

Maassilo-housing a transshipment society

Reflection paper

Kostis Vatanidis
4521609

Introduction

The following reflection paper addresses the value assessment and redesigning methods of industrial heritage, focusing on the former harbour area of Rotterdam Zuid.

The is particularly looking at the case of the Maassilo complex, a major ensemble of silos and elevator towers, at the edge of the Maashaven.

Initiated as a group research within the studio of Heritage and Architecture at the TU Delft, the project would later develop into an individual brief of research by design. In this process, our main body of knowledge, would be based on a former cultural value report done by Transformers in 2008, as well as a series of archives acquired from the Municipality and the NAI. Moreover, as a means for deploying our architectural analysis of the building, a method was used for grasping its multiplicity. That was the use of Stewart Brand's structure on reading a building as a hierarchy of 'shearing layers'.

As a combination of Brand's logic and some additions the group made, based on the specificity of the building's features, the following hierarchy of layers was established, as a guideline for analyzing the complex :

Surroundings (the urban context)	Structure (the load bearing system)
Site (the direct surroundings of the building),	Space plan (internal layout)
Spatial composition (basic volumetric distinction)	Surfaces (the skin of the interior)
Skin (the exterior surface)	Services/Stuff (the remaining machinery and services)

Furthermore, as a theoretical framework for interpreting our architectural analysis, the group was introduced to the concept of value assessment, and the cultural value matrix.

This provided a useful platform for weighting down the different scales of cultural and technological findings as traced throughout the building. The matrix is based in the addition of a second context of a value classification as inscribed by Alois Riegl, into a y-x axis (as seen in the following page). This categorizes the values into:

Age value (visibility of the layers of time)	Newness value (vibility of triumph over the past)
Historical value (valuable information from the past, as identified by experts)	Art value (artistic meaning in historical artifacts)
Intentional Commemorative value (human commemorative intervention)	Use value (level of adaptability for new use)
Unintentional Commemorative value (appreciation of unintended events in the story)	

+ (added by the group)

Aesthetic value (everything contributing to the current experience of the building)	Rarity value (uniqueness of certain elements)
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The outcome of this study, would be comprised into specific value statements, which would raise key discussions and objectify as much as possible the essence of the building's character.

Based on this , the first part of the paper reflects on the hierarchy of values, as found in the Maassilo, as well as the emerging conflicts, obligations and opportunities towards its identity. As a sum of personal conclusions on the key discussions of the assessment, the second part describes the proposed programme as a reaction to the main conflict identified, and the response to the main design challenge relating to the building's character.

CULTURAL VALUE MATRIX

VALUE MATRIX	Age Value	Historical Value	Intentional Commemorative Value	Newness Value	Art Value	Rarity Value	Use Value	Aesthetic Value	
MAASSILO, ROTTERDAM									
Surroundings		<p>The Rotterdam south area is characterized by its former harbour function. Several morphological elements (old train tracks, roads, harbours and docked boats) that characterize the surroundings of the Maassilo.</p>	<p>The names of streets, harbours and neighbourhoods refer to the history of the area "Maasvlakte". For instance, refers to the previous harbour function. Or "Lantwerf" as we see on the map the name of the neighbourhood.</p>	<p>A lot of new buildings (especially on the Kop-ven-Zuid) by famous architects bring new activities to Rotterdam-Zuid. These buildings function as a catalyst for the development of the area.</p>			<p>Due to the development of new connectors with the center, the area gained a good location within the urban fabric of the Rotterdam. With the harbour industry disappearing, the area remains with lots of space for further development.</p>	<p>The new high-rise buildings that have been constructed over the last two decades create an interesting contrast with the original industrial buildings.</p>	
Site	<p>Rust, algae, and decay are visible on the structure of the unrenovated elevator towers.</p>	<p>The building complex, together with the elevator towers and connecting bridges form an almost total ensemble (train tracks are missing) in which the process of grain storage and distribution took place.</p>	<p>Sofar two Elevator towers have been re-stored in 2015. They have been brought back to an original state which is clearly an act of commemoration.</p>			<p>The total ensemble of fixed elevator towers, moving elevators, supporting bridge structure and the connection with the building complex is rarely found in the Netherlands.</p>		<p>The building has always functioned as a modern housing for the industrial setting. The abandonment of activity evokes the image of an empty stage.</p>	
Spatial Composition		<p>The different volumes give an impression of the development of the company, the economy and of the building as a whole. However this unclear to the untrained eye.</p>							
Skin	<p>Weathered surfaces, decay, damage on mainly plaster and rust on steel is visible on different parts of the facade.</p>	<p>Since civil works and industrial buildings became part of the architectural discourse in the beginning of the 20th century, the silo buildings are important works in the oeuvre of the different architect. For Maas the office building was a bit less important being 1 of many.</p>	<p>The original sign of the east facade on the building by J.P. Slaik has recently been restored from the original as it was built in 1910. And next to the entrance door on the same building there is a sign indicating the company details.</p>		<p>The architectural styles that are represented in the facade express the architect's artistic intentions. J.P. Slaik's facade for instance, expresses the different functions on the inside. The 20 x 5.5 meter opening called "Flyers of hope for universal Love" by the spiritual artist Lisa Lue on the 3rd-phase building is literally a piece of art.</p>	<p>There is no trace of any identical 'plofboort' on like the ones in the third building by J.D. Podtma which make it very unique.</p>		<p>To prevent noise pollution from the club to the neighbouring houses the 'plofboort' where covered by steel boards on the inside. Consequently the aesthetic appearance of the light coming in through these grills has been lost. Another element are the octagonal ribs of the silos that emphasize the brutistic appearance.</p>	
Structure	<p>The structure shows clear decay, has been worn out and damaged on several places and the concrete surface has gotten dirty after the hundred years of usage.</p>	<p>The development of the technological possibilities in these concrete superstructures is remarkable. The 'pofkast' that has been used in the 2nd phase, the staircase for the office by H. Maas but also the increased height of silos in later phases are examples.</p>		<p>The big columns have been cut away on the ground floor and some have been replaced with new thinner columns in order to create more space for the flow and Wow music club.</p>		RELATED		<p>Due to the intervention with new columns bigger space is currently available that could easily be used in several ways. Besides that the structure is designed to bear the load of 86 million kilos grain. This loadbearing capacity offers great opportunities.</p>	<p>The structure contributes to the industrial feel due to its rough finish and the big scale that is less related to human and more to machine. The structure is the building hence it makes the atmosphere.</p>
Space Plan		<p>The space plan is highly related to the original function of the building. Hence the layout plays an important part in understanding the way the building was used.</p>					<p>low use value. Together all silos form 80% of the actual building volume. The use value of these spaces is very low at the moment. It's a great challenge for the future redesign.</p>	<p>The functional layout of the building as an ensemble of rigid grids results in a repetition of elements. Consequently a 'pressing' symmetry can be experienced in many parts of the building.</p>	
Surfaces	<p>Many surfaces, including signs, are damaged or even worn out to the point that they are no longer readable. This clearly shows they are from another time.</p>	<p>The codes painted on the silos, the blue and yellow silos, and signs like 'gigkas' on the door give an impression of the strictly functional original usage.</p>			<p>Graffiti artworks on the ground floor and on the 10th floor in the 010 Factory have been made during the renovations. The graffiti on the ground floor was commissioned by Pepsi MAX and carried out by graffiti artist. Its still unclear which artist did the artworks in the 010 Factory.</p>		<p>low use value. In its previous function the funnels strictly fulfilled the purpose of unloading grain out of the silos. Due to its specific function its very difficult to come up with a new use for these funnels.</p>	<p>aesthetic value. As an ending of the silos, in a way the funnels form the ceiling that is so characteristic for almost the entire ground floor space. The shape of these surfaces hint at an unknown presence behind those surfaces. Despite that, the funnels have a very unique and striking appearance.</p>	
Services/Stuff	<p>Mainly rust and decay but also damage is visible on machinery and utilities around the building.</p>	<p>The machinery and utilities give an impression of the previous function of the building. The chalk board that was used to blow grain through pipes to the top of the building where one of the first of its kind and very unique at the time.</p>	<p>During the renovations some of the machinery has purposely been put together to be exhibited. The chalk board in the control room on the 2nd phase building shows a grid of different silos and the type of grain stored inside. The board is sprayed with a substance that prevents the chalk and makes it un-erasable.</p>				<p>The buildings were never designed to host vast amounts of people. For the new club, ventilation systems have been introduced during the renovation. These run through some of the silos and provide the spaces with enough fresh air.</p>		

Essential values taking away these elements would change the total essence of the complex

Important values These elements make the readability of the total ensemble richer

Complementary values When these aspects are altered the general idea of the building can still be read

Historical Overview

Built in different phases from 1910 to 1964, the Maassilo shaped one of the largest in situ constructions in Europe for the storage, treatment and distribution of different types of grain. As the first building connected to the Maashaven, a primary instrument for a key grain transshipment company (Granssilo N.V.) and instigator for the worker districts of Rotterdam Zuid, the complex has played a catalyst role in the consistent history of Rotterdam as an international harbor city.

One of the last icons of this unconditional functional context of the past, the Maassilo is caught at the edge of a major infrastructural border between two disparate entities: the future gentrified area of Katendrecht and the inert, working class neighborhoods of Tarwewijk and Bloemhof. Confined by the surrounding infrastructure, the building was also secluded from the development of these two areas, nowadays making its historical value for the socioeconomic development of the city hard to trace.

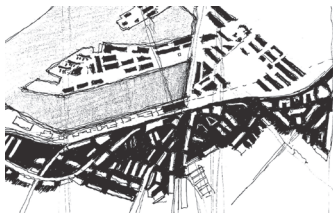
Currently being in the process of officially becoming industrial heritage, the building has been partially occupied by the music venue Now&Wow since 2003, which has utilized its ground and attic levels. Even though establishing a cultural initiative which has brought attention to, this actions however involved no particular commemorative discussions.

The complex is also intertwined with the future plans for the Maashaven, as approved by the Municipality and Port Authority. These are directed towards the idea of a public 'Tidal Park', which would also allow the remaining activity of inland shipping to continue and possibly include floating housing.

Value assessment- statements & key discussions

The revealed hierarchy of values which, as concluded by the cultural value matrix, encapsulates the identity of the building, was translated into the following statements :

- 1. History.** Socioeconomic relevance to the development of the city
- 2. Presence.** Imposing effect and urban prominence in the surrounding areas
- 3. Rarity.** A unique ensemble of a silo typology
- 4. Technology.** State of the art use of re-inforced concrete and methods of in-situ construction

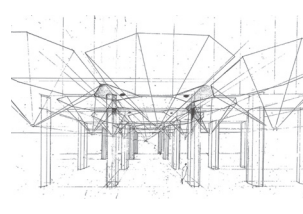


“Gate between north and south”

With the activity of the port being moved to the west, the Maassilo is nowadays caught between an intensely gentrified area in the north (Katendrecht), and an underdeveloped working class area in the south (Tarwewijk). Its inescapable mediating role in this urban fabric makes it essential for the building to balance, and possibly conduct the socioeconomic diversity of the surrounding districts

“Public and Private”

The building's fundamentally closed-off profile reflected its highly specific function. However finding a public function which requires concealment can take advantage of its disposition as an enclave.



“Concealment and Readability”

While being inside the Maassilo, the experience of the place is shaped by the exposed surfaces (funnels, columns, e.t.c), and the occasional awareness/reveiling of the suspended voids. The enhancement of this interplay can be a very effective method of establishing a new spatial experience for the public, by superimposing or re-interpreting the existing atmosphere.

“Mass and Movement”

The building's designed flexibility in structured open plan spaces (ground floor and attic) and integrated flexible detailing, is its inherit tectonic language. Emphasizing or re-introducing this in a new design can prove both multifunctionally resilient and commemorate the building's character.

Research question & Design Approach

How can the Maassilo act both as an object of historical continuity, and urban mediator?

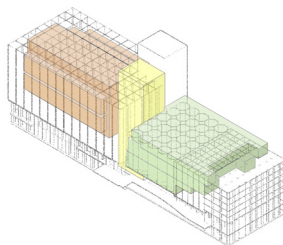
The primary challenge for the Maassilo complex lies in the gap between the building's historical and aesthetic identity within a highly diverse urban realm. Carrying an inescapable mediating role, the Maassilo is called to act as an integrating object of historical continuity, and social resilience. For this reason, the highlighting of its historical and rarity value as an ensemble, forms an essential foundation for its possible re-design.

On the other hand its extreme physicality creates a guiding force on its own. The historical value of the silos' building technology, in relation to their high use value, structure-wise, raises a profound conflict. Hence the design approach would also have to negotiate appropriate ways of utilizing the load bearing capacity of the silos, while preserving their present order and aesthetics.

Starting points

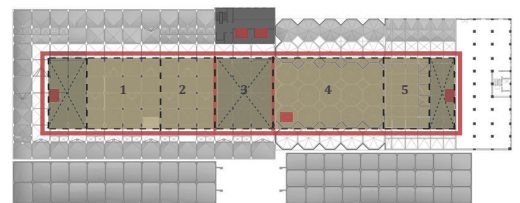
As a means for addressing the volumetric distinction between the different phases, a mixed-use approach appears necessary. Furthermore, as a way of creating consistency between old and new, the footprint of the conveyor belts, as found in the basement and attic, can act as a guide for an intervention strategy while respecting the building's past activity (and sense of movement).

Historical & Rarity value of the site



1. emphasizing the building's disposition as an ensemble, by creating programmatic distinctions between 1st and 2nd building phase

Historical & Aesthetic value of the space plan



2. utilizing the space plan of the ground floor and basement for establishing new circulation and spatial sequences within the level of the silos

Overall, as made evident by the assessed hierarchy of values and key discussions, the chosen programme would have to negotiate an order of public and private, as well as conduct a hierarchy of openness and concealment, as a continuation of the building's character.

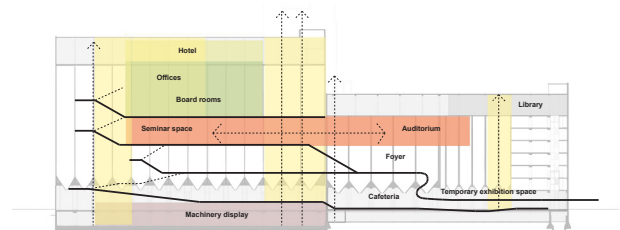
Programme

Addressing the historic aspect of the Maassilo as a major instrument in the context of transshipment, the programme proposes the relocation of the existing central office for the Rhine & inland navigation (CBRB) inside the building.

Taking advantage of the concealed central part of silos, this also involves the 'curving-out' of conference rooms and auditoriums, for meetings with the rest of the European board members and commissions.

With these main functions occupying the main and upper levels of the complex, the ground floor would act as a public interior and transition zone, providing flexible space for exhibitions and displays of the existing machinery.

Operating as a 'transshipment society', the programme aims to investigate how such an official European network of gathering and knowledge, can commemorate the building's historical importance for Rotterdam while also assuming a public character towards the surrounding districts.



Main challenge & Response

Synchronizing the multi-purpose nature of the programme with the straightforward composition of the silo ensemble, formed the main challenge.

More particularly, the need for creating spatial compartments and allowing new logistics, while respecting the building's most important values, raised a profound tension in the design process.

As a general response to this conflict, the design proposes the translation of the existing zoning of ground floor, silo and attics, to more in-between, **mezzanine** levels. Providing flexibility of circulation, this new sectional organization would also allow visual continuity and an experience of climaxing procession throughout the building's new activity.

Addressing the hierarchy of values, various decisions had to be made throughout the different layers of the building.

Opportunities & Dilemmas throughout the design

Site (ground level):

-the need to establish a new entrance by not compromising the building's seclusion from the surroundings, was addressed by extending a new ramp, in the southeast part of the Postma phase

-this would bring the visitor to a first mezzanine level, enhancing the open plan experience of the ground floor and suspended funnels.

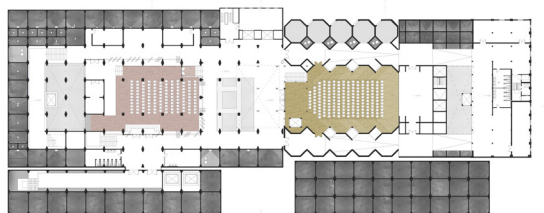
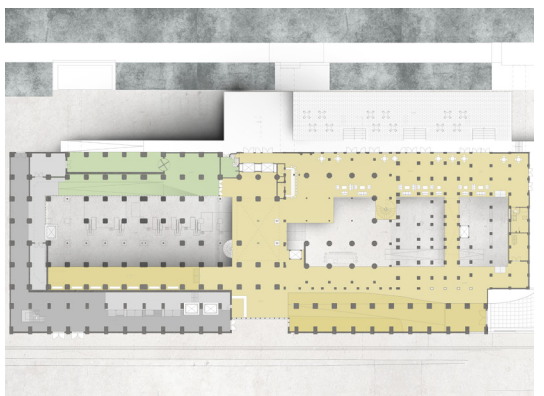
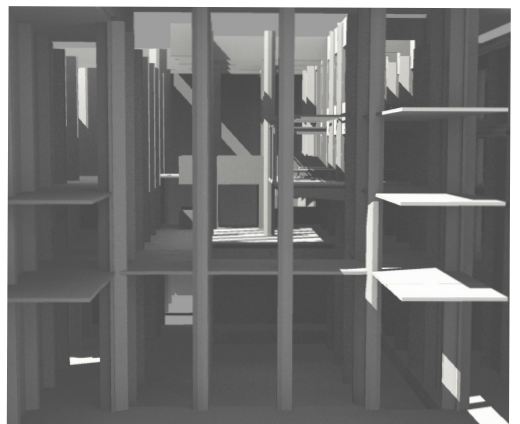
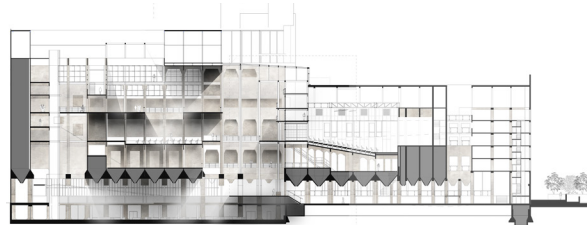
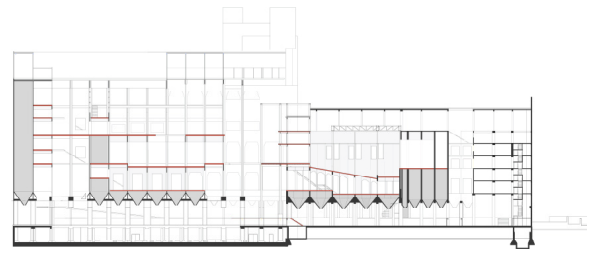
-the need for further shaping a parking space in the existing waterfront area, would also trigger the opportunity for a public terrace extending from the mezzanine and providing an experience of the elevator towers from a closer distance.

Spatial composition/Structure (main levels):

- the different geometries of the silo cells were seen as an opportunity to guide the shape of the main conference halls

-the need for providing a central void, as a reference point, was dealt as an opportunity for highlighting the distinction between the 1st and 2nd phase.

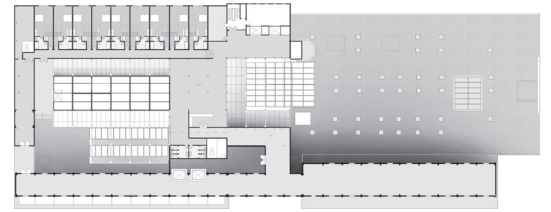
- the created colonnade from the cutting-out of the silos creates a spatial sequence that enhances the experience of concealment and exposure to the silo structure and surfaces



Skin (Roof & Facade) upper levels

-As the fifth facade with the less value importance for the understanding of the structure, the roof would offer the main source of direct daylight at the meeting point of the two building phases.

- the necessity for providing openings which would allow the offices views to the harbor would raise an important dilemma for the design of the waterfront facade. By creating a row of internalized triangular openings, imitating the external shape of the silos, the solution emphasizes the historical/aesthetical value of the skin more as a declaration of the building's depth and sense of mass.



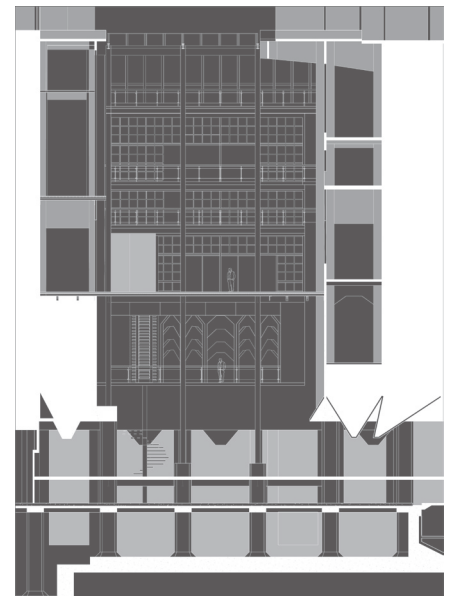
Surfaces/ Services

-Emphasizing the distinction between the volumes and climate zones, at the connection of the Stok and Brinkmann phase was an opportunity for creating a internal glass facade under the new skylight.

-the created floor space at the lower levels also provides space for re-locating the machinery of the attic, along with the already exhibited at the basement.

Conclusions

In cases of post-industrial settings which equally involve complex value assessment and social necessities in diverse urban locations, the nature of re-programming is catalyst, and can/ should guide the new architectural language.



Internal glass facade created under new skylight

The way these settings of unconditional functional context, can act as bodies of civic engagement has been so far investigated at the Hafencity in Hamburg, the port of Marseille, and still remains an intriguing question for a lot of European harbor areas.

As a major example of such a post-industrial context, the Maassilo can act as a protagonist scenario of how to deal with social diversity by re-establishing historical identity and sense of place.

With cases of such immense scale, a good design approach would be to work in layers, constructing a language of interventions, of multiple scales (from site to surface e.t.c) which remains consistent with the existing spatial qualities. That involving the solution of objective necessities, such as new circulation and daylight conditions, to more subjective and commemorative interventions, such as the facade.

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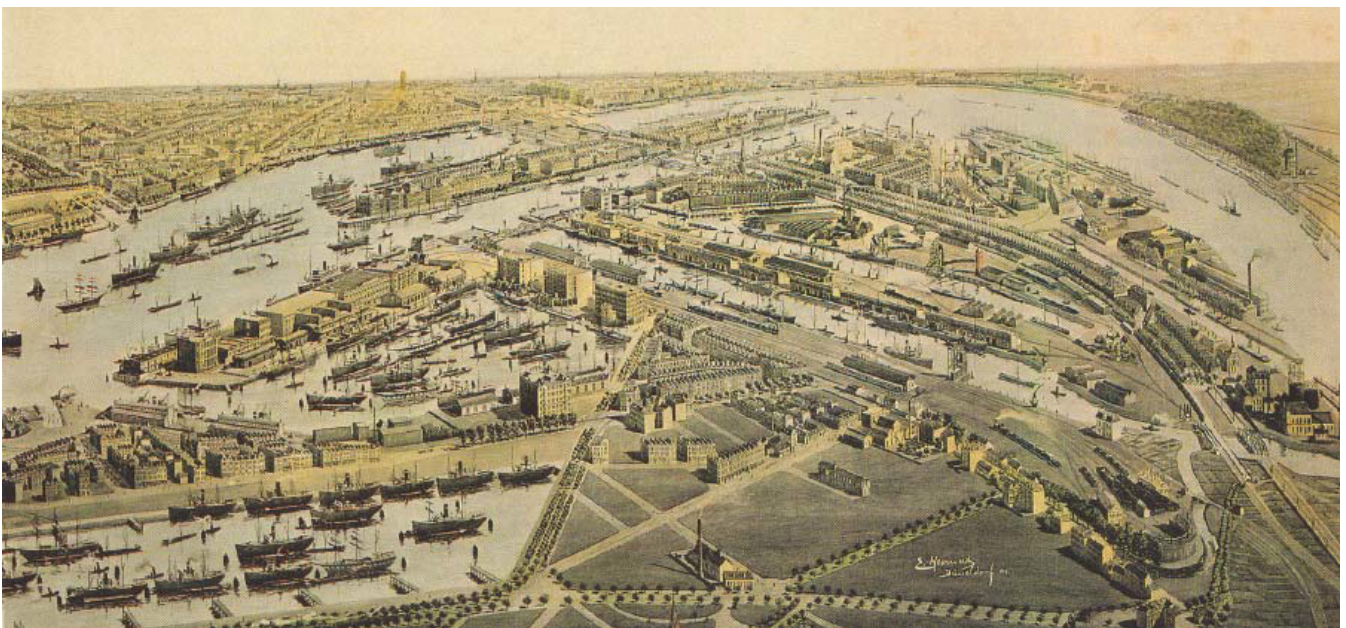
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