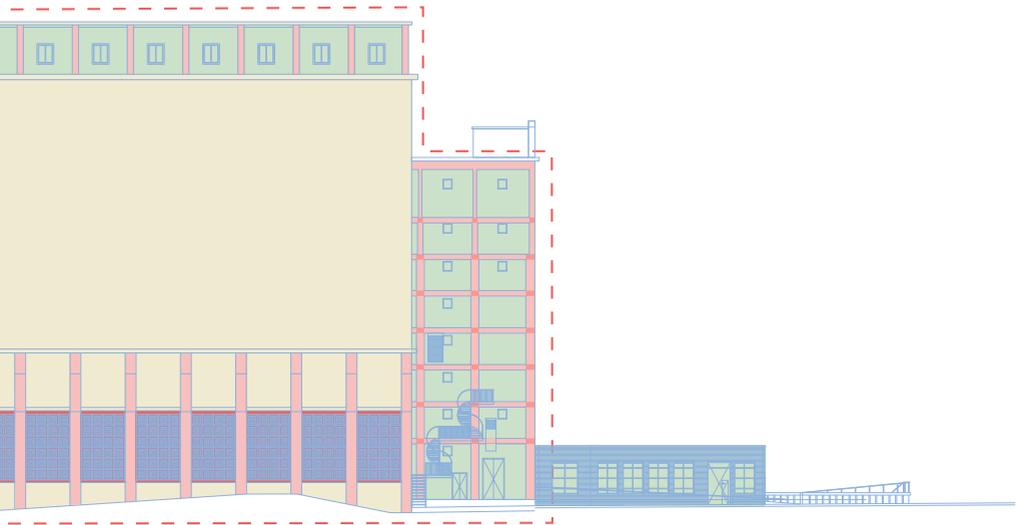
Artwork on the facade is not original and does not fit the concept of this building

The arch is a characteristic element of the south facade and is original



- high value
- medium value
- low value

Elevations - south facade

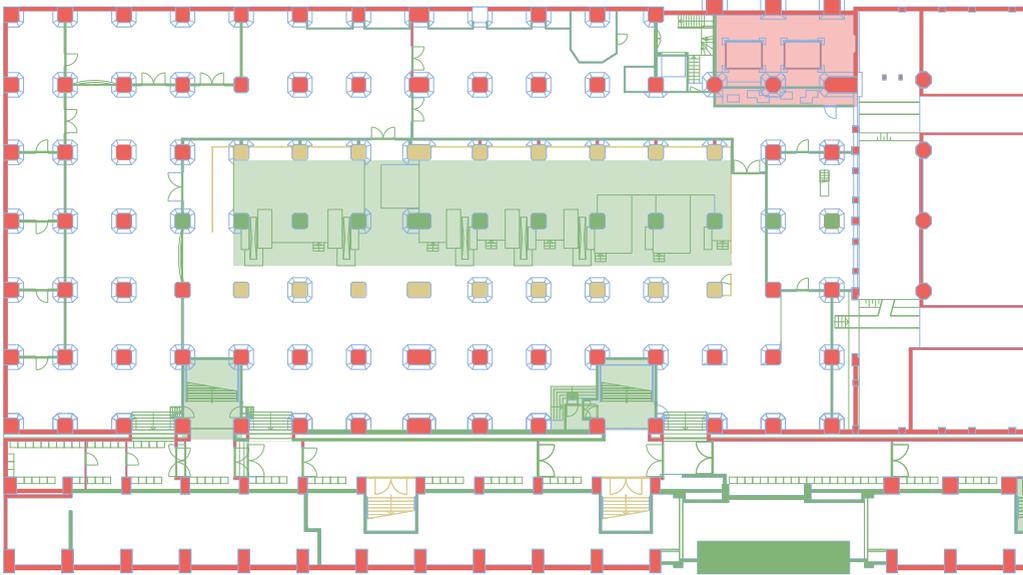


Windows of phase 3 are highly decorated and determine the daylight penetration in the building but are boarded up at the moment. They need to be restored

Value Assessment

The machinery in the basement is original and was valued high in the group report. To me they have less value because they fill a potentially nice open space and are not in use.

Columns are in good shape, original and therefore valued high.



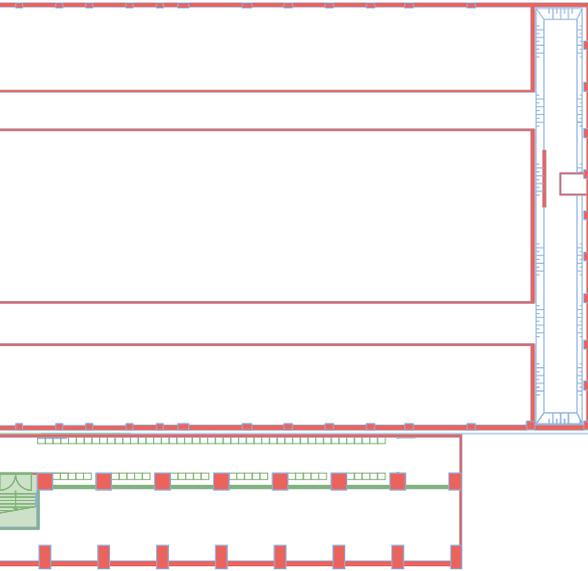
Staircases are not original and have no value

original operation walls have high value but will not stay where they are now. But will form the inspiration for the design of the interior.

- high value
- medium value
- low value

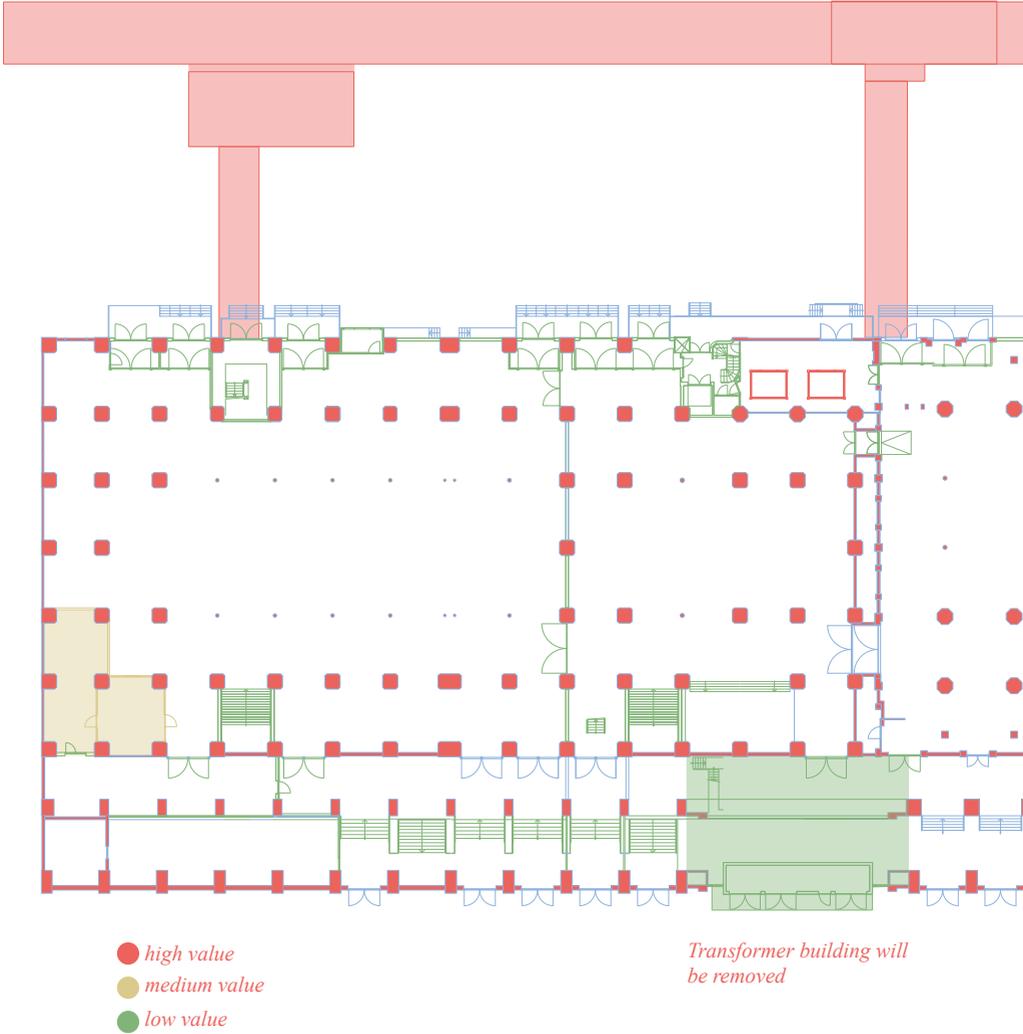
Plans - basement

The old distribution line is original, part of the old grain process and is valued high.

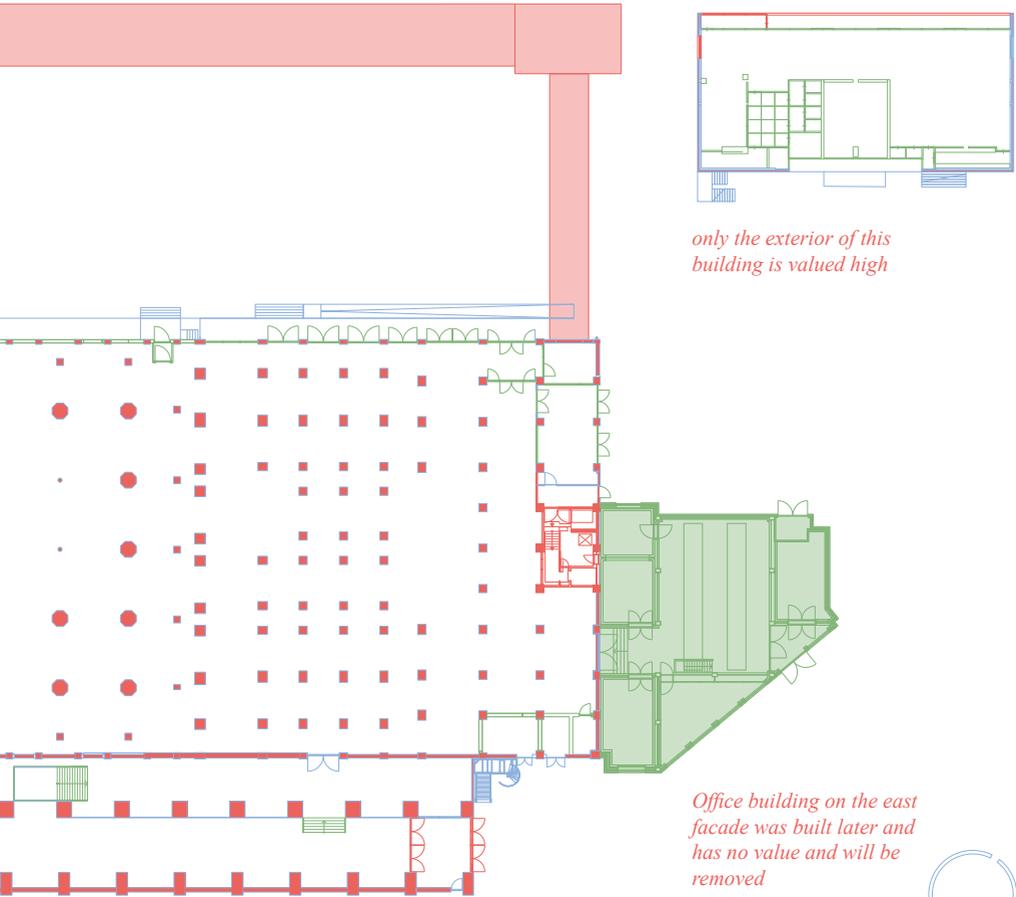


Value Assessment

Crane system is valued highly



Plans - ground floor



only the exterior of this building is valued high

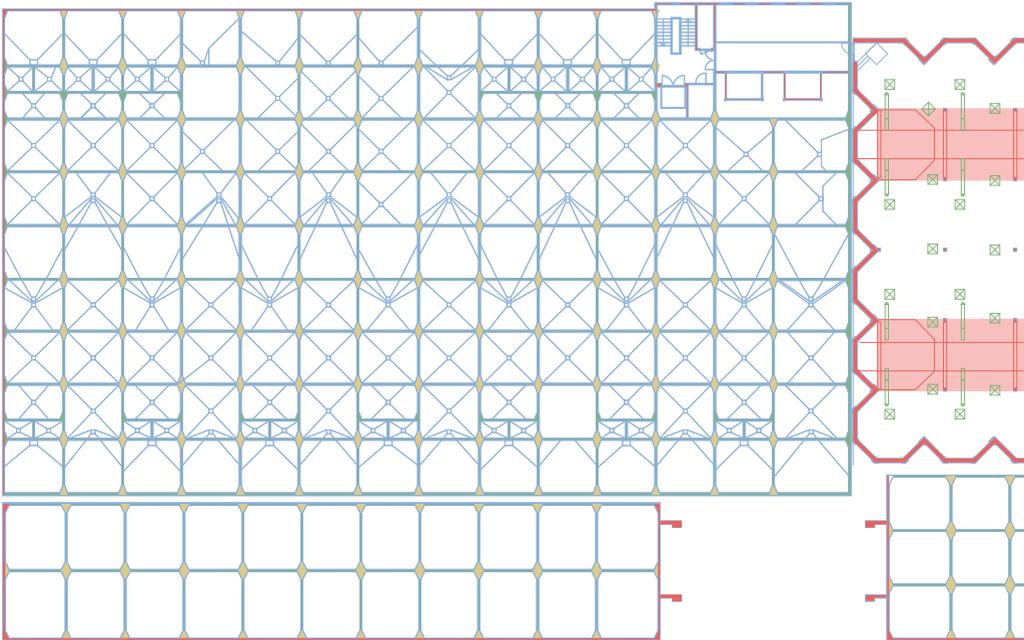
Office building on the east facade was built later and has no value and will be removed

Door of phase 3 is of high value to me



Value Assessment

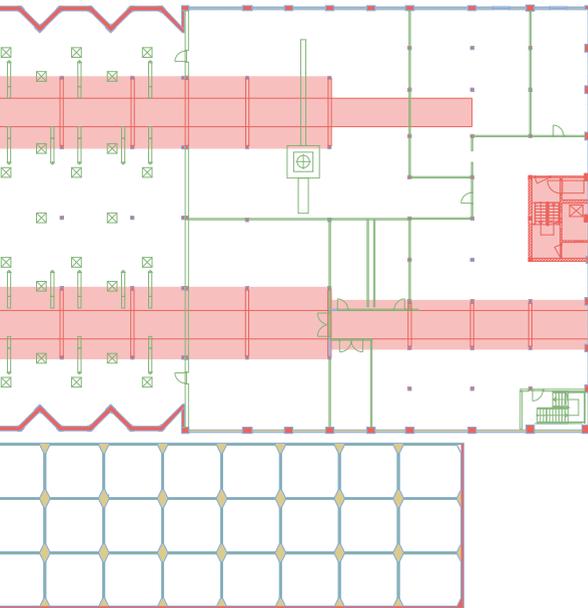
Silowalls are valued like the rest of the load-bearing structure highly.



- high value
- medium value
- low value

Plans - 7th floor

Secondary structure of the distribution system is original and valued high.

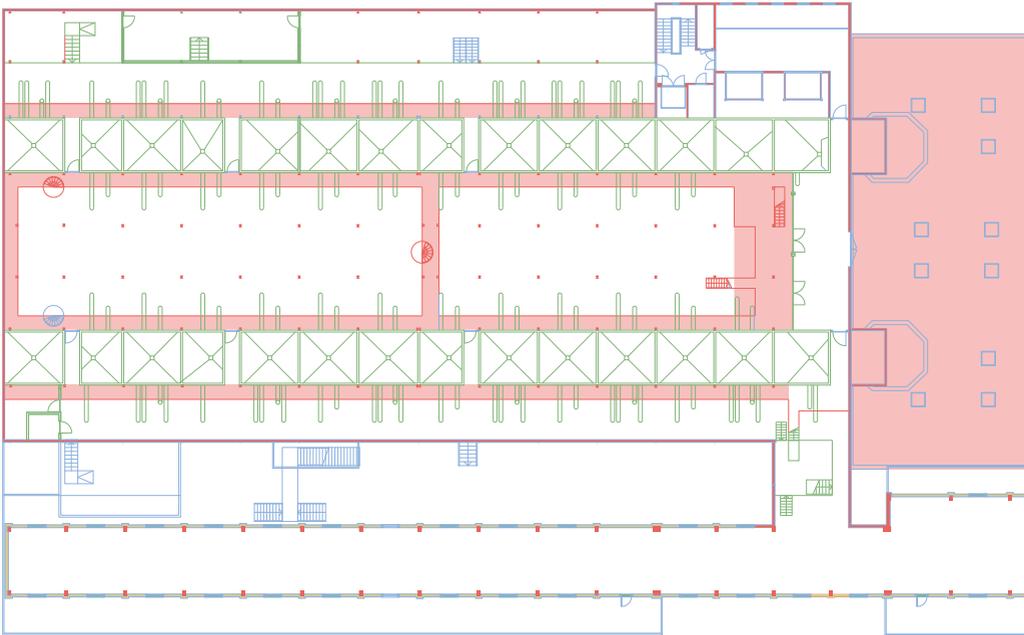


Original staircase of phase 1 is highly rated.



Value Assessment

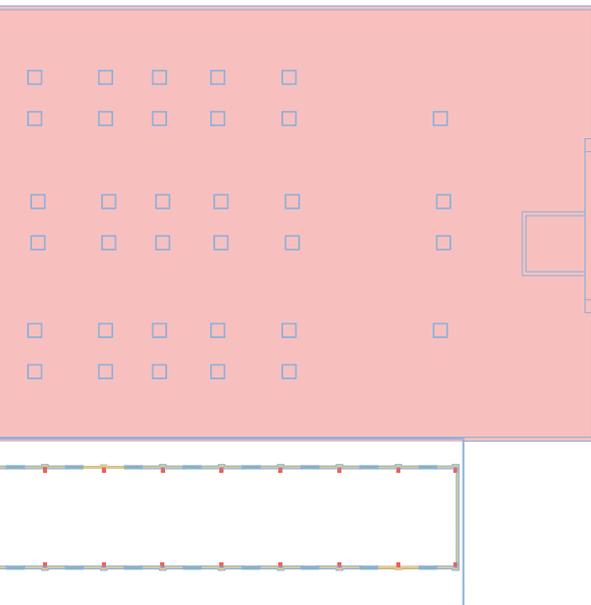
Secondary structure of the distribution system is original and valued high.



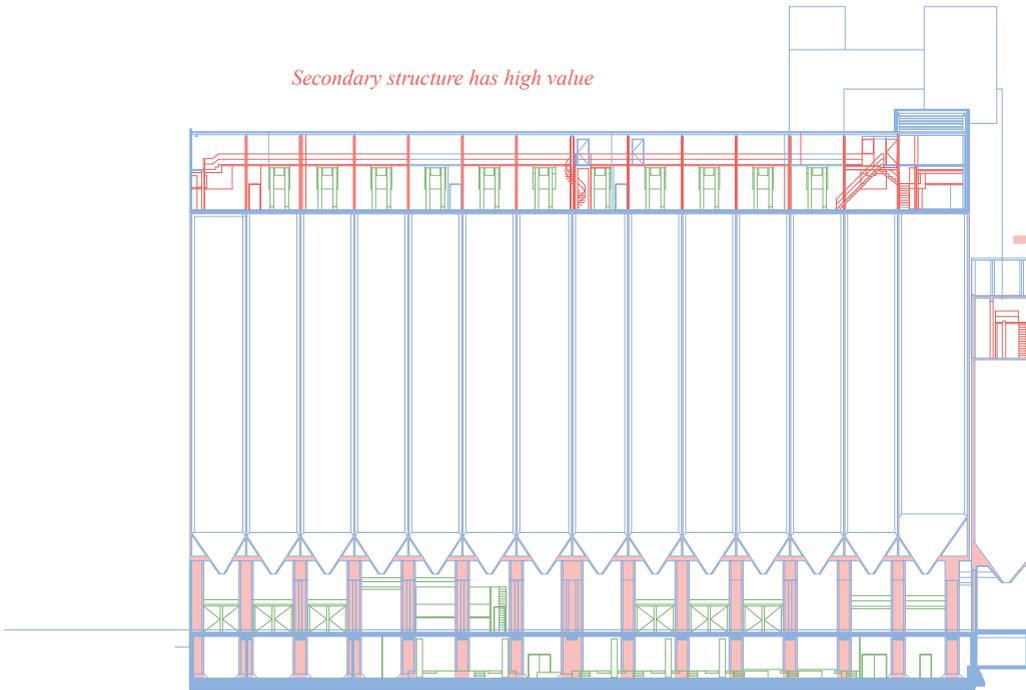
- high value
- medium value
- low value

Plans - 10th floor

Roof scape of phase 1 has a great view of the city. To use the roof the structure needs to be made stronger.



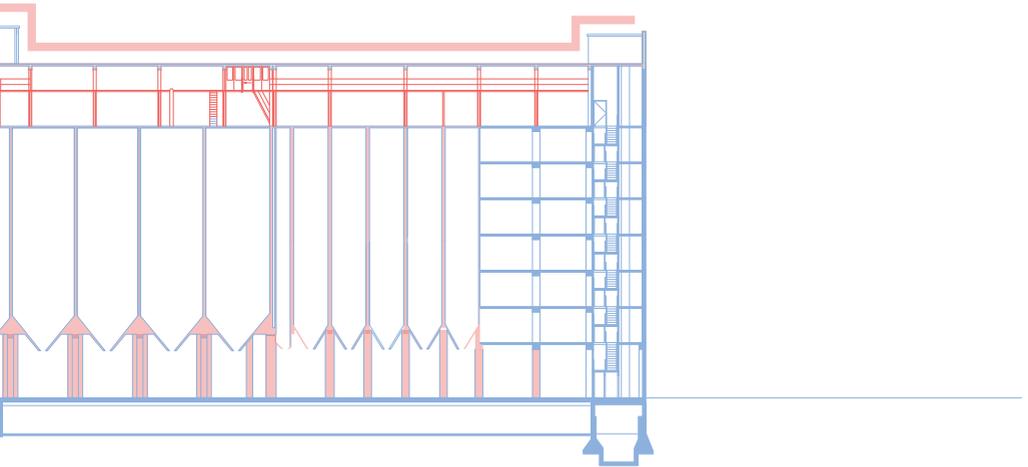
Value Assessment



- *high value*
- *medium value*
- *low value*

Sections - longitudinal

Roofscape has high value



The silo mouths are a very distinct element of the Maassilo and should always be visible. They are original and I value them highly

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