

## **From Grains to Gains:**

*Transforming Rotterdam's Maassilo into an event venue in the 20<sup>th</sup> century*

TU Delft, AR2A011 Architectural

History Thesis

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## Introduction

A striking 48-meter-tall concrete building, being a symbol of growth of the port and port activity in the south of Rotterdam. These are only some characteristics of the Maassilo, a former grain silo and elevator, located at the Maashaven (one of Rotterdam's harbors) (Hogeschool Rotterdam, n.d.). At that time, being one of the key components of the grain cluster in the south of Rotterdam, it was an actual landmark for the city. Since 2004, the complex is used as an entertainment venue, after being designed and adjusted by six different architects over time. These transformations have had impact on Rotterdam's architecture and urban landscape, as the silo embodies a significant part of Rotterdam's architectural collection (*Geschiedenis – Maassilo*, n.d.). As of now, adaptive reuse of heritage buildings is a phenomenon that keeps on getting more attention to the public eye and ears (Trost, 2025), and because the silo has played and still plays an important role in the activity and business of Rotterdam's harbor area, the topic is quite relevant, on both an architectural and urban level. It also gives more insight into the way cultural landmarks shape their context and what effect they can have on a city. This results in the following research question:

*How did the Maassilo with its urban context transform into an event venue in the twentieth century?*

Please note that there will only be focused on the transformation periods, which means that only some relevant years in between these periods will be used to give additional, important information. A small part of the beginning of the 21<sup>st</sup> century will also be described, because it is an important addition to the functional spaces that the Maassilo nowadays provides. After all, since 2004, the Maassilo is used as an entertainment venue. To formulate an answer to the research question, the following subquestions will be answered in chronological order, in order to inform about different transformation periods and to come up with a conclusion:

- *Which architectural interventions have been made to transform the Maassilo?*
- *Which urban transformations have been made during the renovations of the silo?*
- *How did these transformations affect the city with its urban context?*

There will be an explicit explanation about these periods, using various primary and (mainly) secondary sources. Also, archival drawings collected from the Nieuwe Instituut Archief will be used to explain certain architectural interventions. This thesis will contribute to the understanding of how heritage buildings can give a new purpose to an existing design, but also what effect this has on (in this case) a major city and its urban landscape. After all, all the disciplines are related. Repurposing and finding a new meaning of existing architecture is already discussed in the research of van der Werf, A. H. M. (2008) and van der Beek, T. (2020), but this thesis will also relate on the subject of how interventions on multiple levels can affect this meaning and will provide more information about the meaning of the Maassilo, and not necessarily architecture in general. Existing research about urban and architectural transformations gives an overview of the silo's lifecycle, but has never been combined to give a complete, combined overview. So, this is another addition that this thesis proposes.

A more general idea about this thesis will result in the following hypothesis: The Maassilo has developed itself through multiple architectural interventions, such as a change of its plan, additions to the existing structure and new functional spaces. On an urban scale, the mobility aspect has evolved into a bruising crossing point for many traffic flows, next to the new image that Rotterdam wants to create: focusing on being a cultural city, and not only being a port city in the Dutch fabric.

In the first chapter, the architectural interventions and urban transformations of the first 'phase' will be described. Then, the transformation periods from 1929 until 1963 are explained. Finally, the last part of the interventions are defined by explaining how the silo turned into night club Now & Wow, in the early 2000s, next to the impact of these architectural and urban interventions on Rotterdam as a major city. Especially these last years are of great importance to the city, as Rotterdam's vision of creating a more cultural image instead of keeping being a port city as their symbol, was at stake at that time. The thesis will be completed by a conclusion, summing up every argument stated in the thesis, and finally posing an answer to the research question.

## 2. Initial situation (Phase 1)

### 2.1 Completion of the first silo in 1910

In 1905, the Maashaven was completed, which made it possible to add something on the site. In 1906, architect J.P. Stok got permission to build the first part of the 'Graansilo aan de Maashaven', by N.V. Rotterdamse Graansilo Maatschappij (Van Der Werf, 2008). The first part contained seven floors of factories and had space for 20,000 tons of grain. As one of the first largest reinforced concrete silo's in Rotterdam, and one of the biggest in Europe, nobody could escape the presence of the prominent project (Chittavanich, 2017). The 20 meters tall building was a symbol for the growth of the Rotterdam harbors and an important part of 'grain cluster' in the south of Rotterdam (Hogeschool Rotterdam, n.d.). The complex by Stok was providing three functions that time: machinery space on the attic, a packaging process, and a silo. Two elevators transported the grain all the way from the ground level to the other spaces. A third one was already added before 1917, as shown on photographs from that year (Chittavanich, 2017). Stok wanted to shape the industrial character of the port city in the early twentieth century. He accomplished this by choosing functionality as an expression: the structure is the building, which is totally visible from every angle. The eclectic style, in combination with American influences, creates one of the largest silo buildings across Europe (Van Weeghel, 2018).

As shown in Figure 1, the building of 1910 consists of three parts. The eastern section has seven floors and is ten bays wide and three bays deep (Van der Werf, 2008). The grid of the reinforced concrete is clearly visible in the façade, just like Van Weeghel (2018) pointed out as well. The middle section is completely closed, but behind it, there are four rows of twelve square silo cells, plus another twelve smaller cells in one row. The last (western) part consists of five rows, with six silo cells each. Between these, twenty smaller square cells appear, as shown in Figure 8. Another five smaller triangular cells reveal the triangular walls of these silo cells, giving expression to the façade (Van der Werf, 2008).

The nickname 'magic box' originates from this time period, as the damaged grain that was brought in to the silo, had a better quality when it was extracted from the factory again, as it was kept in a very effective way (Van der Werf, 2008). The grain silo asked for an expansion though, so new plans and ideas were very much needed to extend its functionality. That's when architects Brinkman and Van der Vlugt came into sight, who worked on the first transformation.

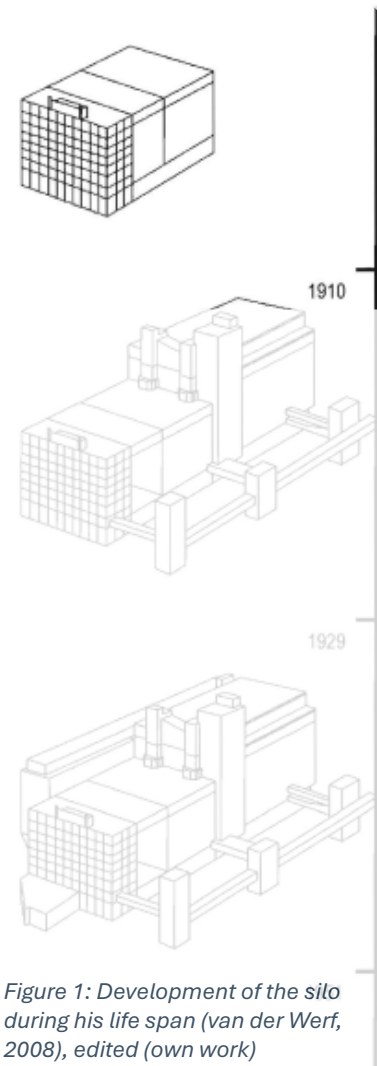


Figure 1: Development of the silo during his life span (van der Werf, 2008), edited (own work)

## 2.2 Urban structure around 1910s

Rotterdam as a port city was never possible without finished the New Waterway (Nieuwe Waterweg) in 1872, as it would become much easier to enter the city via this new entrance (Chittavanich, 2017). Near the end of the nineteenth century, Rotterdam needed a few new ports, due to enormous population growth (Van der Beek, 2021). But population growth was not the only reason for the digging of the New Waterway. In the eighteenth century, ships had to take a detour, as port accessibility was anything but efficient (Van Meijel et al., 2008). After a failed attempt to make the 'Kanaal door Voorne' (Canal through Voorne), the New Waterway was presented by Pieter Caland in 1858. This created an immediate connection between the sea and the ports (Van Meijel et al., 2008). Next to infrastructural interventions, the image of Rotterdam changed too. The excitement for the current 'trading city', as Rotterdam was known for, waned. Around 1880, the cultural connection between the elite and the city got loose and offered a different perspective on the future of the city, with a negative feeling about culture. The image of a trading city changed to that of a 'transito city', meaning 'transshipment port'. (Van der Laar, 2007). The focus rather was on the economic side of the city than on the cultural side.

New plans made it possible to dig the Rijnhaven, which started being dug in 1894, and was finished a few years later. In 1898, the Maashaven started being dug, and was completed in 1905 (Figure 2), only one year before J.P. Stok was granted to build the Maassilo (Van der Beek, 2021). The completion of the Maashaven covered a surface of 58 hectare, because space was what people and companies really needed at that time. Especially because of the harbor's function of letting goods and people off and on, this expansion was of great importance (Ravensteyn & Donker, 1949). The grain was transported from sea ships to floating grain elevators, and stored on river ships. 700 houses in Katendrecht were demolished to make way

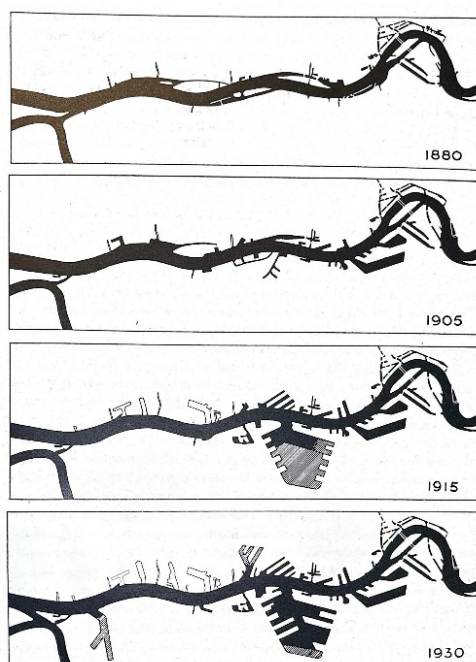


Figure 2: Development of harbor area in the south of Rotterdam (Ravensteyn & Donker, 1949)

for the Maashaven (Van Meijel et al., 2008). In the new Katendrecht, which had become a peninsula, a small residential area was created, especially for the sailors. Multiple factories started settling in the new neighborhood, but have been removed again, because of the need for housing (Van Meijel et al., 2008).

After the completion of the Maashaven, other neighborhoods in the surrounding area were developed, such as a municipal housing complex for the dock workers. The Tarwewijk, where lots of harbor and industrial workers were living, is one of those neighborhoods (Hogeschool Rotterdam, n.d.). By then, the area wasn't yet accessible by metro, but it was by train, as the Rotterdam-Zuid train station was already constructed in 1877 (Van Weeghel, 2018). In 1847, the Hollandsche IJzeren Spoorweg-Maatschappij opened a railway connection between Rotterdam and Amsterdam. Eight years later, a connection with Utrecht had been established (Van Meijel et al., 2008). The railway connection from Antwerpen to the Netherlands stopped at Moerdijk, as the municipality of Rotterdam didn't see the benefit of making a 'Maasbrug' (bridge crossing the Maas), but after a change of government, this connection to the Feijenoord district was established after all (Van Meijel et al., 2008). This had a big impact, as the accessibility of all the neighborhoods was instantly improved. The development of nearby districts (Tarwewijk and Bloemhof, Figure 3)) were of great importance, as they shaped the livability of the area, but they also shaped the urban context. The grain industry that was thriving by then, is still to be found in street names in the surrounding districts, which reflect the importance of it. Names such as 'Tarwestraat', 'Spelstraat', 'Roggestraat' and 'Gerststraat' all refer to the industry (Van Weeghel, 2018). The relationship between architecture and urban interventions thus strengthens and tells way more about a certain district or design than maybe previously thought.

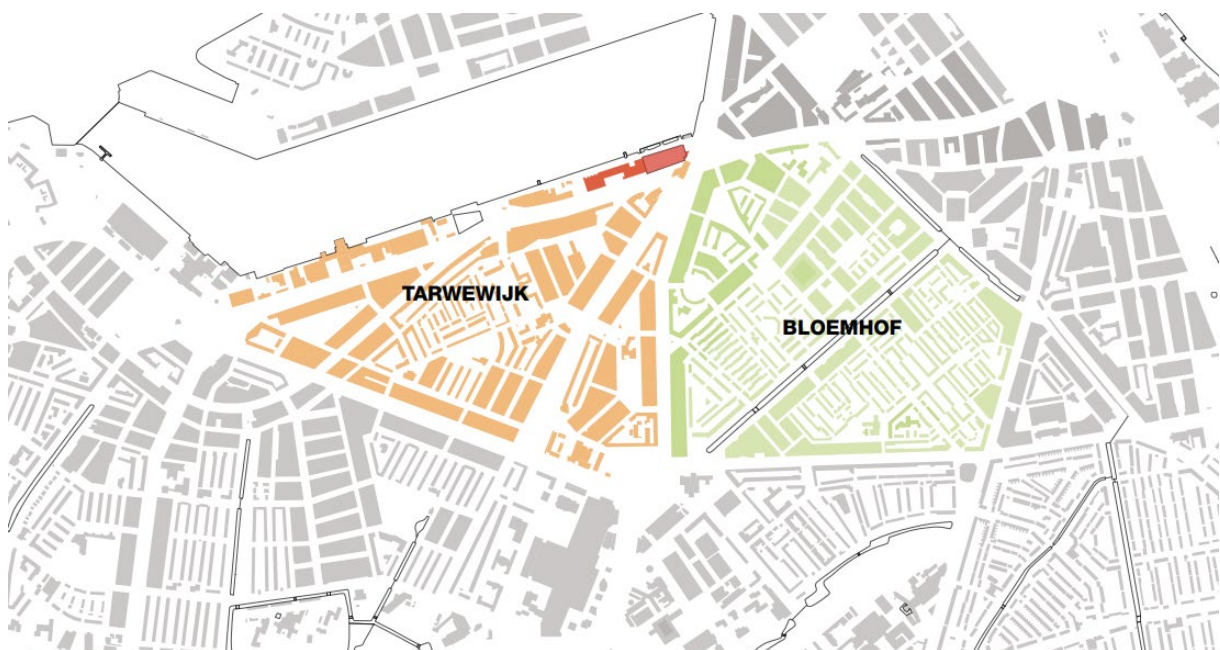


Figure 3: Districts surrounding the Maashaven in the south of Rotterdam (Van Weeghel, 2018)

### 3. Transformations (Phase 2, 3 & 4)

#### 3.1 Architectural transformations from 1929 – 1963

The Maassilo complex got a new owner: the Société Générale de Surveillance Geneve (also known as ICM (Internationale Controle Maatschappij)) and the grain elevator company (GEM). They assigned architects J.A. Brinkman and L.C. Van der Vlugt to make an extension on the existing building by J.P. Stok (Van Weeghel, 2018). The architects were a known duo in Rotterdam, particularly because of their functionalist architecture. They made a big impact with previous design for the Van Nelle factory and thus were asked to apply their building style on the grain silo (Van Weeghel, 2018). The growing demand for grain storage asked for more capacity. The west part of the available site would be the location for this (Van der Werf, 2008). The architects got the design brief in January 1929, developed the design and six months later, the first foundation pile was already put into the ground (Van Weeghel, 2018). The design doubled the capacity of the initial silo, leading up to a volume of 44.000 tons and a height of 48 meters, double the height of the first silo building (Van der Werf, 2008), also shown in Figure 5. This façade drawing, retrieved from the Nieuwe Instituut, shows the extension that Brinkman & Van der Vlugt designed. The plain façade in combination with the height difference gave the silo a new image. The extra capacity made it possible to use cup elevators that secured a faster way of loading of the grain into the silo (Van Weeghel, 2018). They also changed the foundation; poles of reinforced concrete made it possible to increase the load capacity from 40 tons to 60 tons. The extension consists of 66 meter wide cell groups. To distribute the load on all the columns evenly, an overhang was established on both sides of the renewed building. For this, the 'Macdonald-system' was used; a system that makes the formwork slide along the poured concrete, moving upward to the section below it (Van der Werf, 2008). Brinkman & Van der Vlugt finally created the Maassilo as shown in Figure 6, including a new third elevator tower, a transformer house located in the southeast of the building, and a new tower in the northwest (Van der Beek, 2021).

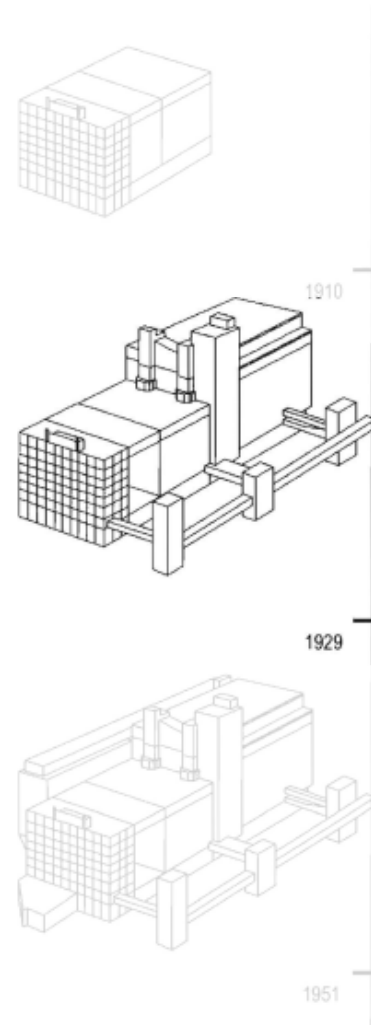


Figure 4: Second development of the Maassilo during its lifespan (Van der Werf, 2008), edited (own work)

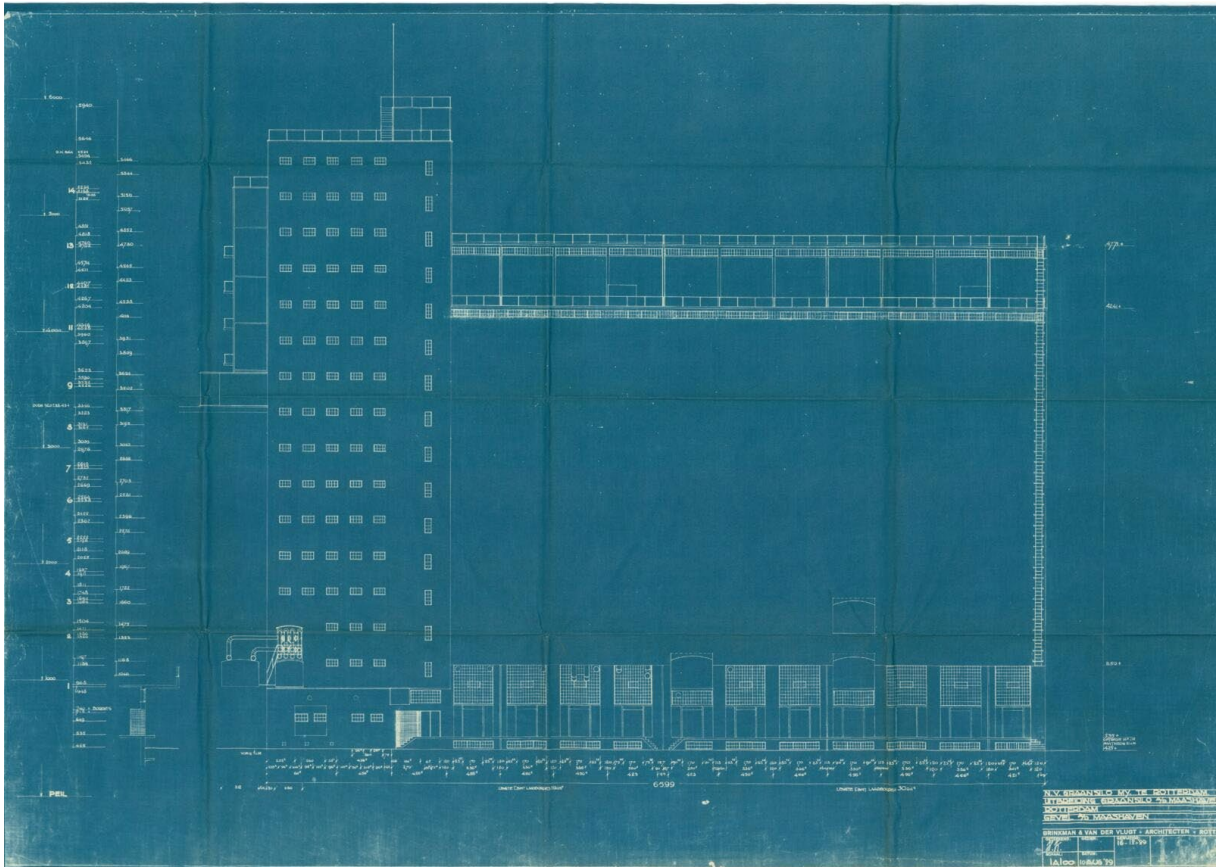


Figure 5: Archival drawing, retrieved from the BROX Archive of the Nieuwe Instituut via <https://zoeken.nieuweinstituut.nl/nl/archieven/scans/BROX/392.1.3.1.32/start/0/limit/10/highlight/3>

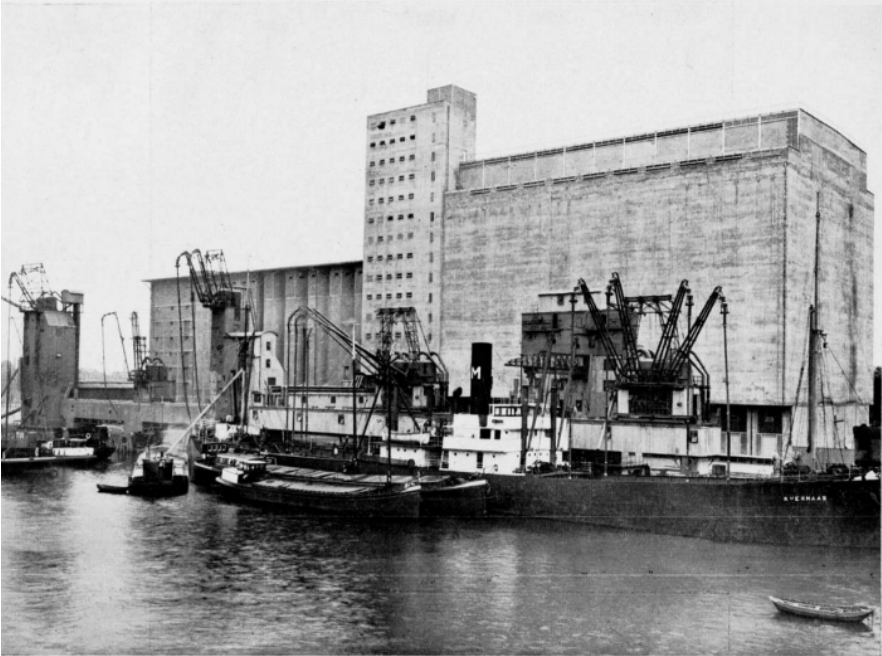


Figure 6: Grainsilo after the first transformation by Brinkman & Van der Vlugt, via [https://www.lib.tudelft.nl/tijdschriften/architectuurtijdschriften/Bouwkundig\\_weekblad\\_Architectura\\_52\\_1931-medium.pdf](https://www.lib.tudelft.nl/tijdschriften/architectuurtijdschriften/Bouwkundig_weekblad_Architectura_52_1931-medium.pdf)

Other archival drawings reveal information about the height difference and composition of both sides of the façade (Figure 7). This height can, next to the extra capacity for grain storage, be explained by all the extra light that would enter the building. This would benefit the working conditions of the employees working inside the silo (Chittavanich, 2017).

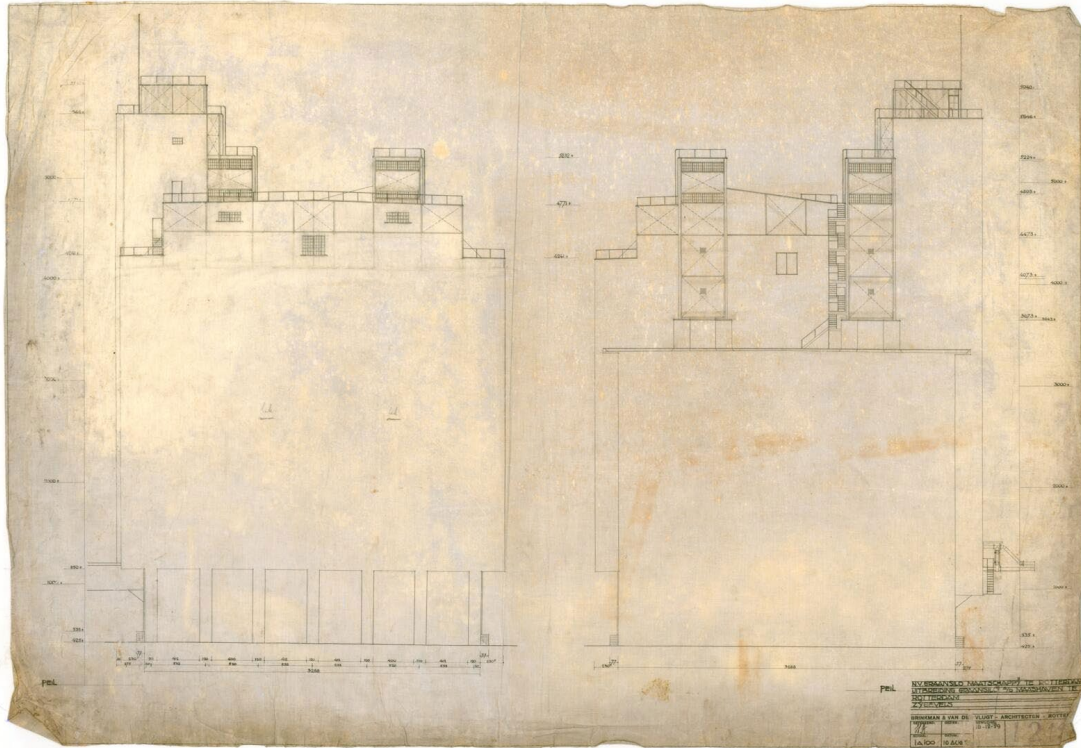


Figure 7: Archival drawing of the east and west facades, retrieved from the BROX Archive of the Nieuwe Instituut via <https://zoeken.nieuweinstituut.nl/nl/archieven/scans/BROX/392.1.3.1.29/start/0/limit/10/highlight/4>

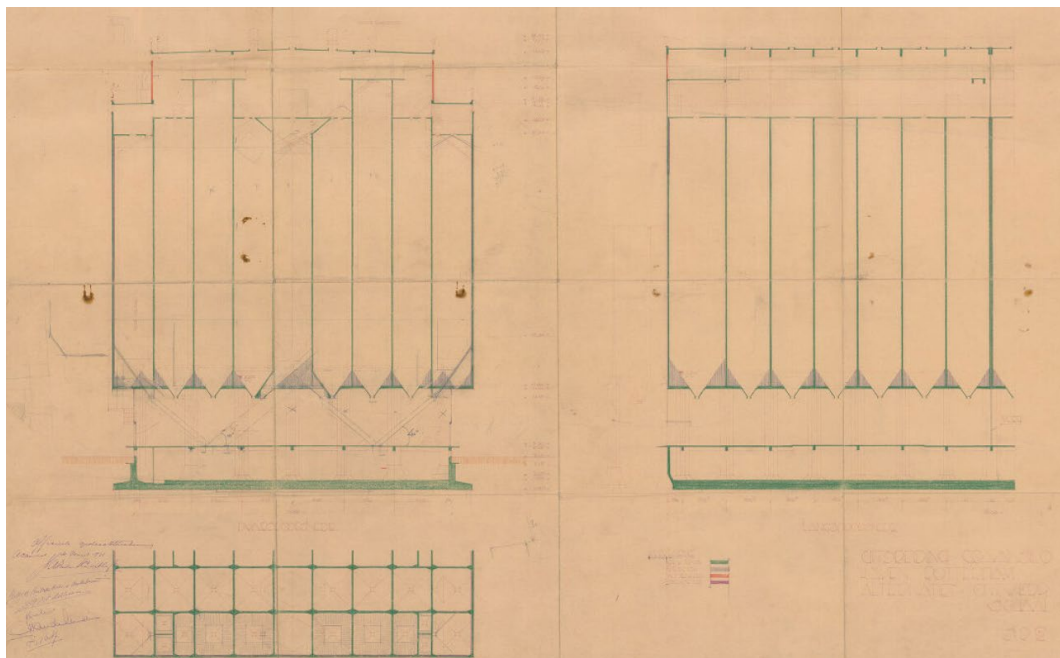


Figure 8: Archival drawing of the silo storages, retrieved from the BROX Archive of the Nieuwe Instituut via <https://zoeken.nieuweinstituut.nl/nl/archieven/scans/BROX/392.1.3.1.13/start/0/limit/10/highlight/2>

After the transformation in 1929, a new assignment from GEM and ICM is set up (Van der Werf, 2008). This time, the aim is to create an extension on the south side of the first two silo's, across the Brielselaan. The façade on the south side (Figure 9) first looked very rhythmic and functional, just like Van der Vlugt & Brinkman had in mind. But now, architects A.G. and J.D. Postma decided to design an almost 40 meters high and 100 meters long complex, placed in between the existing parts of the silo and the Brielselaan (Van der Beek, 2021). With an extra 22,000 tons of capacity, the total storage capacity rose to 90,000 tons. The addition in 1951 functioned as an independent office and offered the complex 50 new silos (Figure 10). Extra conveyor belts in the upper level and bridges in between different departments were also added (Van Weeghel, 2018).

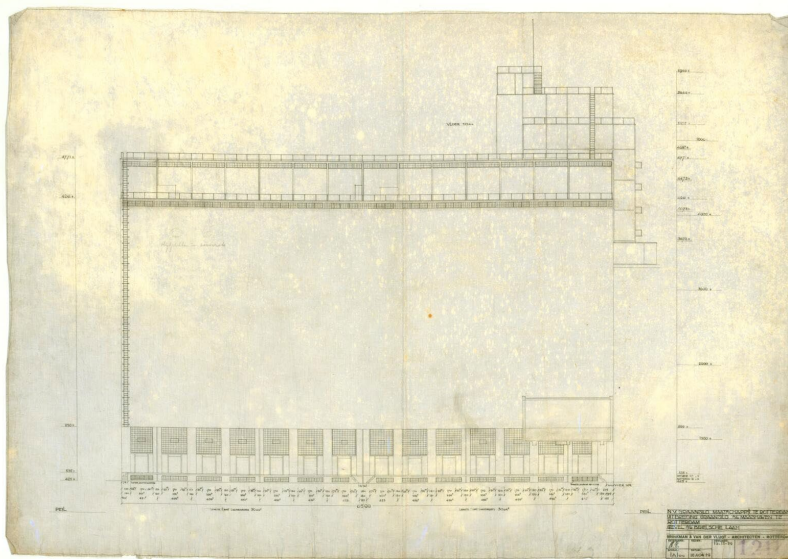


Figure 9: Archival drawing of the south facade, retrieved from the BROX Archive of the Nieuwe Instituut via <https://zoeken.nieuweinstituut.nl/nl/archieven/scans/BROX/392.1.3.1.29/start/0/limit/10/highlight/3>

Next to the architectural transformations, there has only been one other addition to the complex in 1963. The GEM assigned architect Herman Haan to add spaces, as there was an increasing need for office space. That's when Haan designed a two story building, with 250 m<sup>2</sup> of office space, from a modernist perspective (Van Weeghel, 2018). After this, two service homes transformed into office spaces too, although the Maassilo itself remained untouched (Van der Beek, 2021).

### 3.2 Urban development from 1930s until 1960s

As the industrial areas were growing and more and more buildings started to appear in the Maashaven area, there was a need for the railways to expand too. A better connection to the south part of Rotterdam would result in more attractive neighborhoods (Van der Beek, 2021). The accessibility even got more improved by the addition of the Maastunnel in 1942. Not only cars, but now also motorcycles, bikes and other types of traffic could enter the area very easily (Van der Beek, 2021), as the tunnel was four lanes wide (Ravensteyn & Donker, 1949).

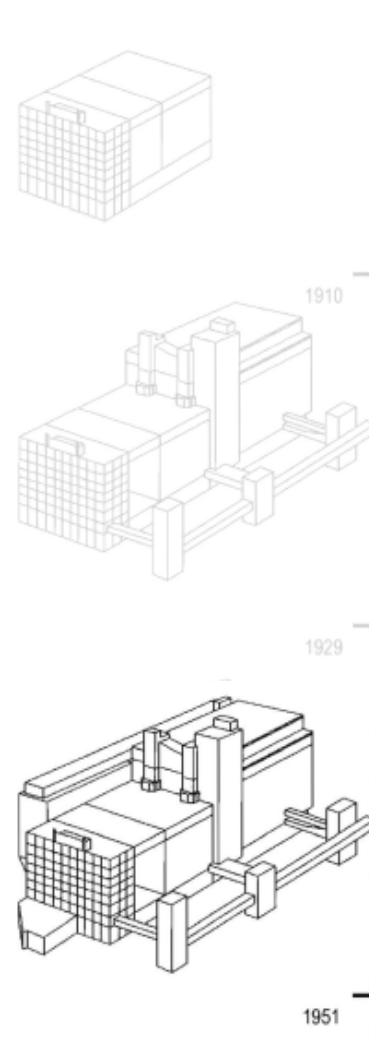


Figure 10: Thrid development of the Maassilo during its lifespan (Van der Werf, 2008), edited (own work)

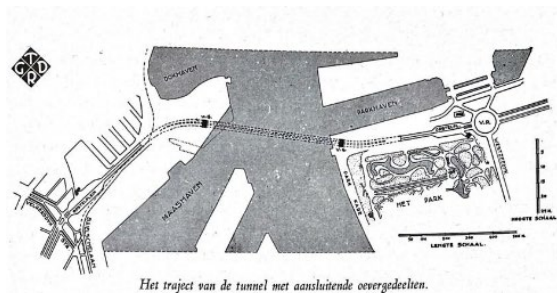


Figure 11: Maastunnel connecting different parts of Rotterdam (Ravensteyn & Donker, 1949)

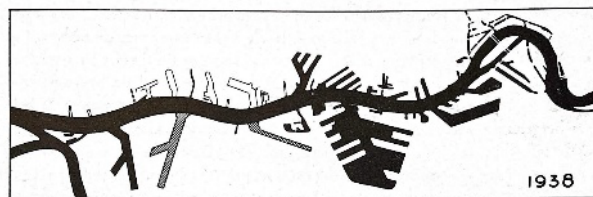


Figure 12: Development of Rotterdam harbors (Ravensteyn & Donker, 1949)

As shown in Figure 11, the tunnel connected the north and south side of Rotterdam (Ravensteyn & Donker, 1949). Around that time, other harbors developed too. In 1927, the island Katendrecht was ‘finished’. Factories and storages filled the area and made it a more and more important part of Rotterdam, as for the growing economy. The harbors kept expanding and investing in an industrial character, but then, the second World War happened. The war has clearly left its marks on Rotterdam as a city. After the bombing, the industrial character was replaced with a need for functionality and a new perspective on building (Chittavanich, 2017). In 1944, the occupying forces decided not to capture the harbor of Rotterdam. The port facilities on the south side had to be demolished though. This way, the facilities couldn’t serve “as a bridgehead for Allied troops” (Crimson Historians & Urbanists, 2020). Explosives were placed along the Rijnhaven and in September 1944, the quays collapsed, which resulted in a completely unusable Rijnhaven. But as the Rotterdam harbor needed to function properly, rebuilding what had been destroyed was of national relevance. It took up until 1947 to clear the connection of the Nieuwe Waterweg to the sea of all the obstacles. Two years later, the rebuilding of the entire Rijnhaven was completed. International help and funding from America (Marshall) played a significant role in this process, because after four years, the harbor was functioning again (Crimson Historians & Urbanists, 2020). After the reconstruction, Katendrecht and the Rijnhaven both didn’t have their central role in the area anymore. Equipped with reinforced concrete quays and refitting the functions caused new building styles and a new vision for Katendrecht (Crimson Urbanists & Historians, 2020). The building style of Brinkman & Van der Vlugt fitted (looking back) exactly the brief and the cultural need for this new building style. The industrial character that arose gained ground in the general view of the new city. This was also caused by a new climate that arose after some societal changes: a new generation of inhabitants that were pro-livable city and a new political view on culture (Van der Laar, 2007). Halfway through the 1980s, a new vision on culture was needed. Then, the actual culture city started to appear. Although there were still some image issues when it comes to changing from a working city into a culture city, optimists kept the vision alive and emphasized the importance of it (Van der Laar, 2007). Van der Vlugt and Brinkman both contributed to this image as well, with their functional, light and transparent architecture. This fitted the vision for the modernity era (Van der Laar, 2007).

## 4. Current state (Phase 5)

### 4.1 Introducing night club Now & Wow (early 2000s)

After functioning as a grain storage until 2003, the function of the Maassilo changed. Up until 2003, everything worked out fine, but because of “problems with automation, the depth of the Maashaven, and encroaching residential and commercial developments” (Van der Werf, 2008), the function didn’t longer fit with the surrounding area. As the municipality already had decided about moving harbor activities more to the west part of the Netherlands, this was in line with the problems at that time. Then, the complex was being acquired by the OBR (Rotterdam Development Agency), as the silo functioned as a strategic point between multiple neighborhoods. Demolishing the complex was no option, as it would be too expensive; the complex has monumental value and the adjacent metro line wouldn’t be strong enough if dynamite would be used with the demolition (Van der Werf, 2008). Moreover, the city of Rotterdam had other plans for this part of the city: emphasizing culture. The storage was moved a different silo in the Botlek area, and the Maassilo turned into an event location by 2004 (Van der Beek, 2021).

Dance club Now&Wow became the new tenant, for at least five years. As the building was underused after the relocating of the grain storage, it would be ‘a pity’ not to use the building (Delpher – Algemeen Dagblad, 2003). This required several adjustments (Van der Werf, 2008). The old grain elevators, conveyor belts and control panels were kept as much as possible. After calculating the strength and stiffness of the columns, many column got removed from the original floorplan (Debets, 2004). Other columns have been replaced by slimmer round steel columns, creating more open space (Figure 6). To ensure their load-bearing capacity, they were prestressed and filled with concrete (Van Weeghel, 2018). They were forced to tension and filled with extra concrete and forced to secure. As the current floor wasn’t strong enough to deal with this renewed construction, an extra layer of concrete was added to ensure safety (Debets, 2004). Now&Wow expected an audience of 5000 to 6000 people per night, which meant that the ventilation capacity needed to be increased. This was achieved by using the existing silo’s as ventilation shafts. The corridor in the building was used for flight routes and sound insulation (Van der Werf, 2008). Fire safety was ensured through the high amount of concrete and steel in the building; both have a low risk of flammability (Debets, 2004). The future of Now&Wow is unknown, as it’s also just a concept of a party. The vision that they had for their party complemented the vision of the Maassilo B.V., but it’s still unsure whether Now&Wow will stay in the Maassilo forever (Van der Werf, 2008).



Figure 7: Square concrete columns have been partly replaced by slimmer steel columns (Debets, 2004)

#### 4.2 Cultural city (1970s until early 2000s)

Rotterdam used the international modernist movement as a leading concept for reinterpreting the architecture and urban planning of the city. International and global orientation were a part of this development, as Van der Hoeven & Hitters (2023) argue. The creative city is one of the concepts that was taken from previous work by Charles Landry, Franco Bianchini and Richard Florida. The south part of Rotterdam would be regenerated the same way as successful projects in for example Barcelona and New York showed (Van der Hoeven & Hitters, 2023). In terms of music venues, the central goals of Rotterdam are quite clear. There needs to be enough space for talent to develop and present themselves. A lack of affordable spaces to rehearse and perform is an issue though (Van der Hoeven & Hitters, 2023). Also in other countries, this is a problem. Gentrification causes challenges to cultural establishments, which makes it harder to make from a city a culture focused city. As Van Ulzen (2007) argues, Rotterdam was behind in terms of transforming into a creative, cultural city. Around the 1970s, an identity crisis, caused by the image of being a port city, stood in the way of making this transformation successful. Also, the city stood in the shadow of Amsterdam and was too much focused on their port activities (Van Ulzen, 2007). After Richard Florida mentioned the attractiveness and importance of the 'creative city' in his book *The Rise of the Creative Class*, Dutch provinces have now understood the assignment to get the most out of the cultural emphasis. Rotterdam showed a bigger and faster development in this creative industry than Amsterdam did, which led to new 'rivalry' between the two cities (Van Ulzen, 2007).

Going back to the site and the neighborhood scale, it becomes clear that in 1968, the metro line from Rotterdam Central Station to Zuid Plein was completed, which created another efficient connection of getting to the southern part of the city, and thus also to the Maassilo (Van Weeghel, 2018). The metro became the fastest way to reach the silo from the city center. After the metro goes up from the underground at the Rijnhaven (the harbor above the Maashaven), an imposing view is presented by a monumental building (Van Weeghel, 2018).

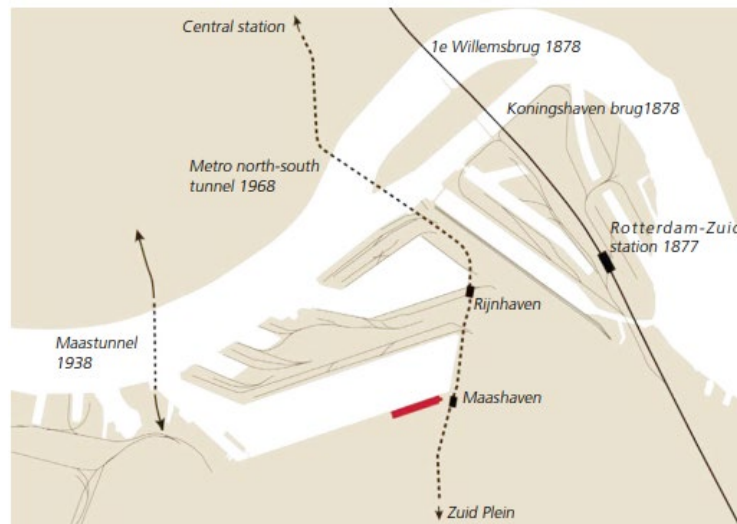


Figure 8: 1968 - Metro line from Rotterdam central station to Zuid-Plein is finished (Van Weeghel, 2018)

On the contrary, on a social-economic scale, the south of Rotterdam suffered from the loss of thousands of jobs in the cargo shipment sector. Also, families who could afford it, moved to new neighborhoods in the east and south of Rotterdam. Their places were taken by foreign workers and immigrants from former Dutch colonies (Crimson Historians and Urbanists, 2020). This led to less safety and welfare. Around the same time (early 1980s), the shift from leading port city to cultural city started when music became a big point of consideration in the city's cultural agenda. Also, festivals became an interesting means for city marketing, and with the new music policy plan, the city fostered a widespread appreciation of the importance of music for shaping a cultural city defined by (among other things) music (Van der Hoeven & Hitters, 2023).

In 1982, the role of the Kop van Zuid (the south part of Rotterdam) was investigated by architects like Aldo Rossi and Oswald Mathias Ungers (Crimson Historians and Urbanists, 2020). Although these plans remained just proposals, the site still lingered for change. The new plan for the Erasmus bridge in 1986 started this, as the renovation had positive consequences on the development and position of the area (Crimson Historians and Urbanists, 2020). After this, the economy asked for more expensive living instead of purely social housing for the current inhabitants. The urban climate should be a mixture of public and private places, where the focus would lie rather on culture than being a port city. And because the silo was used for grain storage until 2003, changing it into an event location and creative factory would fit seamlessly in the plan for the urban context (Van der Beek, 2021). The port will now change into a distribution port instead of an industrial port, because the Rotterdam harbors will now be working together with other same-region harbors. The focus will be on transshipment and storage of goods in the larger network (Chittavanich, 2017).

Next to that, the Maashaven became too small to provide enough space for every industrial function. That is why they relocated to other places in the city. What followed was the disappearance of the railways to the industrial areas, as they were less needed (Van der Beek, 2021). Although the railways disappeared, a tramline was added, which made it easier to enter the port area from every other part of the city.

Finally, new plans for the Maaskade area included bridging the gap between the yet to build expansion of the city center and the neighborhoods in the Kop van Zuid (Van der Werf, 2008). A functional and economic axis would improve the cultural quality of the area. Existing cultural platforms on the Wilhelminapier and in Katendrecht would be connected, and via bridges, pedestrians would be more likely to visit the site. The ultimate goal was to create a new image for the south part of Rotterdam, making it a worthy place with its own identity and essence (Van der Werf, 2008).

#### 4.3 Effect on Rotterdam

As Van der Beek (2021) argues, there are a few types of influences that the Maassilo has known: industrial, architectural and economic influences. These aspects caused a certain movement, which created an overall essence of the silo and its surroundings. The historical development of the area and the building is the first key element that describes the DNA of the Maassilo. Its massiveness and great impression it leaves, next to the hints of the process of grain inside and around the silo are the other key aspects (Van der Beek, 2021). But not only these elements contribute to the image of the Maassilo and its site. After the Second World War, a period of urban reconstruction and economic development was needed. The use of arts and culture have played a significant role in this (Van der Hoeven & Hitters, 2023), and as the Maassilo currently houses nightclub Now & Wow, the silo now becomes more of a connector between the time before and after the war. Music and culture are both 'stored' in the building, and thus gave a new meaning to heritage.

The historical development has been the founder of the story of the silo (Van der Beek, 2021). The context asked for a new grain silo, because of all the port activities in the beginning of the twentieth century. This resulted in the first part of the silo, by architect J.P. Stok. This industrial and economic development asked for bigger capacities, which led to new architecture. The surroundings developed as well, in terms of new neighborhoods, new connections to other parts of the city, but also other cities in general. It served as a catalyst (Van der Beek, 2021). The massiveness and great impression were caused by new ways of building (with reinforced concrete at that time), and evolving materials. This resulted in an immovable and imposing structure. Finally, the elements that were being kept on both the inside and outside of the silo, even during the transformation periods, give hints to the past processes and development that the grain silo has known. This adds to the overall value and essence of the complex (Van der Beek, 2021). Not only on a local level, but also internationally – Rotterdam has always been a leading city when it comes to port cities (Hein & Van De Laar, 2020) – Rotterdam has been a known harbor city. The Maassilo contributed well to this image.

## 5. Conclusion

The Maassilo used to be one of the key components in Rotterdam's cluster of grain silo's. After a while, architectural and urban interventions have taken place to accommodate the needs of the city. These changes have had a massive impact on the image of the city. Because the silo played – and is still playing – a big role in the business of Rotterdam's harbor area, it was relevant to research how the silo, with its urban context, transformed into an event venue in the twentieth century after all. On a larger scale, it also contributes to the topic of how heritage buildings give a new meaning to existing architecture. To give an answer to the main research question, architectural interventions, urban changes and the effect on Rotterdam have been studied. This was done by a chronological order of transformation periods, respectively the 1910s, then the 1930s until the 1960s, and finally the 1970s until the early 2000s. Primary sources, including archival drawings, as well as secondary sources have been used to gain sufficient insight from the literature.

Looking at the architectural interventions, it becomes clear that the first building by J.P. Stok was one of the most meaningful ones to the site. As the harbor industry expanded, the new grain storage building provided a lot of space for a new silo warehouse. By then, it was already the largest grain storage silo in Europe. Because the harbor grew in size, extra capacity was needed. Architects Brinkman & Van der Vlugt made a new design, and added a capacity of 24.000 tons to the existing 20.000 tons and even changed the foundation poles, to make sure that the complex would not collapse because of its huge storage capacity. The height changed to 48 meters, and thanks to the new developments in reinforced concrete, the whole structure was made with this material. Multiple functionalist development skills were implemented in the redesign of the Maassilo, for example the 'Macdonald-system'. In their design, Van der Vlugt & Brinkman also thought of the working conditions inside the silo. That is why they added enough space for daylight to enter the building. After their transformations, architects A.G. and J.D. Postma added the last big structure to the existing parts. Extra office space and new storage capacity expanded the volume to a new capacity of 90.000 tons. After another addition of office space in 1963 by Herman Haan, the silo remained the same for years. However, after the closing of the silo in 2003 because of internal and external factors, the complex needed a new function. In 2004, the Maassilo made way for nightclub Now&Wow. Architectural changes included the removal of several columns (after a recalculation of the strengths and stiffness of the columns), replacement of concrete columns by slimmer round steel columns (to create extra space) and the filling of columns with extra concrete inside. Last up, the existing silos were repurposed as ventilation shafts, ensuring enough fresh air. Sound insulation and flight routes were taken care of by the corridor.

The Maassilo could never have been built if it was for the Maashaven that had to be built first. Only one year before the building of the silo started (1905), the Maashaven was completed. The growing harbor industry was made possible by the New Waterway, which was finished in 1872. The image of Rotterdam as a port city now really started to gain ground on a national and international level. Around this time, Van der Laar (2007) called Rotterdam rather a 'transito city' than a 'trading city', which meant that culture played everything but an important role. The

excitement for the current 'trading city', as Rotterdam was known for, waned. Around 1880, the cultural connection between the elite and the city got loose and offered a different perspective on the future of the city, with a negative feeling about culture. The image of a trading city changed to that of a 'transito city', meaning 'transshipment port'. (Van der Laar, 2007). The focus rather was on the economic side of the city, than on the cultural side. After the completion of the Maashaven, other neighborhoods were built. Providing housing for the dock workers was the most important reason for this, next to the fact that the whole area started developing into an industrial area, so housing was desperately needed. The train network and later the addition of the metro line made the south part of Rotterdam accessible via multiple ways. The completion of the Maastunnel in 1942, finally, made it possible to easily reach this part of the city regardless of the type of traffic. After World War II, the industrial character was replaced by a sense of functionality. The Rijnhaven (and Maashaven) had to be rebuilt and the New Waterway had to be cleared, which took up to four years. International help from America played a part in this part of the reconstruction of the area. Around the 1980s, culture started to play a more prominent role in the conversation of how Rotterdam wanted to become and which image it would envision. Although not everyone stood behind this idea, the creative city appeared to be a concept that Rotterdam wanted to incorporate in their city vision. The development of the Erasmus bridge in 1986 caused a positive wave in the south part of the city, also having an effect on the urban climate. The focus now was more on culture instead of the (forever leading) concept of a port city. The change of function of the silo into an event venue thus gave an extra boost to the image that Rotterdam wanted. The port around the Maashaven and Rijnhaven will now change into a distribution port, as the focus is shifting. New additions to the existing infrastructure will finally make the area more attractive and livable, and better accessible for all types of traffic.

Industrial, architectural and economic influences have shaped the way that people and cities look at Rotterdam. This historical development describes the DNA of the Maassilo, next to its massiveness and history of the grain process. After World War II, the image shifted. The complex will either serve as a statement of history, but also as a connector between pre- and post-war times, storing history and culture all in one complex. It can be concluded that the hypothesis was right. A change of its plan, new functional spaces and the image that Rotterdam wants to keep are all points that appeared to be true after doing the research. What was not foreseen in the hypothesis, for example, were the structural adjustments to make the silo a more 'night club proof' building.

To conclude, it appears that the Maassilo has definitely gained ground in the urban network of silo's, but also into the image development of culture. Several transformation periods have affected the urban area, but also the inner structure of the complex. All these changes have given the Maassilo an impactful character, contributing to a new way of looking at the meaning of heritage in a world where repurposing architecture is a leading conversation. Shifting from being grain storage to housing a nightclub, the Maassilo surely knows how to transform from grains, into gains.

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Chittavanich, S. (2017). *Maassilo: Transformation of Rotterdam Inner-Port Area [Masterscriptie]*. TU Delft.

*Chittavanich discusses the various transformation periods that the Maassilo and its surroundings has known, describing every moment that something was edited or added to the silo. The research comes from a place of curiosity about the context that shaped the silo's character.*

Crimson Historians and Urbanists. (2020, November 13). *Meelfabriek CO-OP te Rotterdam: Bouw- en cultuurhistorische analyse en waardestelling*. Crimson. Retrieved January 21, 2026, from [https://www.planviewer.nl/imro/files/NL.IMRO.0599.BP2240Codrico-va01/b\\_NL.IMRO.0599.BP2240Codrico-va01\\_tb3.pdf](https://www.planviewer.nl/imro/files/NL.IMRO.0599.BP2240Codrico-va01/b_NL.IMRO.0599.BP2240Codrico-va01_tb3.pdf)

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DEBETS. C. (2004), *Graansilo herbestemd voor danceclub*, *Bouwwereld*, vol 100, p 10-13

*Primary source about some architectural interventions on the silo. Article published in 2004, and is still relevant for the research, because it describes what was needed to make the Maassilo 'nightclub ready'. Ventilation, noise and fire safety are discussed.*

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*Driel, H., & Schot, J. (2005). Radical Innovation as a Multilevel Process: Introducing Floating Grain Elevators in the Port of Rotterdam. *Technology and Culture* 46(1), 51-76. <https://dx.doi.org/10.1353/tech.2005.0011>.*

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*General information about the history of the Maassilo (also: Graansilo/Silo aan de Maashaven) in Dutch, to give an overview on the history of the Maassilo. More useful as background information.*

*Hein, C., & Van De Laar, P. T. (2020). The Separation of Ports from Cities: The Case of Rotterdam. In *Strategies for sustainability* (pp. 265–286). [https://doi.org/10.1007/978-3-030-36464-9\\_15](https://doi.org/10.1007/978-3-030-36464-9_15)*

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*Methodische herbestemming van een graansilo?: de toverdoos van Rotterdam*

*van der Werf, A. H. M. (Auteur). 31 aug. 2008*

*Investigating the reuse of the Maassilo, also known as 'de toverdoos'. It's about how industrial buildings like grain silos can have a new purpose. Architectural and urban interventions over the past decades have been examined.*

*Now & Wow naar graansilo. "Algemeen Dagblad". p. 23. Rotterdam, 17-01-2003. Geraadpleegd op Delpher op 20-01-2026,  
<https://resolver.kb.nl/resolve?urn=KBPERS01:003202014:mpeg21:p00023>*

*Newspaper article about the future plans to house the Now & Wow club in de grain silo. Useful to answer the questions about the latest architectural transformation of the complex, also telling something about the urban ideas of the 'new city'.*

*RAVENSTEYN, L.J.C.J. van; DONKER, A (1948) Rotterdam in de twintigste eeuw, de ontwikkeling der stad voor 1940, Rotterdam.*

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*Richards, G., & Wilson, J. (2004). The impact of cultural events on city image: Rotterdam, cultural capital of Europe 2001. Urban Studies, 41(10), 1931-1951.  
<https://doi.org/10.1080/0042098042000256323>*

*This source describes the way that Rotterdam became more of an event and cultural city in the beginning of the 2000s. However, the general idea about Rotterdam's architecture and the city being an important port city still remained the same. It provides insights about the effect of urban transformations and the transformation of the silo's on the city.*

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*Trost describes how adaptive reuse is a strategy that is applied more and more in the world of today. He also explains what adaptive reuse is (giving a new purpose to old buildings).*

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*T. van der Beek describes, with the Maassilo as case study project, how the essence and meaning of heritage can be found and understood. He analyses some parts of the silo by sketching, which are useful with understanding how the silo complex is composed and will help understand the initial structure of the silo.*

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*In another research paper, T. van der Beek examines the development of the Maashaven area, explaining how the Maassilo evolved over time and what urban interventions were happening by then. He explains how the silo is trying to be the link between Rotterdam as a port city and the new image of being a cultural harbour.*

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*Describes what transformations Rotterdam has gone through (mostly about the time period from 1970-2000), exploring a new vision for the city, namely a change of image: going from a large port city with lots of post-war rebuilding history to a more culturally ambitious city. Culture became a more important focus point.*

Van Weeghel, D. (2018). *Maassilo Rotterdam*. <https://resolver.tudelft.nl/uuid:bb3f1201-eeae-48e2-a341-14415f1355aa>

*Van Weeghel provides as a secondary source a lot of information about the different phases of the Maassilo and its surroundings, analyzing if the Maassilo could play a role in providing a structural place for a renewed dynamic. This information is useful to answer the first and second subquestion.*