HA

HERITAGE & ARCHITECTURE

ARCHITECTURAL ANALYSIS, BUILDING TECHNOLOGY AND CULTURAL VALUE REPORT

DATE:

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COURSE:

AR3AR022 - Cultural History - Essential Qualities
AR3AR032 - Analysis of Building and Material Structure
AR3AR142 - Architectural Analyses of Buildings and Urban Context

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1)

INTRODUCTION

PURPOSE OF THE REPORT

Overall, this report is conducted to understand Fenixloods II building, located at the Veerlaan 19 in Rijnhaven, Rotterdam. Fenixloods II building (previously names San Francisco warehouse) was built in 1916, as the longest warehouse in Europe. Rotterdam city has transformed itself from the previously busy industrial harbour into the various functions, such as commercial area, dwelling, cultural area, offices nowadays; the industrial activities have shifted to west side of Rotterdam, closer to North Sea. Due to this city transformation, there are opportunities for Fenix II to have another life, different inputs, and better integration with the changed surroundings.

METHODOLOGY

There are 3 major parts of analyses: architectural analyses, building technology, and culture values. In order to have comprehensive overall understanding, architectural and culture values analyses contain 3 different scales, starting from: urban level, site level, and building level; building technology analyses focus on building level.

Frist of all, there was very limited provided information on TU Delft Black Board. The first step was to visit Rotterdam City Archive to gather essential information as much as possible, such as previous drawings and photos from different periods. Secondly, visit of Nieuwe Instituut for the archives was planned, mainly for the background of architect, C. N. van Goor, who designed San Francisco Loods(original building for Fexniloods 1 and Fenixloods 2). There is also information found on newspaper, articles on internet. Finally, many times of site visiting was the important input as well. The Fenix II archives were redrawn by ourselves. With these knowledge, the analyses were made, discussed, and realized.

The respective introductions and conclusions will be drawn in the following chapters, as well as the final overall conclusion.

ANALYTICAL CONCLUSIONS AS DRIVERS FOR FUTURE DESIGN

With these results and conclusions: history background, developments, current conditions, Fenix II can be understood clearly and show the opportunities and dilemmas. Therefore, these inputs will be the starting points, foundation, and drivers for the future design.

* Drawings and photographs are ours; unless it is stated.

INDEX

HERITAGE & ARCHITECTURE

URBAN ANALYSES

ROTTERDAM CITY DEVELOPMENT OVER TIME

1340

Using current Maas River as an orientation point

QUESTION

This research is conducted to understand the way Rotterdam has developed from its establishment to the present. By acknowledging and studying form the past, to the present, to the future, the transformation can be seen and understood.

METHODOLOGY

By looking at the built environment at different periods throughout history comparisons can be made and the development of the city can be monitored. The development of the river Maas will also be taken into consideration. Eight different images will be shown of the Rotterdam area from 1340 towards 2016. From these images and diagrams will be made and conclusions will be drawn. At the end of this part future developments of the city will be taken into account.

FINDINGS

The city was founded in 1270 at the intersection of the rivers Maas and Rotte. It started as a fishermen's town but because of its location soon became a harbour city. Rotterdam received their city rights in 1340. This allowed Rotterdam to dig a channel from the river Rotte to the river Schie. An important trading route was thereby established. This was the starting point for the erection of the city's defence wall and the digging of the canals. The image clearly shows early Rotterdam followed the orientation of the landscape. At the left side of the image the start of the city of Schiedam is also visible.

CONCLUSION

It was the starting point for the erection of the city's defense wall and the digging of canals. The image clearly shows early Rotterdam followed the orientation of the landscape.

Number of inhabitants: 2000

2)

Sources

M. Rotterdam, 2016

Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

1570

Using current Maas River as an orientation point

FINDINGS

Rotterdam grew to be a key player in the trade in wool and agricultural products. Between 1340 and 1570, there were a lot of small wars happening in area of the Netherlands, called Holland, which caused the population of Rotterdam to fluctuate. Delfshaven (middle of the image) was founded in 1389 as a result of a water connection from Delft to the river Maas. Rotterdam did not grew in surface area and remained constrained within the city walls. Between 1449 and 1525 the late gothic Laurenskerk (Laurens church) was built. It was the first stone building in the city. The eastern part of the city suffered a great loss when a large fire destroyed a large area.

COMPETITION

In this historic period, Rotterdam had intense competition in the trading scene. Schiedam, Delft (through Delfshaven) and Dordrecht were all contending to be the most successful trading city in the Maas area. In this period Rotterdam was not the world leader in oversea trading, but it would become in later centuries.

CONCLUSION

Rotterdam did not grew in surface area and remained constrained within the city walls. Rotterdam was not yet the world-leading trading harbors in this period.

Number of inhabitants: 10000

Sources

M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

1690

Using current Maas River as an orientation point

FINDINGS

During the 80-year war in 1572, Rotterdam was occupied a few times, and it became clear the city needed stronger defences to keep enemies out. The city was fortified with new defence works and harbours in the period. The city seized the chance to become the gate of the East-, and West-Indian trading companies during the early part of the seventeenth century, which initiated the Golden Age.

GOLDEN AGE

In the seventeenth century, Rotterdam experienced tremendous economic growth, as did the rest of the Netherlands (Golden Age). The city expanded towards the river Maas as the harbor became more comprehensive. However, the city remained enclosed within its walls throughout this time. Moreover, Rotterdam was not only blooming economically, but also attracting foreign scientist, painters and philosophers and increased the diversity of inhabitants.

CONCLUSION

The city expanded towards the river Maas as the harbors became more comprehensive. However, the city remained enclosed within its walls throughout this time.
Attraction for foreigners and increase of diversity of inhabitants.

Number of inhabitants: 50000

4)

Sources
M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

1850

Using current Maas River as an orientation point

FINDINGS

After the stagnation of growth under French occupancy, Rotterdam started to expand again quickly in the first half of the nineteenth century. The disappearance of the merchants and the rise of transhipment businesses was a significant step towards the future. Rotterdam became a transitional harbour between the United Kingdom, Untied States of America and the Ruhr area. The trade with African continent also enabled a growth in revenue.

DESTROYING BOUNDARIES

In 1825, Rotterdam started expanding beyond its traditional city boundaries. The city walls were breached and the possibility for real expansion was presented. The ‘triangle’ between the Coolsingel, Goudsesingel and the New Maas was demolished at last. The sanding of Rotterdam’s main connection to the sea resulted in Voorn channel between 1827 and 1830. This was a connection between Rotterdam and Hellevoetsluis

CONCLUSION

Rotterdam became a transitional harbour between the United Kingdom, Untied States of America and the Ruhr area. The trade with African continent also enabled a growth in revenue.
In 1825, Rotterdam started expanding beyond its traditional city boundaries.

Number of inhabitants: 90000

5)

Sources
M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

1890

Using current Maas River as an orientation point

FINDINGS

NIEUWE WATERWEG (NEW WATER WAY)
made the demand for better accessibility of the harbour to a top priority. Between 1866 and 1872, the Nieuwe Waterweg was constructed between Rotterdam and Hoek van Holland as a direct connection to the North Sea.

This initiated a rapid economic growth and both the city and the harbour would undergo significant expansions. These expansions come in form of annexation of neighbouring municipalities and the erection of the neighbourhoods. Delfshaven, Feijenoord, Kralingen, Overschie, IJselmonde and Charlois were added between 1869 and 1895. Bridges were built across the river Maas to enhance the accessibility of all parts of the city. The population kept growing, in spite of the decline in birth rates. People were coming to work in the city from all over the countryside.

CONCLUSION

A better accessibility of the harbour to a top priority, Nieuwe Waterweg (New Water Way)
Both the city and the harbor would undergo significant expansions. People were coming to work in the city from all over the countryside.

Number of inhabitants: 201858

6)

Sources
M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

1940

Using current Maas River as an orientation point

FINDINGS

In the early twentieth century, the advancement and extension of the ports continued in Rotterdam. Especially the transhipment of Bulk Goods experienced significant growth. It was the period in history that Rotterdam surpassed Amsterdam as the main harbour city in the Netherlands. The better and more prominent position Rotterdam had, between different major ports, also played a drastic role in this development.

WORLD WAR I

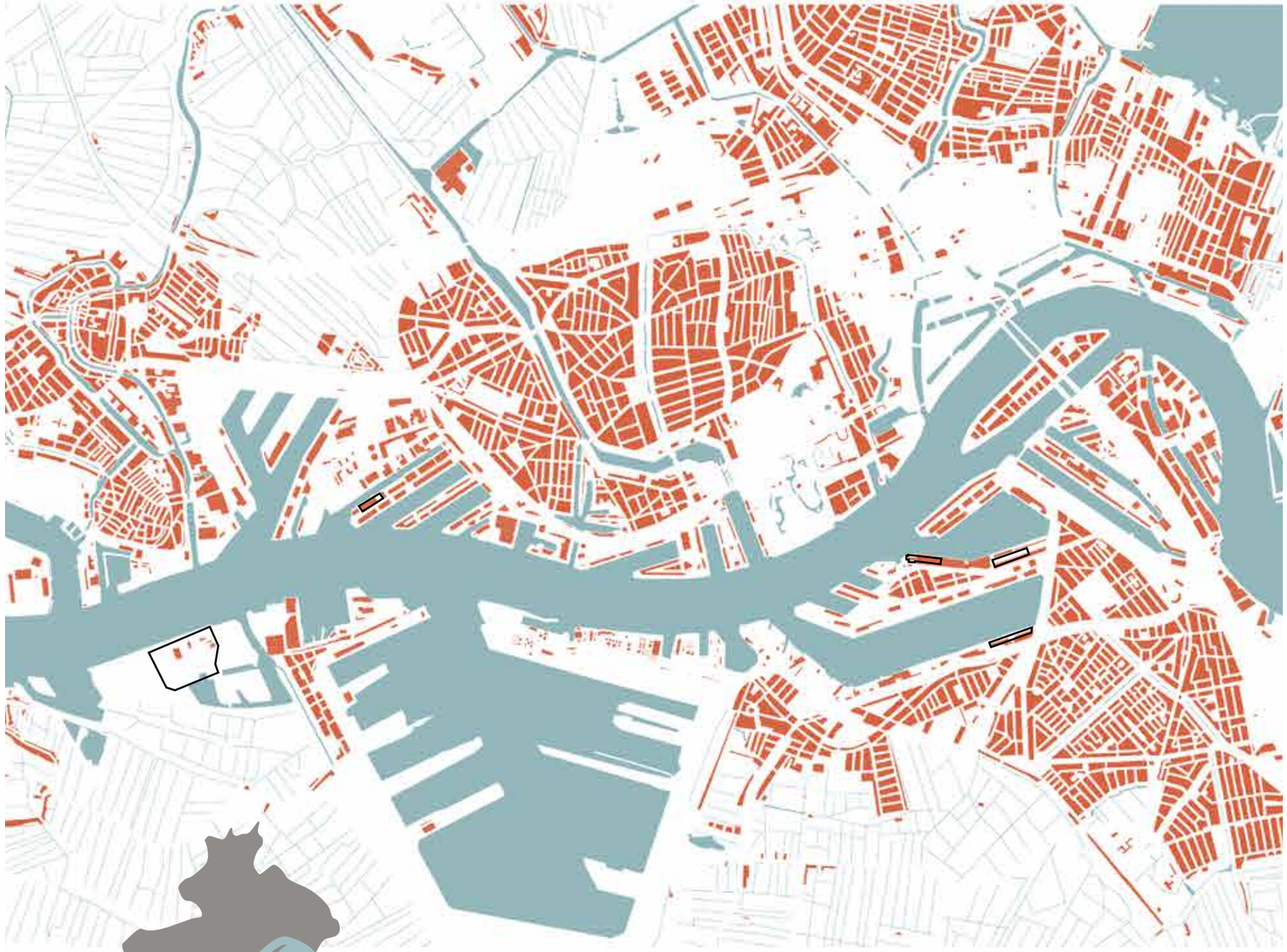
Stagnation in trade and economic growth occurred in Rotterdam (as well as other cities) due to the outbreak of the First World War. Rotterdam started recovering around 1926, by which time it only had three years left until the great recession in 1929. The recession showed the city's vulnerability and one-sidedness.

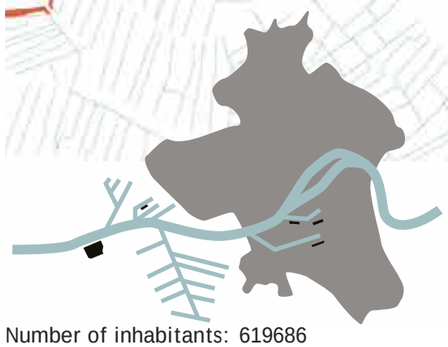
WORLD WAR II

In May 1940, the old city centre and the seventeenth century harbours were destroyed by the German invaders. 900 inhabitants were killed and several 1000's lost their homes. In October 1941 and March 1943, the city was bombed again, by the Allies this time. At the end of the war, the Germans took everything they could from the harbors. In 1946, a plan was devised for the reconstruction of the city and the harbors.

CONCLUSION

It was the period in history that Rotterdam surpassed Amsterdam as the main harbor city in the Netherlands.
The stagnation in trade and economic growth occurred in Rotterdam due to WWI and the city was boomed and damaged during WWII.





Number of inhabitants: 619686

Sources

M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

1970

Using current Maas River as an orientation point

FINDINGS

After the war, the original streetplan was abandoned and the city centre was accessible through wider roads. The city centre largely became a place of business while new neighbourhoods were built all around the city. The city of Rotterdam and the country of the Netherlands wanted to be less depended on Germany for their trade and was looking for ways to make this happen. The petrochemical industry combined with a major expansion of the harbour where the chosen solution.

LARGEST HARBOUR

In 1962 Rotterdam became the largest harbour in the world. The newly built Maasvlakte (the first one) in 1970 helped to fortify this global number one position. The economic growth in this period would create a great demand for foreign workers, increasing the demand for living quarters in the city. Rotterdam would have its largest population in history in 1965: 731564 inhabitants.

CONCLUSION

In 1962 Rotterdam became the largest harbour in the world. The economic growth in this period would create a great demand for foreign workers, increasing the demand for living quarters in the city.

Number of inhabitants: 686586

8)

Sources

M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

2016

Using current Maas River as an orientation point

FINDINGS

In the 1980s, the Basicplan to reconstruct Rotterdam had been concluded for several decades. A new city had been built with a clear division of functions. Small scale housing projects had filled in the open spaces in the city. In the 1990s, large scale building projects had become the new norm. The Kop van Zuid and the Erasmusbrug being the most striking ones. This city had gotten a metropolitan feel to it. Explosive economic growth resulted in a great demand for foreign labour forces. This resulted in 40% being of foreign origin.

RECENT YEARS

Up to 2008, the economic growth of the city resulted in some famous grand scale building projects. The Witte Keizer, Montevideo, Coopvaart, Wijnhaeve, Scheepmakerstoren, Red Apple, New Orleans and the Maastower and some examples. The economic and financial crisis of 2008 had a deep impact on a trading city like Rotterdam. Unemployment rates rose and the municipality was forced to cut its expenditure. In spite of that projects like the new railway station, the Rotterdam and the Markthal still got built.

CONCLUSION

It was the period in history that Rotterdam surpassed Amsterdam as the main harbor city in the Netherlands.
The stagnation in trade and economic growth occurred in Rotterdam due to WWI and the city was boomed and damaged during WWII.

Number of inhabitants: 631155

9)

Sources

M. Rotterdam, 2016
Erfgoedhuis, 2017

ROTTERDAM CITY DEVELOPMENT OVER TIME

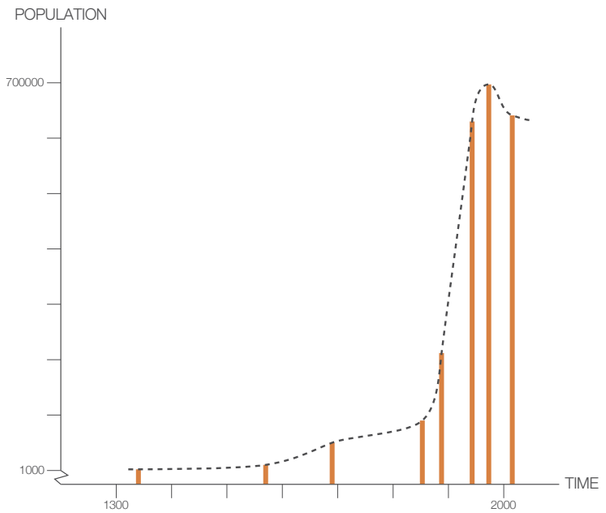
OVERALL CONCLUSION

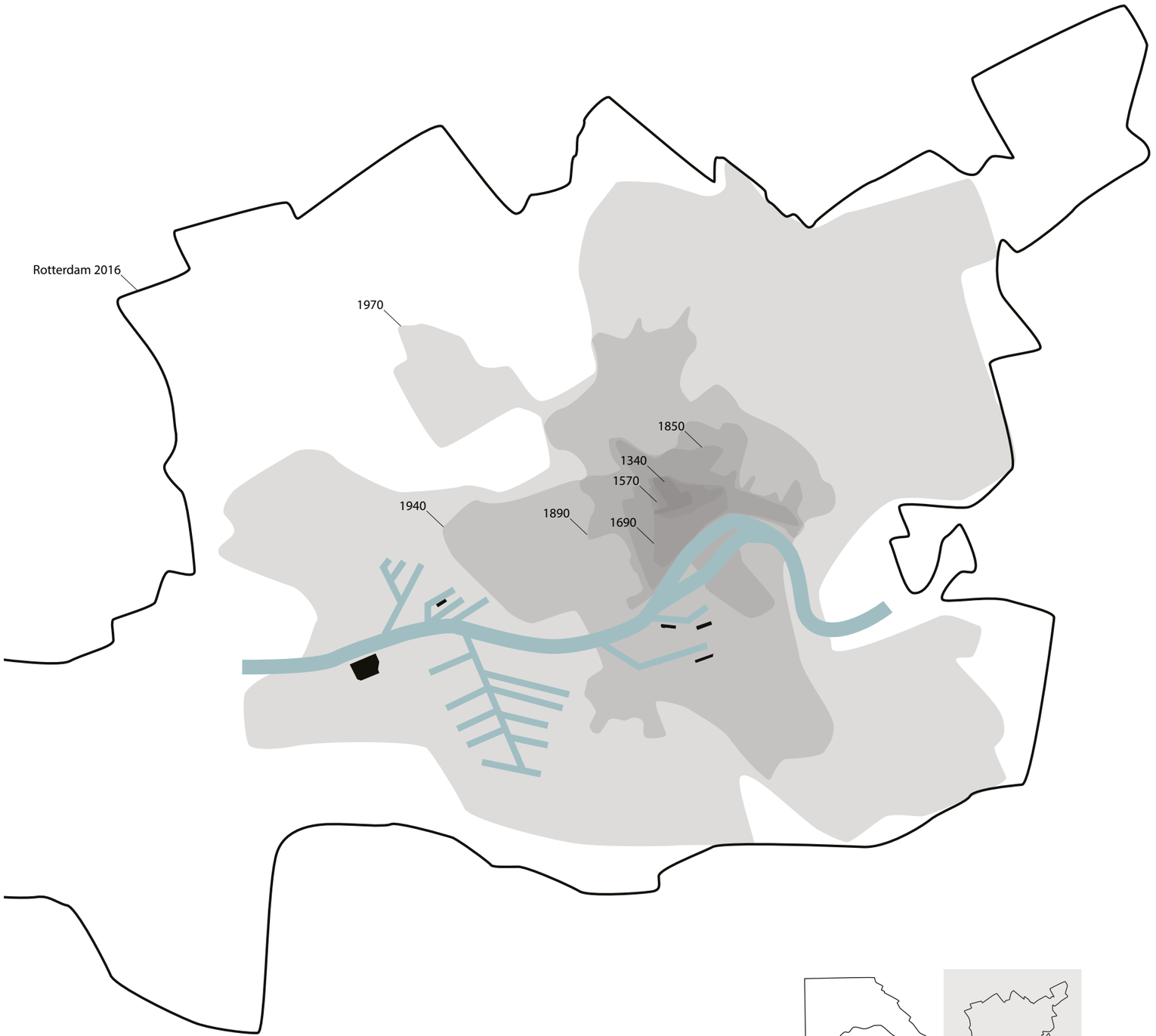
Using current Maas River as an orientation point

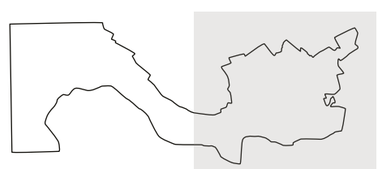
Rotterdam got city rights in the 1340 and developed into one of the biggest harbor cities in the world. The overall expansion started from the north side of Mass River and crossed the river in 1890; the expansion started from east to west side to North Sea. The harbour has been the main source of economic growth and expanded accordingly.

The city remained within the boundaries of its city wall for nearly five centuries, before expanding beyond them in 1825. Once the walls were down, the city grew extremely rapidly. It attracted many people from the countryside, as well as from abroad.

The World Wars combined with the Great Depression resulted in a stagnation of economic prosperity. However the Basic-plan, designed in 1946, was the start of Rotterdam rise to metropolitan status. The conclusion diagrams give a clear understanding of the growth of the city and its population throughout history. This information can be used to see into the direct future of Rotterdam.







10)

Sources
M. Rotterdam, 2016
Gemeente Rotterdam & Westerlengte, 2012

URBAN DEVELOPMENT OF THE HARBOR
CHRONOLOGY

QUESTION
This research is conducted to understand the development of the harbors of Rotterdam and familiarise with their characteristics.

METHODOLOGY
By looking at the city on a large scale level we get a general overview of the development of the riverside of the Maas and are introduced to the four modernizations of the harbour system of Rotterdam.

FINDINGS
Until the start of the 19th century, Rotterdam stayed within its city walls and occupied only the north side of the river and functioned as a Merchant port. The main activity was goods delivering to the merchants in Rotterdam and distrib-uted it to the hinterland.

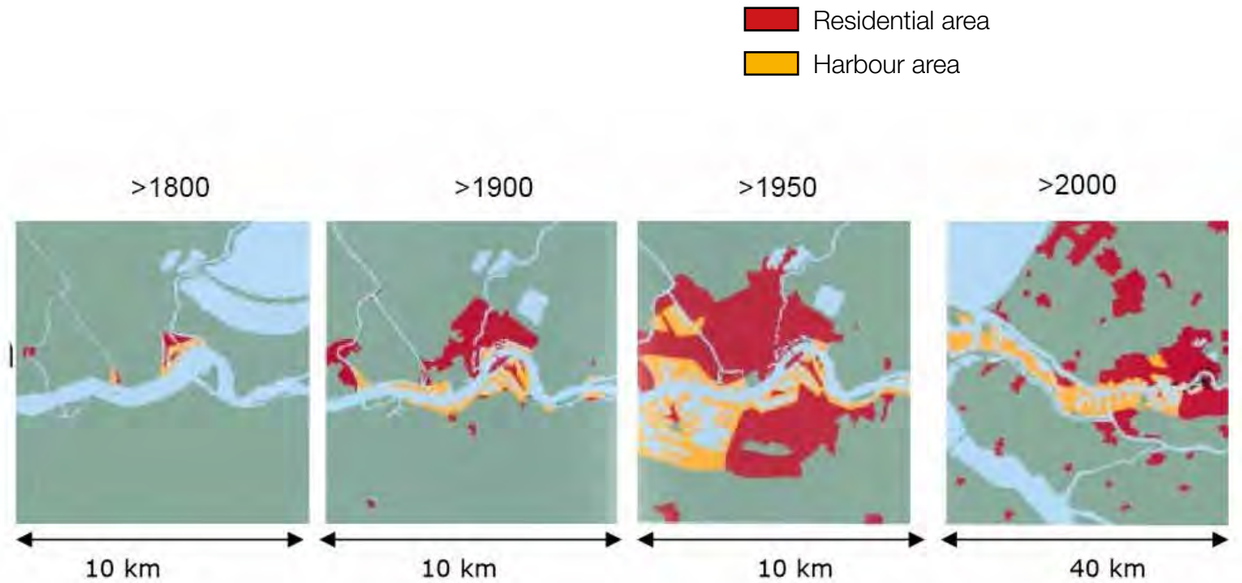
When the 'Nieuwe waterweg' was constructed in 1872, the harbor activities quickly repositioned to the south side of the Maas. The removal of the forti-fi-cations around Rotterdam released an unprecedented growth of the city. In this period, the harbour activities not only provided goods to the hinter-land, but also start to function as a Transit port to neighbouring countries like Germany for example.

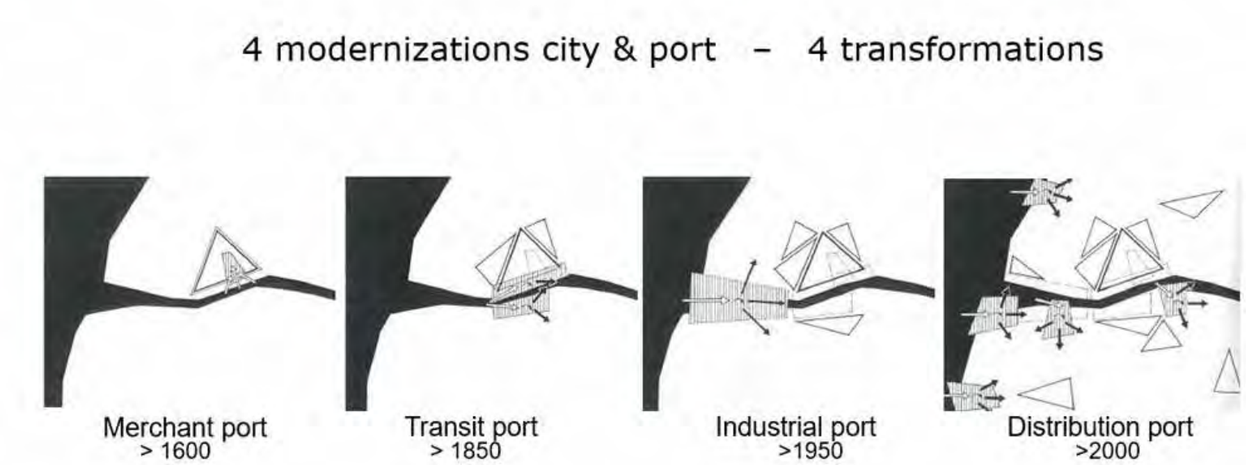
Around 1950, the growth of the city has been substantial and developed in all directions. The clustering of the harbour activities to the west side of the city expanded to the estuary of Maas River. The ports transformed with heavy in-dustrial activities on the quays. This made possible to not only transit goods, but also played a part in the production process. Under this situation, Rotter-dam harbours became essential for the whole Europe and was the largest har-bour in the world from 1962 till 2004.

Now in the 21st century the latest transformation took place. The map shows that the process of moving the harbours west continued all the way to the es-tuary of the Maas. The biggest impact is to minimise the shipping traffic passing through the city. Multiple harbors and industrial areas work together, creating a network of linked activities. The harbor currently handles a stag-gering amount of 320 mil. Tons of goods and its activities has remained the economic motor of the city providing thousands of jobs.

CONCLUSION
The ports transformed with heavy industrial activities on the quays. This made possible to not only transit goods, but also played a part in the pro-duction process. Under this situation, Rotterdam harbours became essential for the whole Europe and was the largest harbour in the world from 1962 till 2004.
Multiple harbors and industrial areas work together, creating a network of linked activities.

Sources
Rotterdam N.V., 2016
Meyer, 2016
Laar et al., 2004





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URBAN DEVELOPMENT OF THE HARBOR
CHRONOLOGY

QUESTION
This research is conducted to understand the development of the harbours of Rotterdam and familiarise with their characteristics.

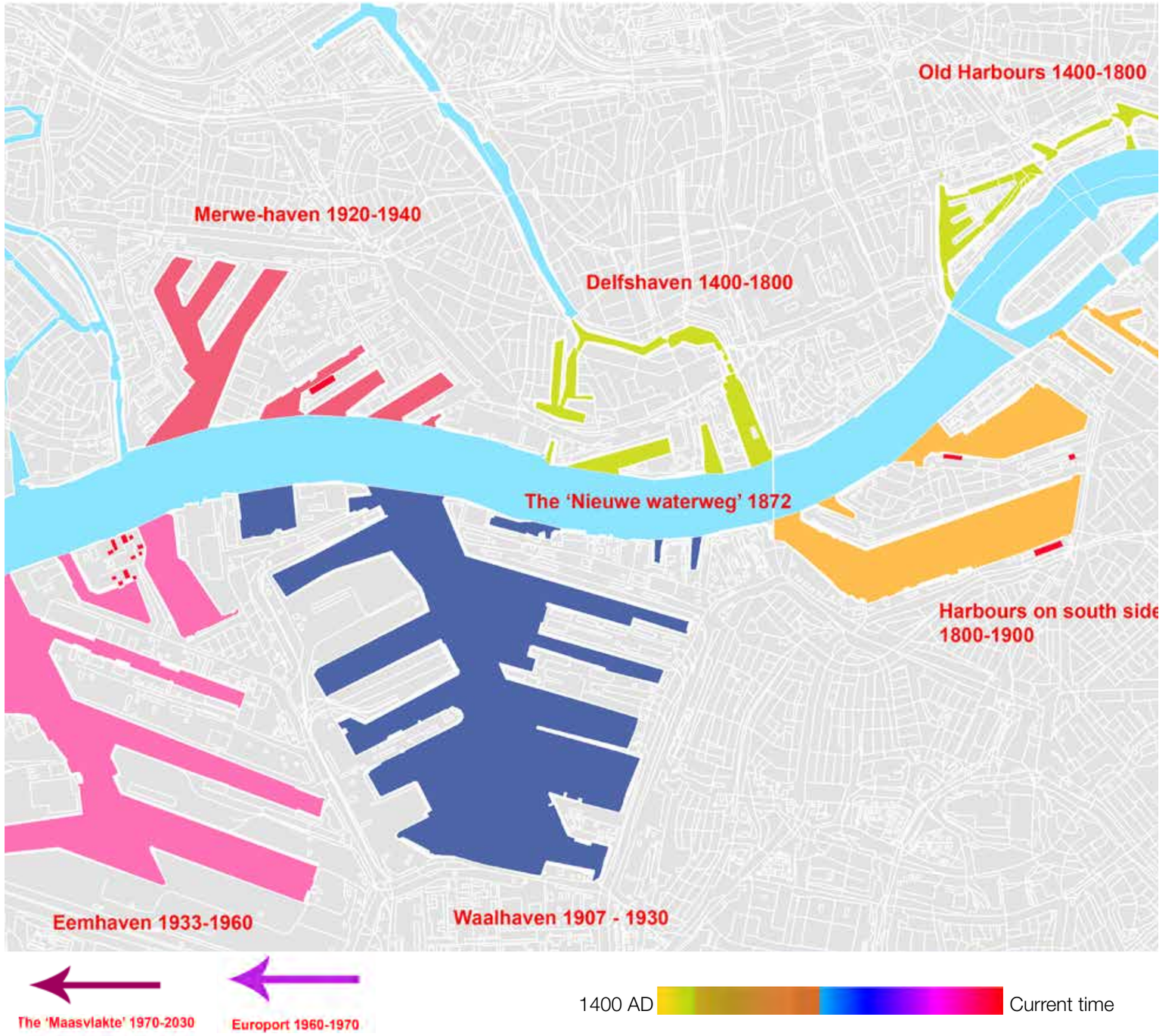
METHODOLOGY
By looking at the city on a large scale level, a general overview of the development can be seen along the riverside of Maas River. There are four modernizations of the harbour system of Rotterdam.

FINDINGS
In this map the development of the harbours direction is clear. First expansions close to the city centre were realised on the south side of the Maas in 1800. This gave the harbour activities room to grow and relief some of the stress on the clogged up city centre of the 18th century. It is also remarkable the large scale expansion of southern harbors with wider entrances, wider harbours and an increase in surface area on the quays.

The southern expansion was a great success and was followed quickly by the developments of the Waalhaven,Merwe-haven and Eemshaven. These harbours grow considerately in size. The harbors move further to west direction and located between the estuary of Maas River and the edge of the city. This disconnects the major transit activities from the city centre.

This development continues until now where the Europort and Maasvlakte expansions have reached the estuary of the Maas and these ports are geographically disconnected to the city of Rotterdam anymore. Currently the extension Maasvlakte 2 has been realised and is planned to be under development till 2030.

CONCLUSION
In this map the development of the harbours direction is clear. First expansions close to the city centre were realised on the south side of the Maas in 1800. It is also remarkable the large scale expansion of southern harbors with wider entrances, wider harbours and an increase in surface area on the quays. The harbors move further to west direction and located between the estuary of Maas River and the edge of the city. This disconnects the major transit activities from the city centre.



12)

Sources
Gemeente Rotterdam & Westerlengte, 2012

URBAN DEVELOPMENT OF THE HARBOR TYPOLOGY

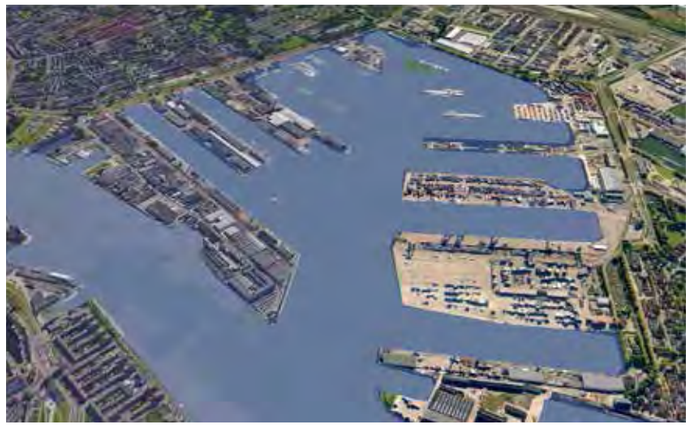
QUESTION
This research is conducted to understand the development of the harbours of Rotterdam and familiarise with their characteristics.

METHODOLOGY
By looking at the city on a smaller scale level we get a closer look at the individual harbours of Rotterdam and what is typical about them.

FINDINGS
The Waalhaven and Eemshaven expansions show the further development into an industrial port. The harbours, quays still remain to grow in size. Further developments in transport systems and organisations reach the harbor activities to its fullest. More heavy industry is positioning itself in a close proximity. These harbors not only transport goods but also start to play parts in production processes to maximise the profits generated by the port.

These large harbours with its mixture of light and heavy industrial buildings and equipment give the characters to the area. Currently these harbors are still partially used, although it's overshadowed by the exponentially larger expansions of the Europort and Maasvlakte.

CONCLUSION
The harbors, quays still remain to grow in size. These harbors not only transport goods but also start to play parts in production processes to maximise the profits generated by the port. Currently these harbors are still partially used, although it's overshadowed by the exponentially larger expansions of the Europort and Maasvlakte.



Aerial view of Waalhaven

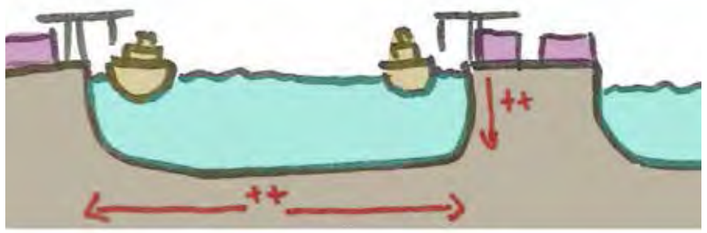
Aerial view of Eemshaven

Historic picture of the activities at Waalhaven, dated around 1950 from the collection of Kees de Keijzer.

Aerial picture from Eemshaven with it's recent activities, 2010

Main harbour road

Secundary quay road



Section of the Eemshaven

Sources
Fruit, 2016
Google, 2017
Kustvaartforum, 2017

URBAN DEVELOPMENT OF THE HARBOR
FUTURE PLANS

QUESTION
This research is conducted to understand the development of the harbours of Rotterdam and familiarise with their characteristics.

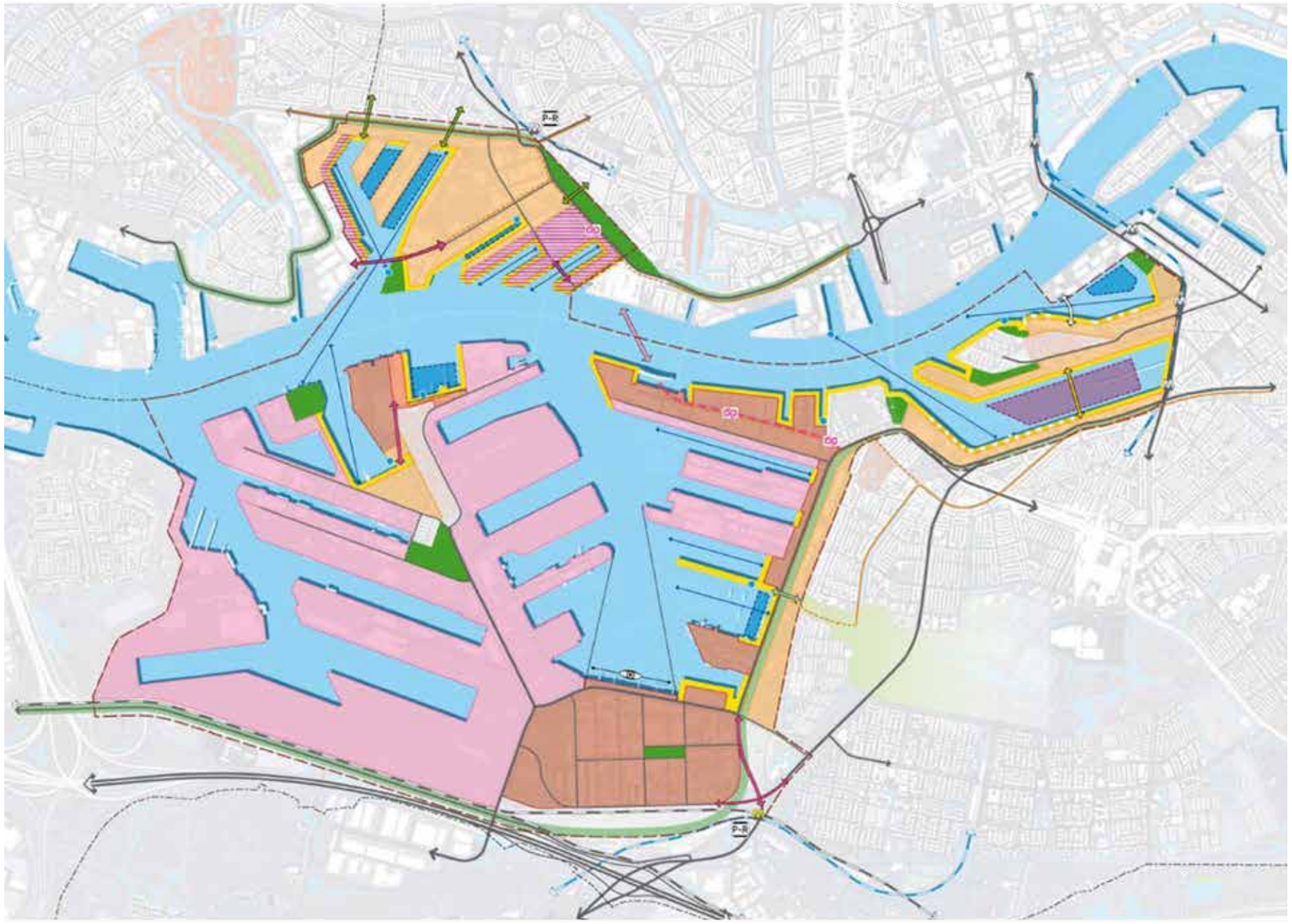
METHODOLOGY
By looking at the future plans of the city on a large scale level we can get a peek at the further developments of the harbours by the municipality.

FINDINGS
When taking a closer look at this general plan for future development one thing stands out. At the Merwe-haven and Maashaven the harbours will be re-developed as inner-city districts with residential and commercial functions. Partially renovating the old fabric of warehouses but also with new high rise buildings on the quay and on the water.

Eemshaven and Waalhaven will mostly remain a functional harbour and is planned to restructure its business.

Also the increase of accessible quays for public activity is a big change from the original situation. New routes of transportation and relation between districts are proposed which will create new possibilities and challenges in the future.

CONCLUSION
At the Merwe-haven and Maashaven the harbours will be re-developed as inner-city districts with residential and commercial functions. Partially renovating the old fabric of warehouses but also with new high rise buildings on the quay and on the water.
The increase of accessible quays for public activity is a big change from the original situation.



14)

Sources
Gemeente Rotterdam & Westerlengte, 2012

URBAN DEVELOPMENT OF THE HARBOR
URBAN LAYERS

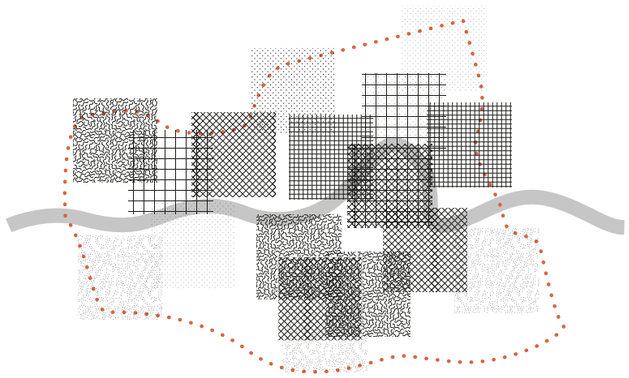
QUESTION
To understand the urban structures of Rotterdam identifying it as a cityscape.

METHODOLOGY
By looking at the diversity of layers through its structures of the urban fabric.

FINDINGS
Rotterdam has three main structures which define the cityscape of the city:
Development of cultivation by street + block
Division by the dynamics of the water
Enclosure of the cityspace through traffics

Different types of urban structures are visible and show Rotterdam its diversity. Recognition is by memorizing the unique structures as individual entities part of the cityscape as a whole (ill. 1). Orientation is through the sequence of place as they are all independently presented. Calling it a collage each part links the different places by recognizing and memorizing the unique characters, such as: landmarks, green zones or harbour places.

CONCLUSION
Development of cultivation by street + block
Division by the dynamics of the water
Enclosure of the cityspace through traffics



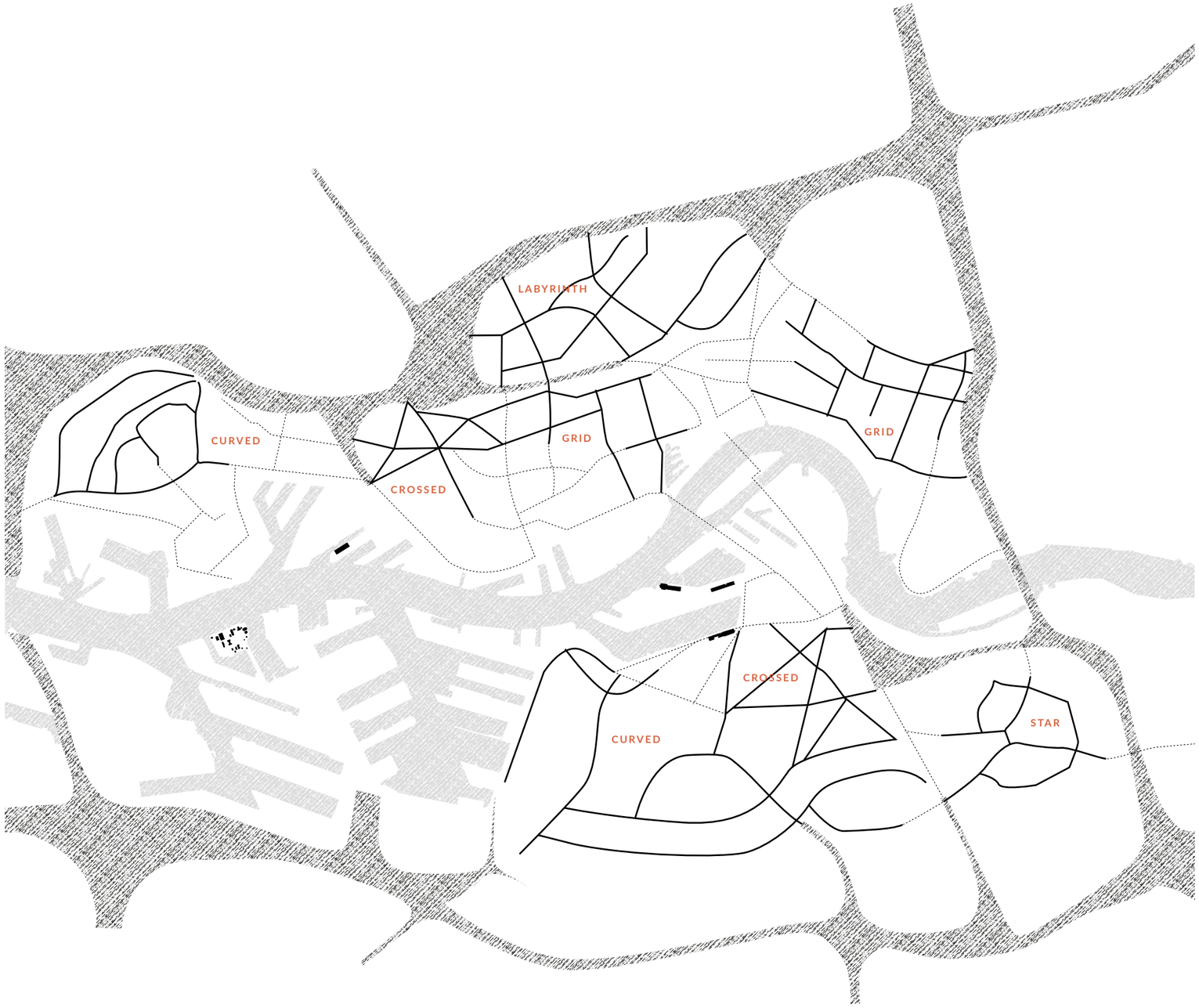


Illustration 1 (above) collage of structures
Illustration 2 (left) structures as unique cityscape

Sources
Palmboom, 1990

15)

MORPHOLOGY
OPEN STRUCTURE

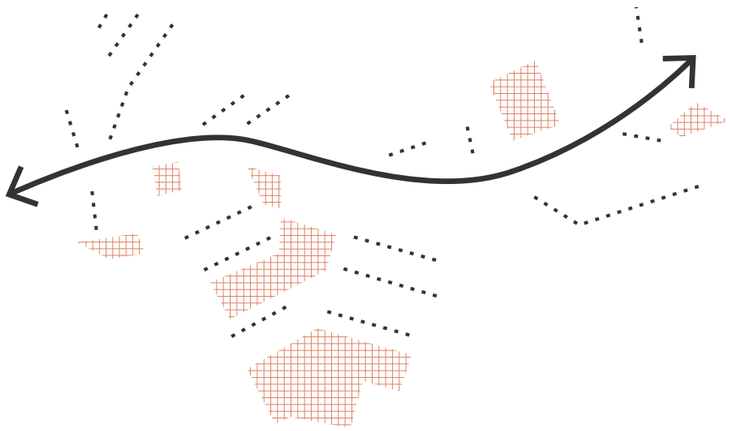
QUESTION
To focus on the open structures in the harbour area and their meaning related to the flow between buildings.

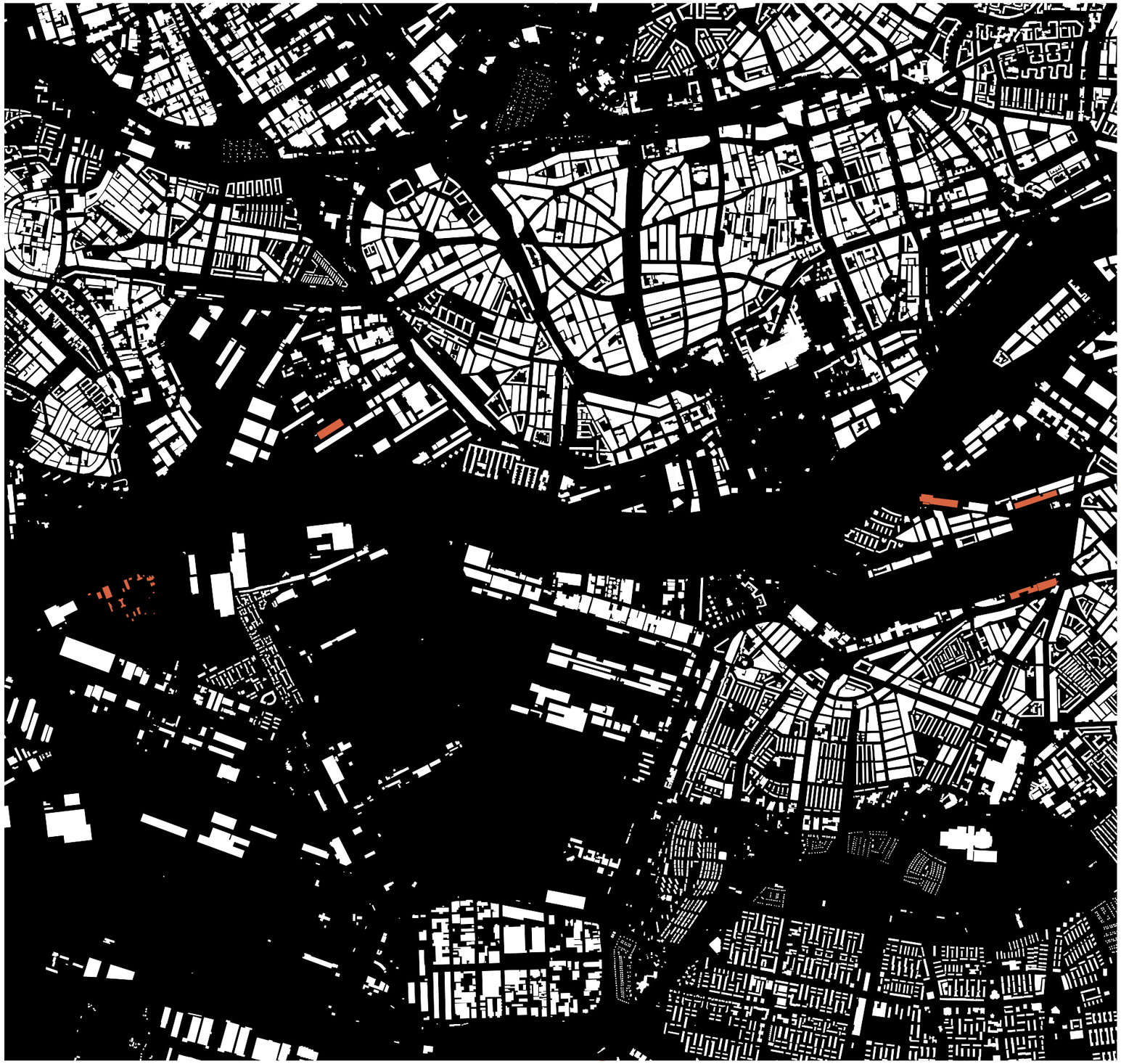
METHODOLOGY
By linking the inverse structure of building and open space to the way they create a specific flow and place.

FINDINGS
In the left map, a diversity of black structures can be ssen: the open spaces between the buildings. Relating them to flow and space we can understand that there are three different types to achieve this:
Long routes
Cutting lines
Open islands

These three define the open spaces of Rotterdam its Harbour Heritage site. Long routes as direction through space, cutting lines to create enclosed areas and open islands floating in the space. These structures can be seen as starting points to define others structures in the cityscape.

CONCLUSION
Long routes as direction through space, cutting lines to create enclosed areas and open islands floating in the space. These structures can be seen as starting points to define others structures in the cityscape.





16)

Sources
Laar et al., 2004

INFRASTRUCTURE
ROAD SYSTEM

QUESTION
This research is conducted to understand the connections of Rotterdam by car.

METHODOLOGY
Trace the existing traffic system

FINDINGS
By looking at current maps of road system, it is clear that Rotterdam is well connected by car. The ring of Rotterdam, made by the four highways, A4, A15, A16 and A20, not only connect to the rest of the Netherlands, but also within the city.

CONCLUSION
The city is well connected by the highways to the rest of the country and the city accessibility is remarkable.

Primairy road/ high ways

Secondary roads/ side ways

17)

Sources
Kadaster, 2016

INFRASTRUCTURE
METRO SYSTEM

QUESTION
This research is conducted to understand the underground network of metro system.

METHODOLOGY
Trace the existing traffic system

FINDINGS
There are 5 subway line in Rotterdam.
Line A - Binnenhof to Schiedam center
Line B - Nesselande to Schiedam center
Line C - De Terp to De Akkers
Line D - Rotterdam central to De Akkers
Line E - Den Haag central to Slinge
Line A, B and C are going in the East and West direction and Line D and E the North and South direction.

CONCLUSION
These lines are overlapped considerately. The metro system might be improved and wide spreaded in the future, in order to reach every corner of the city.

18)

Subway

19)

Sources
Kadaster, 2016
RET, 2016

INFRASTRUCTURE
HARBOR

QUESTION
This research is conducted to understand the water traffic.

METHODOLOGY
By looking at current maps and the schematic representation of the metro system, the underground network of the subway can be made visible.

FINDINGS
The main route through the river goes from North Sea far to Germany. This main direction is also the point where the harbors can be entered. There is only one entering point to further hinterland in Rotterdam.

CONCLUSION
The water connection mainly happens along Mass River, expect one water routing connected to the hinterland; the water traffic can reach to Germany.

20)

Sources
Kadaster, 2016

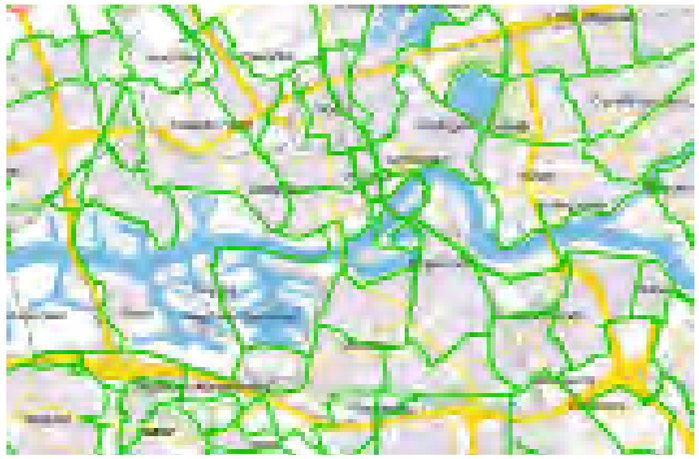
INFRASTRUCTURE
BIKING ROUTES

QUESTION
This research is conducted to understand the routing for cyclists around Rotterdam.

METHODOLOGY
By looking at the information of PDOK, there are two maps with cyclist related information. One with the long distance routes and one with short cyclist routes.

FINDINGS
The map on the right shows the long distance routes for cyclist that goes through Rotterdam. The map below (direct map of PDOK) shows all possible cycling routes.

CONCLUSION
The biking path is well connected to the main axis of the city, and covers some waterfront of the city from residential and commercial areas to industrial areas in the city.



21)

Long distance routes cyclists

22)

Sources
Kadaster, 2016

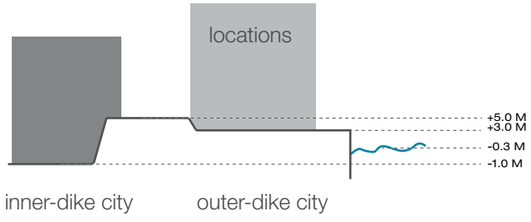
LANDSCAPE
OUTER DIKE AND INNER DIKE

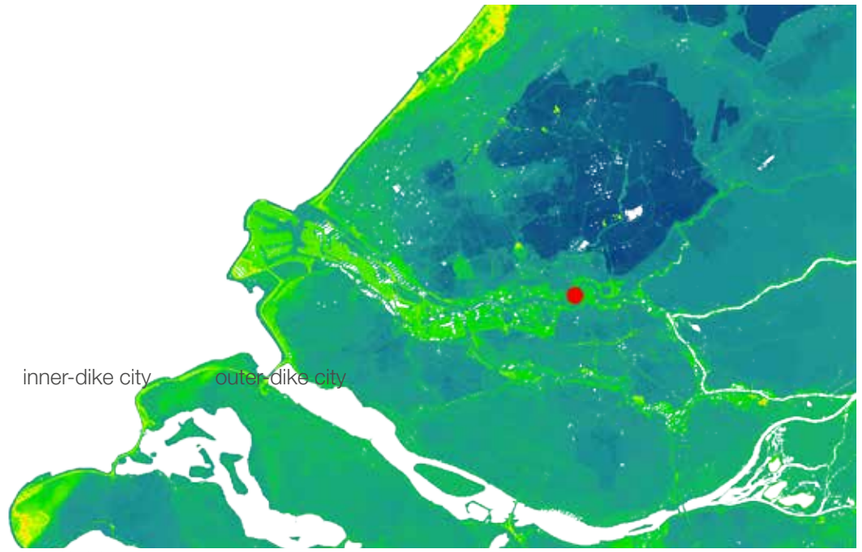
QUESTION
This research is conducted to understand the height difference of the city and relation to the urban context.

METHODOLOGY
By looking at the current height of the soil, it can be traced back to the different layers of the soil.

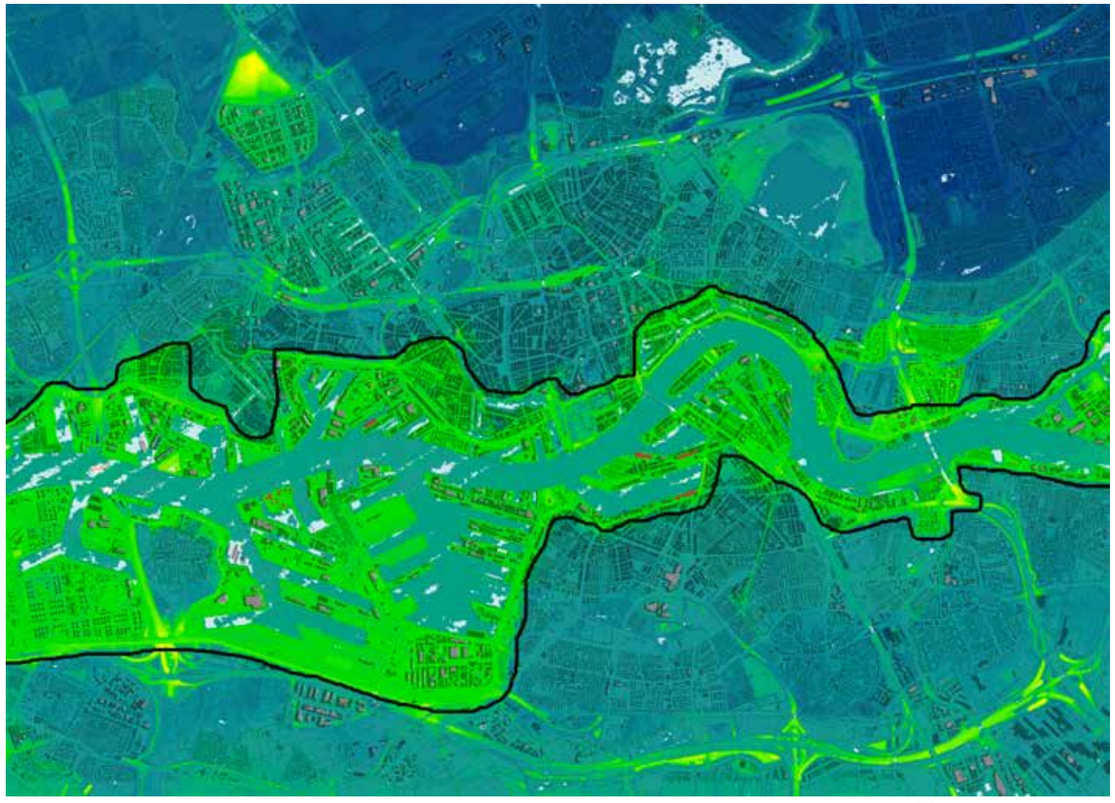
FINDINGS
Rotterdam is built around the delta of the river Maas. By looking at the maps and the section, hinterland is much lower than the river and the dikes. This leads to a vulnerable position once water break through behind the dikes. The outer dike city regions are also quite vulnerable, because there isn't a dike to protect them from the water.

CONCLUSION
Rijnhaven is located inside the outer dike which means the area is more vulnerable to water impact.





regional height-map


Rotterdam height-map

- 8.0 meter

+ 8.0 meter

Sources
Actueel Hoogtebestand Nederland, 2016
Kadaster, 2016

LANDSCAPE
NATURAL ELEMENT AND PUBLIC SPACE

QUESTION
The distribution of natural elements and public space in the city.

METHODOLOGY
By looking at the infill of the location of water, greenery and public space.

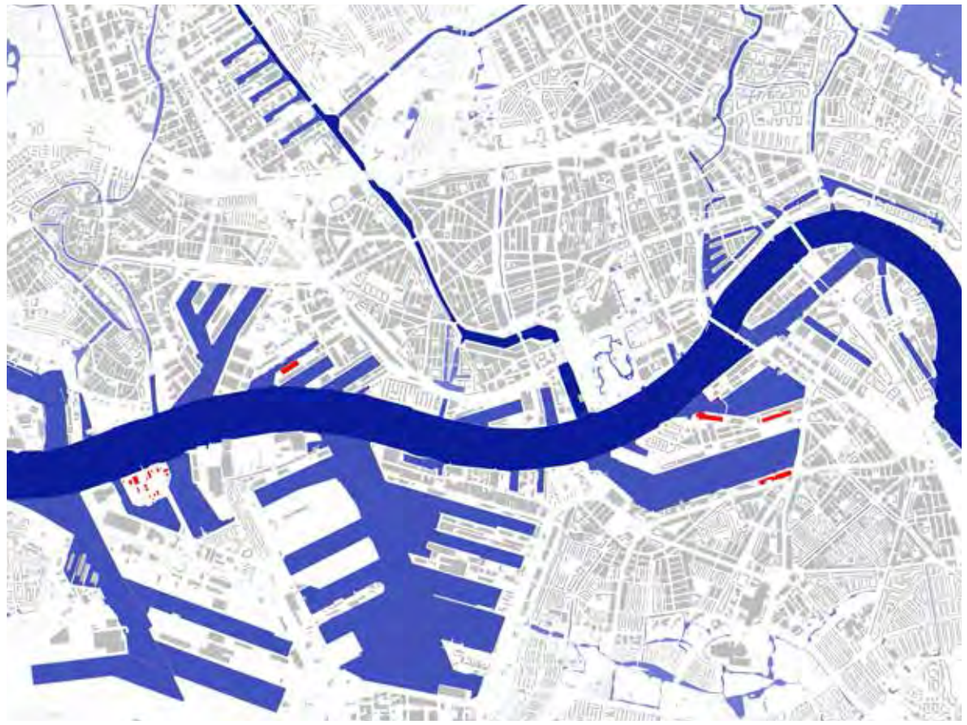
FINDINGS
Maas River divides the city into two major parts, and there are several huge harbors on the south side of the river. The greenery is scattered in the city, with much less influent surface than water. Rotterdam isn't really a green city. It has a number of bigger parks but they are all located outside the city center. As visible in the nolli-map, Rotterdam has a lot of open public space. But most of it is Maas River and the harbors.

CONCLUSION
As visible in the nolli-map, Rotterdam has a lot of open public space. But most of it is Maas River and the harbors. The greenery is considerately little within the city center.

other waterways

secondary waterways/harbor

main waterways



water

green

private space

public space

green

24)

Sources
Own illustrations

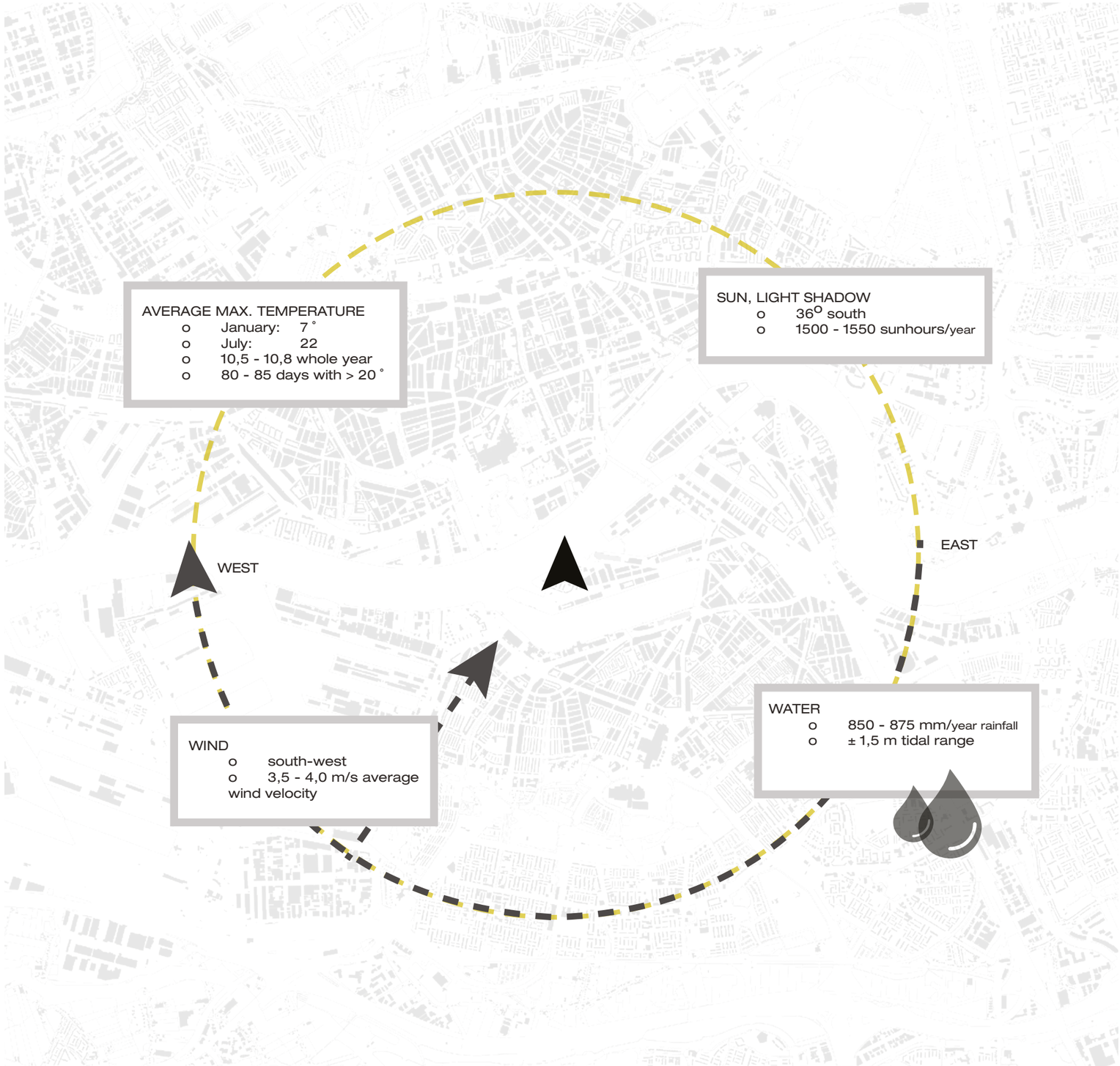
CLIMATE
SUN DIRECTION, WIND DIRECTION, PRECIPITATION, AND TEMPERATURE

QUESTION
The basic climate characteristics in Rotterdam

METHODOLOGY
By gathering statistics about the local climate in Rotterdam.

FINDINGS
Rotterdam is close to the sea which performs a moderate temperature; the tide difference gives the impact to the city harbors.

CONCLUSION
Overall the climate condition is agreeable. The only thing needs to be dealt carefully is tide difference within city harbors.



25)

Sources
Heijboer & Nellestijn, 2002

CLIMATE
EXTREME CONDITION

QUESTION
How does the city of Rotterdam cope with the current and upcoming climate change?

METHODOLOGY
By looking at the cities strategies to cope with the more extreme weather conditions.

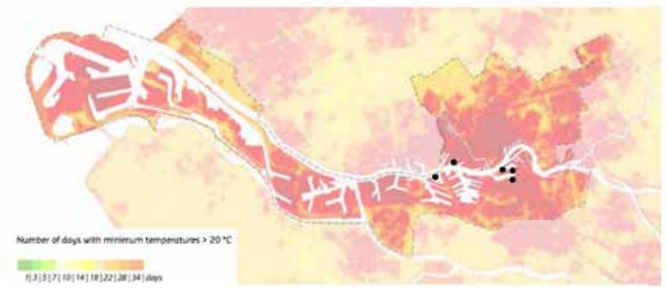
FINDINGS
There are 4 important threats detected that will affect the city in the up-coming century. Higher sea and river levels, longer hotter periods, longer periods of drought and more intensive rainfall. All these phenomena have their own serious impacts.

CONCLUSION
The future planning is better to integrate within these topics, in order to increase the flexibility and sustainability.

Higher sea and river levels
- o Increased risk of outer-dike flooding
- o More frequent closure of the Maeslant storm surge barrier
- o Increased risk of inner-dike flooding

outer-dike flooding in Rotterdam in 2100

Longer hotter periods
- o Decrease in the thermal comfort in the city
- o Negative effects on health and well-being
- o Increased likelihood of damage to flora and fauna



urban heat island effect in 2100

Longer periods of drought
- o Lower water tables
- o Decrease in the water quality
- o Increased likelihood of damage to built-up area, flora and fauna
- o Low river levels obstruct shipping

areas at risk by droughts in 2100

More intensive rainfall
- o Water is less able to drain away
- o Increased risk of disruption and water damage

insufficient water storage capacity in 2100

Sources
Rotterdam Climate Change Adaption Strategy, 2013

DEMOGRAPHY
POPULATION

QUESTION
From the developing history of Rotterdam, Maas River plays an important role, but also a role of barrier; it can be regarded as transition zone nowadays, from north to south of Rotterdam development, which reflects how new comers settle themselves within the city.

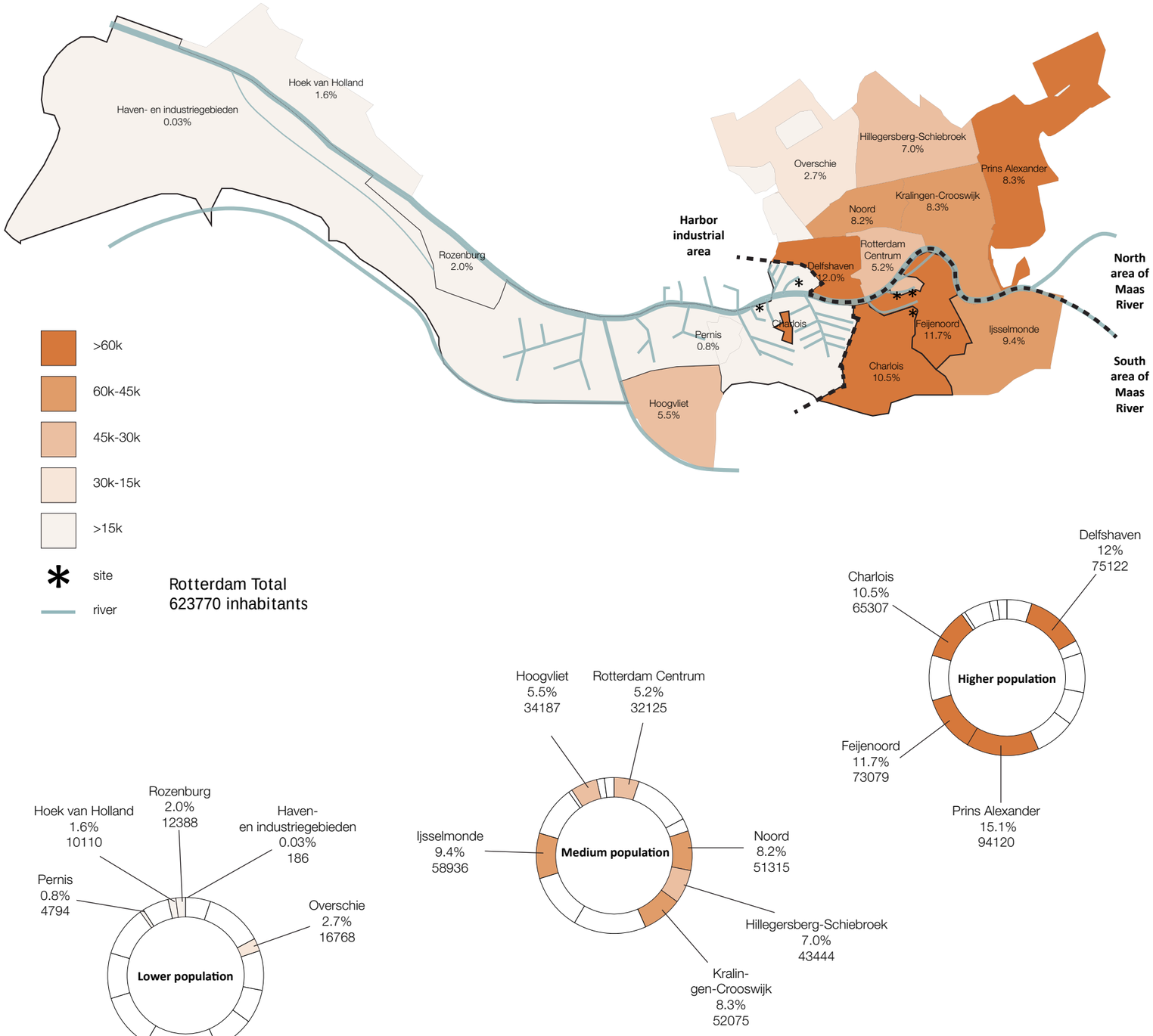
METHODOLOGY
Through different developing periods, Rotterdam can be divided into three parts including 15 districts. From earliest to the latest development, arears are north of Maas River, south of Maas River, and industrial area.

Our sites are located in 3 districts. Feijenoord and Charlois are in south area of Maas River; Haven-en industriegebieden is in the new industrial developing area.

FINDINGS
It is obvious the residential areas are focused on north and south areas, not in harbor industrial area. In north area of Maas River, it consist almost 60% of Rotterdam population; around 30% in south area of Maas River. Only 10% of population lives in harbor industrial area. The top 3 highest residential density occurs in Delfshaven, Feijenoord, and Charlois. Two of them, Feijein noord, and Charlois, are located in the south of Maas River. Also, it is remarkable that the number of inhabitants in Haven-en industriegebieden are only 186, which only occupies 0.03% of the entire population of Rotterdam.

For Rotterdam centrum, the population is relatively low, considering as the earliest developing area which consists of more public facilities and spaces in the city.

CONCLUSION
The top 3 highest residential density occurs in Delfshaven, Feijenoord, and Charlois. Two of them, Feijein noord, and Charlois, are located in the south of Maas River. For Rotterdam centrum, the population is relatively low, considering as the earliest developing area which consists of more public facilities and spaces in the city.



Sources
Rotterdam, 2015
Appendix 1

DEMOGRAPHY
AGE

QUESTION
By analyzing the age structure, the majority of age groups can be found and predicting the city productivity and active city vibes.

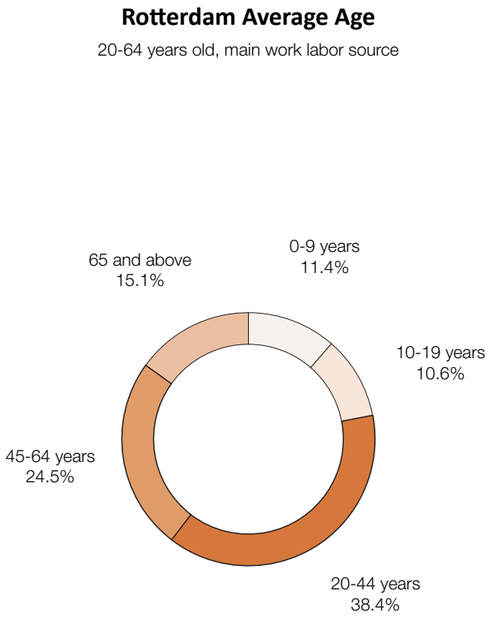
METHODOLOGY
There are five groups of age population; the focus will be the age of 20 to 64 as the main working labor source.

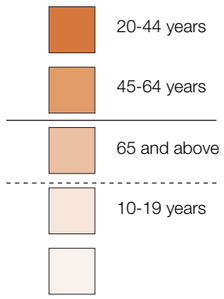
FINDINGS
In north area of Maas River, the younger working labor group, from age 20 to 44, is centered, especially in Delfshaven, Noord, and Kralingen-Crooswijk.

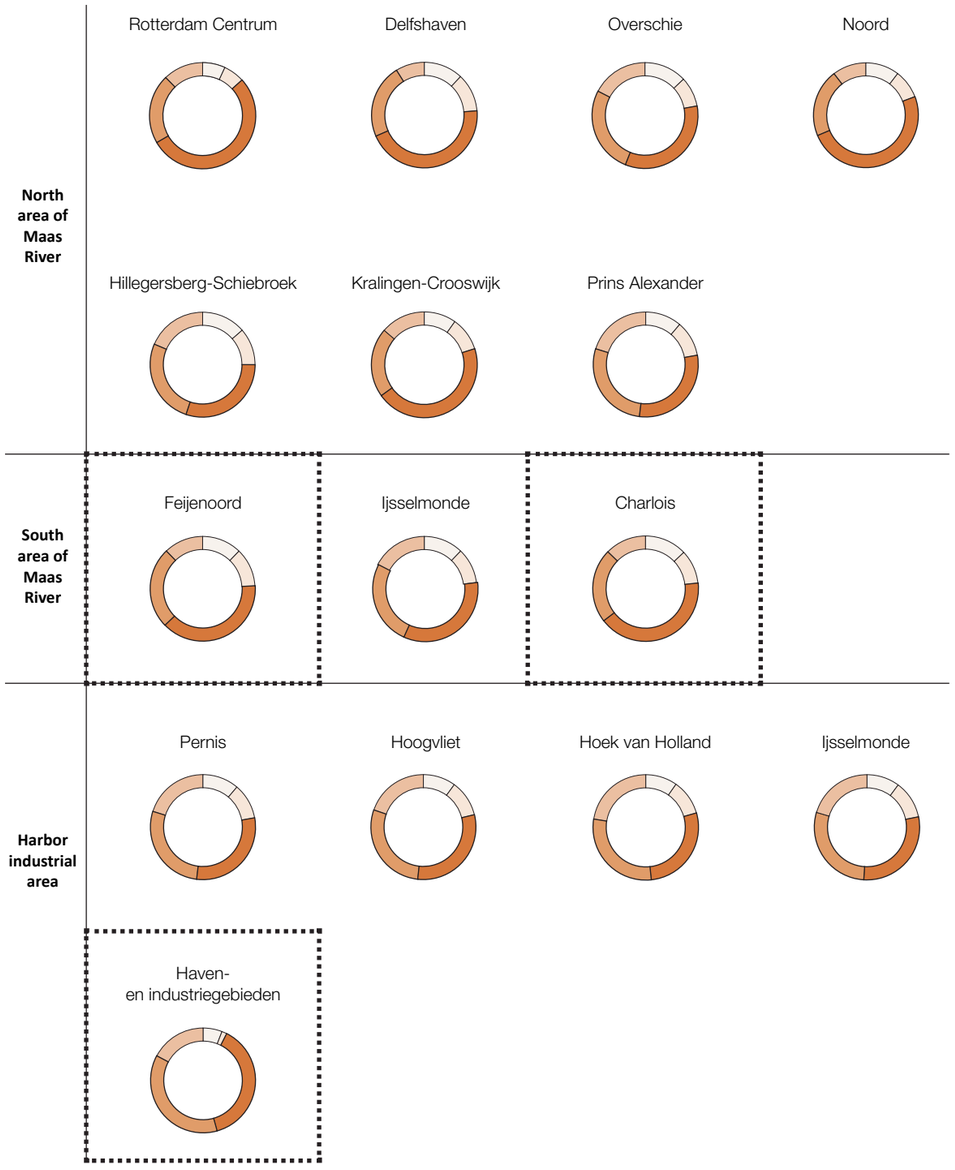
In south area of Maas River, the youngest and the second youngest groups present relatively higher percentage, which means the family structure is different and also shows the need of educational facilities.

The percentage of the older working labor group and the group above age 65 are relatively high within the harbor industrial area; it is around 50% of industrial population.

CONCLUSION
In south area of Maas River, the youngest and the second youngest groups present relatively higher percentage, which means the family structure is different and also shows the need of educational facilities.
The city mainly consist of main working labor source, which reflects the productivity of the city. However, the city is approaching to aging population.







Sources
Rotterdam, 2015
Appendix 1

DEMOGRAPHY
EDUCATIONAL LEVEL

QUESTION
In general, the higher educational level also indicates higher incomes and heathier living and body condition. The main focus will be on the high educational groups.

METHODOLOGY
Divided the population into 4 groups of educational levels: High (HBO,University), High-Medium (HAVO,VWO,MBO), Medium-Low (VMBO-level 1),and Low (only primary).

FINDINGS
Overall, there is only around 33% of the population is under high education group, who graduated from vocational school or university.

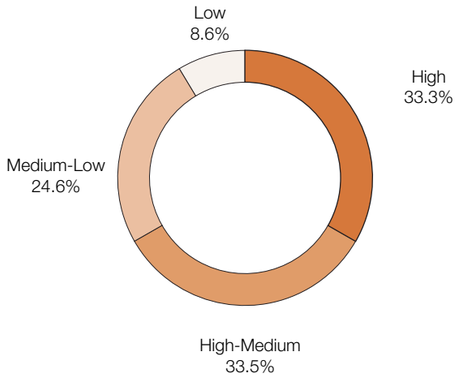
It can be observed that in north area of Maas River inhabitants tend to obtain high education, generally more than half of population.

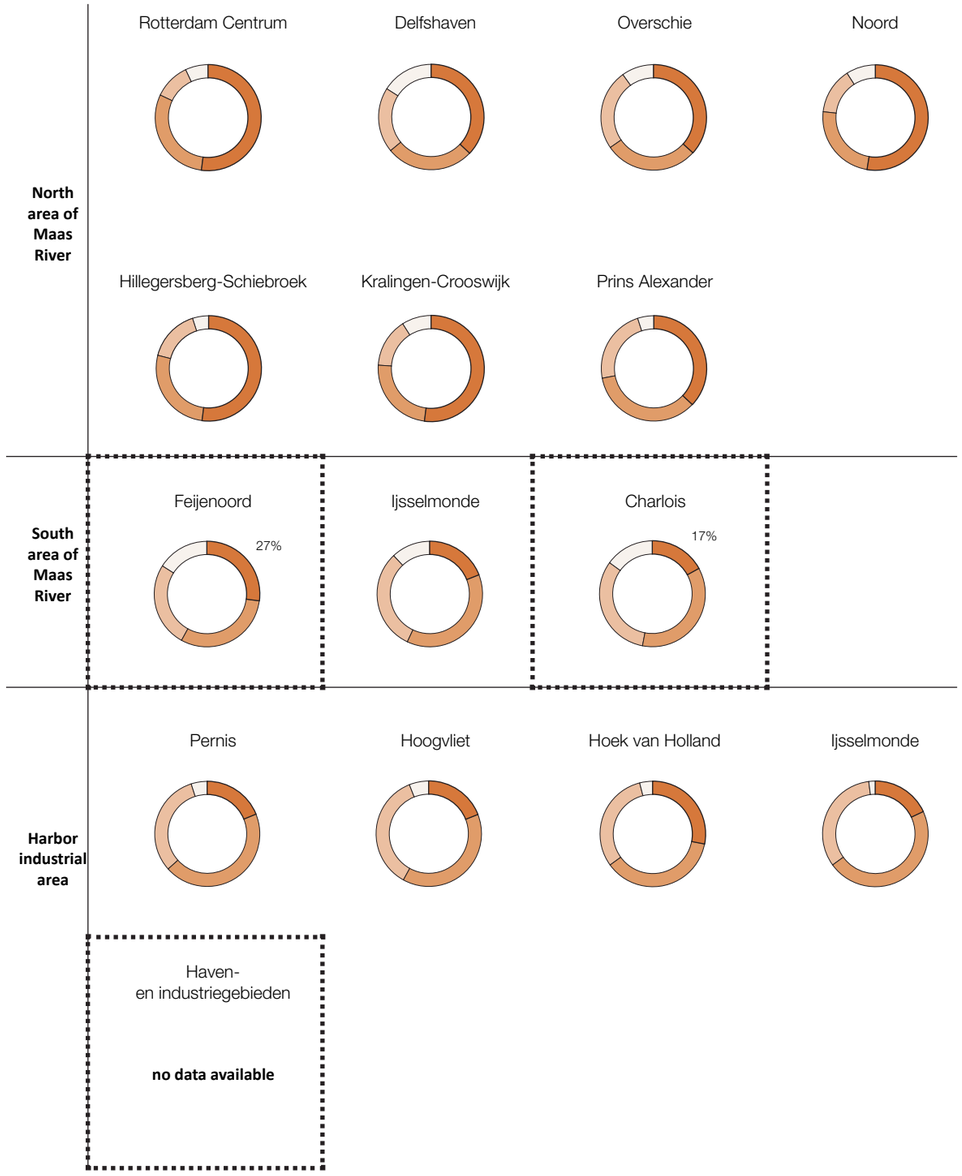
In south area of Maas River, it occurs the highest percentage of low education group, with 16%.

In harbor industrial area, the high to medium education inhabitants are the majority.

CONCLUSION
In general, the higher educational level also indicates higher incomes and heathier living and body condition. In south area of Maas River, it occurs the highest percentage of low education group, with 16%.

Rotterdam Average Educational Level





- High (HBO,University)
- High-Medium (HAVO,VWO,MBO)
- Medium-Low (VMBO-level 1)
- Low (only primary)

Sources
Rotterdam, 2015
Appendix 1

DEMOGRAPHY
ROTTERDAM AVERAGE NATIONALITIES

QUESTION
The diversity of a city cannot be ignored. It shows the difference of culture backgrounds, social habits and the common sharing values.

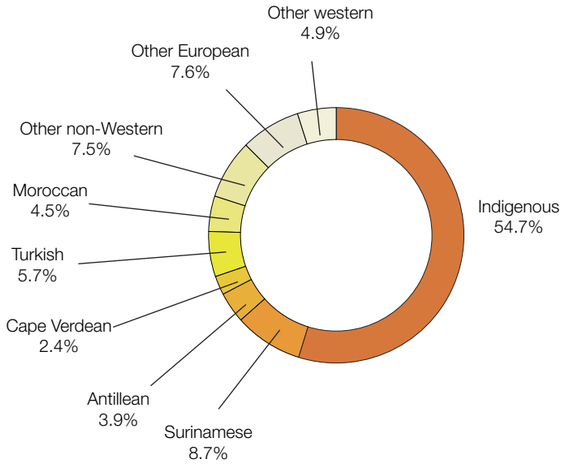
METHODOLOGY
The population can be divided into 9 groups: Indigenous, Surinamese, Antillean, Cape Verdean, Turkish, Moroccan, Other non-Western, Other European, and Other Western. By looking at the percentage of each district distribution, the majority culture influence and habits of the districts can be assumed.

FINDINGS
The diversity of nationalities in Rotterdam is impressive. Overall, the indigenous inhabitants are still the majority, but only with 55%. It can be observed that there is a high percentage of immigrants, who live in south area of Maas River and also in Delfshaven. Surinamese, other Europeans, and other non-westerners are the majority of immigrants in Rotterdam.

Second popular districts for non-indigenous are Rotterdam Centrum, Noord, and Kralingen-Crooswijk.

CONCLUSION
The diversity of nationalities in Rotterdam is impressive. Overall, the indigenous inhabitants are still the majority, but only with 55%. It can be observed that there is a high percentage of immigrants, who live in south area of Maas River.

Rotterdam Average Nationalities



Sources
Rotterdam, 2015
Appendix 1

DEMOGRAPHY
ROTTERDAM AVERAGE FAMILY STRUCTURE

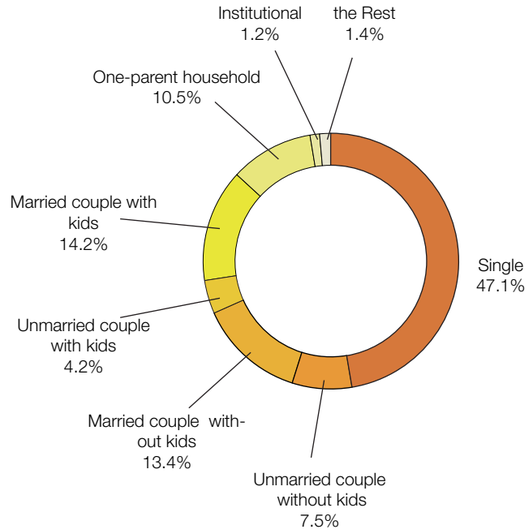
QUESTION
By looking at the family structure, the different needs of facilities to inhabitants can be predicted.

METHODOLOGY
The population can be divided into 8 groups: Single, Unmarried couple without kids, Married couple without kids, Unmarried couple with kids, Married couple with kids, One-parent household, Institutional, and the Rest.

FINDINGS
It is surprising that almost half of the population in Rotterdam are single, especially in north area of Maas River. The groups of married couple without and with kids are concentrated in south area of Maas River, harbor industrial area, and Prins Alexander.

CONCLUSION
It is surprising that almost half of the population in Rotterdam are single. The groups of married couple without and with kids are concentrated in south area of Maas River, harbor industrial area, and Prins Alexander.

Rotterdam Average Family Structure



Sources
Rotterdam, 2015
Appendix 1

HERITAGE & ARCHITECTURE

DOCUMENTATION

DOCUMENTATION
TRANSFORMATION OF THE BUILDING

QUESTION
This research is conducted to understand how the building transforms over time.

METHODOLOGY
By looking at the old drawings from Rotterdam city archive and redrawing them.

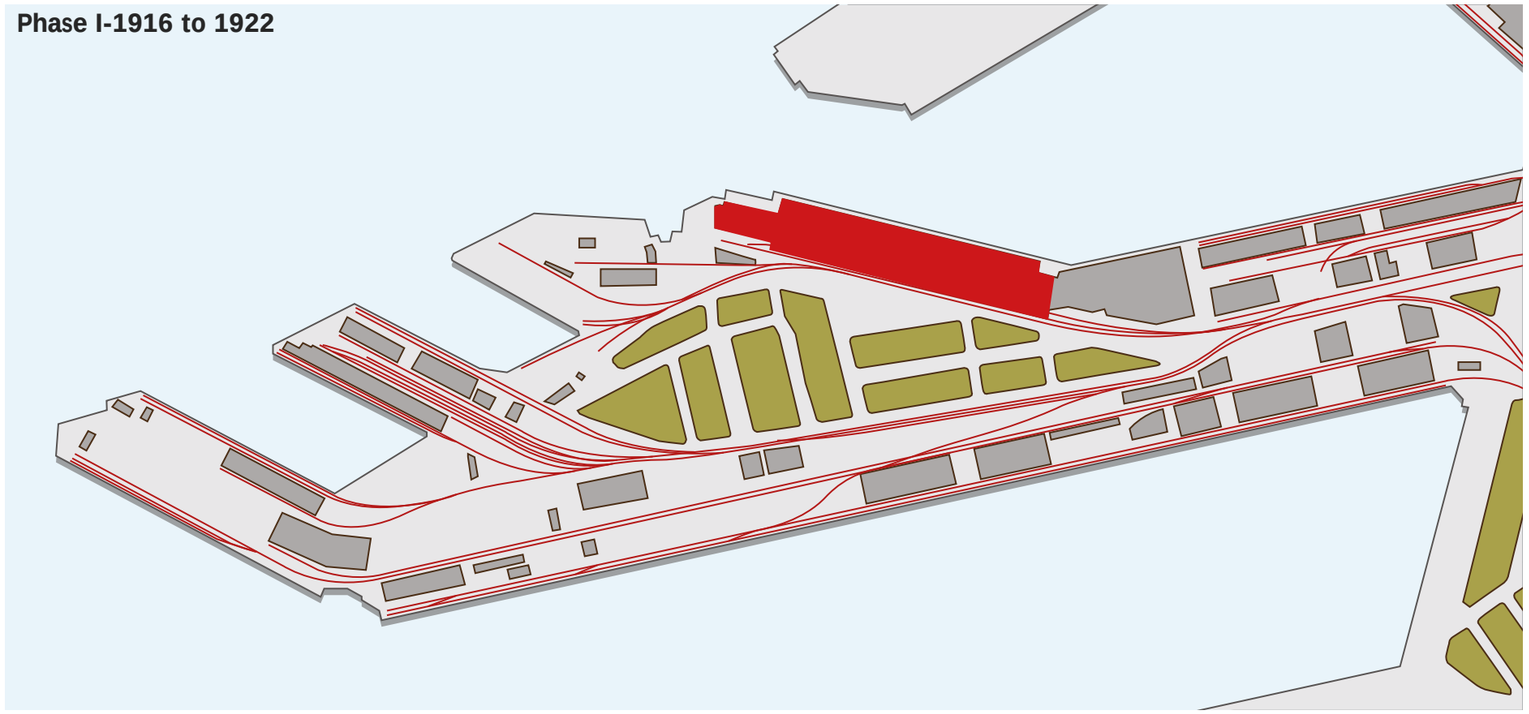
FINDINGS
There are 3 major phases in the building transformation:

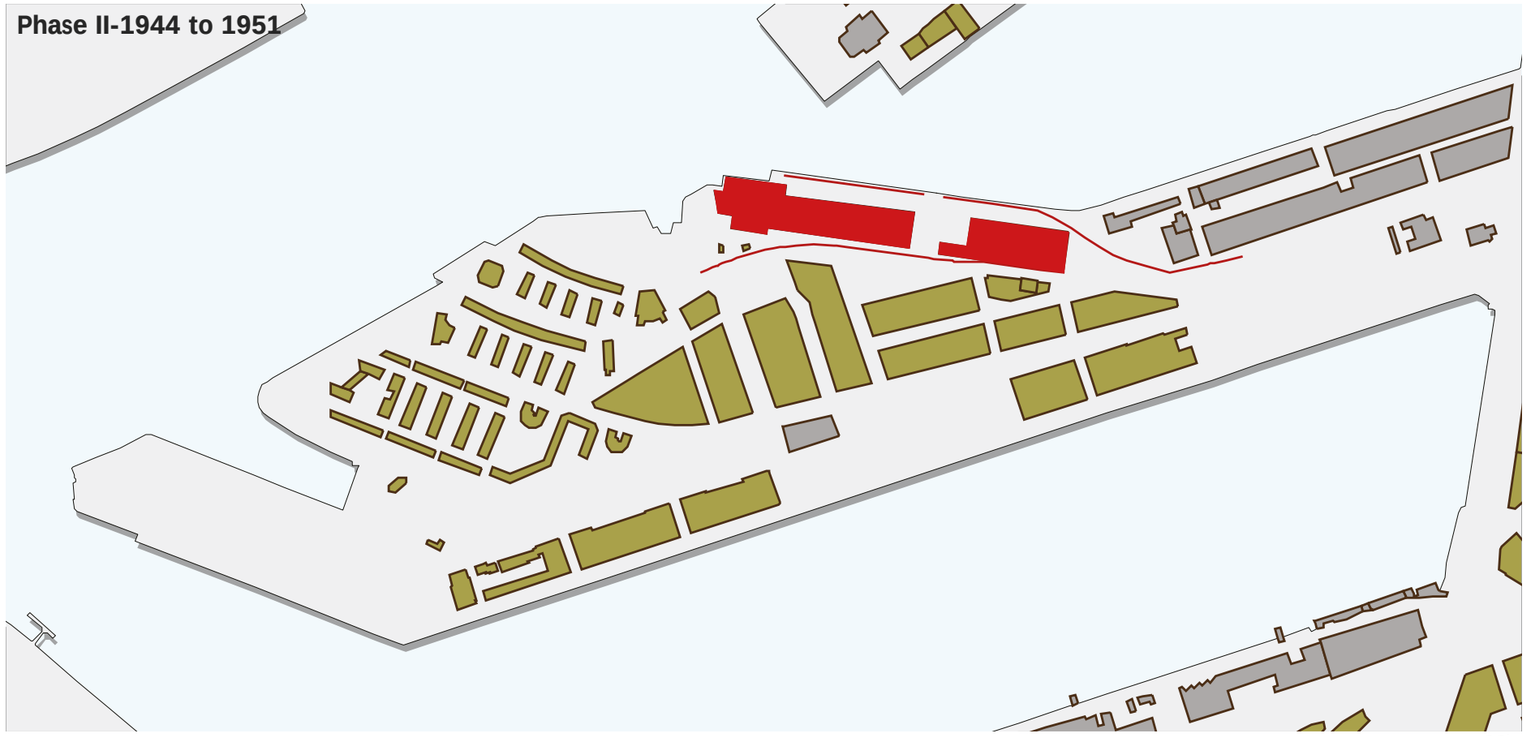
Phase I-1916 to 1922
San Francisco warehouse was completed.
The original building was extremely long, with the length around 430 m in total. The building is based on a simple and repetitive grid. The building was built for storage purpose by Holland Amerika Lijn, mainly for goods and luggage of immigrants and emigrants. Assumingly, the boarding activities also happened occasionally with lower class travellers, in order to enter lower parts of the ship. The building contained entrances on both ground and first floor for goods import and export activities. The goods was loaded, and distributed by train. The rail was located on ground floor, only on south side (Deliplein) within building grid.

Phase II-1944 to 1951
Even though the building survived from WWII booming in 1944 and mainly damaged on waterfront side, San Francisco warehouse experienced a serious fire damage in 1947. In this period, the entirety of the building was interrupted and divided into two parts: Fenix 1 and Fenixloods 2. The reconstruction was finished in 1951 and a canteen was added between to gap of Fenix 1 and 2. The building functioned as storage warehouse as well, remaining entrances both on ground and first floor. The rails was moved to outside of the building on south side (Deliplein), and new rails were added on the north side (waterfront).

Phase III-2012 to 2014
The new programs and space arrangement were applied and has been in use till present. The most influent change on floor plan is the new openings on first floor, made by circus and Codarts. The entrances are only in ground floor, no longer accessible on first floor.

CONCLUSION
There are 3 major phases in the building transformation. The building, San Francisco warehouse, was divided into Fenix 1 and Fenix 2 due to fire damage. The accessibility to ground floor and first floor changed, due to different programs applied.





32)

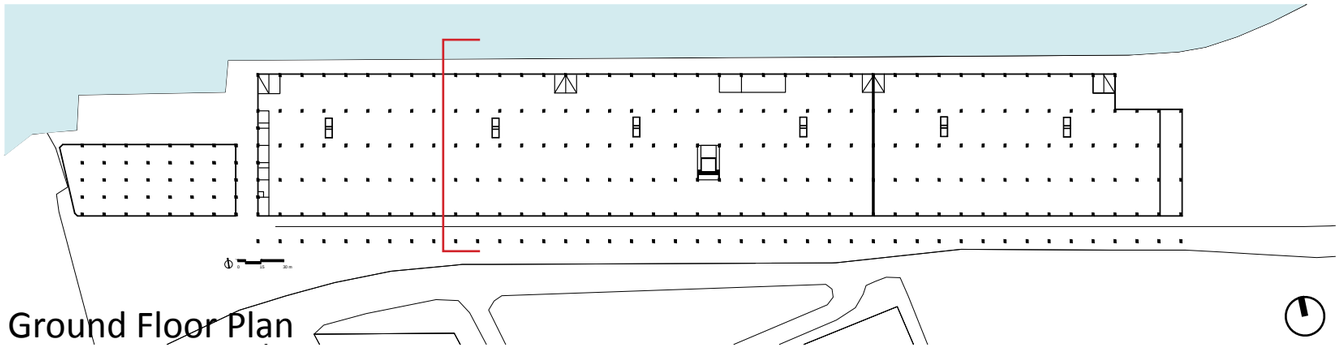
Sources
Rotterdam City Archive, 2017
Own illustration

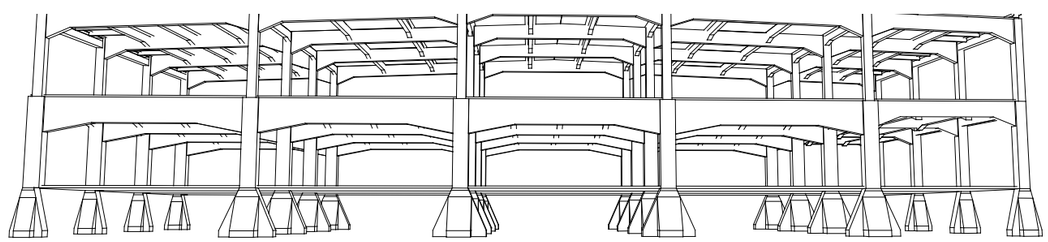
Phase I
1916-1922
San Francisco Warehouse

1922
Completion

coll. Spaarnestad Archief, foto KLM 3328

Bouwkundig Weekblad, p. 110 jg. 1931



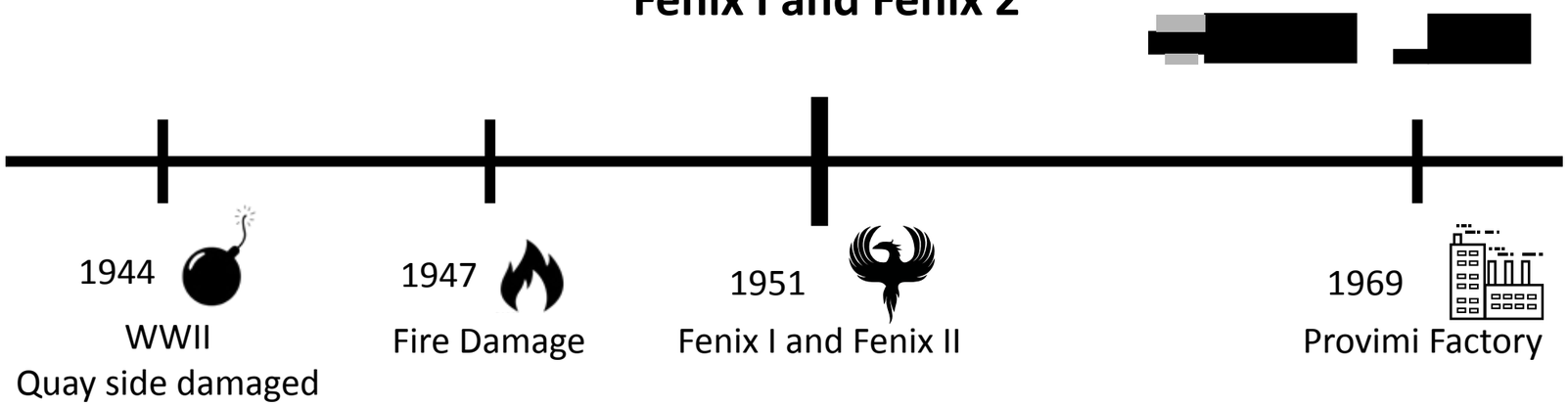


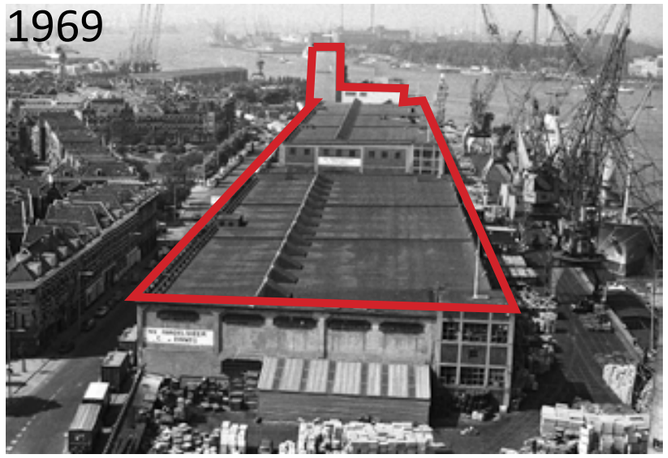
North side(waterfront) South side (Deliplein)

Phase II

1944-1951

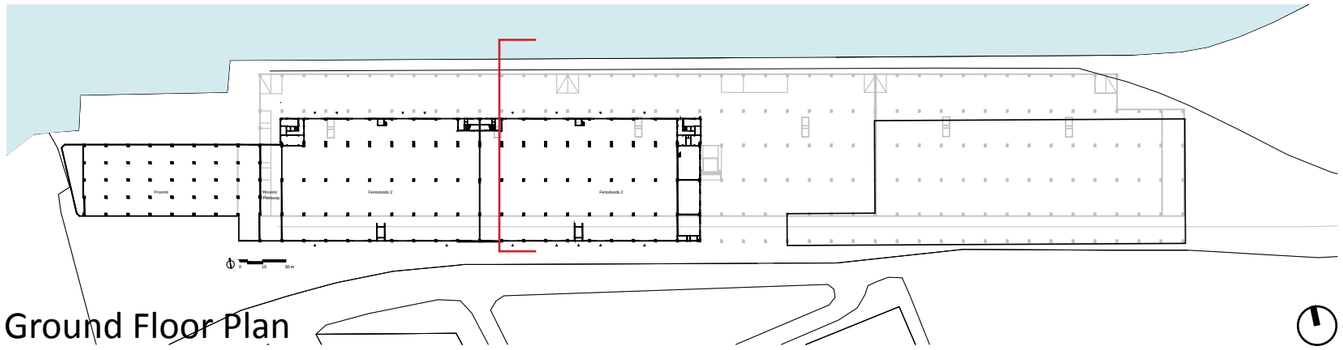
Fenix I and Fenix 2



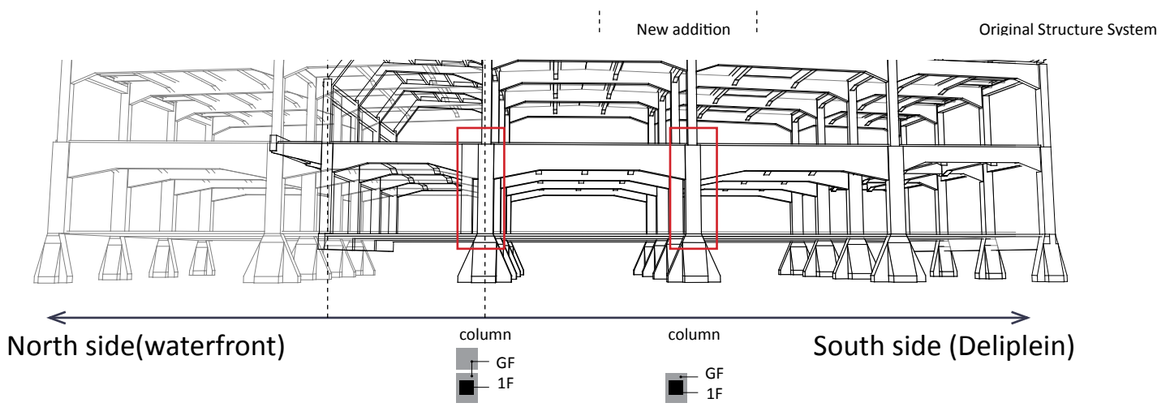


Fenixloft (https://www.heijmans.nl/nl/projecten/fenixloodsen/)

Rooterdam City Archive



Ground Floor Plan



2012-2014

Phase III

2012-2014

Fenix I- New programs

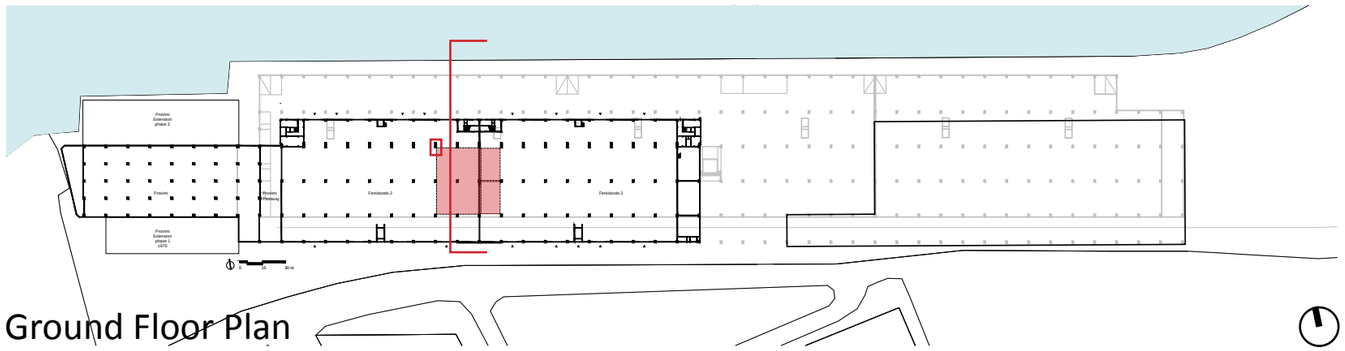
Fenix 2- Dwellings

Google Maps 2017

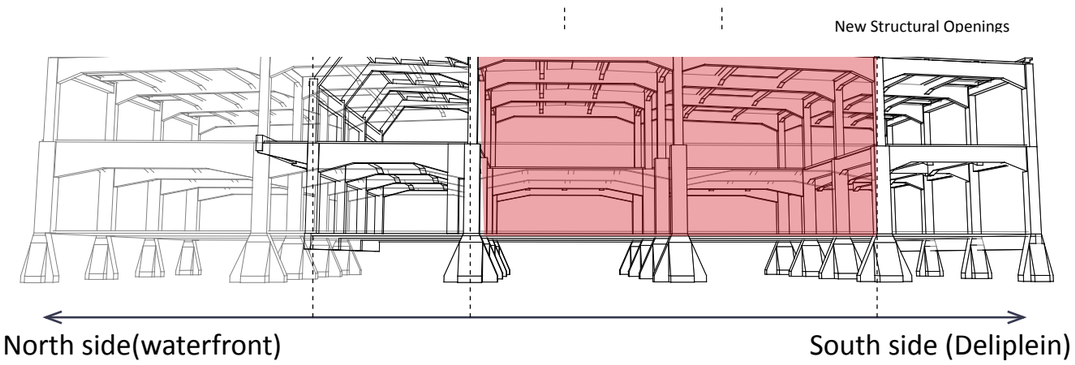
Own Photo

2014

Food Factory
circus
Codarts
...

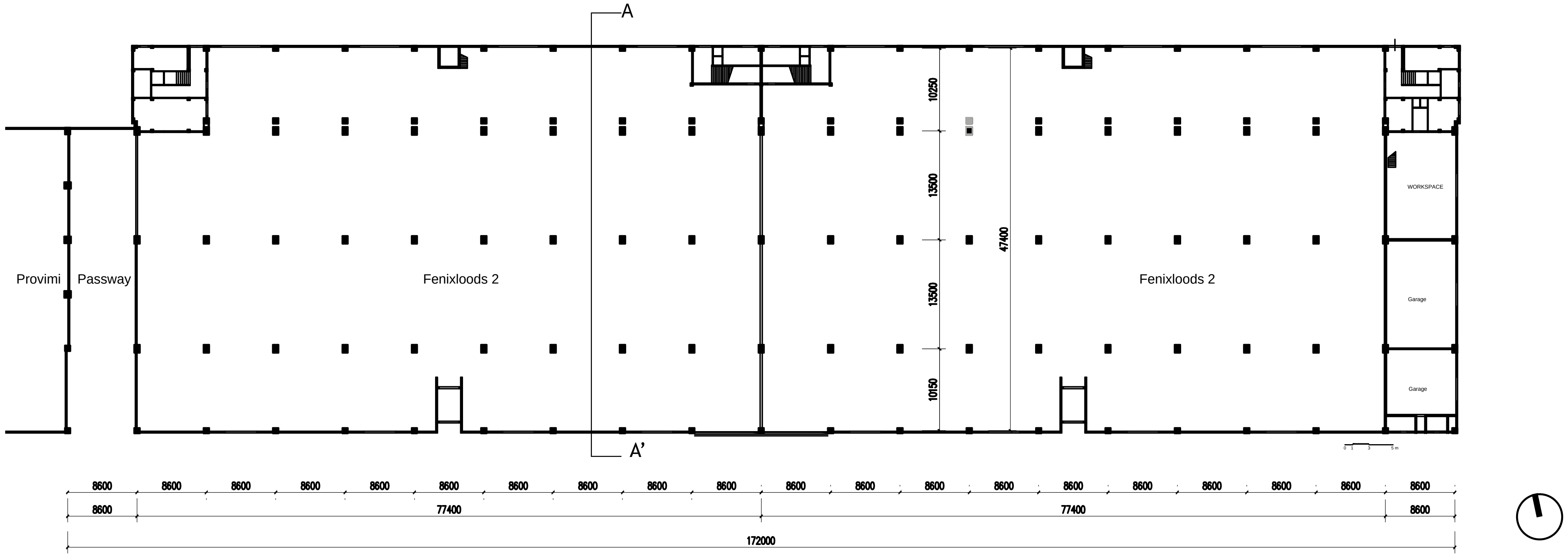


Ground Floor Plan

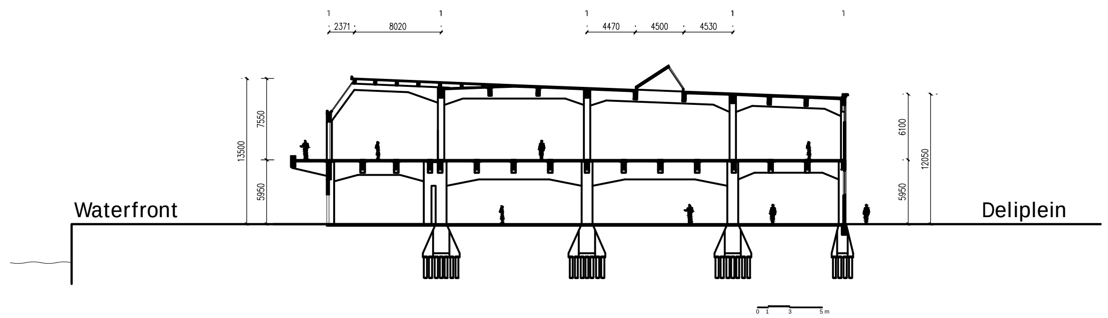


2012-2014

Ground Floor Plan



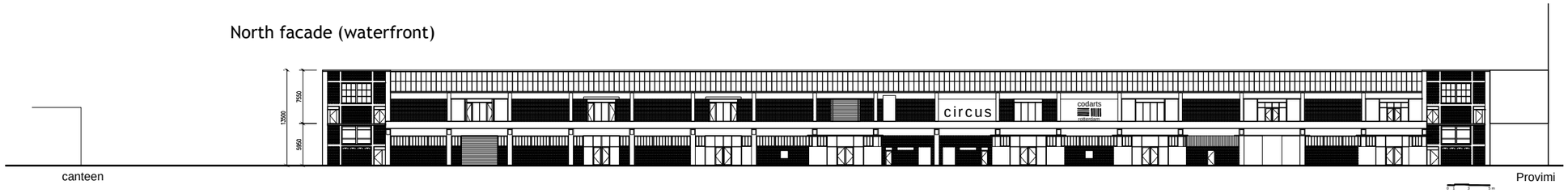
AA’ Section



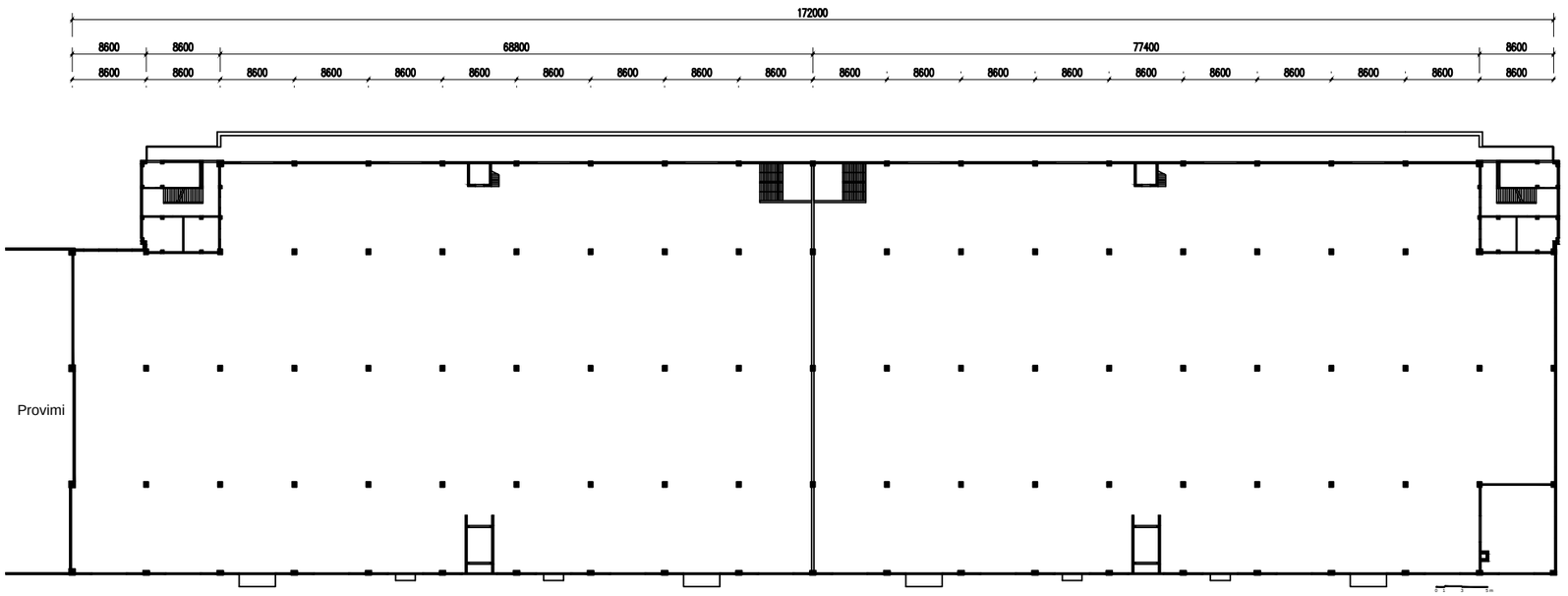
36)

2012-2014

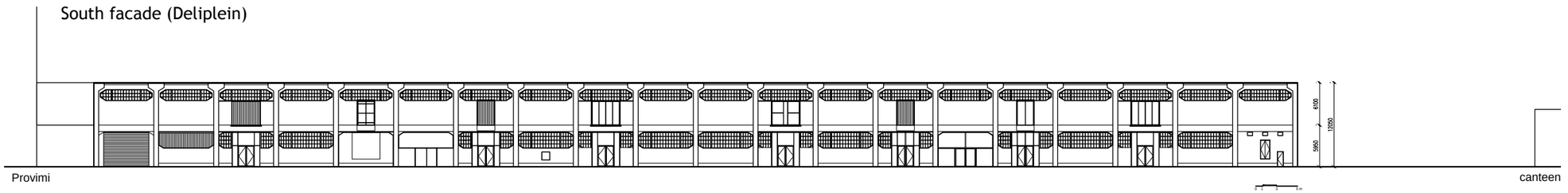
North facade (waterfront)



First floor plan



South facade (Deliplein)



37)

HERITAGE & ARCHITECTURE

ARCHITECTURAL ANALYSES

INTRODUCTION

There was very limited available information on TU Delft Black Board at the beginning. The first step was to visit Rotterdam City Archive to gather essential information as much as possible, such as previous drawings and photos from different periods. Secondly, visit of Nieuwe Instituut for the archives was planned, mainly for the background of architect, C. N. van Goor, who designed San Francisco Warehouse (original building for Fenix 1 and Fenix 2). There is also information found on newspaper, articles on internet. Finally, many times of site visiting was the important input as well.

The architectural analyses contains 4 part: historical analyses, site analyses, building analyses, and future plans.

HISTORY ANALYSES

Firstly, the development of Katendrecht and Holland city are introduced.

Secondly, the background of the architect for San Francisco warehouse is concluded, along with the development of the building.

Lastly, typology of adjacent warehouse is compared; Fenixloods 1 and Provimi factory are alos shown within the context.

CURRENT SITUATION

The current situation information are divided from larger scale to small scale, from site level to building level. The following topics are introduced:

SITE ANALYSES

Infrastructure, zone mapping, green and water area, public space to private space, routing, and sun study (waterfront)

In order to understand the representation of the city, mental map from Kevin Lynch is introduced.

MENTAL MAP

From Kevin Lynch theory, a good city should performance the ability of fulfilling requirements of biological, psychological, social and cultural aspects to the inhabitants. Lynchian elements composited 5 elements: paths, edges, districts, nodes, and landmarks.

In the following analyses, the routings will show the space sequences approaching from different parts to Fenixloods 2, to understand within the city context, what the current role of Fenixloods 2 represents.

BUILDING ANALYSES

Plan usage (original and current)
Rhythm of building
Expression of building
Sun study
Atmosphere

FUTURE PLAN

The future development of Fenix I and Provimi factory in residential area.

* Drawings and photographs are ours; unless it is stated.

HERITAGE & ARCHITECTURE

ARCHITECTURAL ANALYSES
HISTORICAL ANALYSES

HISTORIC BACKGROUND
KATENDRECHT AND AFRIKAANDERBUURT

* Related to the next page

One family dwellings are built in Afrikaanderbuurt in Charlois 20 streets 1 square built for wokrers of the south holland and zeeland islands or from the northwest of north brabant they found work in digging the Maashaven

1881

Municipality proposes sum available for docks for bulk goods for the Rhine shipping

1881

Charlois added to Rotterdam - Afrikaanderbuurt becomes more attractive

1895

Boven-Oudeweg becomes Tolhuisweg

1895

Port in Rotterdam-South was mainly populated by laborers of the South Holland and Zeeland islands or from the northwest of North Brabant. which were drawn here because of the crisis in agriculture to the city in the second half of the last century and found work in the ports.

1900

Demolishing of the Zandhazenstraat downtown, Prostituees, bars, nightclubs come to ‘de kaap’

1900

EMIGrants hotel on “de kaap’

1914

1914-1930

British soldiers return to find work in society, Chinese people are fired. Chinese hope to sign on here

1918

Crisis decreases chinese disappear

1935

First dated: 1199
“Cattendrecht”

1893

Rijn harbor is finished

1895

Streetplan for “De KAAP” is designed

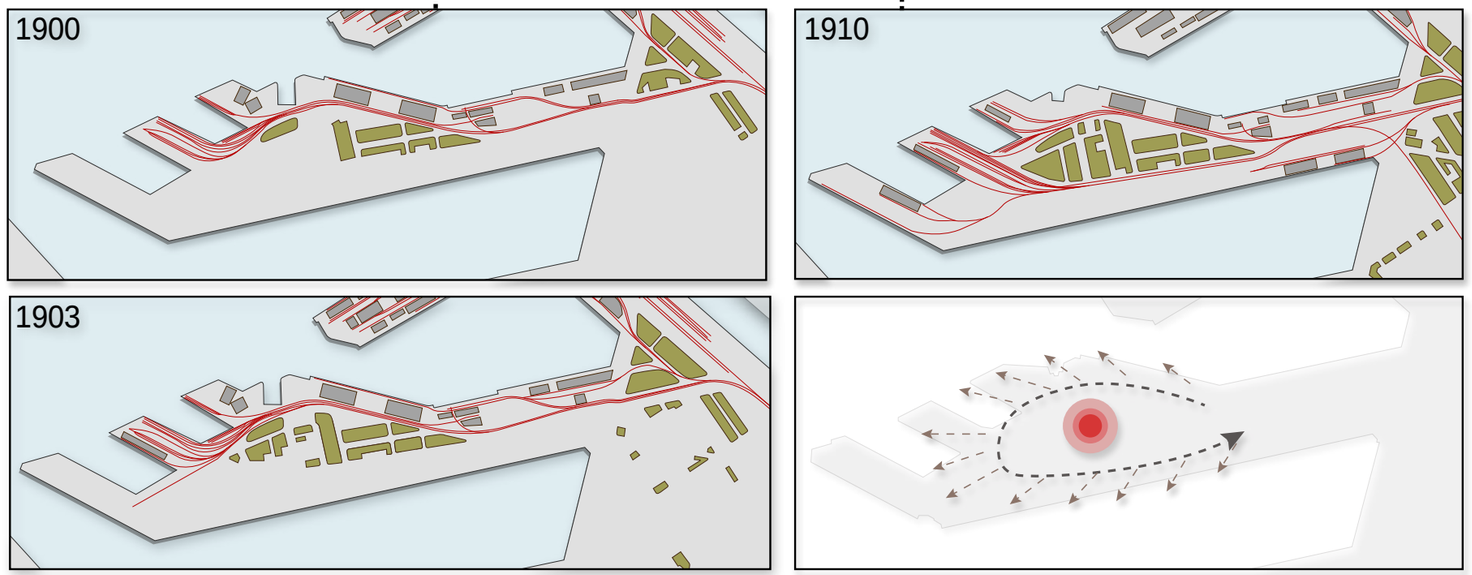
1916

san fransicowarehouse is built for the H.A.L.

1930

3500 Chinese people op “de kaap”

Originally Katendrecht was a distinguished village with a beautiful location, where the wealthy citizens of Rotterdam had built their villas and country houses. Because it was on the route Antwerp-Amsterdam Katendrecht was also crossing point for travelers and so there were inns and guest houses



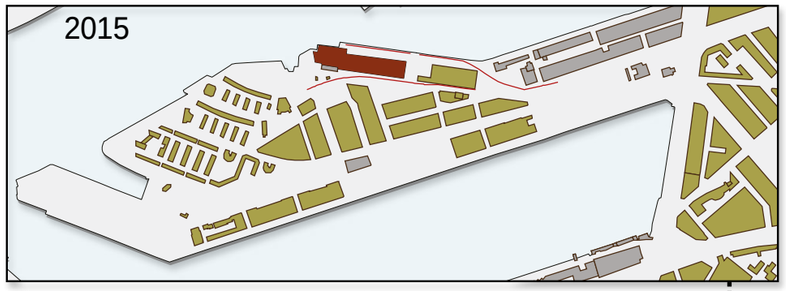
Residential

Industrial

Railway tracks

HISTORIC BACKGROUND
KATENDRECHT AND AFRIKAANDERBUURT

* Related to the previous page



1944 Germans blow up port installations

1953 watersnoodramp which leads to raising of the brede Hilledijk - border between Katendrecht and Afrikaanderbuurt

1956 Promivi start in katendrecht

1974 Municipality starts urban renewal

1981 “de driehoek” renovation

1984 refilling 1st Katendrechtsehaven

2005 Deliplein renovation

1940 Schiedamsedijk destroyed second and last red light district comes to “de kaap’ Atjehstraat en Deliplein as centrum

1966 construction of the metro to Zuidplein on top of the Brede hilledijk

1969 - 1974

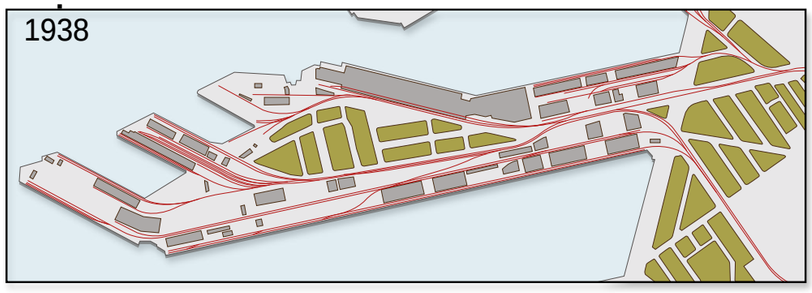
1969 local residents start fight against prostitution

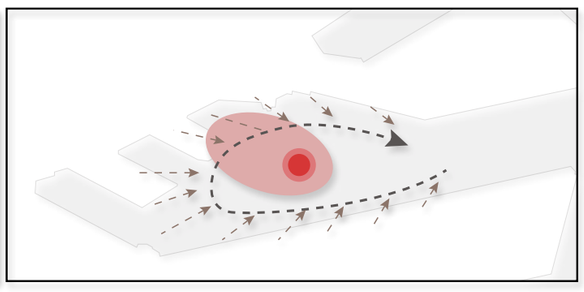
1979 “Tolhuispoort”

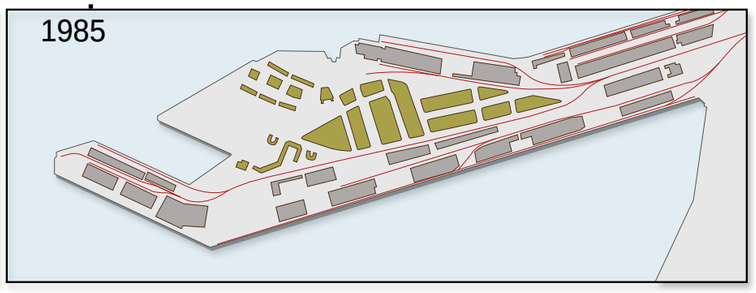
1984 “Citex”

2001 “katendrechtsehoofd”

2012 Rijnhavenbridge







Residential

Industrial

Railway tracks

QUESTION
This research is conducted to understand the lifecycle of the peninsula of Katendrecht.

METHODOLOGY
By looking at different books, maps, photographs and newspapers we found at the archive we have come up with this timeline of events.

FINDINGS
We did find out that Katendrecht started as a small quite village, but after the construction of the Rijn- en Maashaven the village becomes enclosed by industries. And also, the still remaining neighborhood is in a very bad shape, because of all the local prostitution.
But in the end of the 20th century the industrie slowly leaves and the empty spots were filled with dwellings. Which results in a way better neighborhood and Katendrecht is slowly becoming more and more trendy and hip.

Sources
Borselen, 1995
Does, 2004
Klaassen, 1992
Rotterdam City Archive, 2017
Soeters & Speksnijder, 1990
Wolters, 2002a, 2002b

Own Illustrations

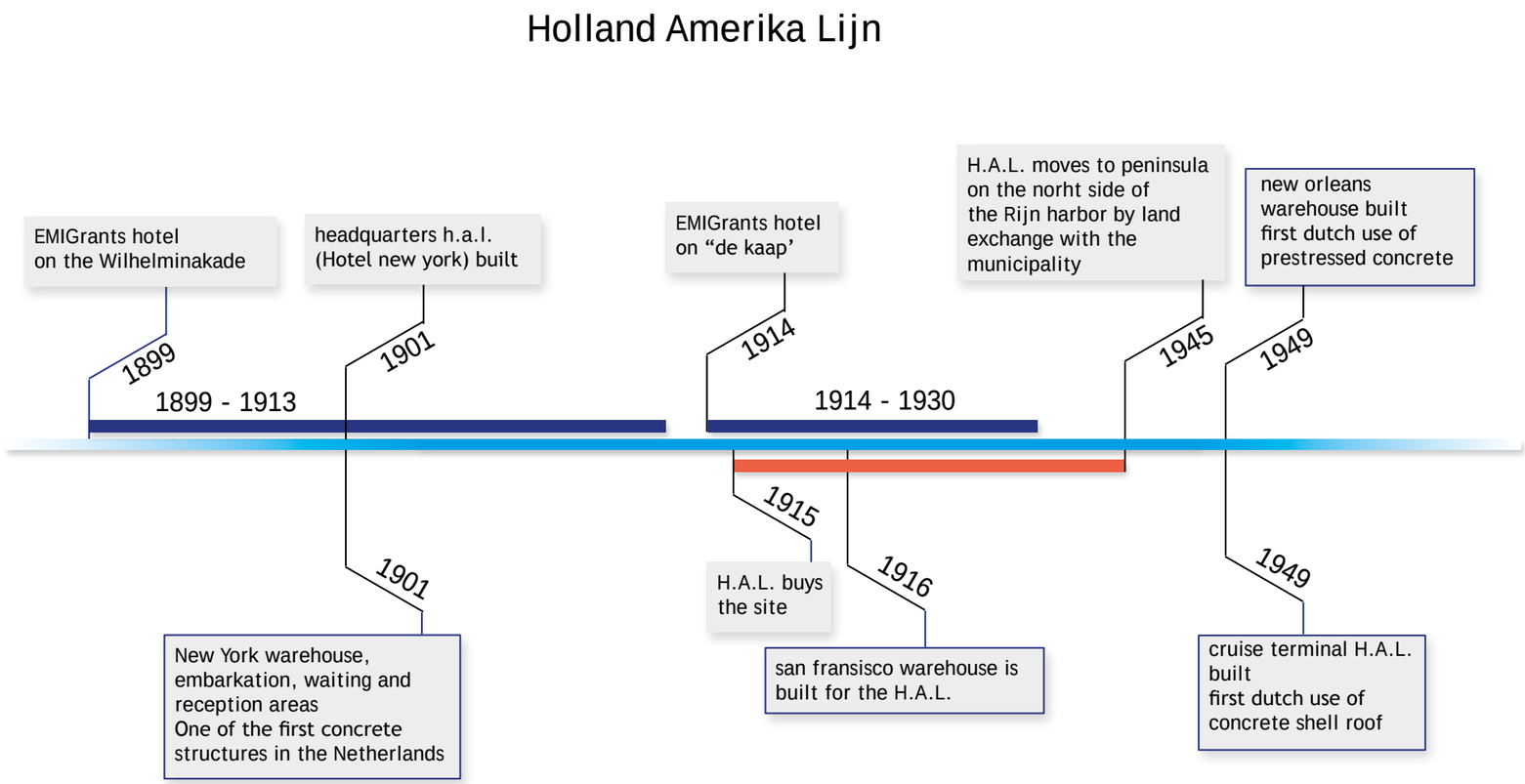
HISTORIC BACKGROUND
HOLLAND AMERIKA LIJN

QUESTION
This research is conducted to understand the background of the Holland Amerika Lijn and the relation to the site.

METHODOLOGY
By looking at various sources at the Stadsarchief Rotterdam, the major timeline of Holland Amerika Lijn have been created, happening in Katendrecht and Kop van Zuid.

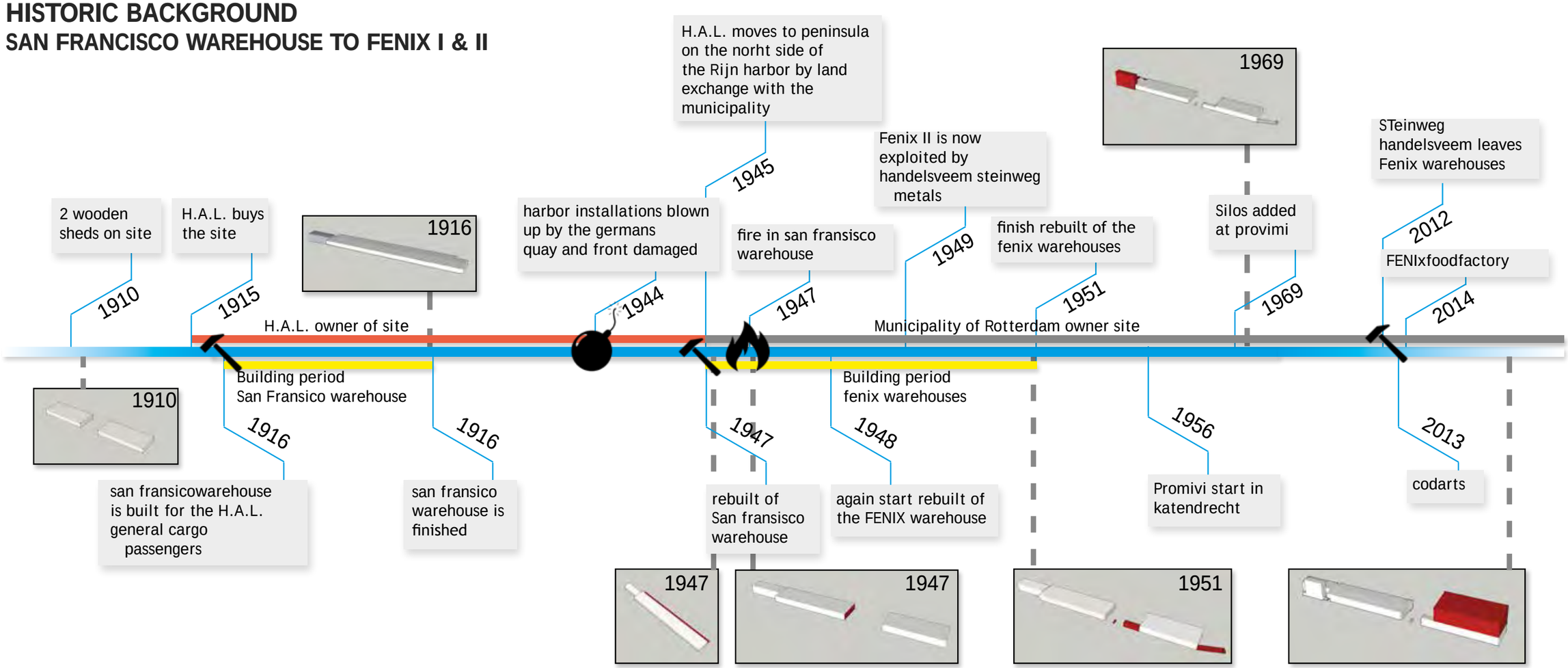
FINDINGS
With the timeline of Holland Amerika Lijn, it can be found that Fenix II is in a series of unique and modern buildings constructed by the time. H.A.L. clearly desired to express the American way of living. Therefore, the buildings clearly showed modernity and built in an advanced construction method. Moreover, H.A.L. was very active in the area of Katendrecht and Kop van Zuid. The atmosphere here once showed modern, busy industrial expression with activities, which no longer exists today, especially on Katendrecht. Fenix I and II are the last two buildings, representing the liveliness of H.A.L. activities on Katendrech

CONCLUSION
The lost atmosphere should be brought back and relink the liveliness in any form of history layers.



Sources
Borselen, 1995
Does, 2004
Klaassen, 1992
Soeters & Speksnijder, 1990
Wolters, 2002a, 2002b
Own Illustrations

HISTORIC BACKGROUND
SAN FRANCISCO WAREHOUSE TO FENIX I & II



QUESTION
This research is conducted to understand the lifecycle from San Francisco warehouse to Fenix I and II.

METHODOLOGY
By looking at the archives of newspapers, plans and photographs of the building, in order to create a timeline of all the major events.

FINDINGS
There were several major events happened to the building: an international connection, WWII survivor, fire damage survivor, former glory of Rotterdam industrial horbor, and new programs applied.
San Francisco warehouse once played a role of connection, not only in the Netherlands and Europe, but also acted as a gate of international trading. However, the quayside was partially damaged during German bombing in WWII, and later suffered severe fire damage. The entirety raised from the ashes, however, was separated into two since then, from San Francisco warehouse to Fenix I and II.

The Rotterdam municipality initiated the city reconstruction after WWII. The municipality made a deal with H.A.L. to switch the business to Kop van Zuid which also gathered the entire H.A.L. business on the same peninsula, in order to preserve the former industrial glory of Rotterdam harbor and reuse Fenix I and II.

In the last few years, Fenix II starts with another transformation. The temporary new programs brings back the lost liveness and gives the new life of Fenix II and Katendrecht, programs including Fenix Food Factory, circus Rotjeknor, Codarts, and several start-ups.

CONCLUSION
The transformation of the building was rich, continuing over 100 years and still in process. With these transformations of the building, it shows the character of itself in various potentials and resilience over times. The former glory layers of Rotterdam industrial horbor should stressed in future design.

Sources
Borselen, 1995
Does, 2004
Klaassen, 1992
Rotterdam City Archive, 2017
Soeters & Speksnijder, 1990
Wolters, 2002a, 2002b

Own Illustrations

ARCHITECT BACKGROUND
CORNELIS NICHOLAAS VAN GOOR

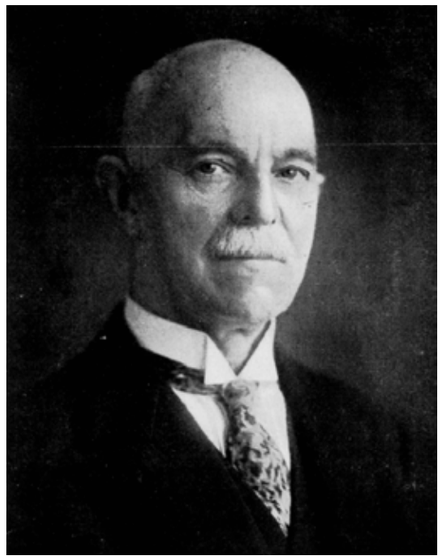
QUESTION
This research is conducted to understand the architect and his work.

METHODOLOGY
By looking at previous works of the architect and his career.

FINDINGS
C.N. van Goor was from Rotterdam. He did not design a lot of buildings, only seventeen buildings in total, and twelve of these buildings were located in Rotterdam. San Francisco warehouse was in his later works. During his practice, he was very active within the architectural community and was also involved with many boards and committee that are still important nowadays.

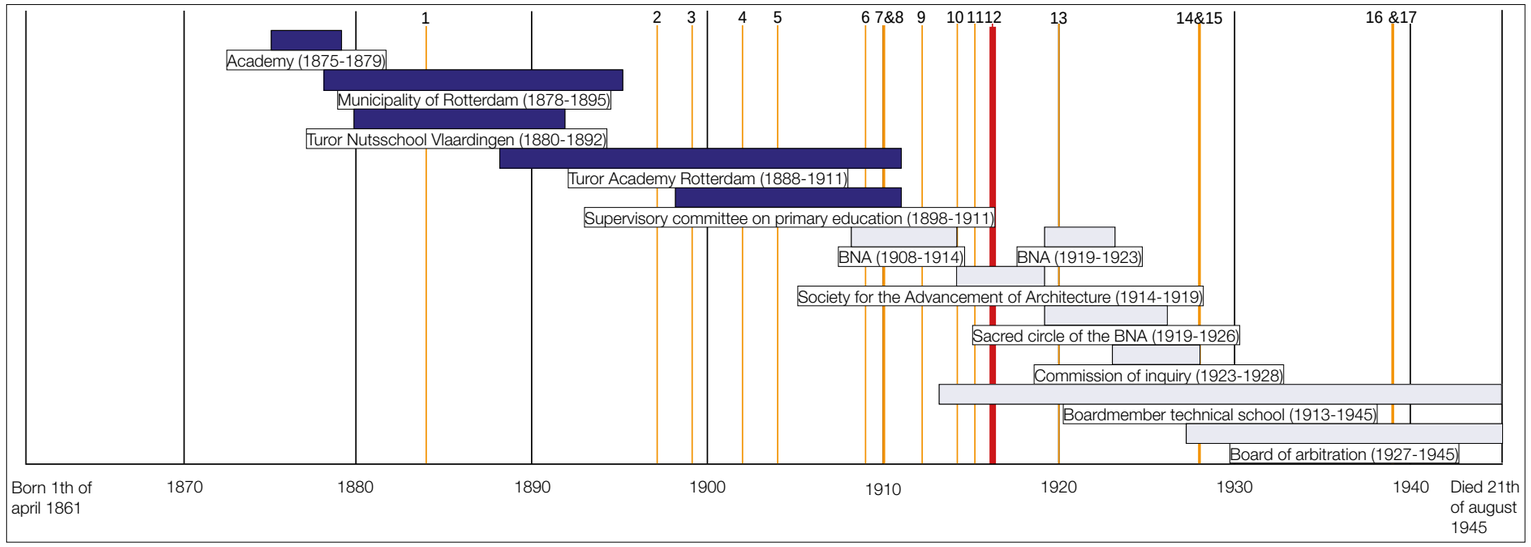
Six of the buildings van Goor designed are monuments heritage today.

CONCLUSION
C.N. van Goor played an important role in Dutch architecture field. Due to his enthusiasm in architecture, this made San Francisco warehouse performed in an advance design during that period, such as the scale of the warehouse and the applied technique.



42)

Nr.	Year	Building	City	Street	Remark
1	1884	Gasfabriek	Rotterdam	Oostzeedijk	Supervisor for the municipality of Rotterdam
2	1895-1902	“Walenburg”	Rotterdam	Walenburg	Monument of the government
3	1895-1902	Local evangelism	Rotterdam	Oranjeboomstraat	
4	1902	Printing house Immig & zoon	Rotterdam	Nieuwe haven	
5	1904	Building of Arts and Sciences	Rotterdam	Unknown	Burned down in 1936
6	1909	Dwelingcomplex Schans	Rotterdam	Esch	
7	1910	Dwellings	Rotterdam	Persoonshaven	
8	1911	Officebuilding Stokvis & zonen	Rotterdam	Westzeedijk	Monument of the government
9	1912	Gazelle bisycle factory	Dieren	Wilhelminaweg	Monument of the government
10	1914	Officees and storage Stokvis & zonen	Amsterdam	Keizersgracht	Monument of the municipality of Amsterdam
11	1915	Storage Stokvis	Groningen	Tuinbouwdwarsstraat	
12	1916	San Francisco (Fenix)	Rotterdam	Veerlaan	
13	1920	Municipal dwellings Spangen	Rotterdam	Unknown	
14	1928	Timber trading building	Overschie	Abraham van Stolkweg	
15	1928	Hudighuis	Driebergen	Unknown	
16	1939	Administration building of Blijdorp	Rotterdam	Van Aerssenlaan	Monument of the government
17	1939	Access gate of Blijdorp	Rotterdam	Van Aerssenlaan	Monument of the government



43)

Sources
Erfgoed, 2016
Versteeg, 1931
Wikipedia, 2013

Own Illustrations

ARCHITECT BACKGROUND
PORTFOLIO

QUESTION
This research is conducted to understand the styles of the works of the architect.chitect.

METHODOLOGY
By looking at other design works of the C.N. van Goor.

FINDINGS
C.N. van Goor had three styles during his practice: he started with very traditional housing projects, later shifted to focus on more rigid and functional industrial warehouses, and lastly he designed stylised organic forms in his last four projects.

CONCLUSION
The styles of C.N. van Goor had huge transition. San Francisco warehouse can be seen as one of his experimental projects, by designing once the longest warehouse in Europe and using advanced technique as reinforced concrete.


Dwelingcomplex Schans 44)


Gazelle bisycle factory 46)


Acces gate of Blijdorp 48)

Traditional

Industrial

Organic


Walenburg 45)

San Francisco (Fenix) 47)


Administration building of Blijdorp 49)

Sources
Blijdorp, 2011
Bloemsma, 2016
Erfgoed, 2016a, 2016b, 2016c
Fischer, 2014
M. Rotterdam, 2016a
Versteeg, 1931
Wikipedia, 2013

TYPOLOGY
WAREHOUSES IN RIJNHAVEN

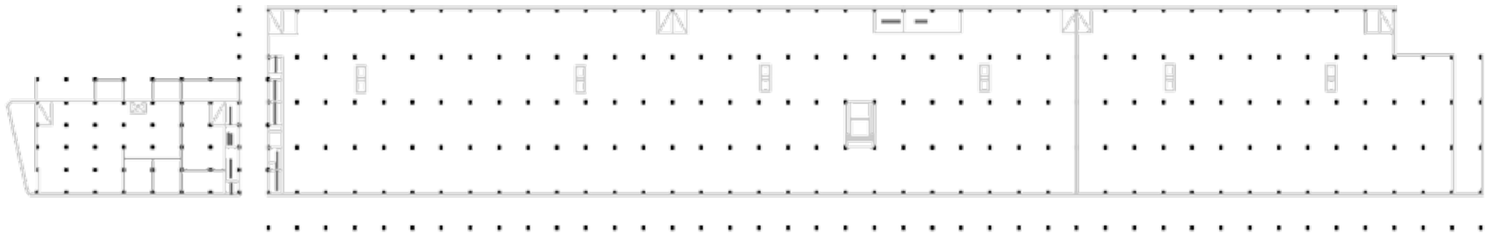
QUESTION
This research is conducted to understand the typology of warehouses, in order to understand what kind of building we are dealing with and how it was used earlier.

METHODOLOGY
By looking at the former function and comparing San Francisco or Fenix II warehouse with other examples from the near period and the same function.

FINDINGS
The comparison is between Santos warehouse and San Francisco. Santos was built in 1903, also located on Katendrecht, and shared the same side of Rijnhaven.

Santos was built with steel structure, bricks wall, and wooden flooring; San Francisco was built purely with reinforced concrete constructed on situ with an enormous building length. Santos was completed 13 years earlier than San Francisco. However, only within 13 years difference, San Francisco had much more modern appearance and structure system. As it can be assumed, San Francisco was iconic and an advanced design during that period.

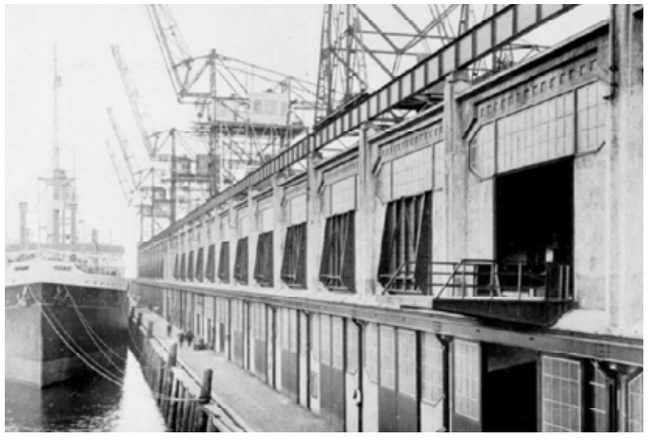
CONCLUSION
By comparing warehouses in near location and period, San Francisco can be assumed iconic and an advanced design during that period.



San Fransisco, 1916 50)

Santos, 1903 51)

Santos, 1903 52)



San Fransisco, 1916 53)

Sources
Jong & Winter, 1982
Oosterwijk & Vennix, 2014
Own Illustrations

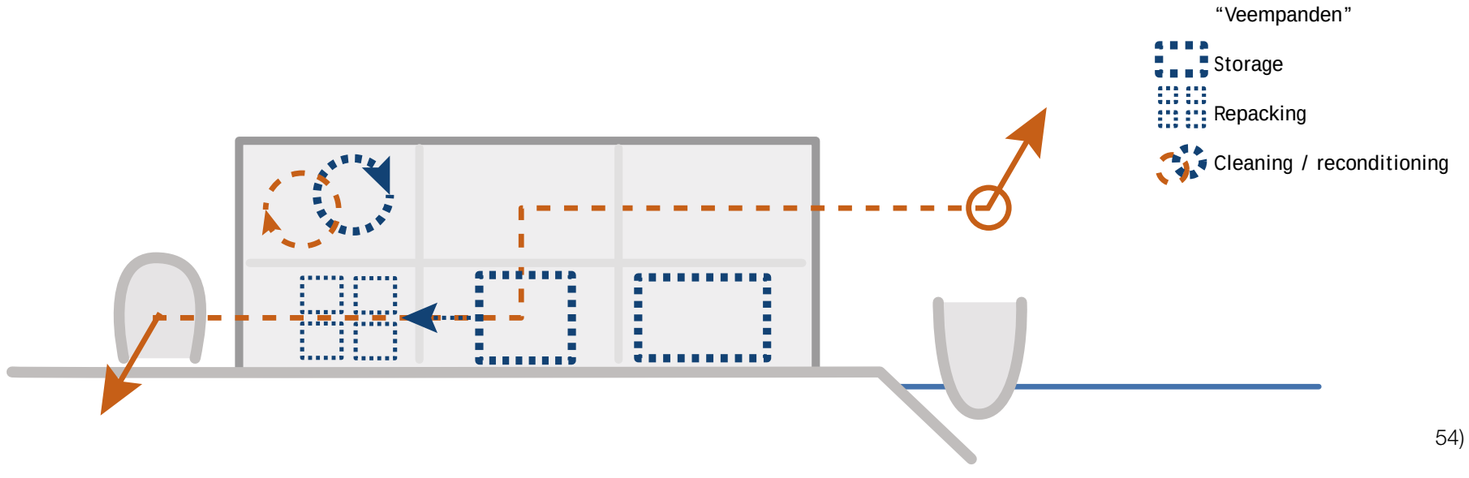
TYPOLOGY
GOODS LOADING SYSTEM

QUESTION
This research is conducted to understand how this building typology and functions.

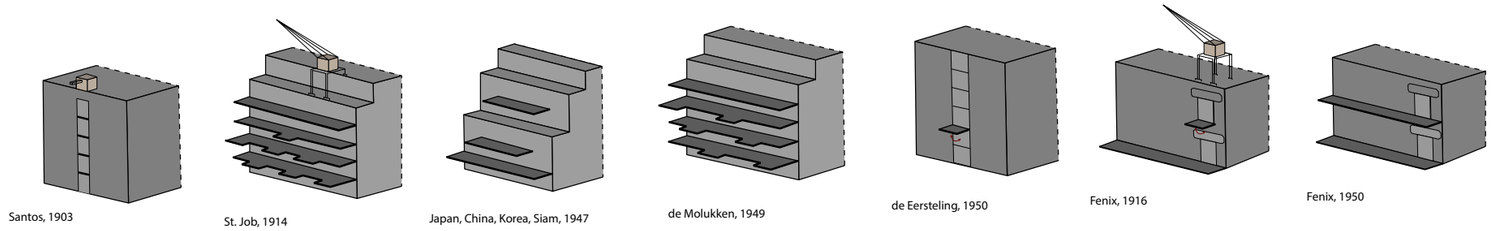
METHODOLOGY
By looking at Fenix II and comparing it to other buildings with the same typology in the nearby area.

FINDINGS
Fenix II dint not function as one of the many so called “veempanden” in the Rotterdam harbor.
It functioned as an intermediate station between the freighters and the hinterland of Rotterdam. However, Fenix II worked more efficiently than others: a less complex balcony system and only two stories to reduce loading difficulty.

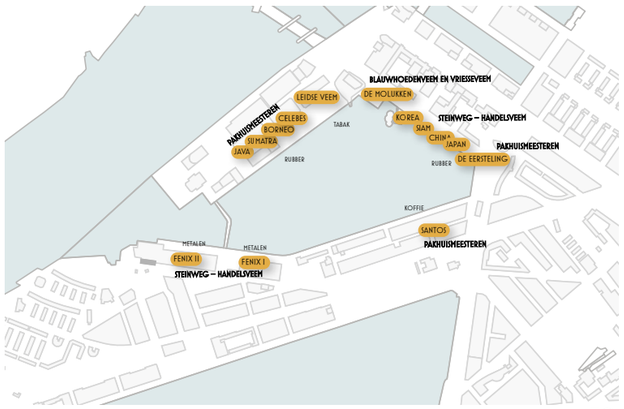
CONCLUSION
Fenix II worked more efficiently within its loading typology.



54)



55)



56)

Fenix 57)

St. Jobsveem 58)

Sources
Jong & Winter, 1982
Oosterwijk & Vennix, 2014
Own Illustrations

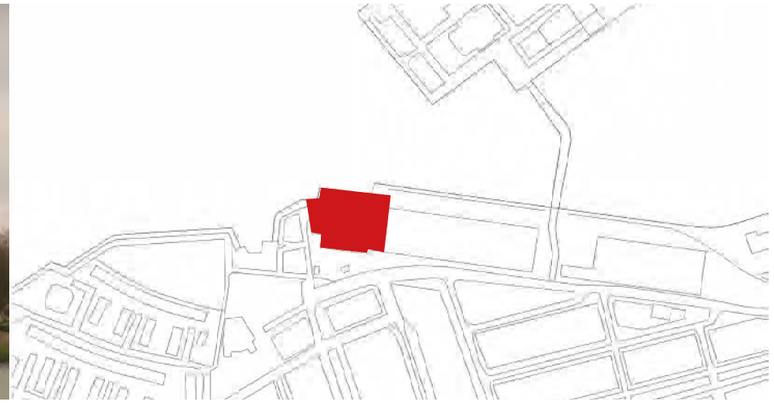
PROVIMI FACTORY
RELOCATION

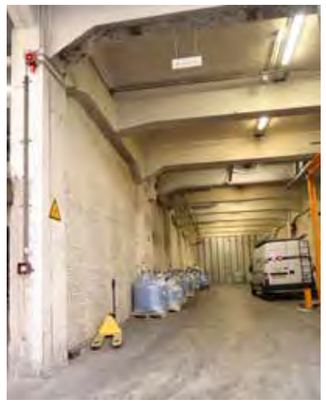
QUESTION
This research is conducted to understand the future possibility of Provimi Factory.

METHODOLOGY
By visiting Provimi Factory, the space usage and requirements can be understood.

FINDINGS
Provimi Factory was built in 1969, taking dwelling part of San Francisco. A silo system was added on south side and covered the original façade from 1916. The additional extension was made later, mainly in light structure, such aluminium structure system and metal panels on waterfront and rooftop of previous dwelling volume.
Provimi Factory acts as the last trace of industrial harbour history in Rijnhaven, and located in residential area on Katendrecht. The traffic of trucks disrupts the connection for pedestrians, from both aspects of surrounding neighbourhood and external visitors. The main issues will be the relation between Fenix II: circulations for passenger and trucks and interruption to greenery on west side. Assumingly, there is a high possibility for the factory to leave Katendrecht and relocate in a more suitable place in the future.

CONCLUSION
Provimi Factory acts as the last trace of industrial harbour history in Rijnhaven. However, the factory function does not fit into surrounding residential area anymore. The traffic of trucks disrupts the connection for pedestrians, from both aspects of surrounding neighbourhood and external visitors. Assumingly, there is a high possibility for the factory to leave Katendrecht in the future.





59)

Sources
Own illustrations and photos

HERITAGE & ARCHITECTURE

ARCHITECTURAL ANALYSES
SITE ANALYSES

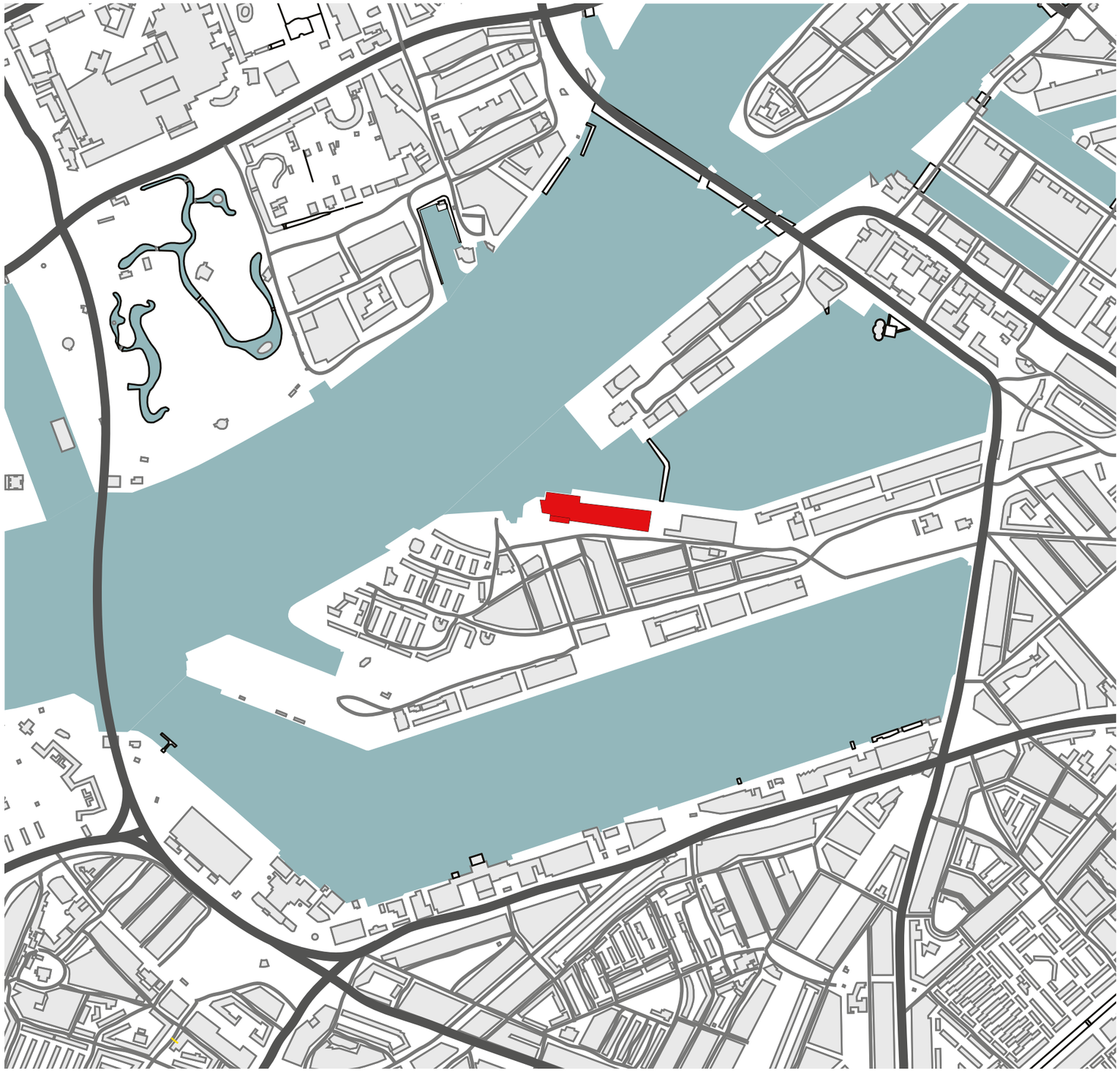
INFRASTRUCTURE
ROAD SYSTEM

QUESTION
This research is conducted to understand the Fenix 2 is connected to the city and other part of the city.

METHODOLOGY
By looking at current maps of the Rotterdam, the road infrastructure can be assessed.

FINDINGS
There are 4 main roads close to Katendrecht; this indicates a good accessibility. However, since Katendrecht is a peninsula, this means the connection to the city center and other part of the city is quite simplex, only through the tail of the peninsula. The traffic capacity is also smaller than surroundings and leaves the residential neighbourhood more tranquil atmosphere.

CONCLUSION
There are 4 main roads close to Katendrecht; this indicates a good accessibility. The traffic capacity is also smaller than surroundings and leaves the residential neighbourhood more tranquil atmosphere.



60)

Sources
Kadaster, 2016

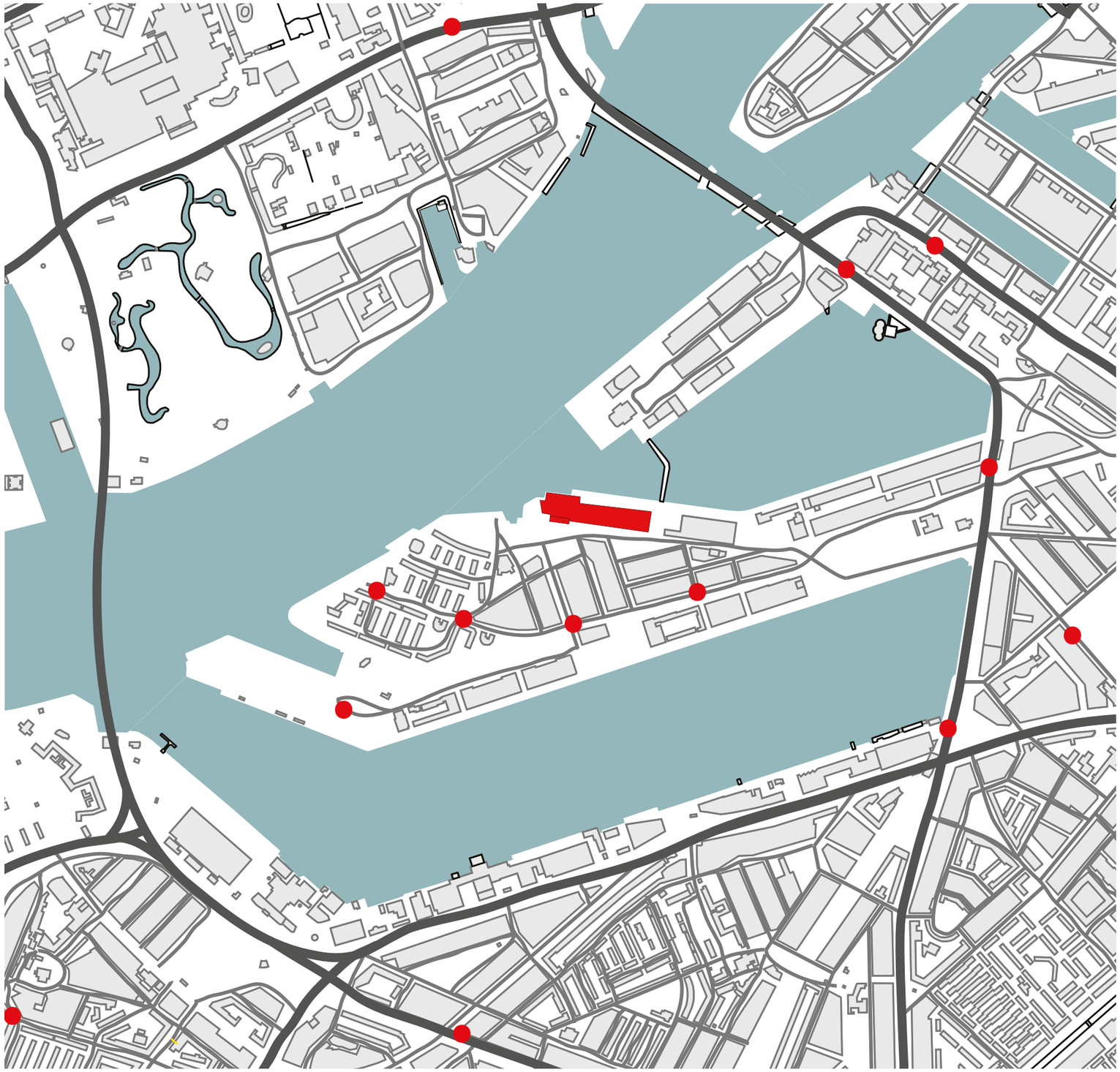
INFRASTRUCTURE
PUBLIC TRANSPORTATION-BUS NO.77

QUESTION
This research is conducted to understand the Fenix 2 is connected to the city and other part of the city.

METHODOLOGY
By looking at current maps of the Rotterdam, the road infrastructure can be assessed.

FINDINGS
There are 4 main roads close to Katendrecht; this indicates a good accessibility. However, since Katendrecht is a peninsula, this means the connection to the city center and other part of the city is quite simplex, only through the tail of the peninsula. The traffic capacity is also smaller than surroundings and leaves the residential neighbourhood more tranquil atmosphere.

CONCLUSION
There are 4 main roads close to Katendrecht; this indicates a good accessibility. The traffic capacity is also smaller than surroundings and leaves the residential neighbourhood more tranquil atmosphere.



61)

Sources
http://pdokviewer.pdok.nl/

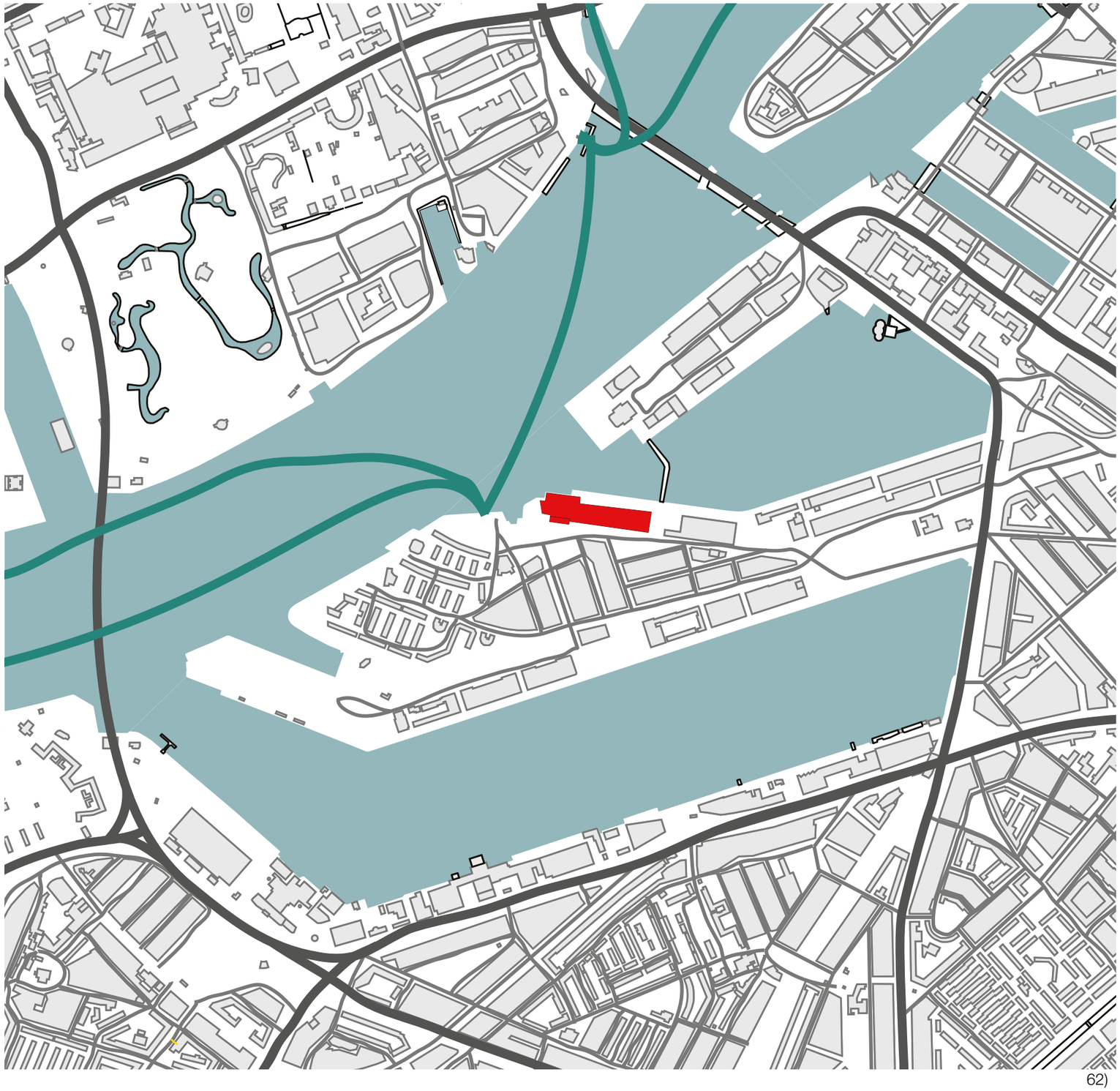
INFRASTRUCTURE
WATERBUS

QUESTION
This research is conducted to understand the connection within public water transportation.

METHODOLOGY
Looking at the routes of waterbus

FINDINGS
With the information from PDOK, the accessibility of the water is good, with the main sailing direction of Maas River and harbors area.
The site is close to the waterbus stop, within 5 mins walking distance by foot.

CONCLUSION
The public water transportation is well connected to other parts of Rotterdam. The site is close to the waterbus stop, within 5 mins walking distance by foot.



62)

Sources
Kadaster, 2016

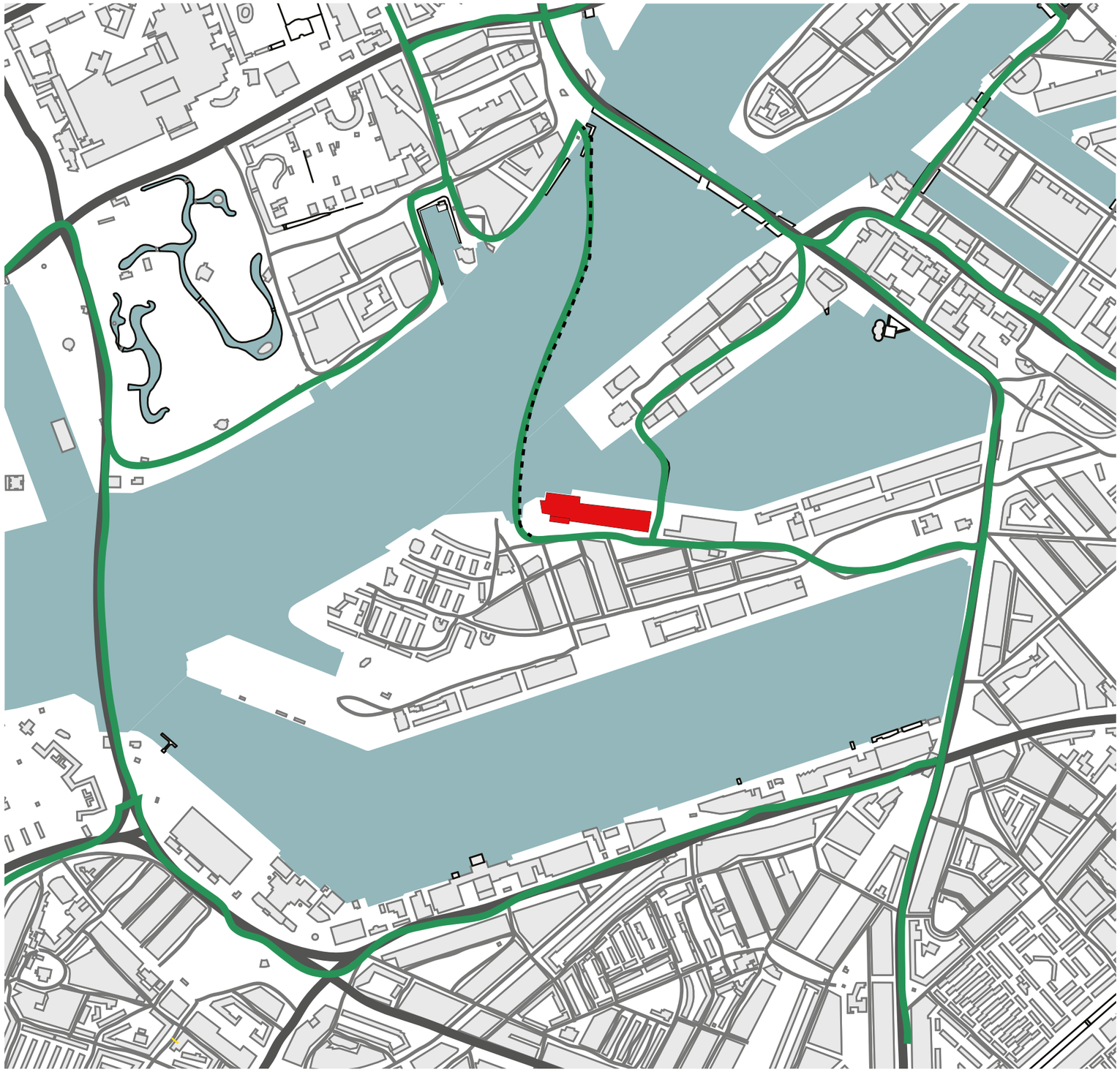
INFRASTRUCTURE
BIKING ROUTES

QUESTION
This research is conducted to understand the routing for cyclists around Katendrecht.

METHODOLOGY
By looking at the information from PDOK of the registered biking routes.

FINDINGS
Cyclists can approach to the site from three routes: two of them are connected by land road; one is connected with waterbus. However, during multiple times site visiting, there are not many cyclists.

CONCLUSION
Cyclists have good accessibility by cycling to the site.



63)

Sources
Kadaster, 2016

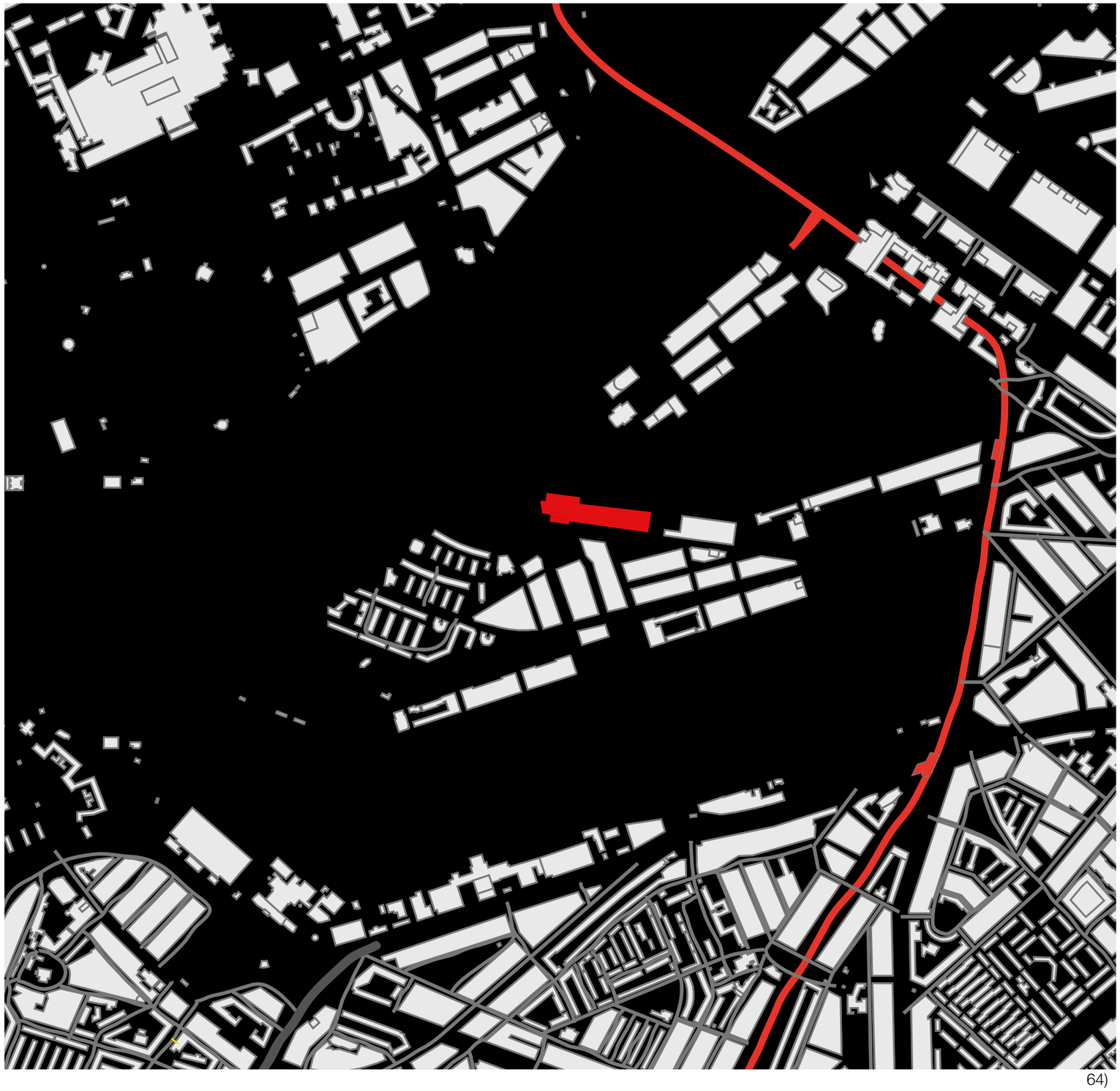
INFRASTRUCTURE
PUBLIC TRANSPORTATION-METRO

QUESTION
This research is conducted to understand the underground network of metro system.

METHODOLOGY
By looking at current maps and the schematic representation of the metro system, the underground network of the subway can be made visible.

FINDINGS
Rotterdam city metro system has gone from underground to high elevated rails after station Wilhelminaplein. The impact of the high elevated rails is relatively small. Besides, both station Wilhelminaplein and station Rijnhaven are close to the site; each of stations is within walking distance from metro line D and E.

CONCLUSION
Visitors have good accessibility to the site from public metro system.



64)

Sources
Kadaster, 2016

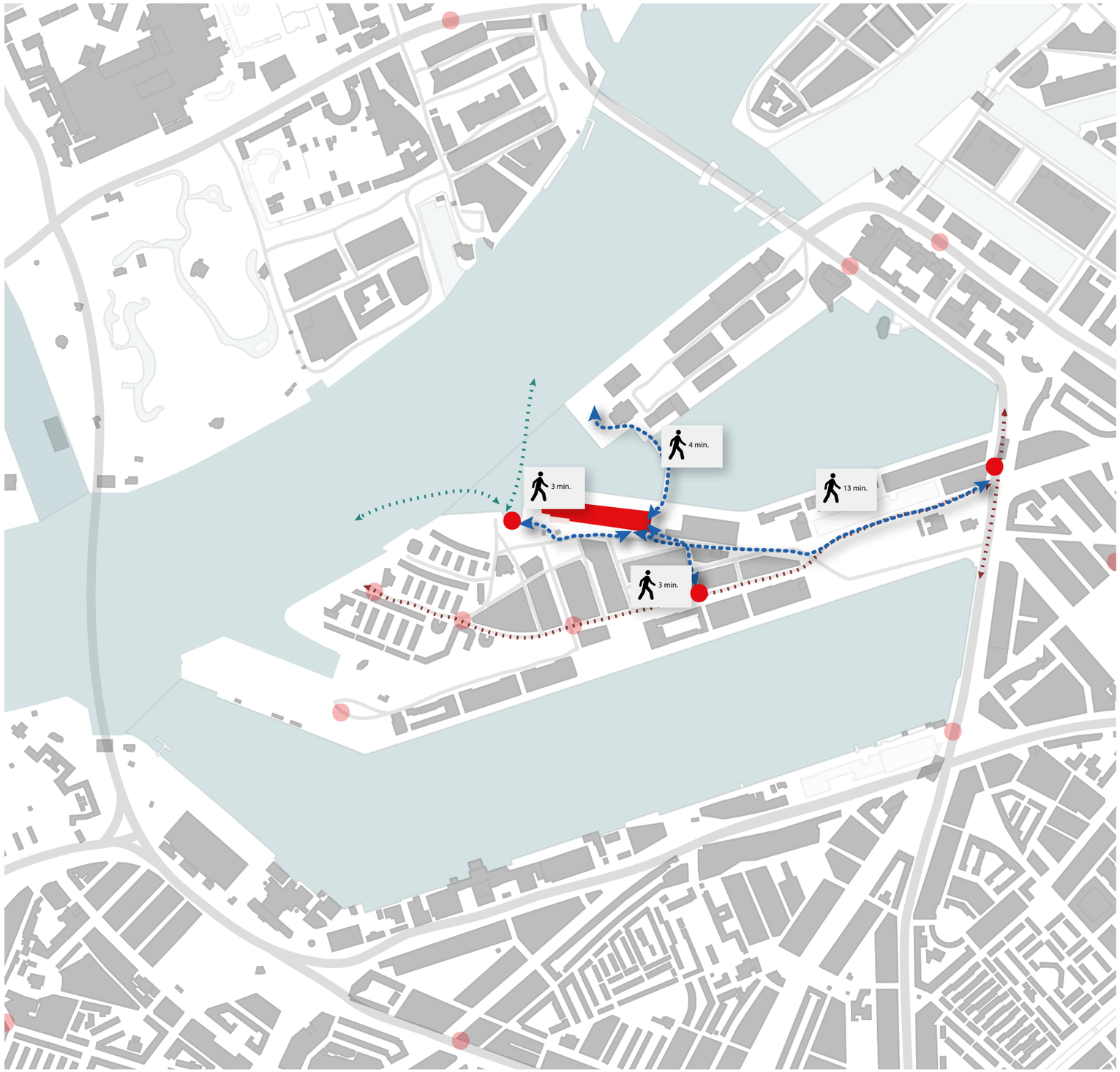
CIRCULATION
ACCESSIBILITY

QUESTION
This research is conducted to research the accessibility of our site.

METHODOLOGY
By approaching the site with different public transportation methods, the walking distance can indicate the accessibility.

FINDINGS
Our site is well connected. Even though the location is at the end of a peninsula, the walking distances from all public transport is within walking distance. The same applies for the bike and car.
With the help of newly built Rijnhaven Bridge, the accessibility of visitors by foot increases.

CONCLUSION
Especially with the public transportation system, the site is well connected, namely metro, bus, and waterbus.



65)

Sources
BV, 2017

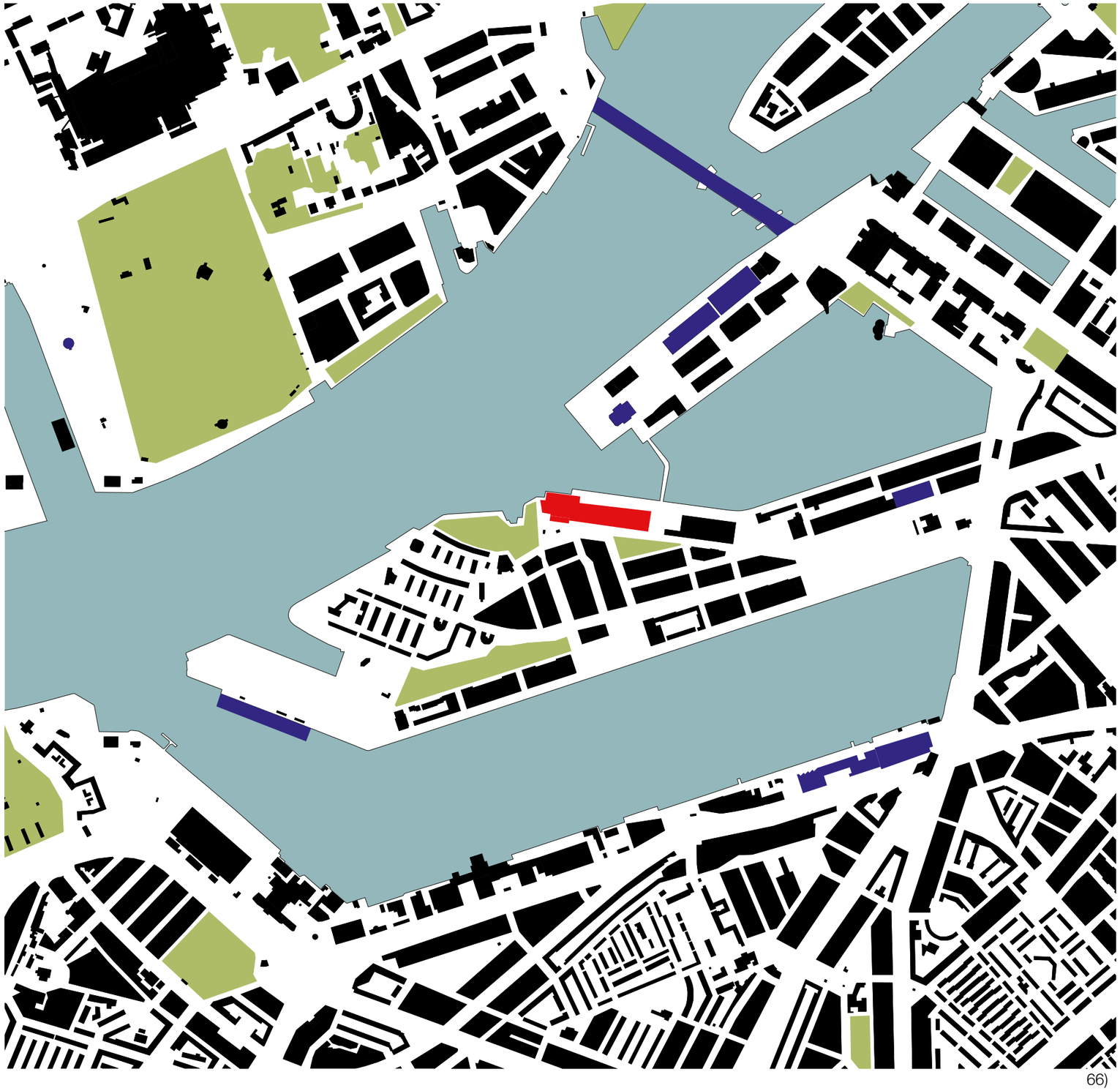
LANDMARKS
ROTTERDAM ICONS

QUESTION
By remarking Rotterdam icons, the influence and character of the neighbourhood can be observed.

METHODOLOGY
By highlighting the most famous buildings and structure in the city near Katendrecht.

FINDINGS
It is surprised that several major Rotterdam landmarks are very close the site, namely New York Hotel, De Rotterdam, the Rotterdam cruise terminal, Erasmus bridge, Santos, Maassilo, and SS Rotterdam. SS Rotterdam is located at the end of Katendrecht also gives the opportunities to introduce flows inwards to the end of peninsula.

CONCLUSION
The site is quite close to these famous landmarks; the opportunities of visitors will increase under the influence.



66)

Sources
Own Illustrations

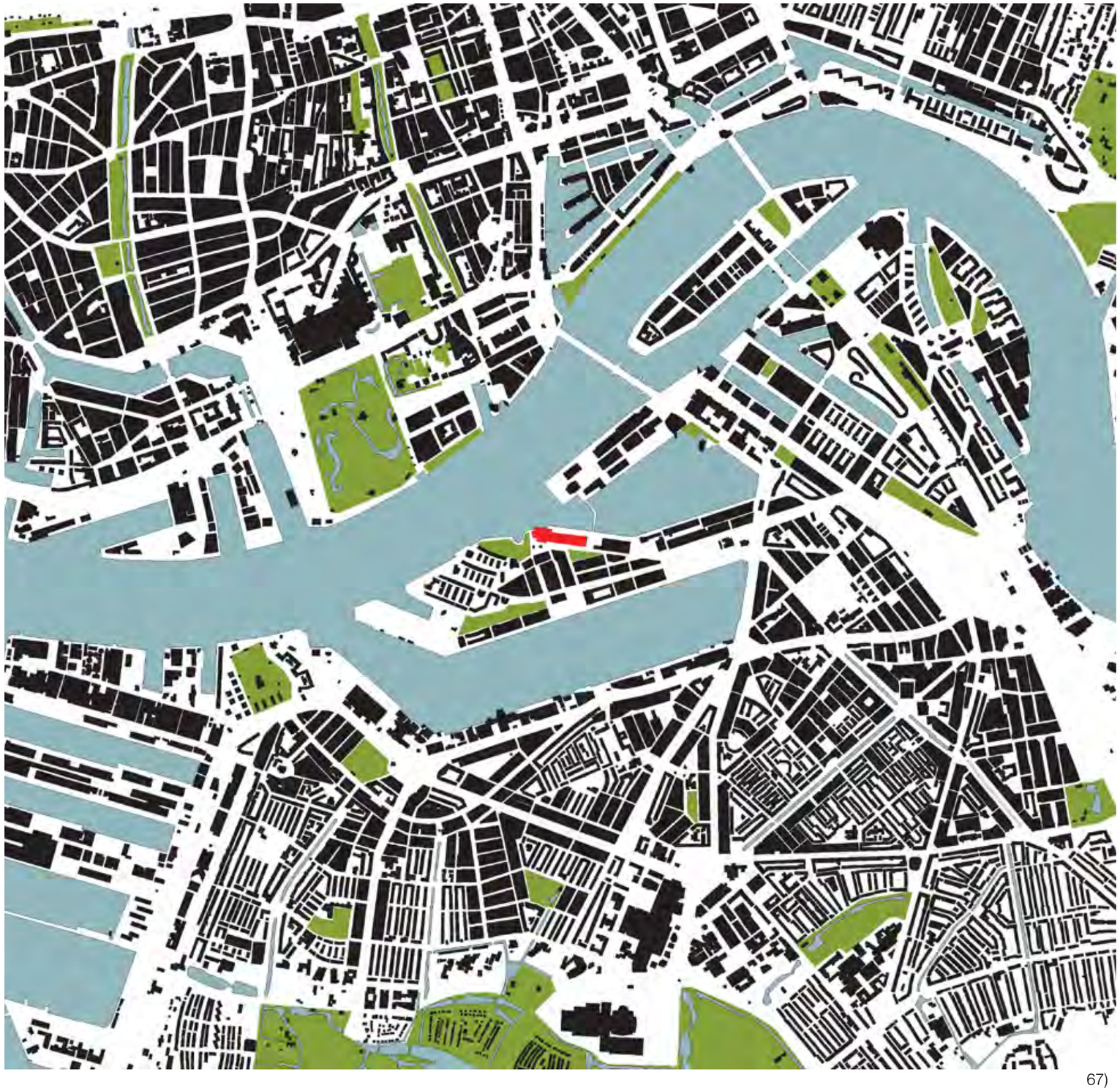
GREEN AREA AND WATER RELATION
NATURAL ELEMENTS IN THE CITY

QUESTION
How do natural elements situate in the city?

METHODOLOGY
By looking at the location, size of the green area, and water area in the city and Katendrecht, the integration of green area with surrounding can be observed.

FINDINGS
It can be seen that the green area is not integrated, nor equally distributed within the city. The biggest green area which locates closet to the city centre is Het Park along Maas River. Artificial elements consist a high proportion in Rotterdam. The connection to the green space and water front is segmented.

CONCLUSION
The connection to the green space and water front is segmented.



67)

Sources
Own Illustrations

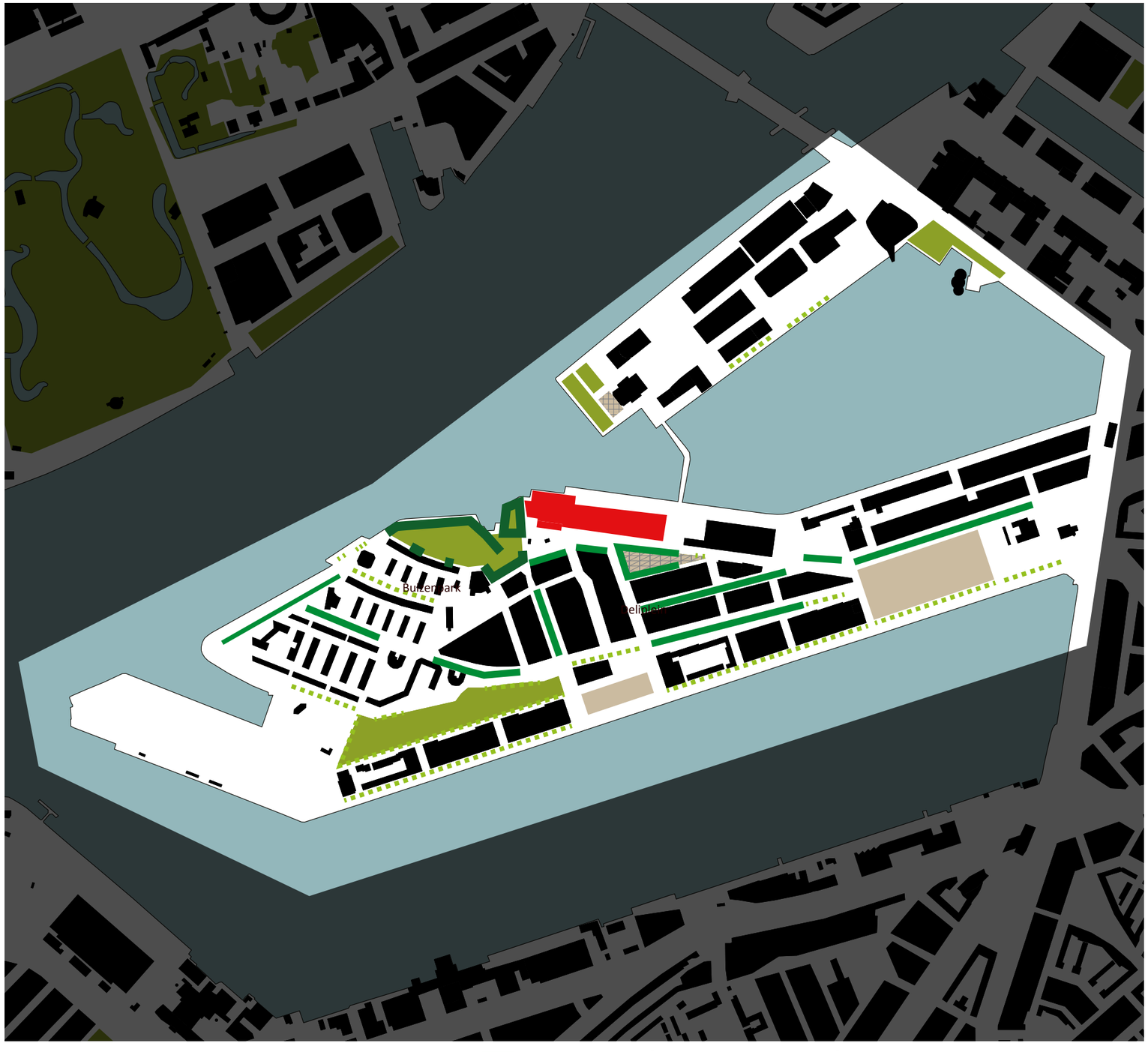
GREEN AREA AND WATER RELATION
VARIOUS SCALES OF GREEN

QUESTION
How do natural elements perform in different scales in the city?

METHODOLOGY
By looking at surroundings in Katendrecht, different scales of existing natural elements and location are marked and can be observed.

FINDINGS
Defined green areas in the map are mainly covered with grass. Different scales of trees are marked, in order to see the densest and nature area with current situation. Buizenpark provides with the tallest trees and the closet relation to the waterfront. On the south side of the building, Deliplein square is placed.

CONCLUSION
Buizenpark provides with the tallest trees and the closet relation to the waterfront. What will be the possibility to integrate the waterfront, square, and existing green area to the future design? How to increase overall natural elements within a walking distance in the city context?



68)

Sources
Own Illustrations

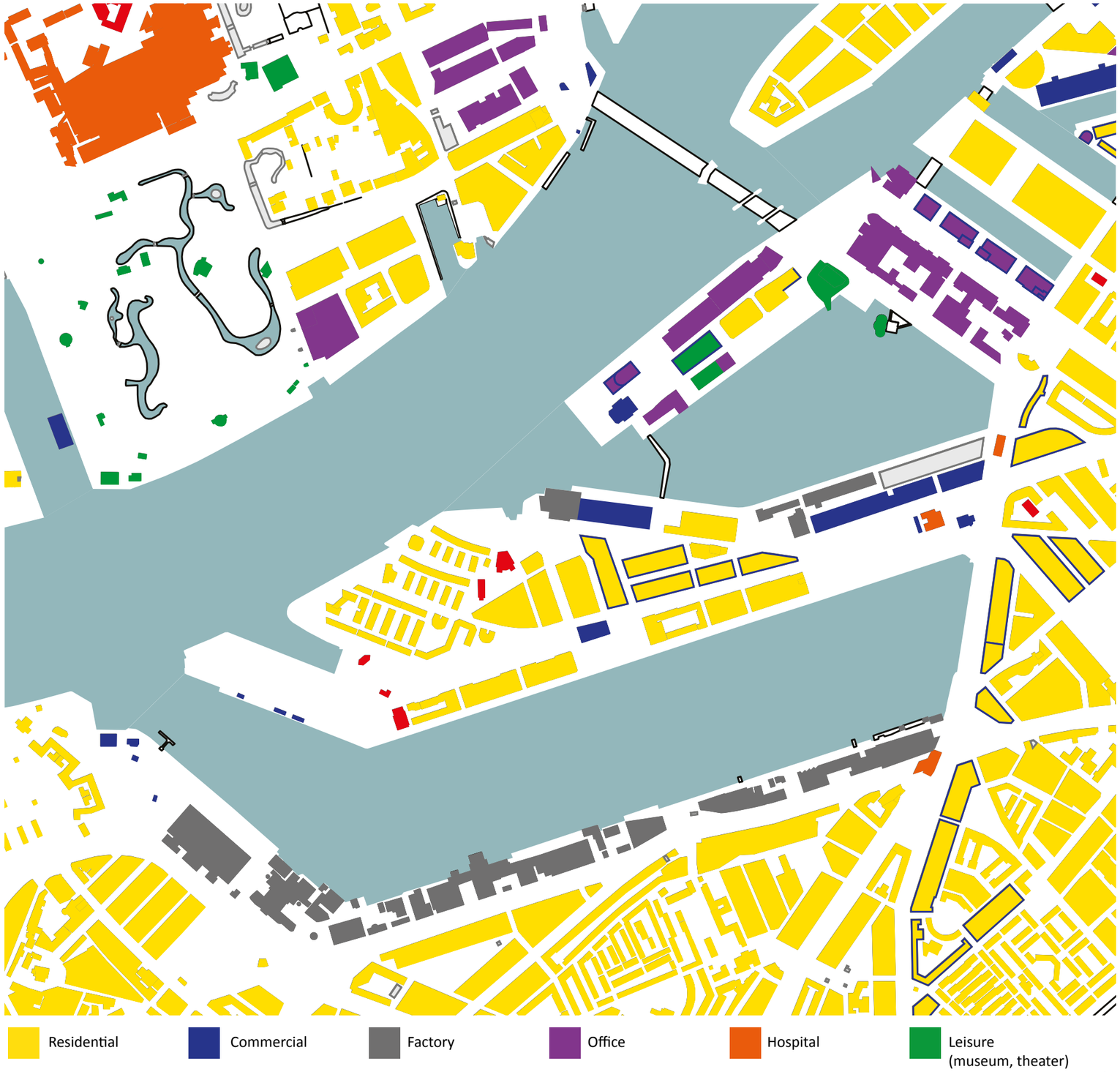
ZONE MAPPING
FUNCTIONS

QUESTION
This analysis is conducted to understand the relation between the building and its surrounding functions.

METHODOLOGY
By creating a map of the neighbourhood with the main important functions per building.

FINDINGS
It can be seen that Fenix II now is mostly enclosed with residential area and semi-public area, instead of industrial area. The residential area is concentrated on Katendrecht; the semi-public area is on Kop van Zuid. It is clear that most of the previous former industrial function has lost and changed to new functions mentioned above.

CONCLUSION
Functions on Katendrecht have changed, from previous industrial to residential and semi-public.



69)

Sources
Own Illustrations

PUBLIC, SEMI-PUBLIC AND PRIVATE SPACE
ACCESSIBILITY

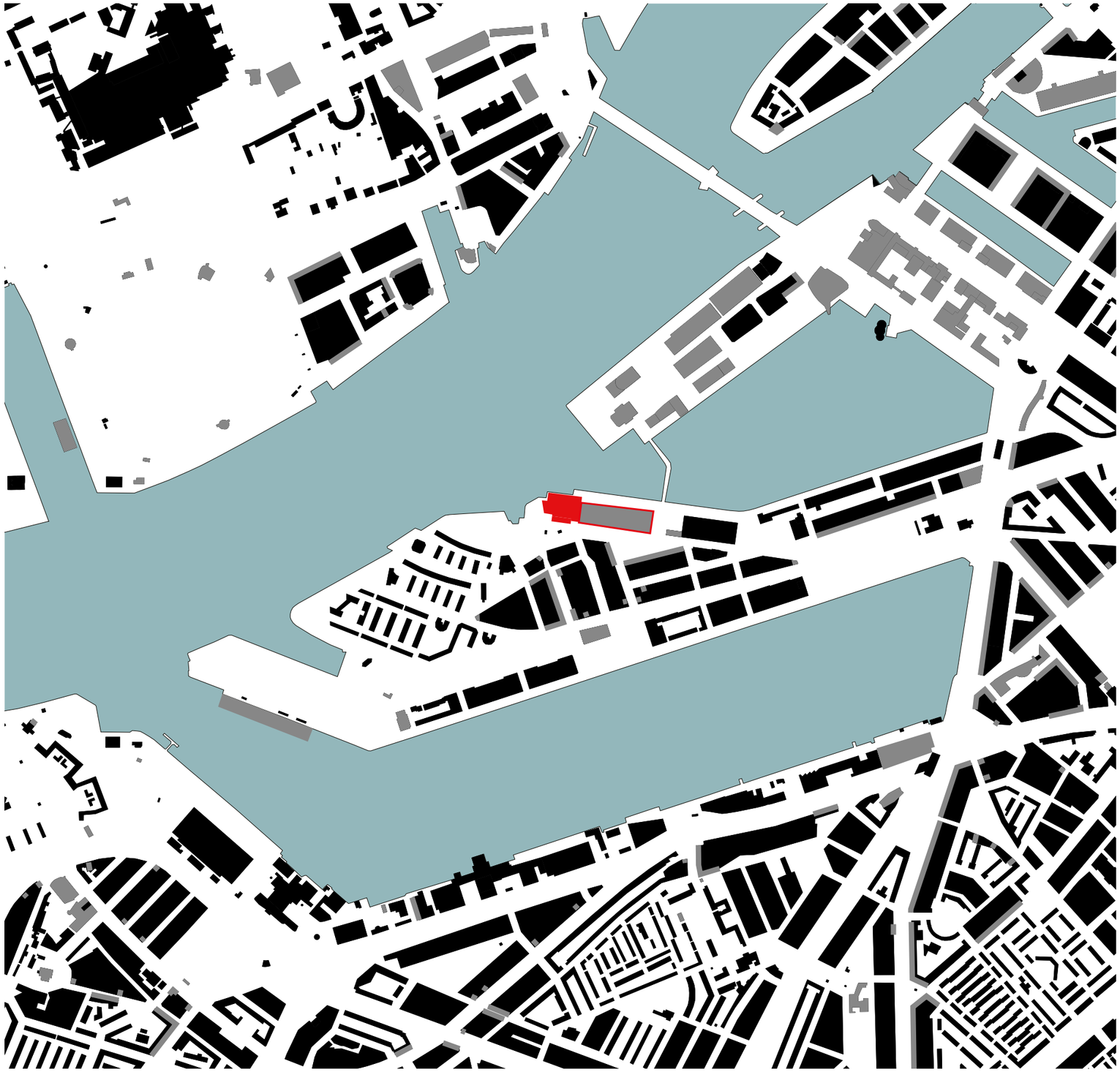
QUESTION
By using the method of Nolli Map, the composition of the public space, semi-public space, and private space can be understood.

METHODOLOGY
By looking at white parts of the Nolli Map, the openness to the public can be seen, contrasting black parts.

FINDINGS
From the map, it can be seen that northern part of the map is quite public, mainly contributed by Het Park and traffic lanes (green space and transportation area can be seen in previous analyses). In Kop van Zuid and the southern area across Erasmus Bridge, it highly consists of the semi-public function which shows the character of accessibility. The southern part of the map is mostly private, assuming dwelling clusters. Only little semi-public space runs along the main street of traffic lanes and metro line.

Looking closely to Fenix II, visitors from Kop van Zuid and metro station will mainly encounter these semi-public space.

CONCLUSION
The waterfront side of Fenix II is close to semi-public space from Kop van Zuid; the south side is facing more private space as residential area.



70)

Sources
Own Illustrations

SUN STUDY
SHADE ON THE BUILDING

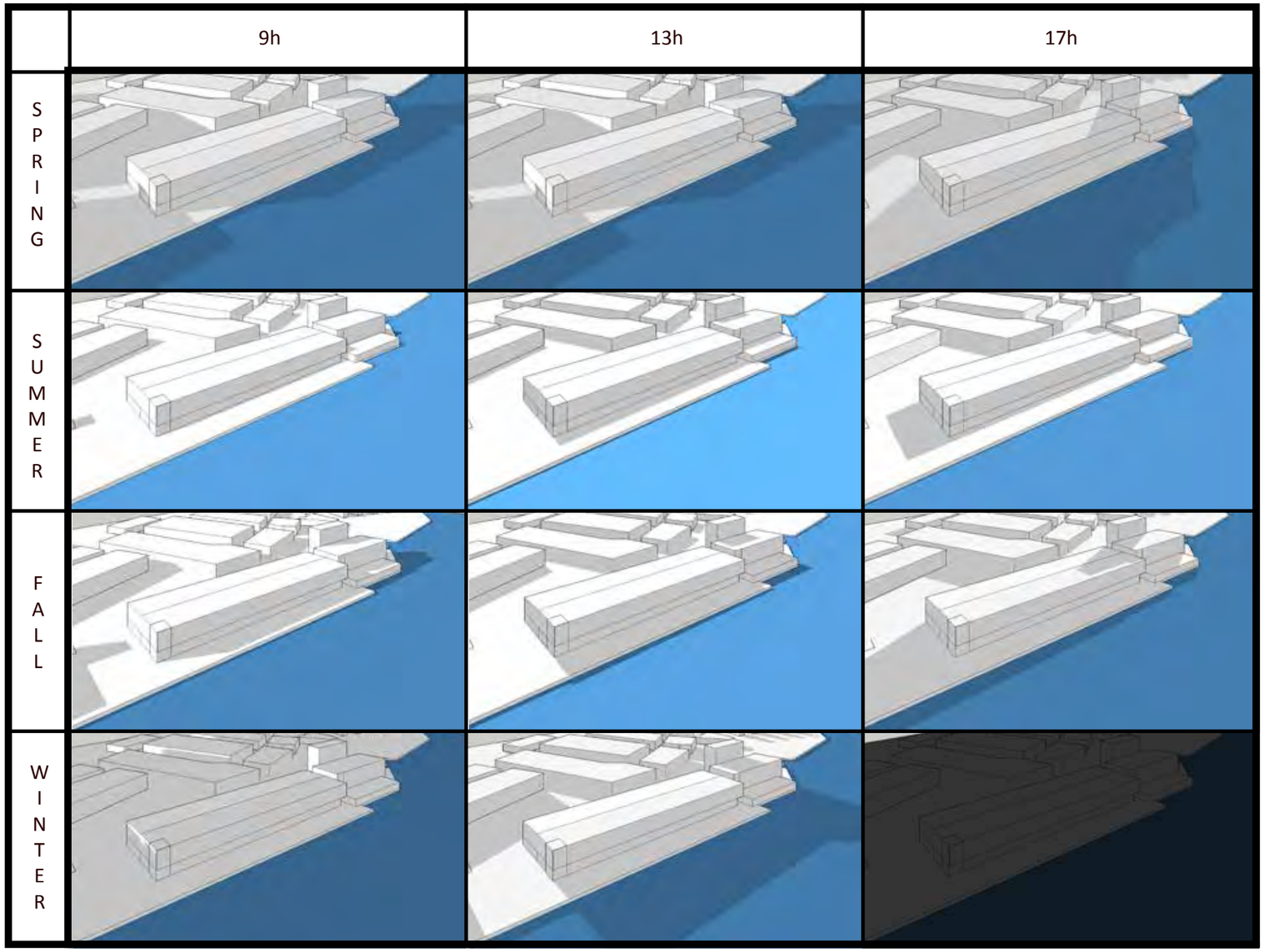
QUESTION
This research is conducted to see how the sunlight falls on the building and how the shade falls on the quay.

METHODOLOGY
In order to see how the sunlight falls on the building and the shade on the waterfront, 3D mass model has been made.

FINDINGS
Only in summer time, north facade (waterfront) is exposed under the sunlight entirely, at least from 9h to 17h. Besides that, the waterfront is shaded.

The south facade (Deliplein) is always under the sun, with only few exceptions.

CONCLUSION
Waterfront is the only side which the entire building can be seen. However, it is shaded more than half time of a year. Therefore, the attention should be addressed more in the future design.



71)

Sources
Own 3d model in google sketchup

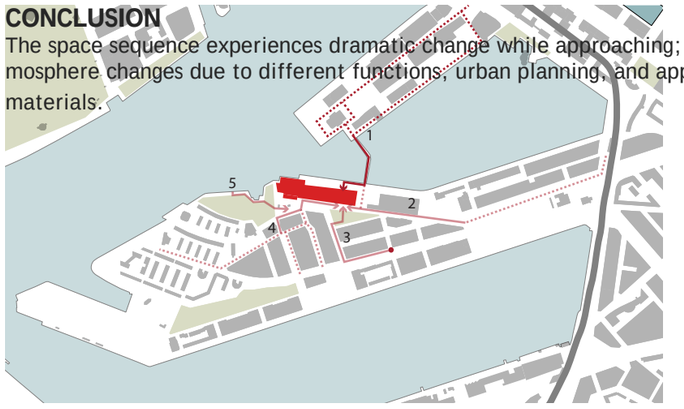
ROUTING/ STREETSCAPE
1 KOP VAN ZUID

QUESTION
This research is conducted to see how the sunlight falls on the building and What is visitor experiences approaching to Fenix II as destination?

METHODOLOGY
From the starting point of individual routing to the destination as Fenix II, the experience of visitors can be concluded. Different scale of continuous space sequence, the material of the pavement and the height difference are important factors to these routings.

FINDINGS
Coming from Kop van Zuid, the atmosphere is dramatically changed, even with such close distance connected by Rijnhaven Bridge, from well-developed area to developing area, and from semi-public space to more private residential area. Fenix II is the first building after Rijnhaven Bridge, locating along on the waterfront which can be seen clearly from the side of Kop van Zuid. The change of height difference is emphasized by the Rijnhaven Bridge. The waterfront quay of Fenix II is relatively small and disrupted by parking, which interrupts accessibility of users. The space sequence experiences dramatic change while approaching.

CONCLUSION
The space sequence experiences dramatic change while approaching; atmosphere changes due to different functions, urban planning, and applied materials.



Starting Point

Destination

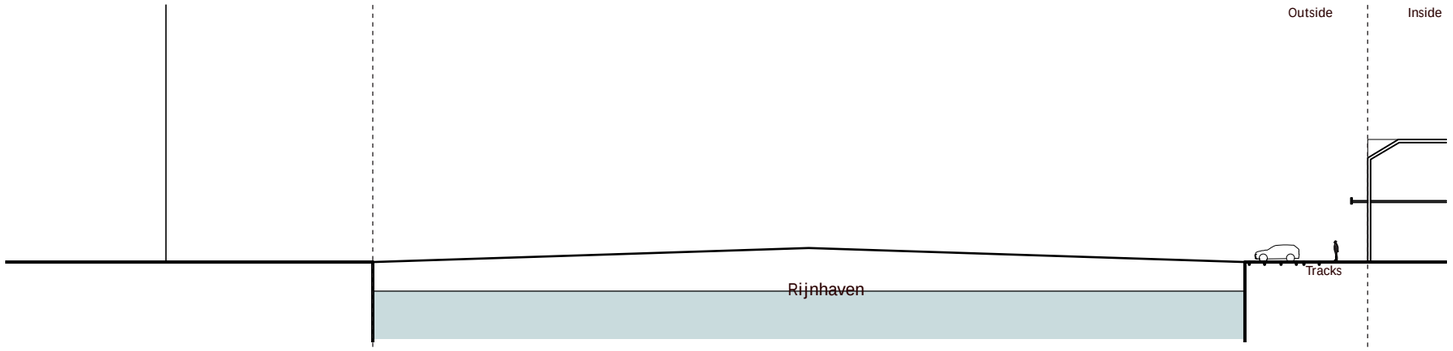
Sources
Own illustrations and photos

Streetscape

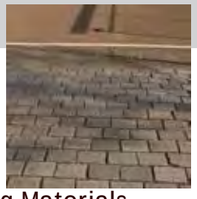
Hotel New York

Rijnhaven bridge

Fenixloods 2



Space Sequence



Paving Materials

ROUTING/ STREETSCAPE
2 METRO STATION-RIJNHAVEN

FINDINGS
Coming from metro station, visitors will pass by Fenix I which remains some identical appearance as Fenix II. Part of the pedestrian is relatively narrow and unmaintained (damaged paving for example). Right before entering Fenix II, the in between square can be seen. However, it is not a welcome space which is full of obstacles and damaged paving. The high rise of Kop van Zuid can be through the square.

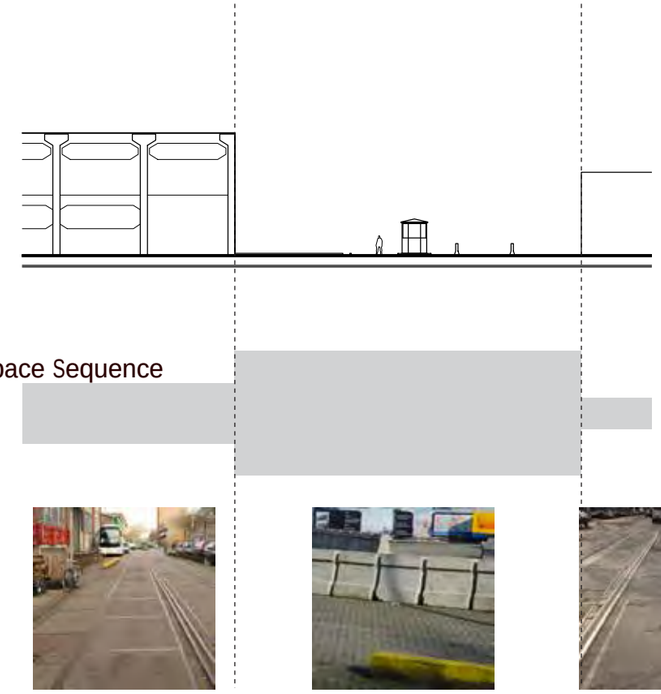
CONCLUSION
The in between square acts as connection between Fenix I and Fenix II. However, it is not a welcome space which is full of obstacles and damaged paving.

Starting Point

Destination

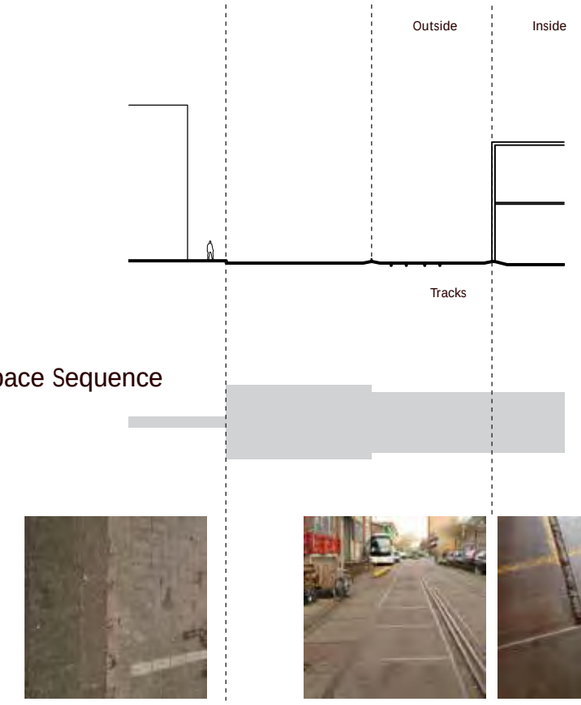
Sources
Own illustrations and photos

Streetscape



Space Sequence

Paving Materials



Space Sequence

Paving Materials

73)

ROUTING/ STREETSCAPE
3 BUS STOP-ROTTERDAM, LOMBOKSTRAAT

FINDINGS
The routing is relatively quiet, reached by bus. Coming from the main road of Katendrecht, visitors enter directly to residential area. Then the huge open square, Deliplein, appears. However, the entrance to Fenix II is disrupted, due to the lack of proper opening of the square and parking space along the road.

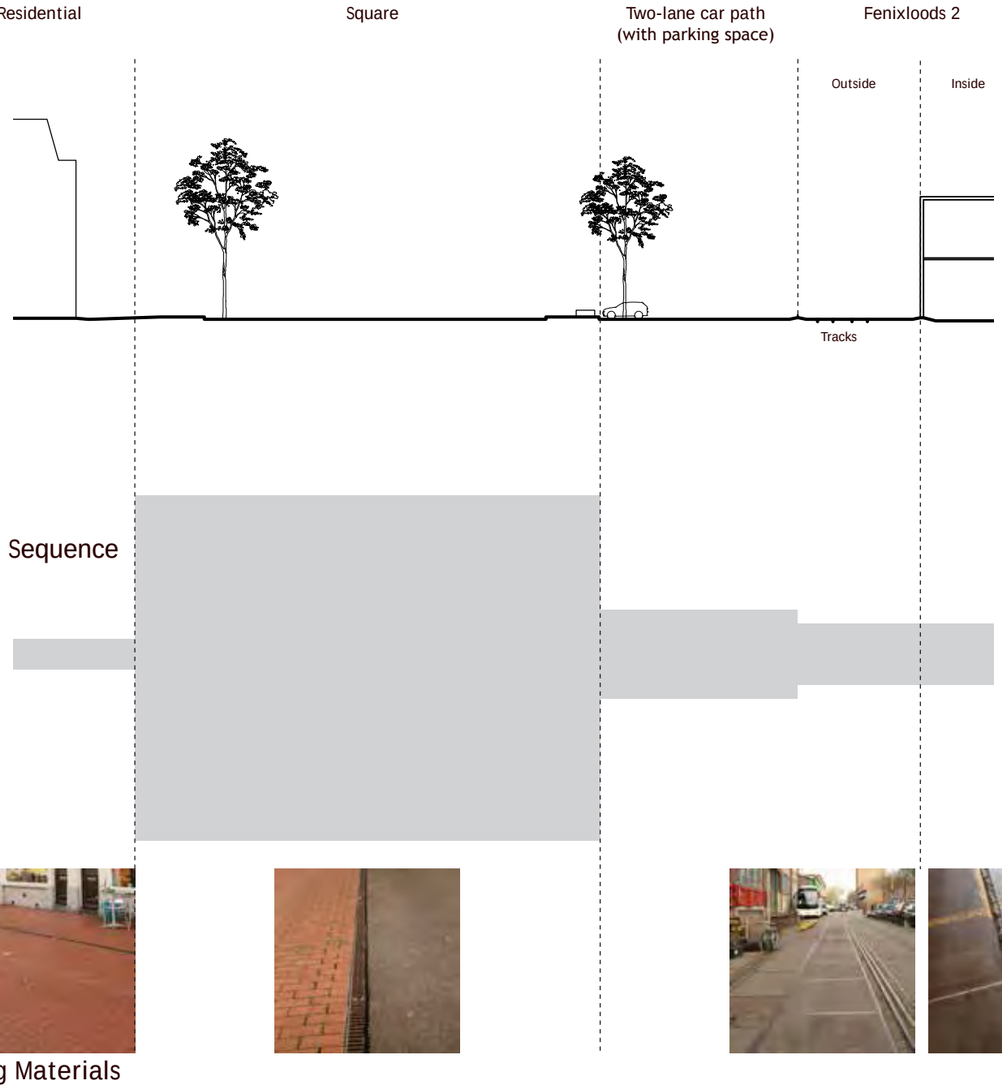
CONCLUSION
The routing is relatively quiet passing residential area. The huge open square, Deliplein, in front of the entrance to Fenix II is disrupted, due to the lack of proper opening of the square and parking space along the road. The reconnection between Deliplein and Fenix II should be concerned.

Starting Point

Destination

Sources
Own illustrations and photos

Streetscape



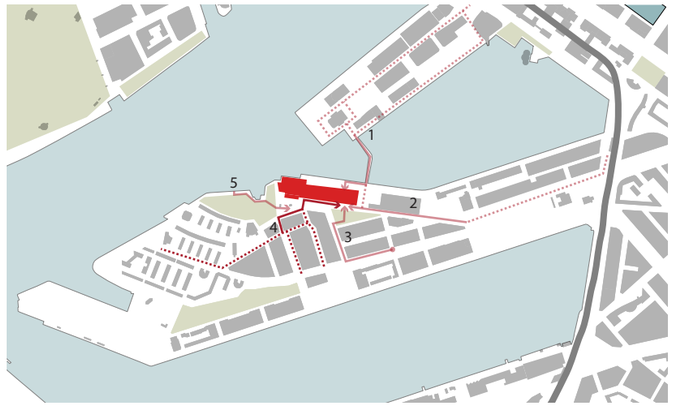
Space Sequence

Paving Materials

ROUTING/ STREETSCAPE
4 NEIGHBORHOOD

FINDINGS
This routing is more for local residents and relatively short comparing to other routings. The space sequence does not change much. The major contrast are encountering Provimi Facotry and the industrial appearance of Fenix II to the adjacent residential façade.

CONCLUSION
The contrast reflects on industrial heritage and new residential area.

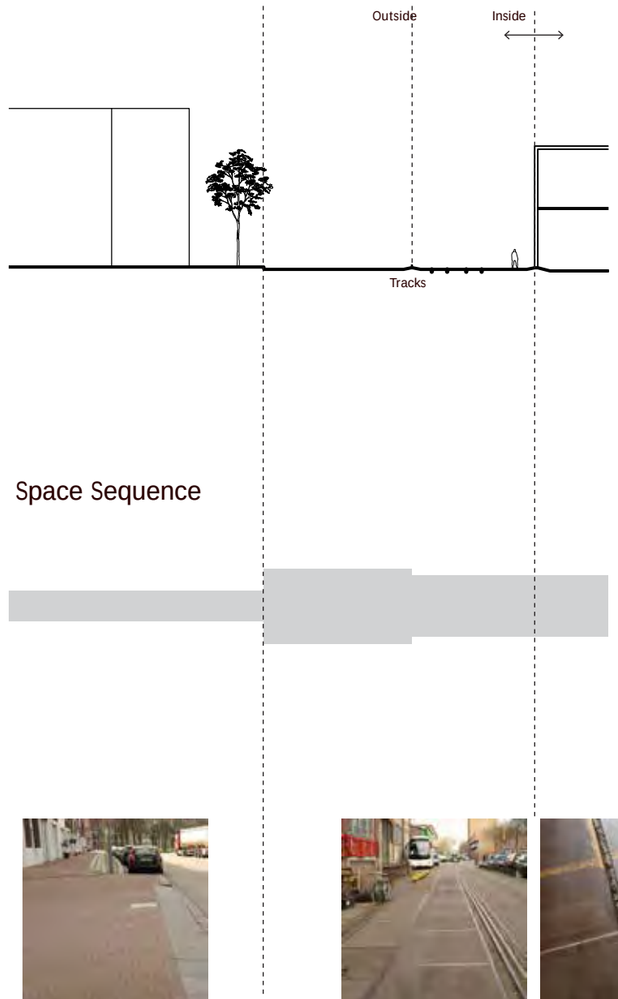


Starting Point

Destination

Sources
Own illustrations and photos

Streetscape



Space Sequence

Paving Materials

ROUTING/ STREETSCAPE
5 WATER BUS-ROTTERDAM KATENDRECHT

FINDINGS
This routing has the closest relation to the natural environment. Visitors take water bus and arrive to the huge open green area. However, the routing is disrupted by Provimi Factory with busy large trucks without proper pedestrian linked to Fenix II. The space sequence of this routing experiences the most dramatic change with greenery and surrounding condition.

CONCLUSION
The opportunity of reconnecting natural element to Fenix II can be stressed on future design. The interruption of Provimi Factory should also be concerned.

Starting Point

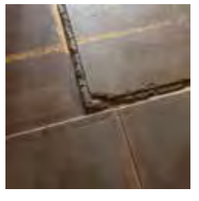
Destination

Sources
Own illustrations and photos

Streetscape

Space Sequence

Paving Materials



HERITAGE & ARCHITECTURE

ARCHITECTURAL ANALYSES
BUILDING ANALYSES

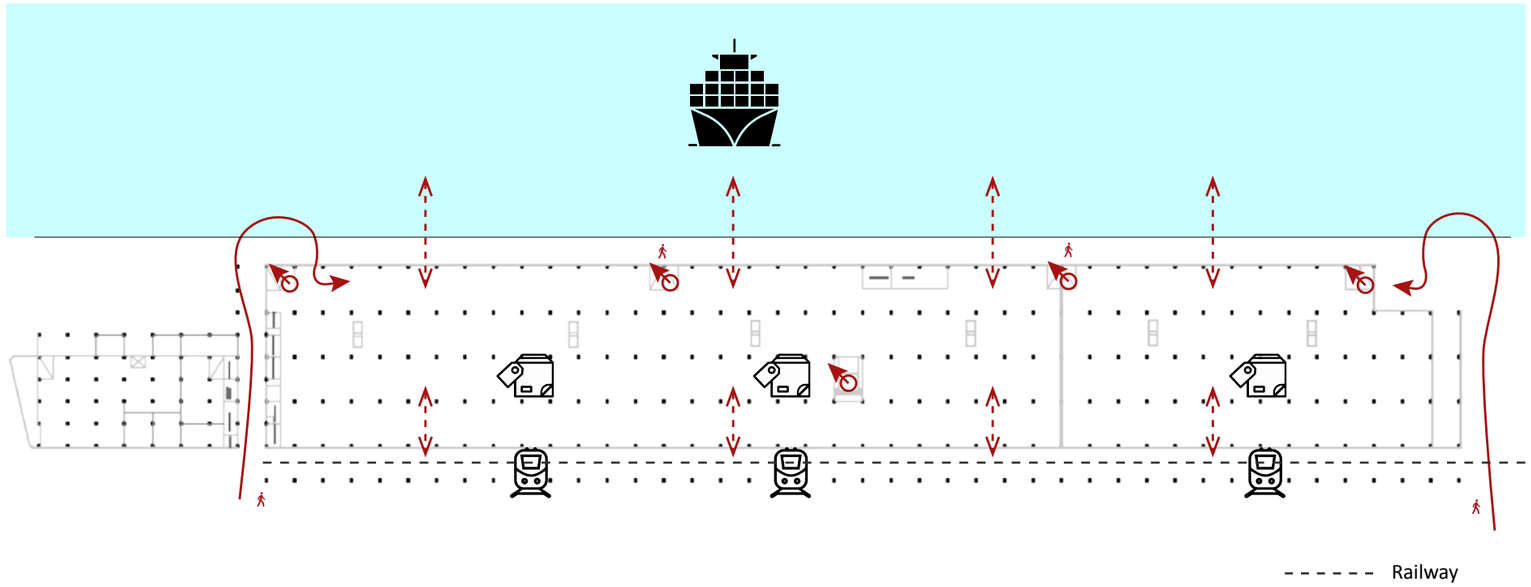
CIRCULATION
ACCESS 1916

QUESTION
This research is conducted to understand how the previous circulation worked on building level.

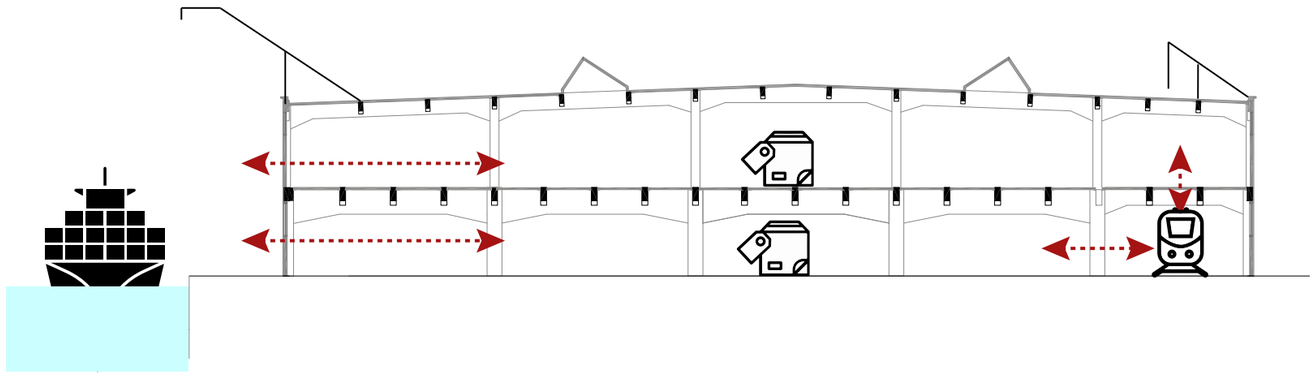
METHODOLOGY
By looking at the former routes of the cargo and people; how goods were moved in, out and through the building.

FINDINGS
Firstly, there were two streams of circulation: cargo and worker. The cargo was transported all over the north façade (waterfront) into the building; the same movement was also happening on the south side (Deliplein). Under this loading and unloading situation, both facades had the same importance. The circulation of worker was the secondary stream in the building, comparing to the main stream of cargo.

Another interesting thing is the fact that both levels had the same importance. Cargo entered or left the building both on ground floor as it was on the first floor.



CONCLUSION
The circulation was mainly for loading and unloading goods; ground floor and first floor had the same accessibility of this movement.



77)

Sources
Own Illustrations

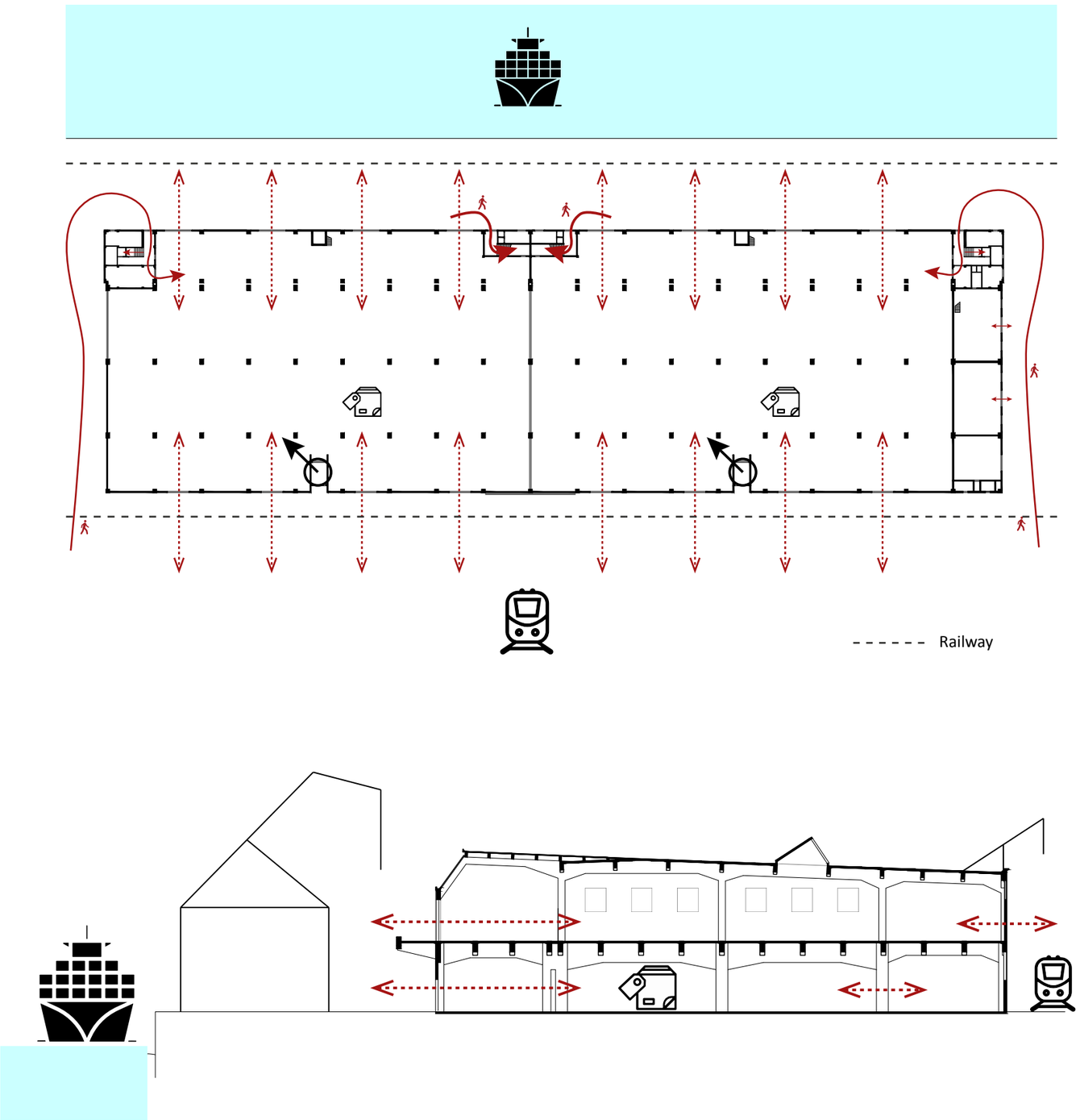
CIRCULATION
ACCESS 1951

QUESTION
This research is conducted to understand how the previous circulation worked on building level.

METHODOLOGY
By looking at the former routes of the cargo and people; how goods were moved in, out and through the building.

FINDINGS
The reconstruction had been made due to the war and fire damage, and the setback of the building can be seen. The circulation of goods and workers was similar to the previous period. However, the south side railways had been moved outwards; the first grid of south side on ground floor had been enclosed with doors, instead of opening railway passage. On the north side, there was railways added on the quay side, and functioned as external loading platform. The transporting circulation happened both on ground and first floor.

CONCLUSION
The circulation was similar to previous period, and the transporting circulation happened both on ground and first floor. Due to reconstruction of the building after WWII and fire accident, the quay side space was extended and acted as external loading platform.



78)

Sources
Own Illustrations

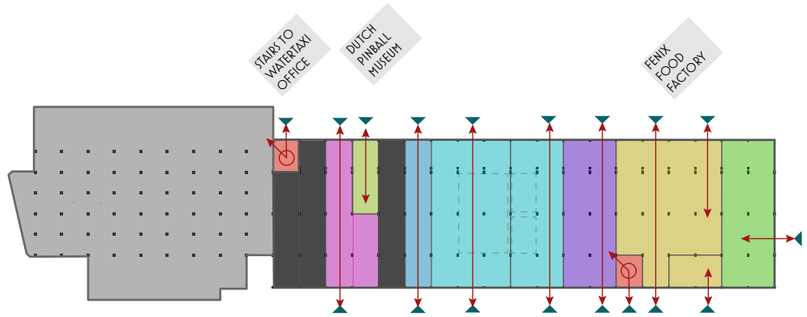
CIRCULATION
ACCESS 2014

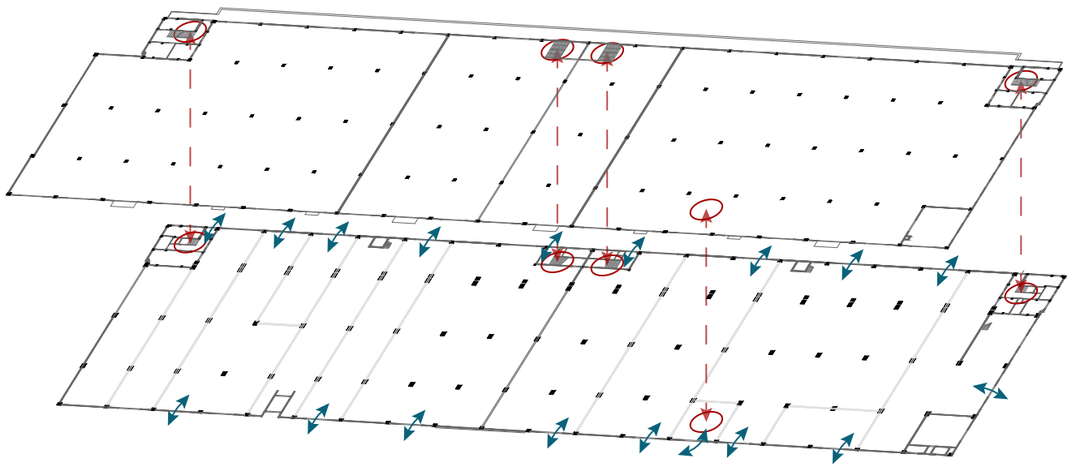
QUESTION
This research is conducted to understand how the circulation worked on building level nowadays.

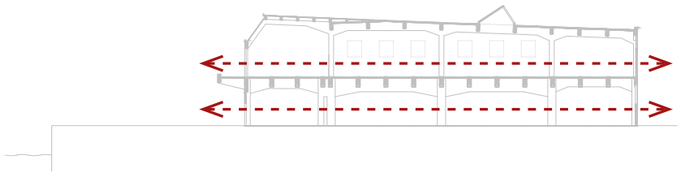
METHODOLOGY
By looking at the current routes of users through the building.

FINDINGS
It can be seen that small divisions have been made according to new functional needs. There are 11 new programs situated in Fenix II. On ground floor, most of the new divisions keep the same circulation as previous period, accessed by both sides; a clear front and back do not exist. In previous periods, both ground and first floor had the same importance of connection to external. However, on the first floor, the connection of external and internal no longer exists today, only connected with few staircases.

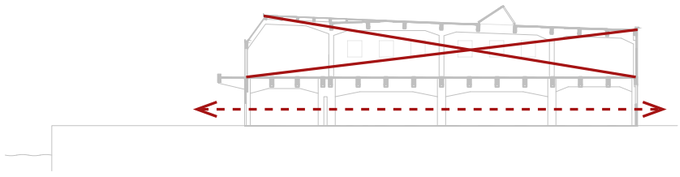
CONCLUSION
On ground floor, there are small divisions made, still accessed by both sides. On the first floor, the connection of external and internal no longer exists today.







PAST



PRESENT

Sources
Own illustrations and photos

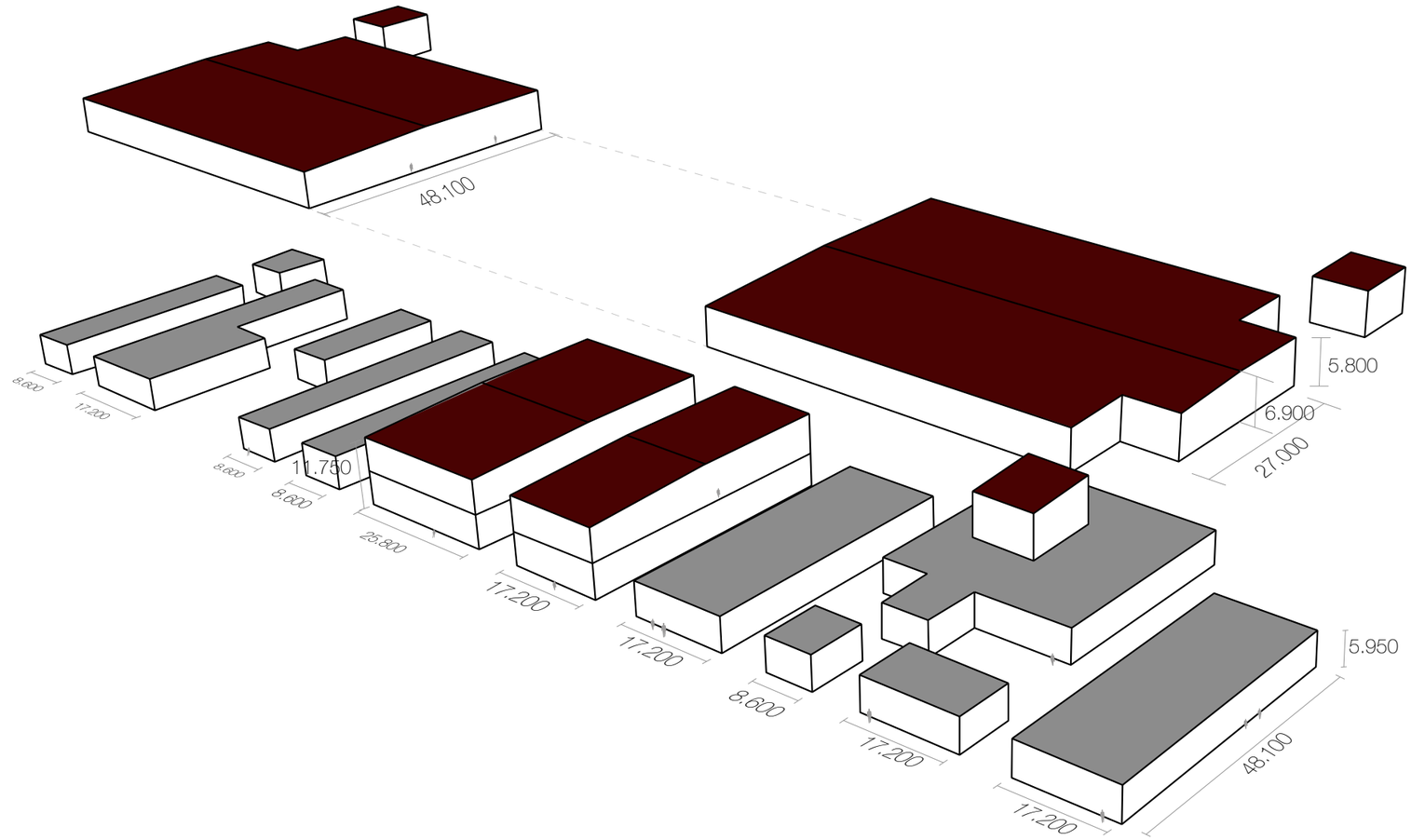
COMPOSITION
SPACE DIVISIONS

QUESTION
This research is conducted to understand how Fenix II works in space divisions today.

METHODOLOGY
By looking at the different volumes and spaces in the building.

FINDINGS
The building is divided into many smaller volumes on ground floor, and two huge division on first floor. The width of each new division is at least 1 grid span, and accessible on both sides. However, on first floor, the former dimensions of space are preserved, using the entire floor as a huge space.
The first floor is no longer accessible directly from external, and therefore the space is connected with staircases in small volume.

The circus Rotjeknor and Codarts parts are the new highlight in the composition. The openings on the floor had been made to fulfil the needs of circus practice and performance. These openings not only connects ground floor and first floor, but also gives another spatial dimension with 11m high ceiling.



CONCLUSION
The composition in the building are much more in diversity than previous periods. The connection from external to internal only preserves on ground floor.

80)

Sources
Own illustrationS

RHYTHM OF FENIX II
STRUCTURE

QUESTION
To understand the character of Fenix II, the rhythm and the proportion of the building can be seen in the following analyses.

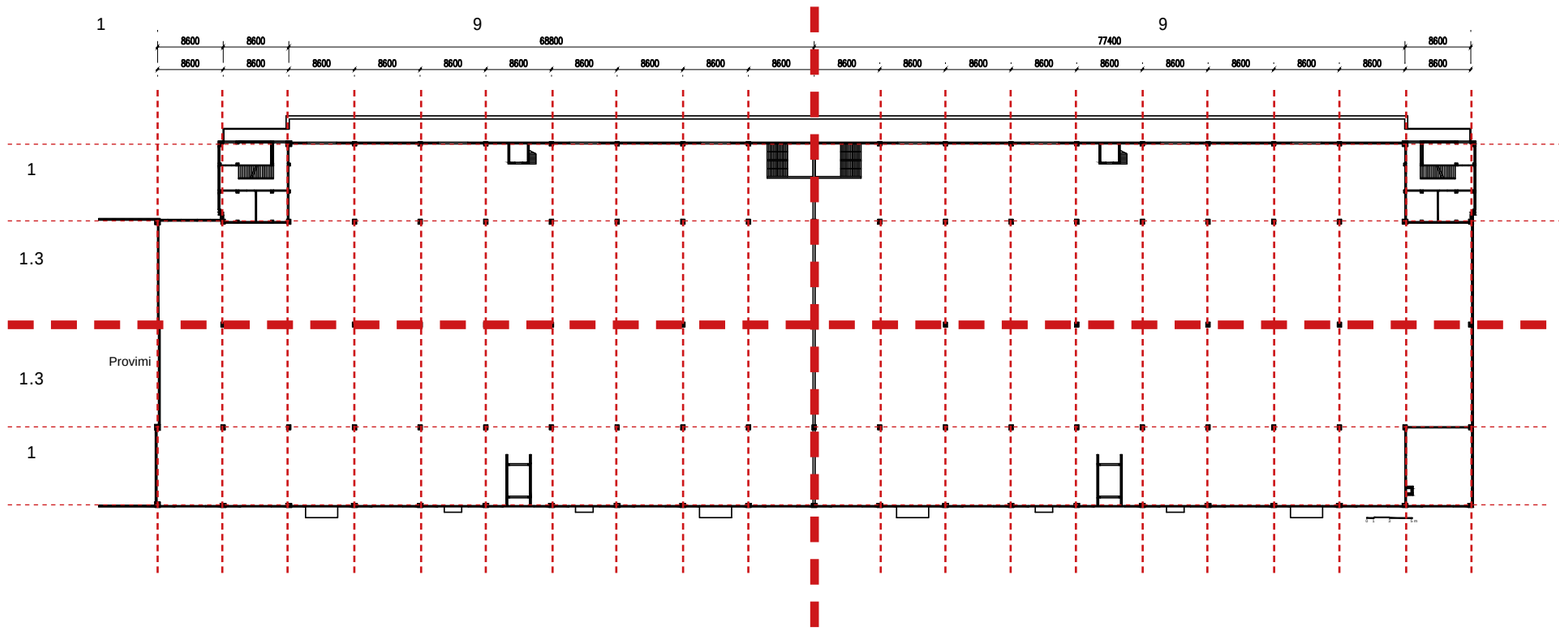
METHODOLOGY
By looking at floor plans, the ratio of the building can be found.

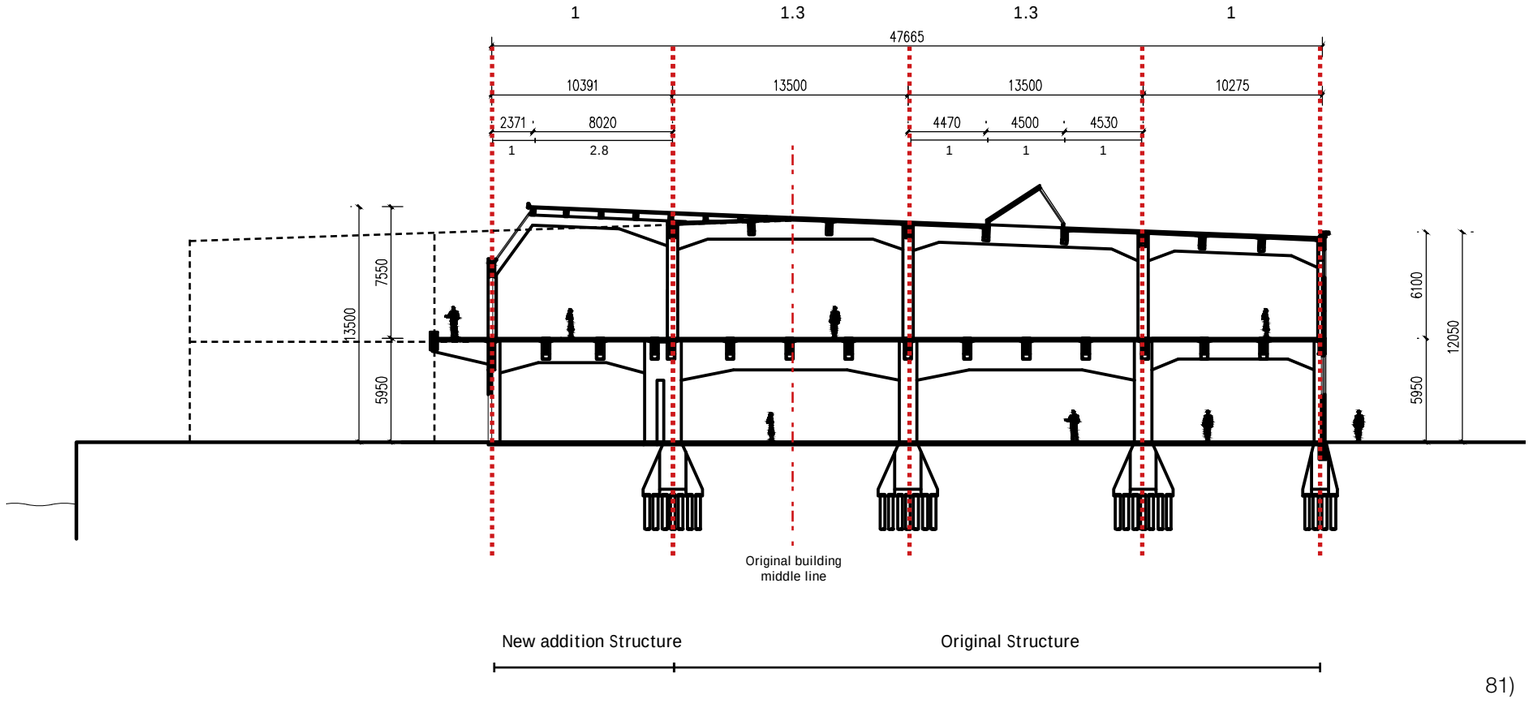
FINDINGS
Even though the building has been partially demolished. The new addition has tried to follow the rhythm, and also creating another space quality. Fenix II still preserves its repetitive rhythm of structure.

By looking at the plan, symmetrical middle line can be seen from both directions. The ratio of larger span to the smaller one is 1.3; this ratio has been used over the building, such as in the height and openings which will be shown in the following analyses.

CONCLUSION
Fenix II has repetitive and symmetrical rhythm. The ratio of 1.3 has been applied to many parts in the building.

First Floor Plan





81)

Sources
Own illustrations

RHYTHM OF FENIX II
STRUCTURE

QUESTION
To understand the character of Fenix II, the rhythm and the proportion of the building can be seen in the following analyses.

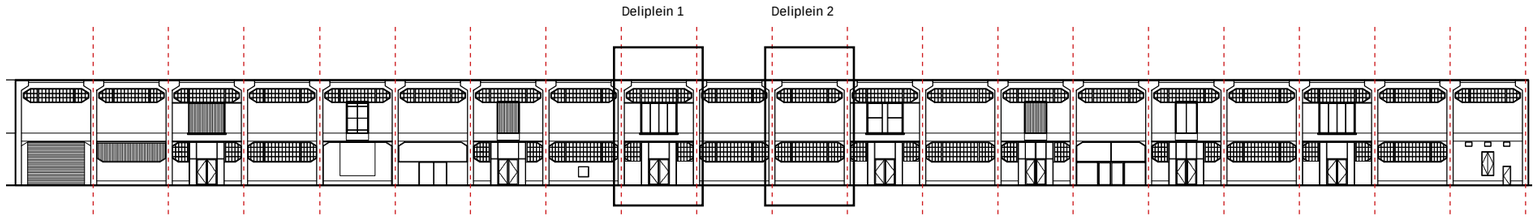
METHODOLOGY
By looking at facade, the ratio of the building can be found.

FINDINGS
The facade itself has such high repetitive rhythm as the main character and it is also emphasized by the popping out column on the south side (Deliplein), especially with the strong color applied later.

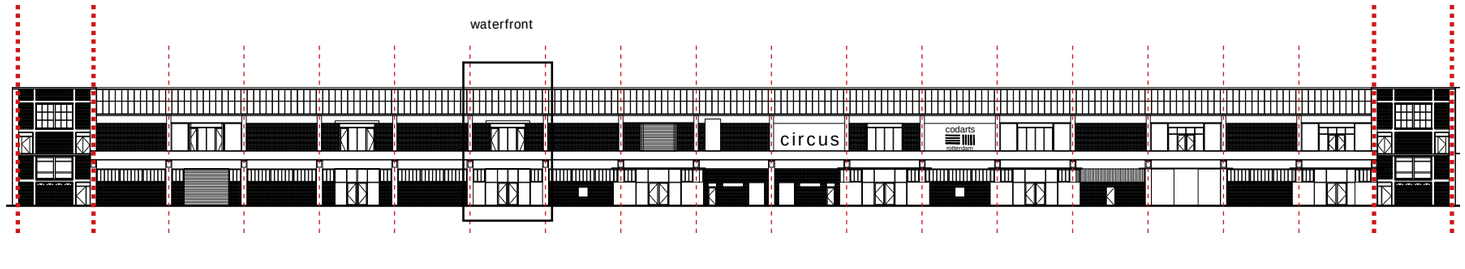
The ratio of 1.3 can be seen applied again on the height of ground floor and first floor, also on the new addition side window which runs all along the first floor on the south side (waterfront).

CONCLUSION
Fenix II has repetitive rhythm. The ratio of 1.3 has been applied to many parts in the building.

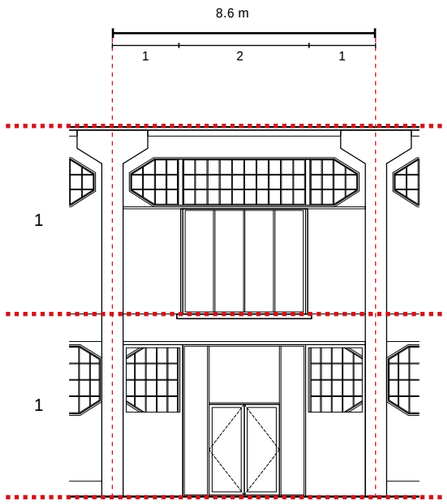
South facade (Deliplein) 1916



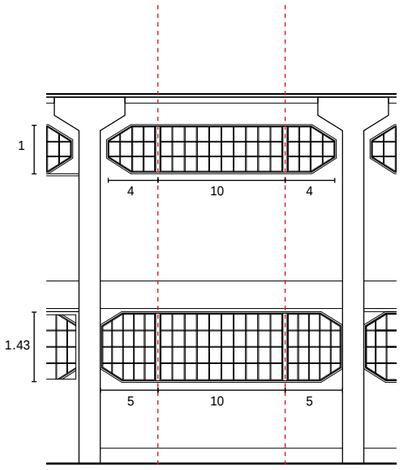
North facade (waterfront) 1951



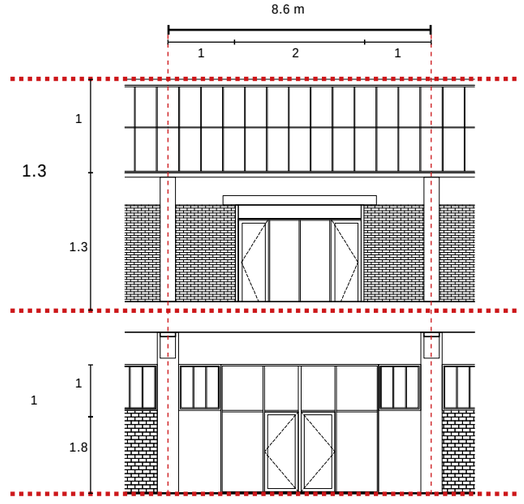
Deliplein 1



Deliplein 2



Waterfront



82)

Sources
Own illustrations

RHYTHM OF FENIX II
OPEN AND ENCLOSED FACADE

QUESTION
To understand the character of Fenix II, the rhythm and the proportion of the building can be seen in the following analyses.

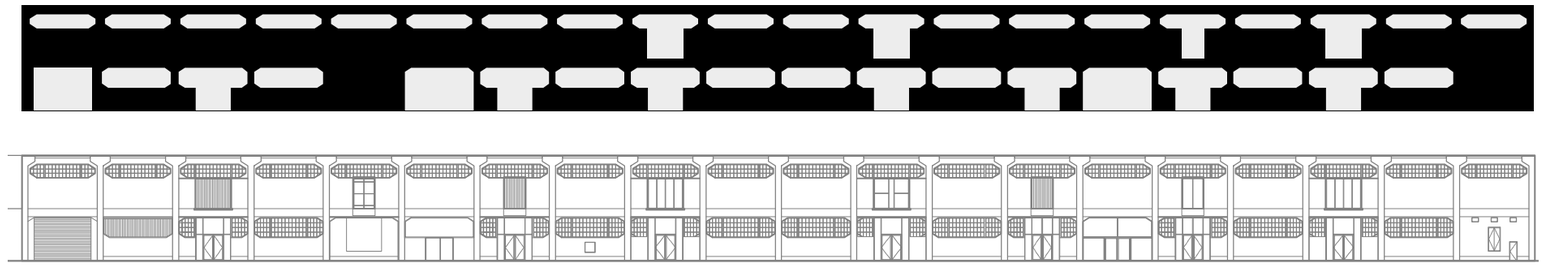
METHODOLOGY
By looking at black and grey parts, the contrast can be seen.

FINDINGS
For the south façade built in 1916 (Deliplein), it is relatively more open on ground level than waterfront side which creates connections to a huge open square in the front. The south façade perverse the original design of window shapes which gives strong character to the building. As it can be seen, the window openings on first floor are very high, which it can be assumed not openable for ventilation. It has also more repetitive window openings than the north side.

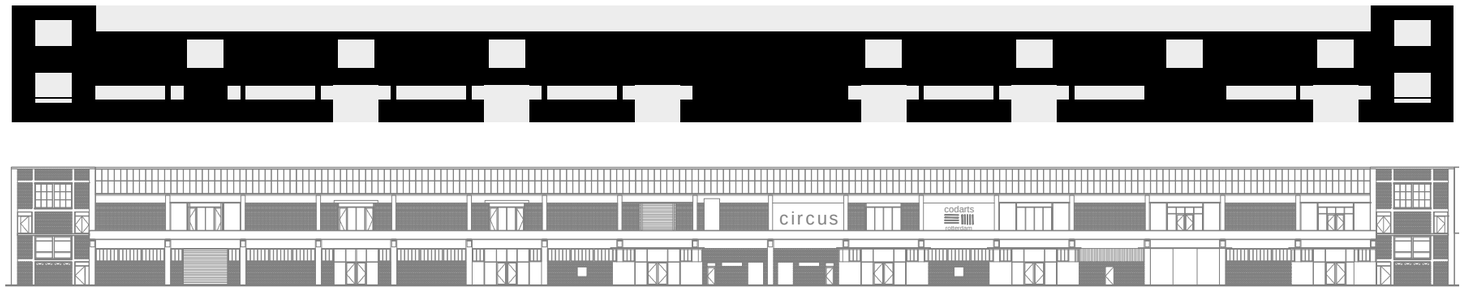
For the north façade built in 1951 (waterfront), it has several huge entrance openings from the ground level. However, the closet volume approaching from Rijnhaven Bridge is not open, which may reduce the welcoming atmosphere and accessibility to visitors. The side window on the first floor, it has made a strong expression of the building, with consistent glazing without interruption of structure. It also gives sufficient natural daylight to the interior.

CONCLUSION
The expression from both façades is very different. For ground level, south façade is more open than the north side. The south façade perverse the original design of window shapes which gives strong character to the building. The ground openings on north façade did not give a good connection to the waterfront. However, north façade side window gives sufficient natural day light to interior space.

South facade (Deliplein)



North facade (waterfront)



83)

Sources
Own illustrations

RHYTHM OF FENIX II
FIRST THING TO NOTICE ON FACADE

QUESTION
The first thing to notice when approaching to Fenix II can be seen as the main character of the building.

METHODOLOGY
By looking at the elements in the building, building character can be defined.

FINDINGS
On the south façade built in 1916 (Deliplein), the first thing appears is the repetitive rhythm; the shape of the columns emphasizes the rhythm and also popped out with the strong applied colour. It also distinguishes itself as industrial building from adjacent residential area, with high openings for entrance, and warehouse appearance. Secondly, the sophisticated shape of the window which runs along with the shape of column reinforces the expression of the whole façade.

On the north façade built in 1951 (waterfront), the first thing comes to eyes is the consistent side window on the first floor. Secondly, the balcony and the structure of the balcony which expose entirely and runs along the building gives strong image. Lastly, the huge transparent opening for entrance expresses the presence.

CONCLUSION
On the south façade, it emphasizes on the repetitive rhythm and the shape of the columns with industrial appearance.

On the north façade, side window on first floor gives the most expression with its continuous openings without interruption along the entire building.

Shape of the column
Color of the column

Shape of the window

Side window all along the building

Extended balcony and its structure

Huge opening as entrance

Sources
Own illustrations

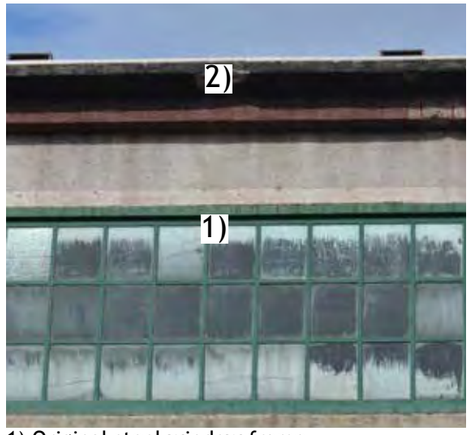
MATERIALISATION
1916-1922

QUESTION
This research is conducted to categorize the materials applied in the building in different periods.

METHODOLOGY
By looking at old photos and taking pictures of the materials on site, it can be categorized.

FINDINGS
Materials found in the building show different time period. Concrete is the original main material in this building, which can be found with the structure and the plaster, and mainly on the south facade. On the south façade, the original window frames were made with wood and steel.

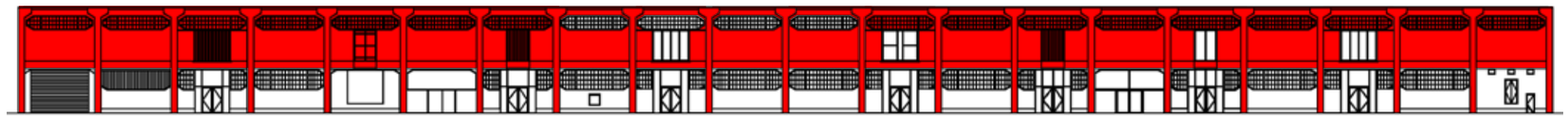
CONCLUSION
The applied materials in the building are relatively consistent, mainly concrete, which shows a unified character.



1) Original steel window frame
2) Concrete structure

3) Original steel door + paint

4) Original steel door + paint



5) Concrete balkony

6) Elevator box

7) Concrete plaster

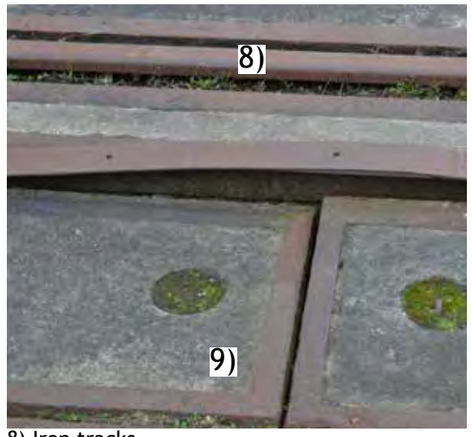
85)

Sources
Own illustrations and photos

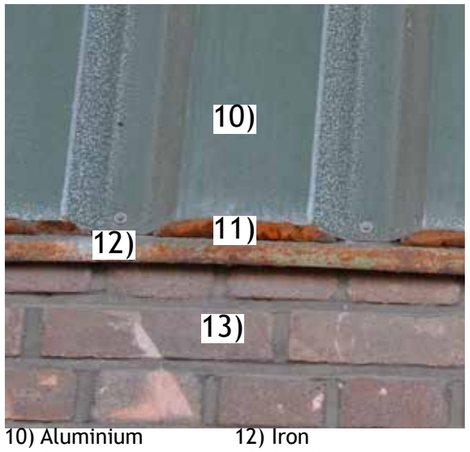
MATERIALISATION
1941-1952

FINDINGS
In the second period, brick walls and aluminium window frame was added.

CONCLUSION
The additional materials were mainly brick walls, due to the reconstruction of the north façade.

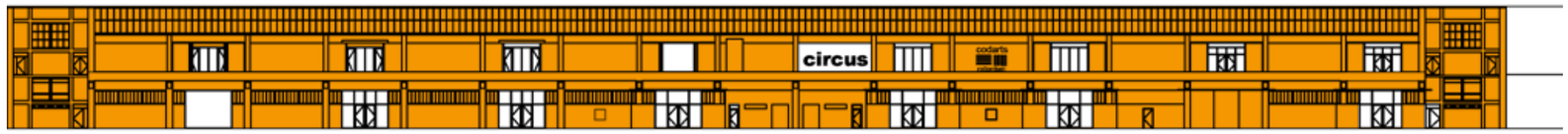


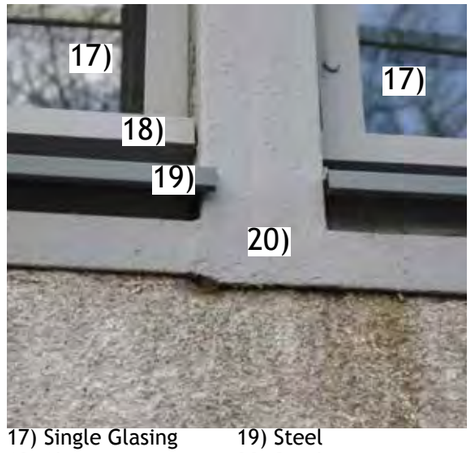
8) Iron tracks
9) Concrete slabs



10) Aluminium
11) Purr
12) Iron
13) Brick

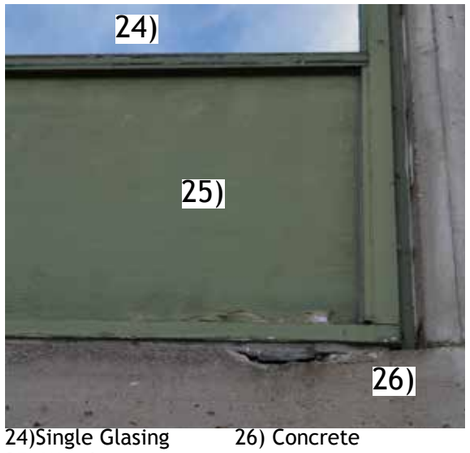
14) Concrete
15) Wood
16) Steel





17) Single Glasing
18) Aluminium
19) Steel
20) Steel

21) Brick
22) Wood
23) Steel



24)Single Glasing
25) Wood
26) Concrete

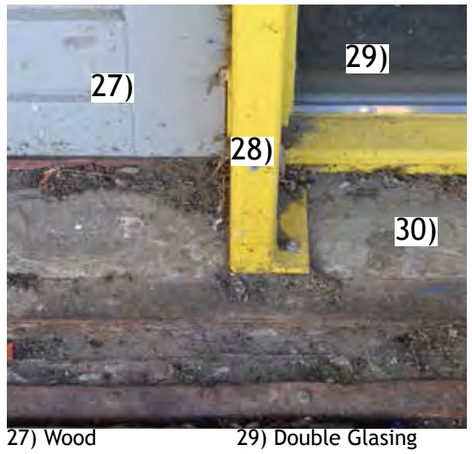
86)

Sources
Own illustrations and photos

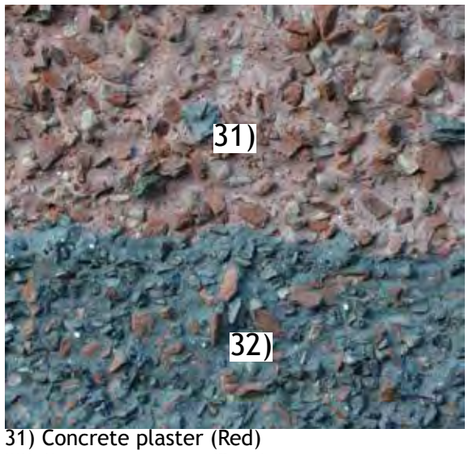
MATERIALISATION
2012-PRESENT

FINDINGS
In the last period, double glazing was installed and concrete plaster had been applied with small popping surfaces which in first period was smooth surface. The color of red had also been applied and made a strong expression of the south façade.

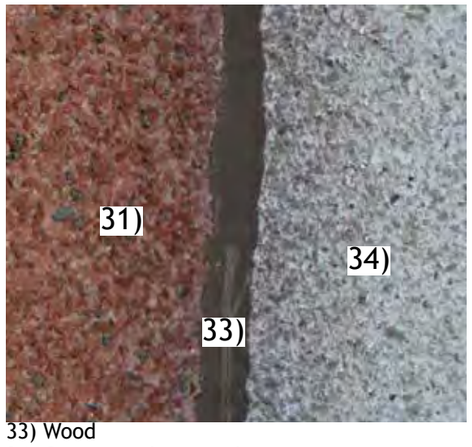
CONCLUSION
The applied materials has changed the character of façade, such as the texture of column surface and color.



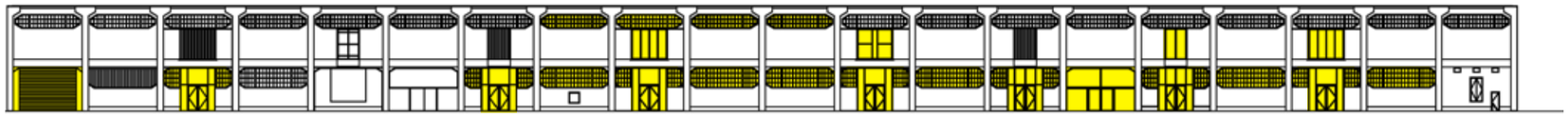
27) Wood
28) Steel
29) Double Glasing
30) Concrete

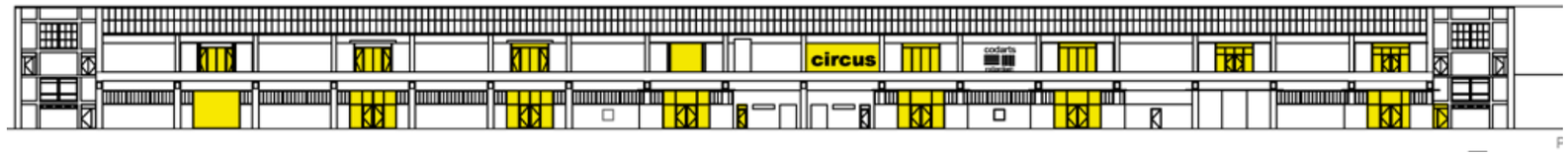


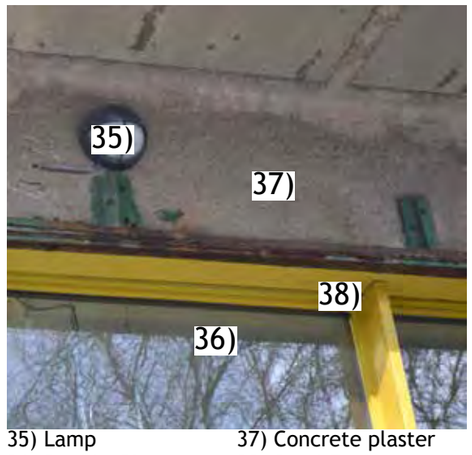
31) Concrete plaster (Red)
32) Concrete plaster (Blue)



33) Wood
34) Concrete plaster (white)







35) Lamp
36) Double Glasing
37) Concrete plaster
38) Steel Frame

39) Concrete structure
40) Wood infill

41) Plastic roll up doors

87)

Sources
Own illustrations and photos

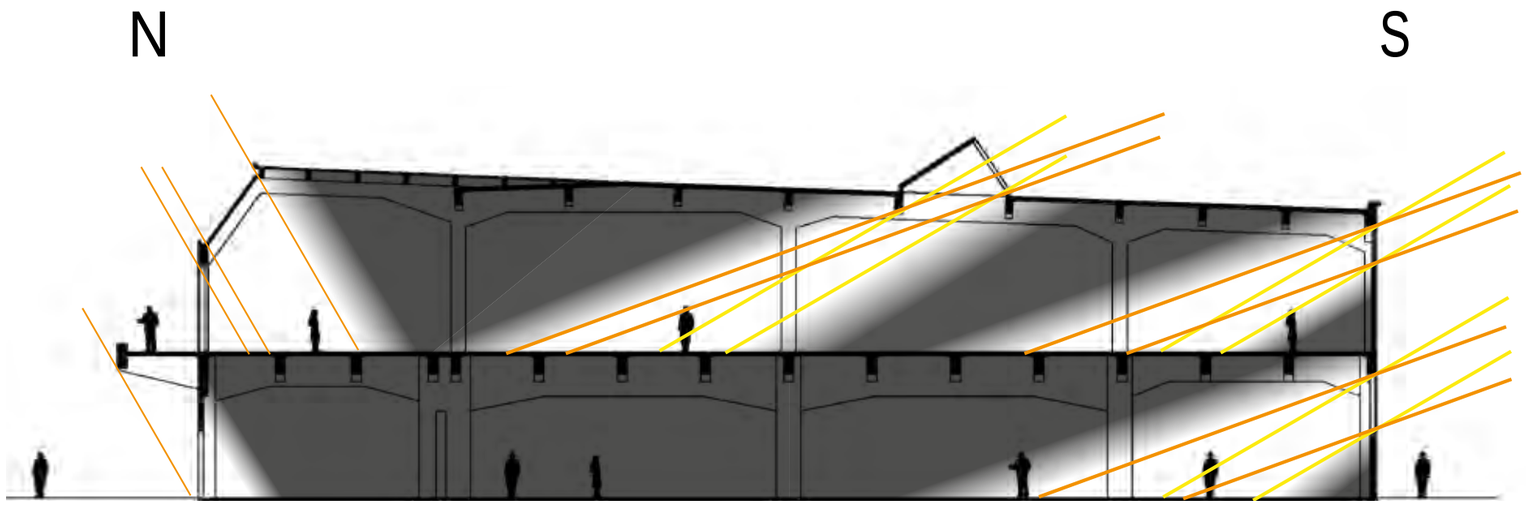
SUNSTUDY
SUNLIGHT ANGLE

QUESTION
This research is conducted to see how the sunlight falls on the building and how the shade falls on the quay.

METHODOLOGY
By making a 3D mass model in sketchup of the site and its surroundings, the shadows that the buildings make can be made visible.

FINDINGS
From the south façade, natural light comes in quite far into the building, one third of the entire space. Especially on first floor, the entire space was very bright and full of natural light, due to the south opening, the skylight, and side window; sufficient natural light introduce reduces the need of artificial light. In contrast, on ground floor, the middle part of the space was quite dark; artificial light needs to be added.

CONCLUSION
On ground floor, the middle part of the space was quite dark. In contrast, on first floor, the entire space was very bright and full of natural light, due to the south opening, the skylight, and side window. The agreeable atmosphere can be felt on first floor.



88)

Sources
Own illustrations

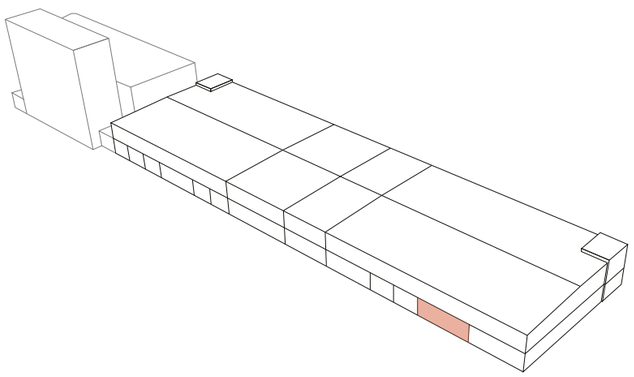
ATMOSPHERE
FOOD FACTORY

QUESTION
This research is conducted to understand the atmosphere or character of the space.

METHODOLOGY
By sketching the space and representing the atmosphere during visits.

FINDINGS
Fenix Food Factory is the biggest space on the ground floor, but it does not express the enormous open space. Instead, the space is full with venders, tables, and chairs. The atmosphere is lively, crowded, and warm market experience, with a smell of delicious food.

CONCLUSION
Lively and warm market experience



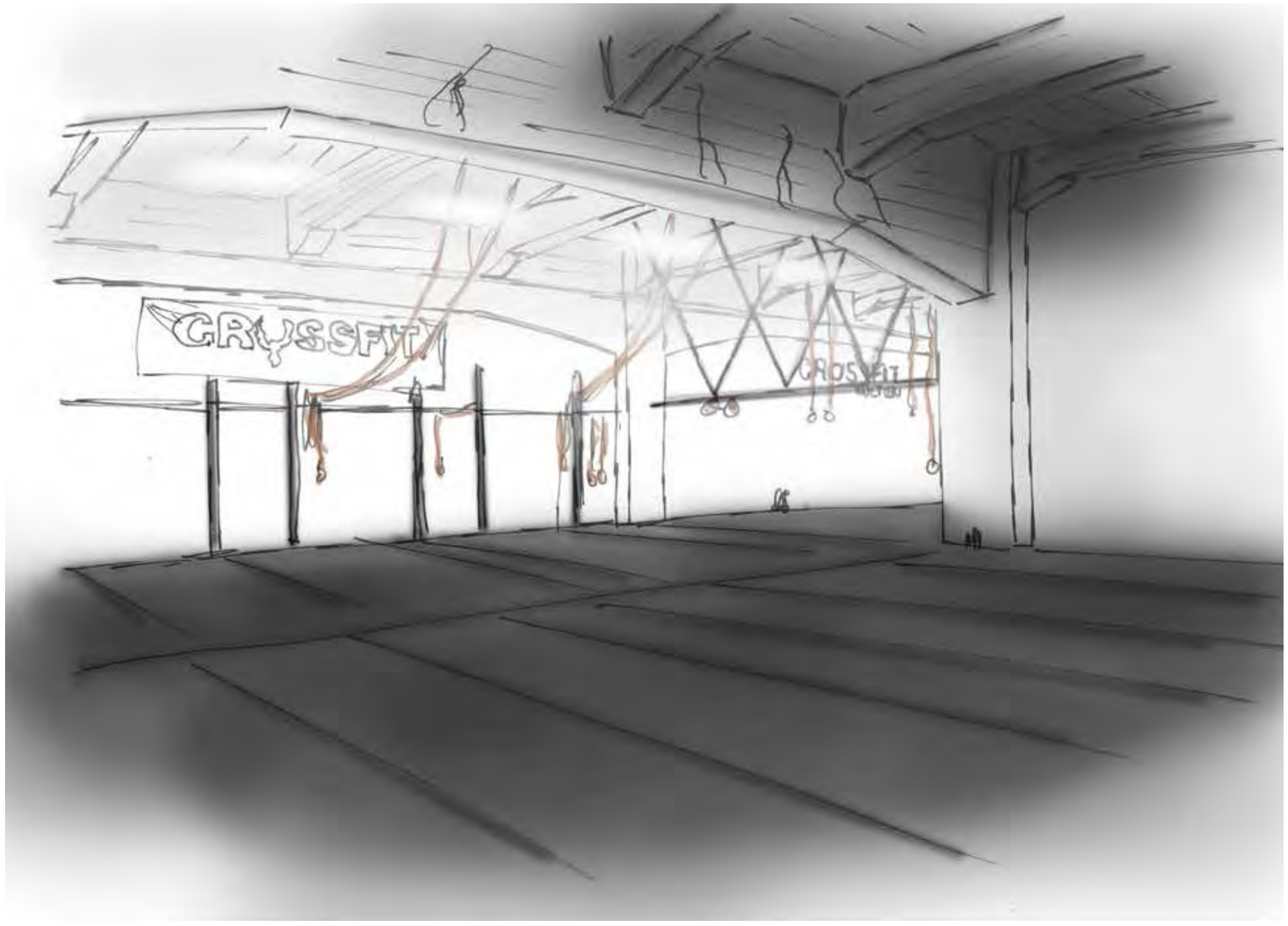
89)

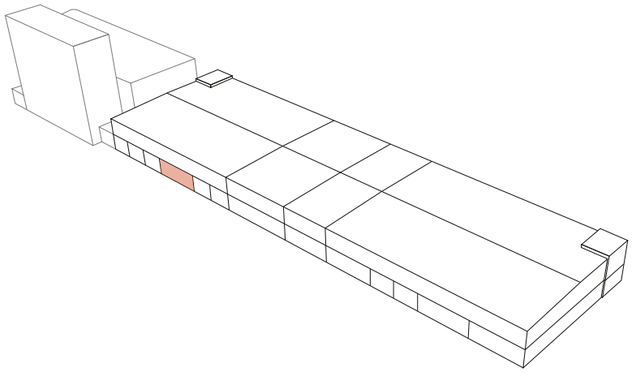
Sources
Own illustrations

ATMOSPHERE
CROSSFIT NULTIEN

FINDINGS
It shows very different atmosphere in crossfit Nultien than Fenix Food Factory. Along with the sport related facilities and materials, the atmosphere is cold, tough, and sportive. Even though the entire space is only two spans, it feel much larger, contrasting Food Factory full of small items. The space is functional orientated, and the natural light introduce makes the space larger and open.

CONCLUSION
In contrast, the atmosphere in crossfit is cold and functional with the work-out facilities.





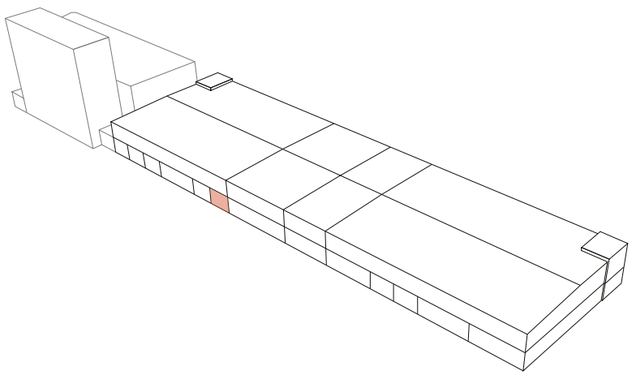
90)

Sources
Own illustrations

ATMOSPHERE
CROSSFIT NULTIEN

FINDINGS
Crooze, a bike shop, is one of these typical one grid wide shops. The space looks very long and stretching out far. Especially, with the both sides accessibility, the tunnel-like natural light is seen from the opposite side which also makes the space longer. The end light can be also seen as a guidance that something also happens on the other side. Moreover, it does not feel crowded with one grid span.

CONCLUSION
It is one of the typical division today, single span width with both sides accessibility. The end light can be also seen as a guidance that something also happens on the other side. Moreover, the space looks long but not crowded.



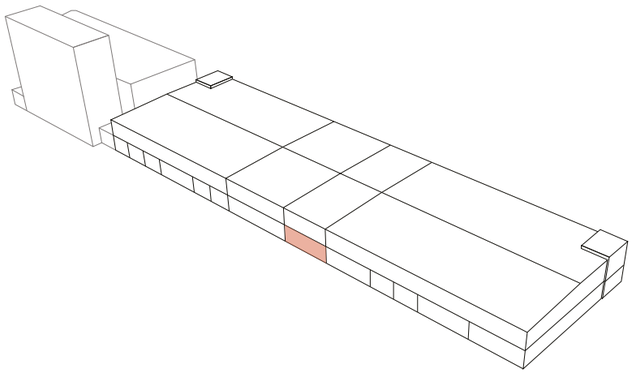
91)

Sources
Own illustrations

ATMOSPHERE
CIRCUS AND CODARTS

FINDINGS
These are the only two spaces having direct vertically connection in Fenix II. Due to the needs of circus practice and Codarts performance, there are two openings made on the floor which creates 11m high ceiling in total. The space here gives lighter and more spacious expression than standard height space, since the entire height is doubled than others and natural light comes in further to the building. Also, the applied colors give “happy” atmosphere in circus.

CONCLUSION
These are the only two spaces having direct vertically connection in Fenix II. The space here gives lighter and more spacious expression than standard height space

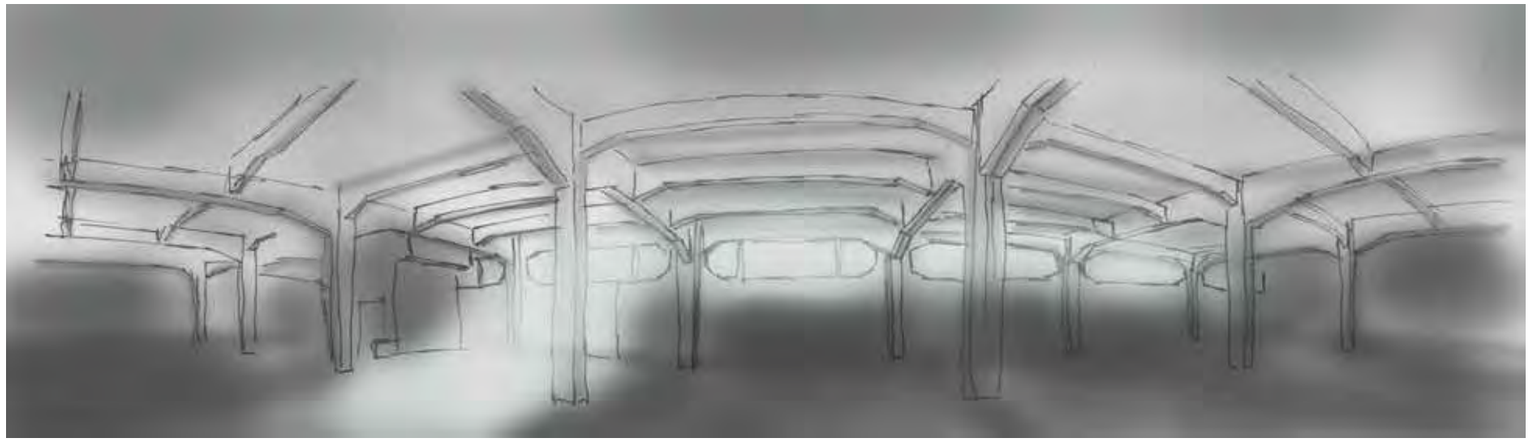


92)

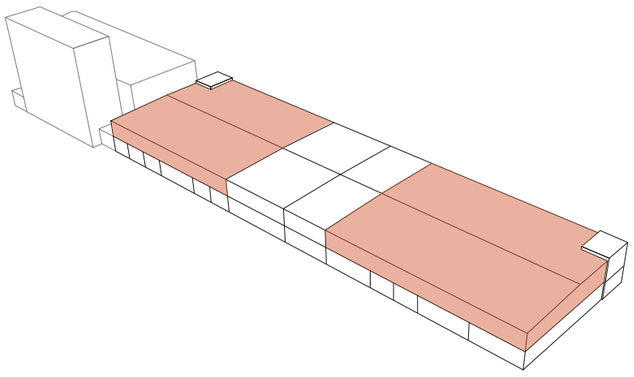
Sources
Own illustrations

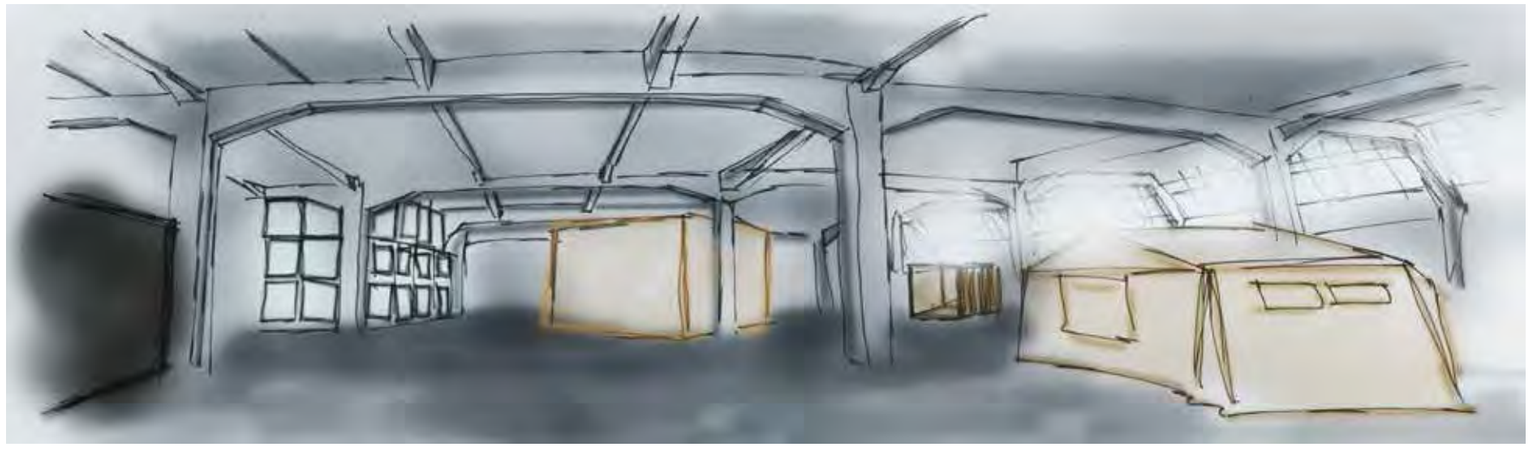
ATMOSPHERE
CIRCUS AND CODARTS

FINDINGS
On first floor, the entire floor is divided into two large open space. It gives enormous and open expression; the structure system stands out clearly with few items around. This space shows the character of the space vividly: the shape of structure, the texture of casting concrete, and natural light spread inside. It shows more cold and industrial, however, bright spatial quality. Especially, when the weather is bad, it gives the feeling of tranquil and isolated from the noisy surrounding. The sounds of rainfall and wind acts as lively background, and it can be experienced indoor as it is outdoor. The poorly enclosed space creates shelter like experience, rather than a perfectly enclosed and protected space quality.



CONCLUSION
Especially, when the weather is bad, it gives the feeling of tranquil and isolated from the noisy surrounding. The sounds of rainfall and wind acts as lively background, and it can be experienced indoor as it is outdoor.





93)

Sources
Own illustrations

HERITAGE & ARCHITECTURE

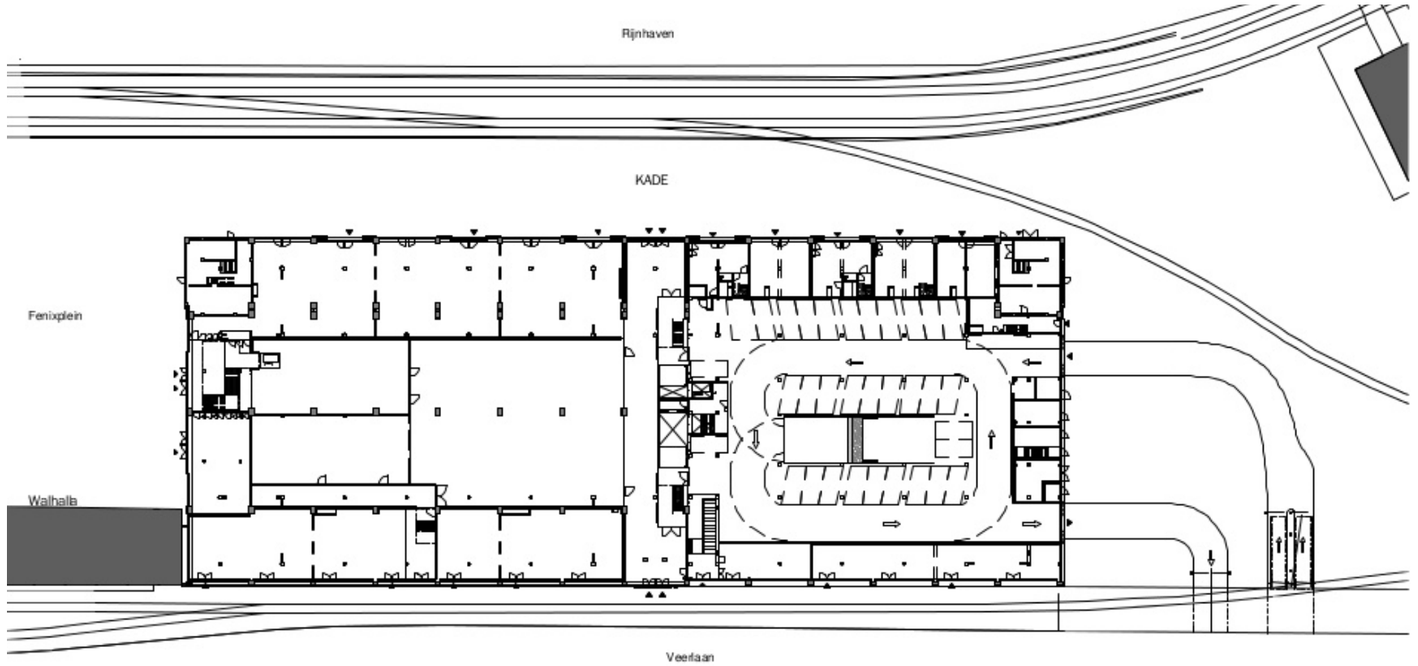
ARCHITECTURAL ANALYSES
FUTURE PLANS

FENIX I
NEW DWELLING COMPLEX

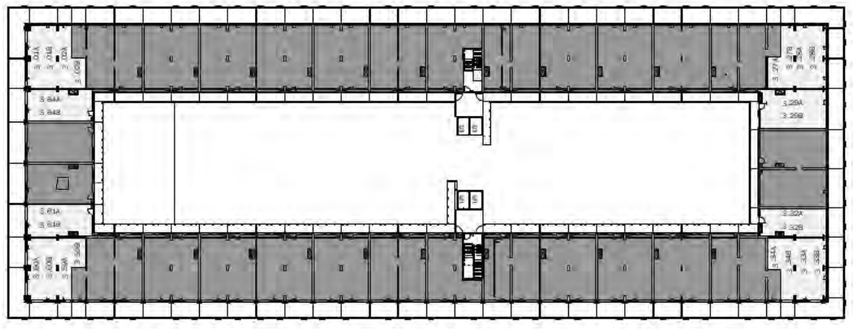
QUESTION
This research is conducted to understand the future function of Fenix I.

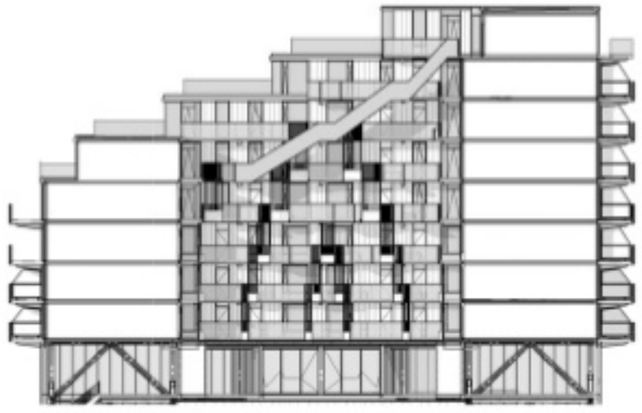
METHODOLOGY
By looking at floor plans found on official Fenixloft website, the proposed plans can be seen.

FINDINGS
The reprograming of dwelling in Fenix I has initiated by Mei architects and planners in 2011, called Fenixloft. The official demolishment has started in 2015 and still been in process today (2017). The project is expected to be completed with renewal in 2018.
The provided units are around 130 in total; the size of dwelling are from 81 to 186 m². Fenixloft will grow much larger when it is completed. One interesting fact is that partially ground floor and first floor programs will be proposed and decided by Fenixloft inhabits.



CONCLUSION
Due to the close historical connection between Fenix I and Fenix II, the newly provided programs in Fenixloft should be also concerned in the future design.





Fenixplein-zijde

Sources
Mei architects and planners,2012
Ontwikkelaars & N.V., 2014

94)

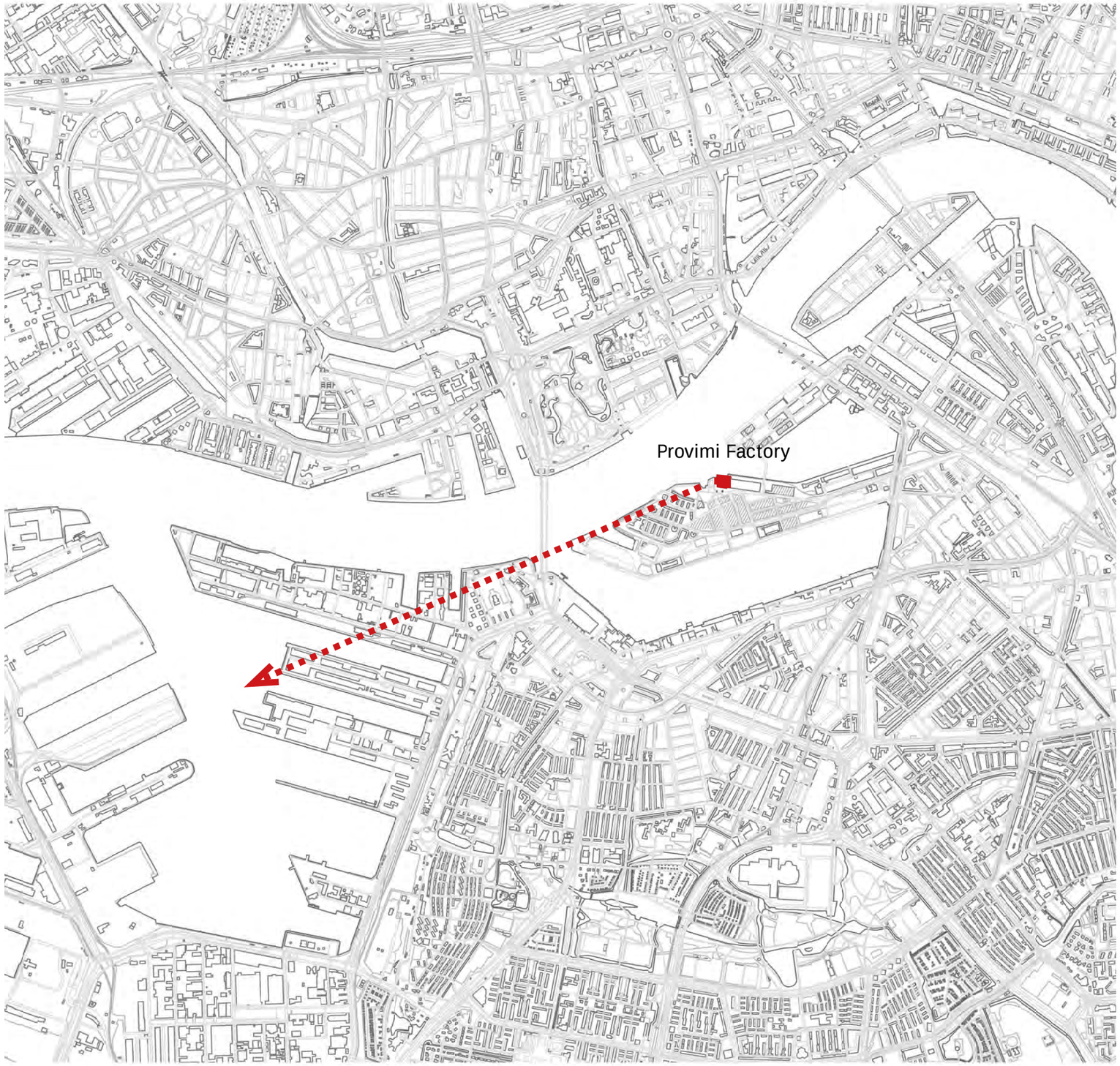
PROVIMI FACTORY
RELOCATION

QUESTION
This research is conducted to understand the future possibility of Provimi Factory.

METHODOLOGY
By visiting Provimi Factory, the space usage and requirements can be understood.

FINDINGS
Provimi Factory was built in 1969, taking dwelling part of San Francisco. A silo system was added on south side and covered the original façade from 1916. The additional extension was made later, mainly in light structure, such aluminium structure system and metal panels on waterfront and rooftop of previous dwelling volume.
Provimi Factory acts as the last trace of industrial harbour history in Rijnhaven, and located in residential area on Katendrecht. The traffic of trucks disrupts the connection for pedestrians, from both aspects of surrounding neighbourhood and external visitors. The main issues will be the relation between Fenix II: circulations for passenger and trucks and interruption to greenery on west side. Assumingly, there is a high possibility for the factory to leave Katendrecht and relocate in a more suitable place in the future.

CONCLUSION
Provimi Factory acts as the last trace of industrial harbour history in Rijnhaven. However, the factory function does not fit into surrounding residential area anymore. The traffic of trucks disrupts the connection for pedestrians, from both aspects of surrounding neighbourhood and external visitors. Assumingly, there is a high possibility for the factory to leave Katendrecht in the future.



95)

Sources
Own illustrations

CONCLUSION

GENERAL

In order to understand Fenix II, different scales and aspects have been analysed from urban level, site level, and building level in architectural approaches. Overall, the available information in Rotterdam City Archive is still limited; the visits of Fenix II private space as Biennale Rotterdam on first floor and Provimi factory interior were made. Besides that, the analyses also focused on the history background, previous and current usage, and space quality; some assumptions were made during the analyses.

REFLECTION

URBAN LEVEL

The location is well connected with public transportation, and it can be further integrated with Kop van Zuid as culture and commercial area. The neighborhood, Katendrecht has transformed from a small village, lively industrial habor, and then into a hipster and multiple function area today. Current situation has the potential to contain different programs than just dwelling and enriches the entire area in the future.

SITE LEVEL

The north side has great potential, not only being the first row on waterfront to show the entire facade at once, but also closely connected with Kop van Zuid developed area by Rijnhaven Bridge. However, the current situation is interrupted by parking space and poorly maintained pavement. Moreover, the tracks are still visible and kept to inditcate the former role of the buiding.

The in-between square of Fenix I and II also shows interesting possibilities, connection and maybe showing once the same building character.

Nature elements on Katendrecht are only in few layers and dimensions. The segregation happens on waterfront, parks, and public square (Deliplein). The integration and reconnection should be addressed.

The current surrounding is mainly dwelling, relatively quiet approaching from south side. What is the capacity of the neighborhood to a lively public and semi-public space?

BUILDING LEVEL

Fenix II is a repetitive building, through its structure and facade elements. It shows itself with simple and direct rhythm and materials. The shape of the original reinforced concrete is the main character of Fenix II; the shape of window openings also run along with the structure. The original character of the building can be seen in the south façade and interior structure system. The trace of warehouse can be seen from the facade and outside pavement. Turning to space arrangement, Fenix II was once an entirely open space for transporting and storing good; various divisions are made to suit current situation, which change the character of the building and gives different atmosphere.

SURROUNDING BUILDINGS

FENIX I

The other remained part of San Francisco warehouse is Fenix. Fenix I is now under transformation into dwelling. Should it be reconnected with these two identical buildings? How can the future programs benefit and support each other?

PROVIMI FACTORY

Provimi Factory acts as the last trace of industrial harbour history in Rijnhaven, and located in residential area on Katendrecht; it currently covers the original façade expression and volume with the later extension. The main issue will be the relation between Fenix II: circulations for passenger and trucks, interruption to greenery on west side, and future plan of leaving or staying on Katendrecht.

HERITAGE & ARCHITECTURE

TECHNICAL ANALYSES

INTRODUCTION

PURPOSE OF THE REPORT

There are two topics will be mentioned in order to understand Fenix II and how it works in technological aspects: Historical Analyses, and Building Analyses.

Firstly, the history of Fenix II transformation has been shown: the original entirety, reconstruction and new additional structure and façade, and later new structural openings.

Turing to second part, current technical analyses, the structure system has been shown in elements. By using rules of thumbs in concrete nowadays, comparisons have been made, in order to check the structure dimensions. The main materials applied in the building has been noted, followed with some details. Lastly, the damage on the building have been pointed out in levels and understood the causes.

METHODOLOGY

Frist of all, there was very limited provided information on TU Delft Black Board. The first step was to visit Rotterdam City Archive to gather essential information as much as possible, such as previous drawings and photos from different periods. Secondly, visit of Nieuwe Instituut for the archives was planned, mainly for the background of architect, C. N. van Goor, who designed San Francisco Loods(original building for Fenix I and Fenix II). There is also information found on newspaper, articles on internet. Finally, many times of site visiting was the important input as well. The Fenix II archives were redrawn by ourselves. With these knowledge, the analyses were made, discussed, and realized.

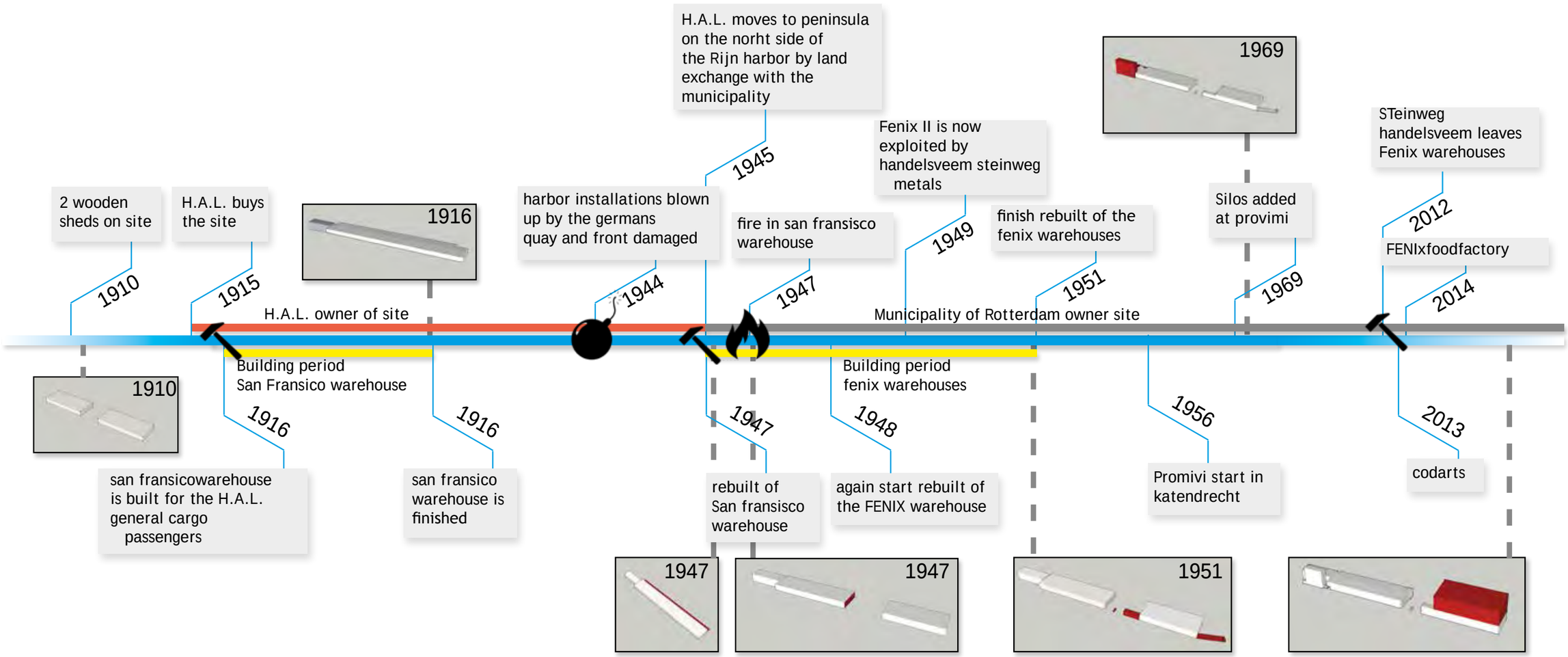
* Drawings and photographs are ours; unless it is stated.

HERITAGE & ARCHITECTURE

TECHNICAL ANALYSES
HISTORICAL ANALYSES

HISTORIC BACKGROUND
SAN FRANCISCO WAREHOUSE TO FENIX I & II

*** Referred to page 46**



Sources

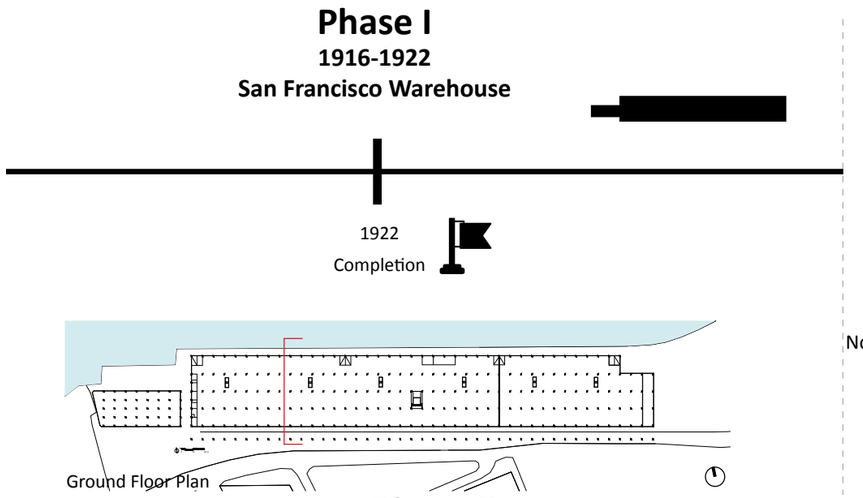
Borselen, 1995
Does, 2004
Klaassen, 1992
Rotterdam City Archive, 2017
Soeters & Speksnijder, 1990
Wolters, 2002a, 2002b

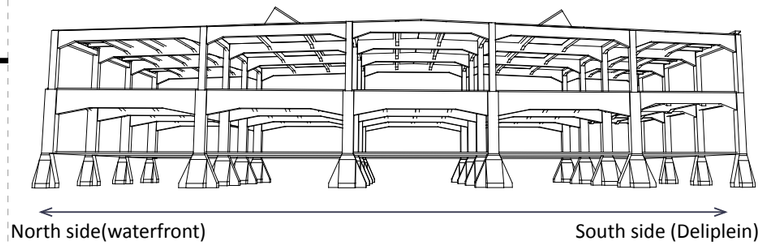
Own Illustrations

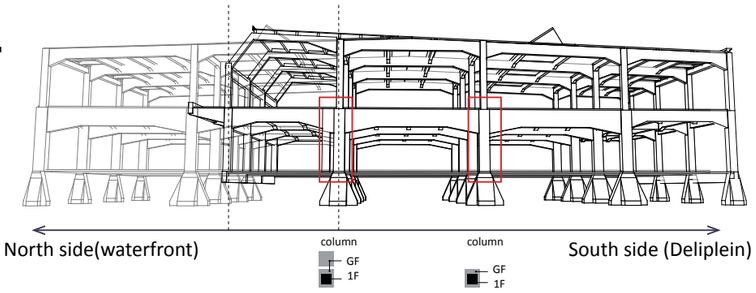
HISTORIC BACKGROUND
TRANSFORMATION OF THE BUILDING

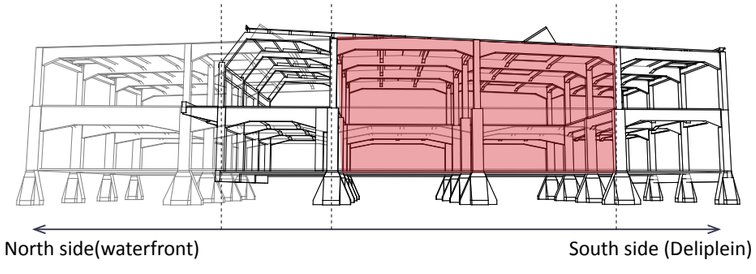
*** Referred to page 34-37**

CONCLUSION
There are 3 major phases in the building transformation. The building, San Francisco warehouse, was divided into Fenix 1 and Fenix 2 due to fire damage. The accessibility to ground floor and first floor changed, due to different programs applied.









Sources
Own illustrations

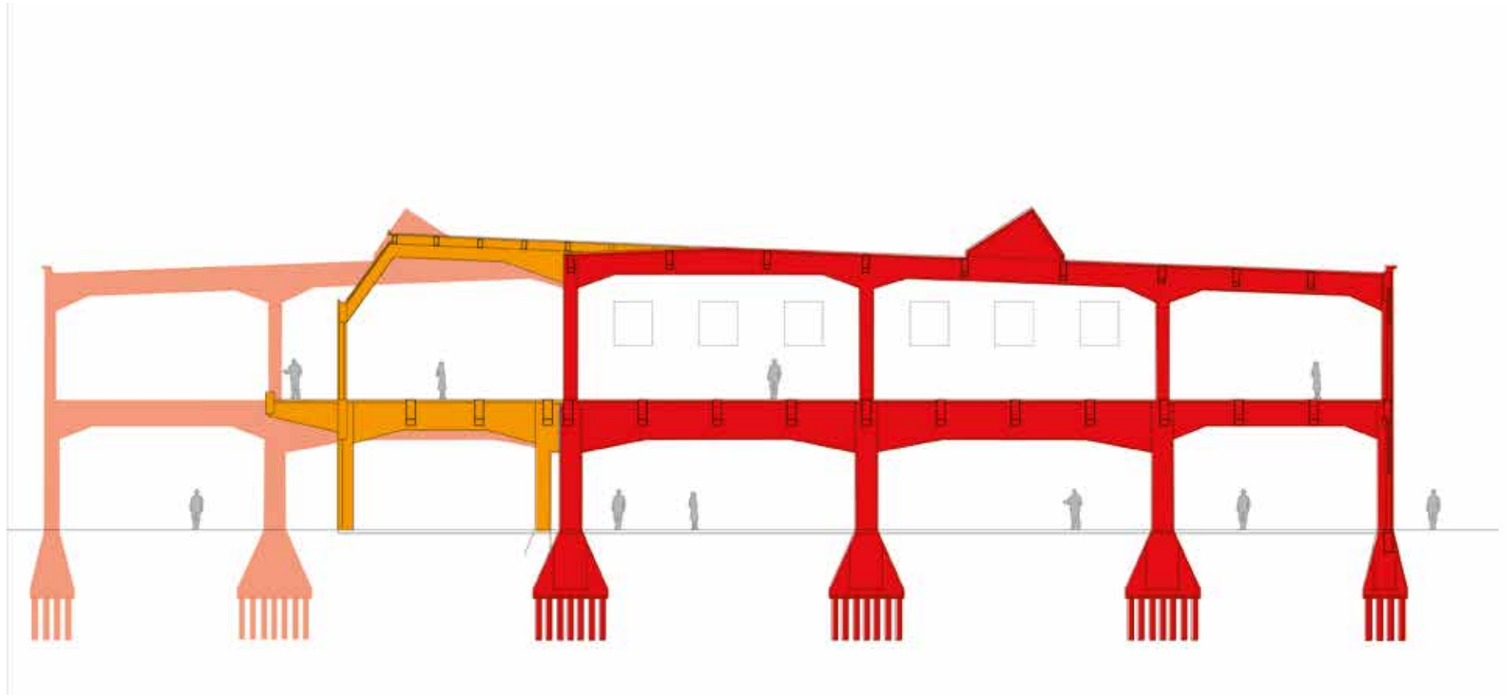
CHRONOMAPING
HISTORY OF STRUCTURE

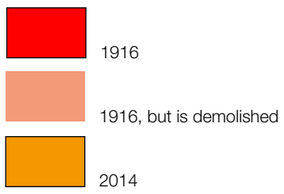
QUESTION
This research is conducted to understand the history of the construction.

METHODOLOGY
By looking at the plans and overlapped with different periods.

FINDINGS
The original part of San Francisco is well-preserved, except the reconstruction on north side (waterfront) due to WWII and fire damage. In phase 2, the shape of the additional structure had changed the appearance, in order to have inclined side window which provides much natural day light. However, the new additional structure follows the original dimension. Moreover, the building has recession on north side which creates more waterfront space. In the phase 3, two new structural openings were made to have 11 m high ceiling, and some wall divisions were added.

CONCLUSION
The original part of San Francisco is well-preserved, except the reconstruction on north side (waterfront). The new structure has been added and provided different shape of structure.





Sources
Own Illustrations

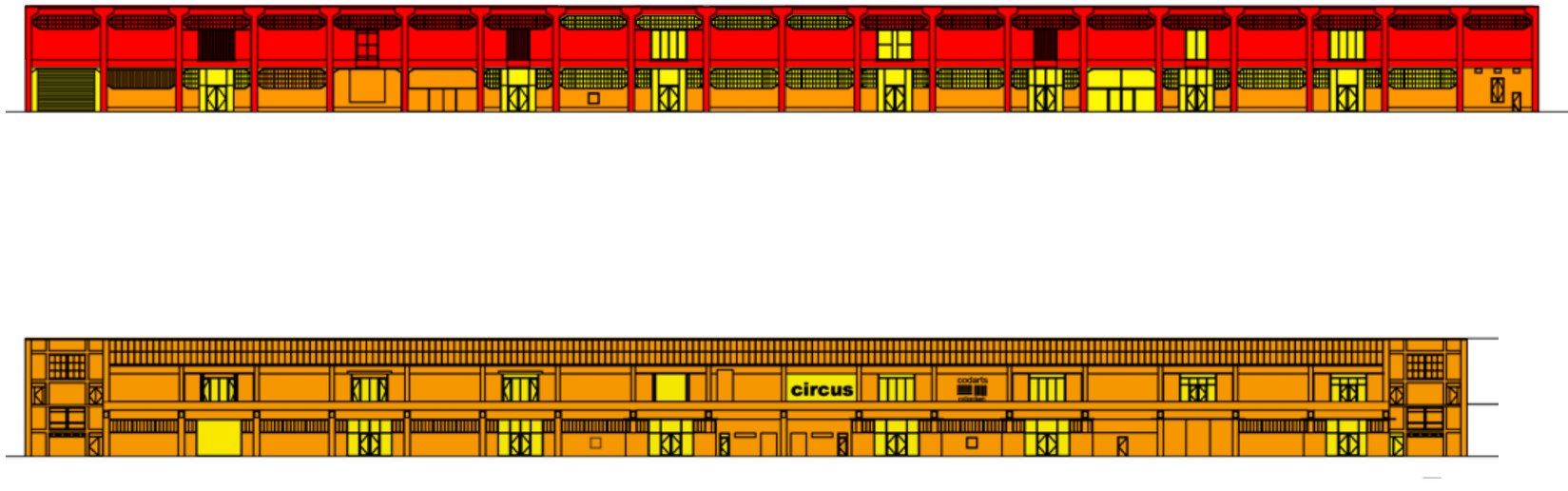
CHRONOMAPING
HISTORY OF FAÇADES

QUESTION
This research is conducted to understand the history of facades.

METHODOLOGY
By looking at the plans over the years and overlapped with different periods.

FINDINGS
The original part of San Francisco is well-preserved, except the reconstruction on north side (waterfront) due to WWII and fire damage. In phase 2, the shape of the additional structure had changed the appearance, in order to have inclined side window which provides much natural day light. However, the new additional structure follows the original dimension. Moreover, the building has recession on north side which creates more waterfront space. In the phase 3, two new structural openings were made to have 11 m high ceiling, and some wall divisions were added.

CONCLUSION
The original part of San Francisco is well-preserved, except the reconstruction on north side (waterfront). The new structure has been added and provided different shape of structure.



1916

1951

2014

Sources
Own Illustrations

HERITAGE & ARCHITECTURE

TECHNICAL ANALYSES
BUILDING ANALYSES

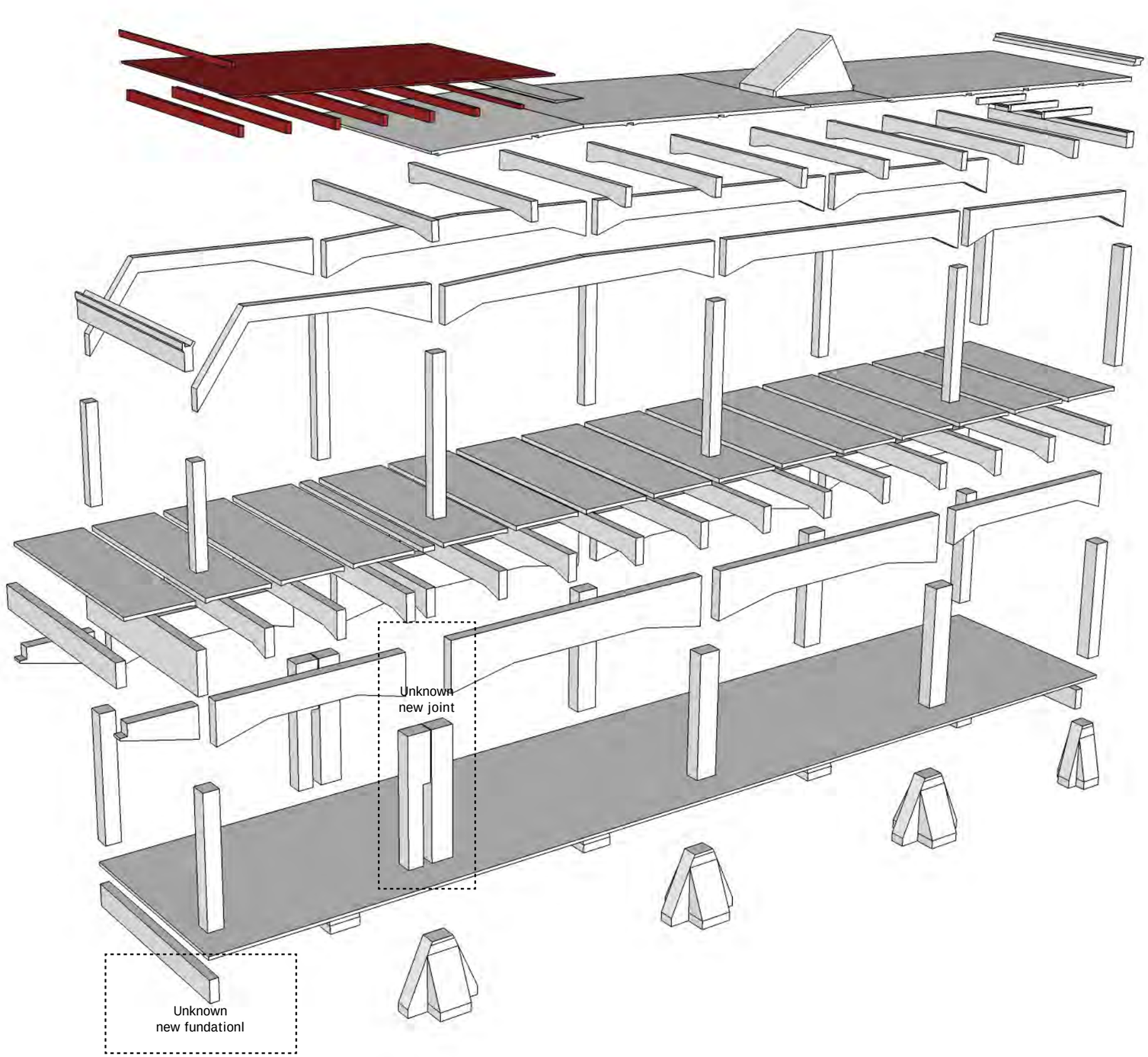
STRUCTURE SYSTEM

QUESTION
This research is conducted to understand how the building is constructed.

METHODOLOGY
By looking at all the different building elements, in order to understand the structure system and how the building was built.

FINDINGS
San Francisco warehouse was built in 1916. The structure system is assumingly inspired by Hennebique system, built in reinforced concrete. The entire structure system: columns, beams and floors were monolithic and casted on situ. In the second phase of reconstruction in 1951, the new additional main structure was also reinforced and casted on situ, and only using the prefab concrete slabs and beams for the new roof structure. The original and additional structure materials are all reinforced concrete, casted on situ, which gives the consistent appearance and atmosphere. The only unclear part is the new foundation. The information of the new addition part is very limited. Without further information, we can only assume the new addition foundation is the same type of previous foundation as well.

CONCLUSION
The original and additional structure materials are all reinforced concrete, casted on situ, which gives the consistent appearance and atmosphere.
There are some prefab elements used in reconstruction period.



100)

Sources
Jong & Winter, 1982
Own Illustrations

RULES OF THUMBS

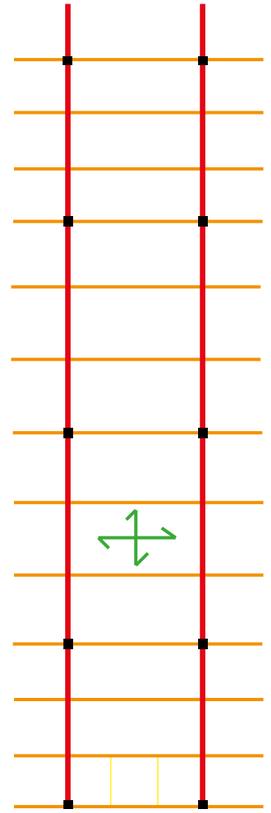
QUESTION
This research is conducted to see if the structure is over- or undersized.

METHODOLOGY
By using the rules of thumbs, rough calculations can be made for the structure.

FINDINGS
According to the rules of thumbs, the primary beams are oversized. It can be assumed to bare the various weight of unknown goods. On ground floor, the columns are oversized and smaller than first floor due to lower height. However, the calculation is based on single flooring. It makes sense these columns are bigger than calculation, since these columns also bare the load of the first floor and the roof. The floors are in line with the rules.

CONCLUSION
The dimension was built in an efficient way, not oversized comparing to rules of thumbs today.

Rules of thumbs



Roof beams
Concrete - cast in situ - continuas field -> 1/12.5 x Lenght span = Height beam

Lenght span:

primairy beam - L = 12870 mm	> 1029.6 mm	current 1100 mm
secundairy beam - L = 8100 mm	> 648 mm	current 700 mm
tertiairy beam - L = 3240 mm	> 259.2 mm	current 300 mm

Beams
Concrete - cast in situ - continuas field -> 1/14.5 x Length span = Height beam

Lenght span:

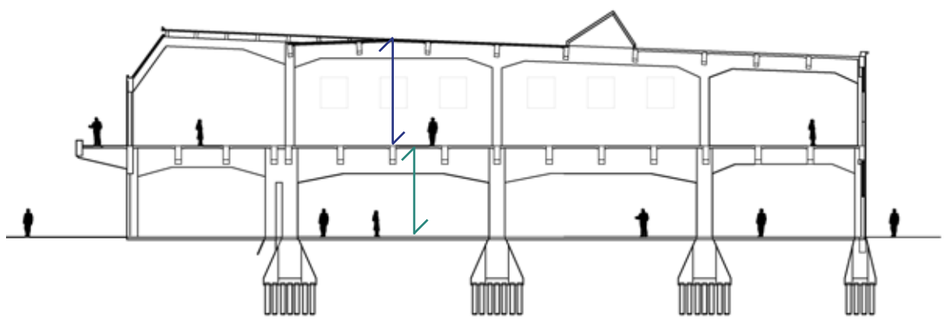
primairy beam - L = 12870 mm	> 887.6 mm	current 1080 mm
secundairy beam - L = 8100 mm	> 558.6 mm	current 900 mm
tertiairy beam - L = 3240 mm	> 223.5 mm	current 300 mm

Floors
Concrete - cast in situ - linear bearings - supported on both sides -> 1/32 x Length span = thinkness of the floor

Length span = 1/3 x 12870 = 4290 mm	> 145.9 mm	current 150 mm

Columns
Concrete - Multiple building layer -> Span floor to floor / 10 or Lenght of the column / 12

Span floor to floor ground floor = 5800 mm	> 580 mm	or	> 483.3 mm	current 1000x910 mm
Span floor to floor first floor = 6780 mm	> 678 mm	or	> 565 mm	current 615 x 510 mm



101)

Sources
TUDelft, 2013

CURRENT STATE OF THE LOAD BARING AND STRUCTURE
LOAD BARING
JOINT TYPE

QUESTION
In order to understand the basic load transmission of the building, Load Baring diagram and Joint Type diagram have been drawn.

METHODOLOGY
By using the diagram to indicate different load and counter force.

FINDINGS
The building has been partially demolished and added a new part to the north side. Both of these two part are made of reinforced concrete. The original part was casted at once with column, beams and floor. The information of the new addition part is very limited. Without further information. It can be assumed that the new addition structure is monolithic as well, by observing the column finishing on site. The only unclear part is the new foundation, and it can be only assumed that the new addition foundation is the same type of previous foundation as well.

The slope on the roof is only 2°, which is relatively small that it can be seen as flat roof. Distributed loads can be applied.

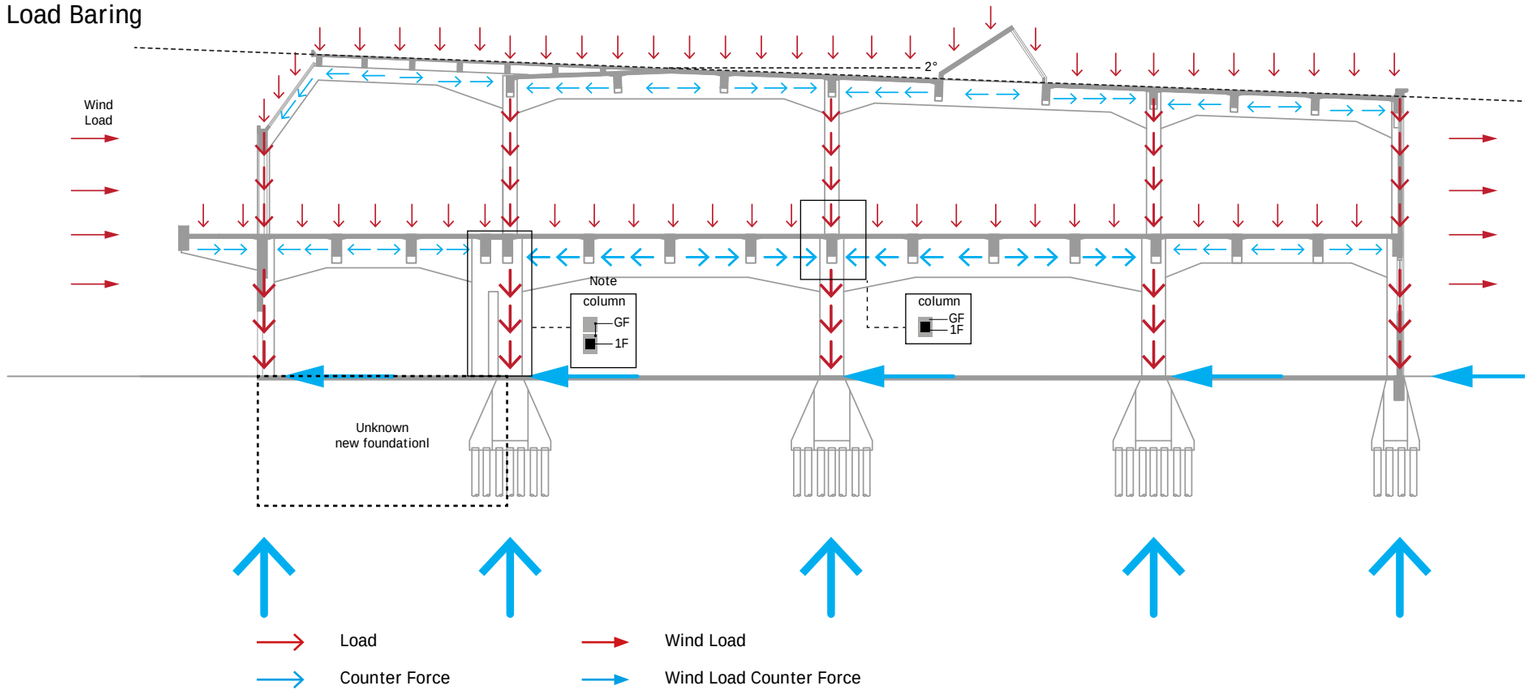
Even though the height of the first floor is higher, the ground floor structure system has been reinforced, in order to carry overall weight. Different sizes of the columns and beams can been seen.

The middle beams can be seen as the central area of the two stories building. Considering the wind loads and larger span, these beams are larger than the rest, and the number of secondary beams increases, in order to perform better resilience of wind load and stability.

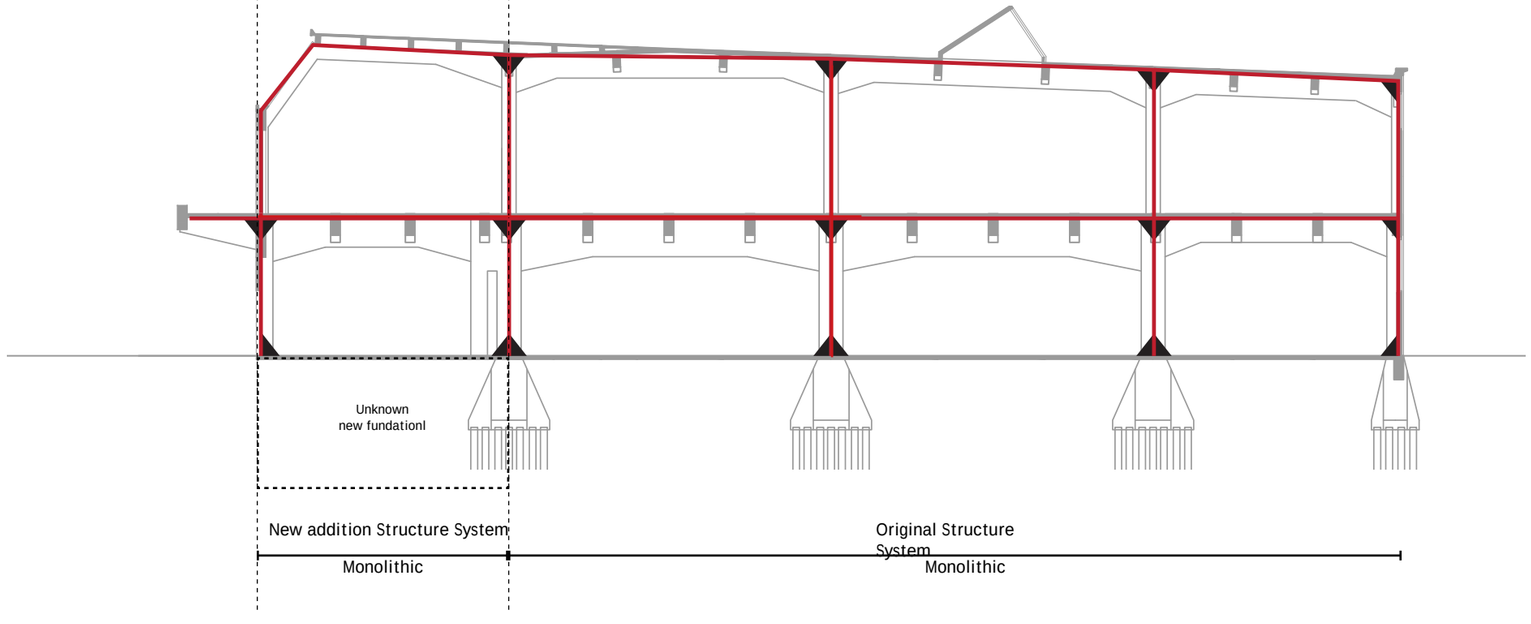
CONCLUSION
The structure is relatively symmetrical. The distributed loads can be seen with diagram clearly.

Note:
Due to the new addition structure system, the extra column was added on ground floor. However, since the extra one is not aligned with first floor column, the force will be transferred to the original column. Therefore, it can be simplified and seen as one column to transmit the force.

Load Baring



Joint Type



102)

Sources
Own Illustrations

CURRENT STATE OF THE LOAD BARING AND STRUCTURE
FLOOR SPAN

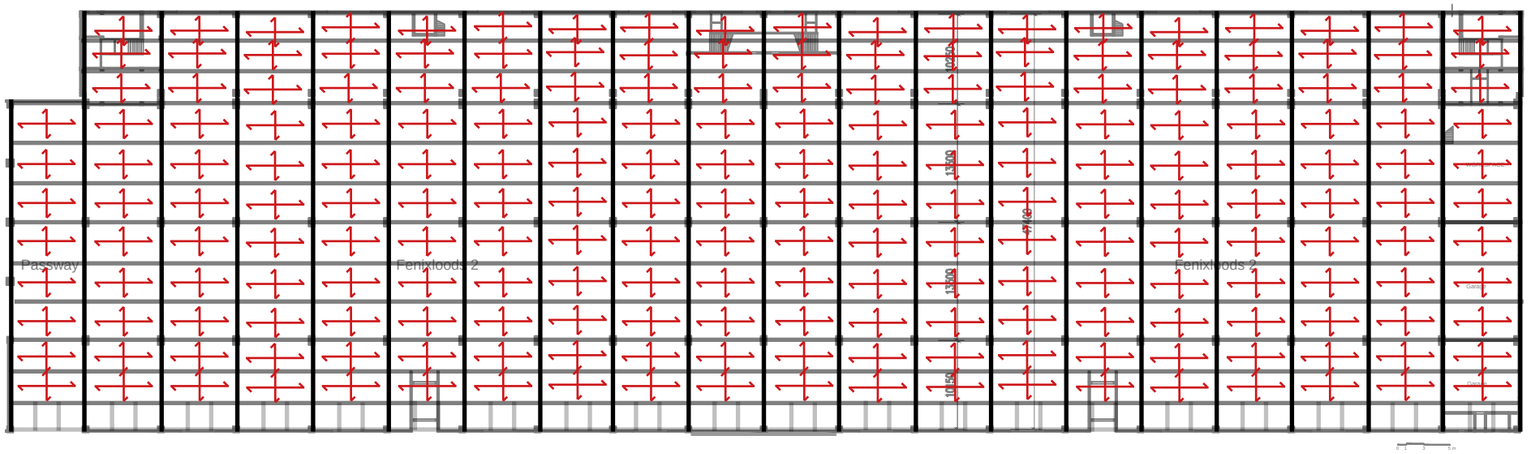
QUESTION
In order to understand the flooring baring capacity.

METHODOLOGY
By looking at the direction of the primairy and secondairy beams, the span of the floor can be determined.

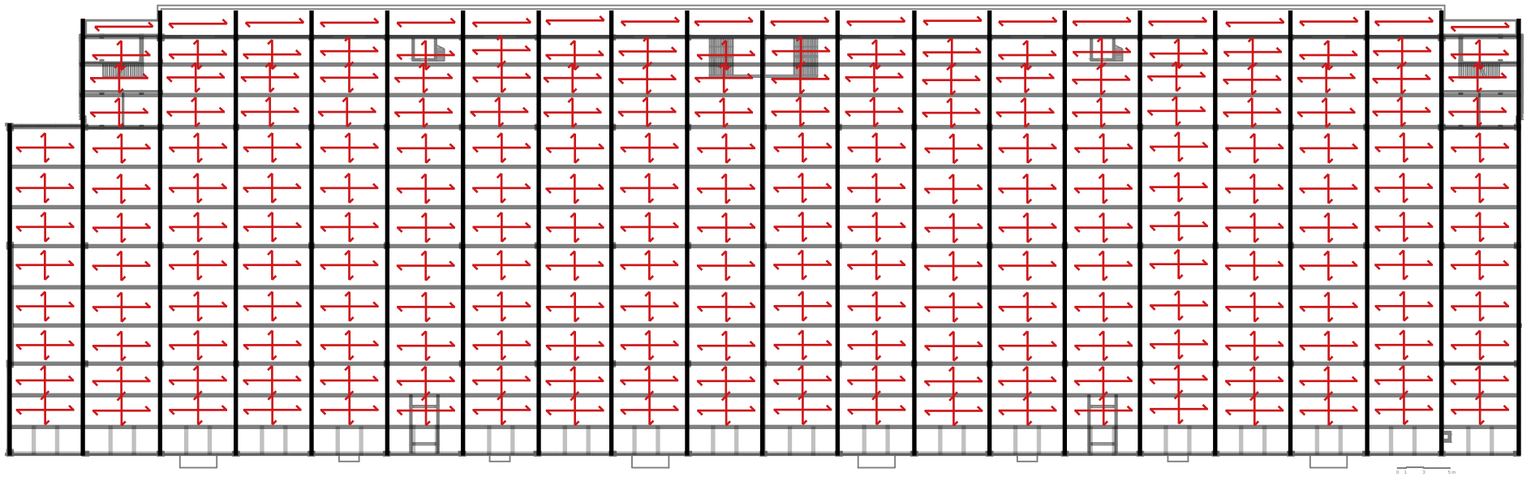
FINDINGS
The floor span is in both direction which gives better baring capacity than single span.

CONCLUSION
The structure is relatively symmetrical. The distributed loads can be seen with diagram clearly.

Ground floor plan



First floor plan



103)

Sources
Own Illustrations

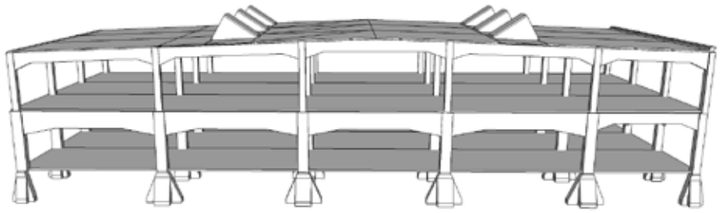
MATERIALISATION

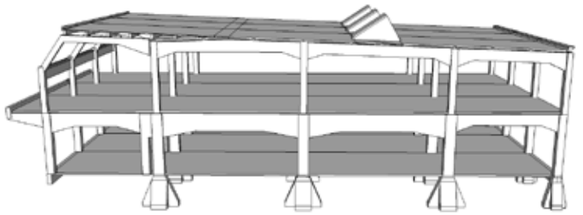
QUESTION
In order to understand the applied and existing materials in current situation.

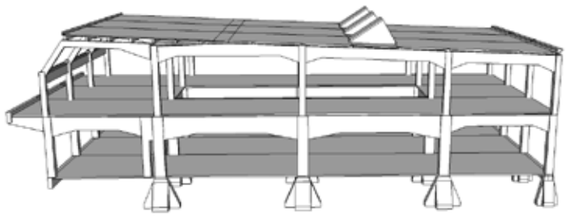
METHODOLOGY
By visiting the site and taking photos of existing materials.

FINDINGS
The main material of the building is clear: reinforced concrete. The intriguing is the connection between original and additional structure space. This connection part not only shows the height difference, due to the changing angle of roof top, but also gives almost the same expression with the material of concrete. The new additional concrete has smoother surface and the prefab concrete slab in grid lines also adds a new character to interiors.

CONCLUSION
The applied materials are almost the same: concrete. However, with different finishing, forms and construction methods, the materialization shows the dynamic character of concrete.







104)

Sources
own illustrations and photos

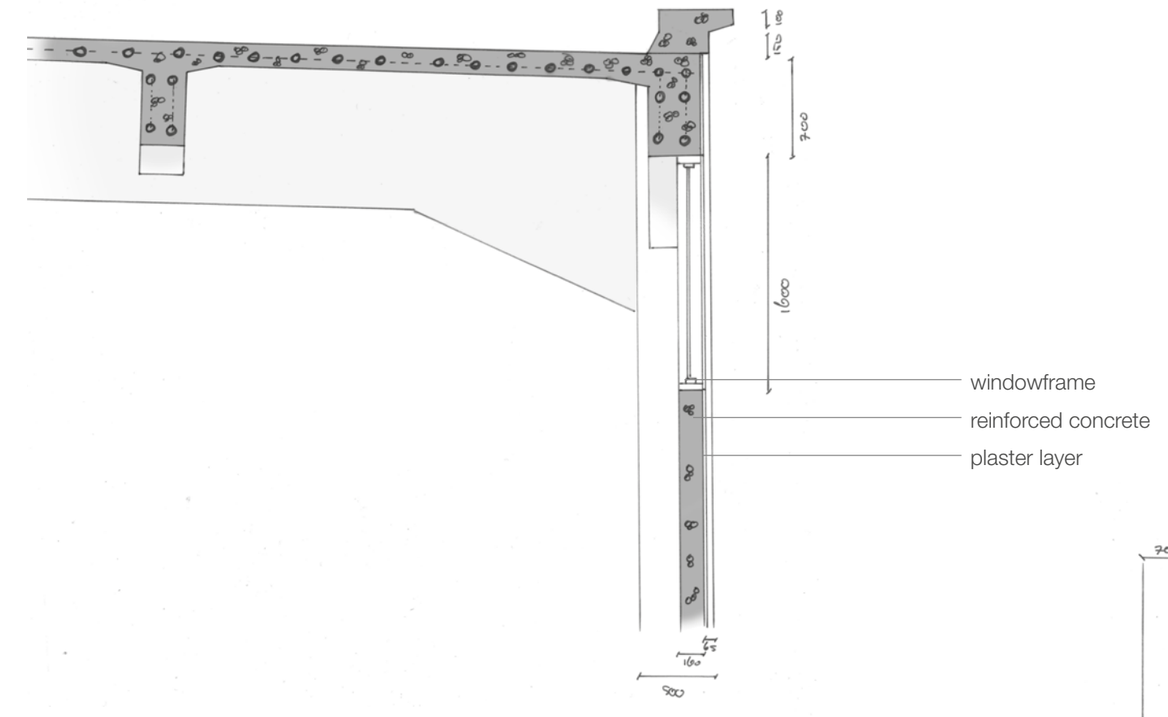
DETAILS
REPETITIVE PARTS

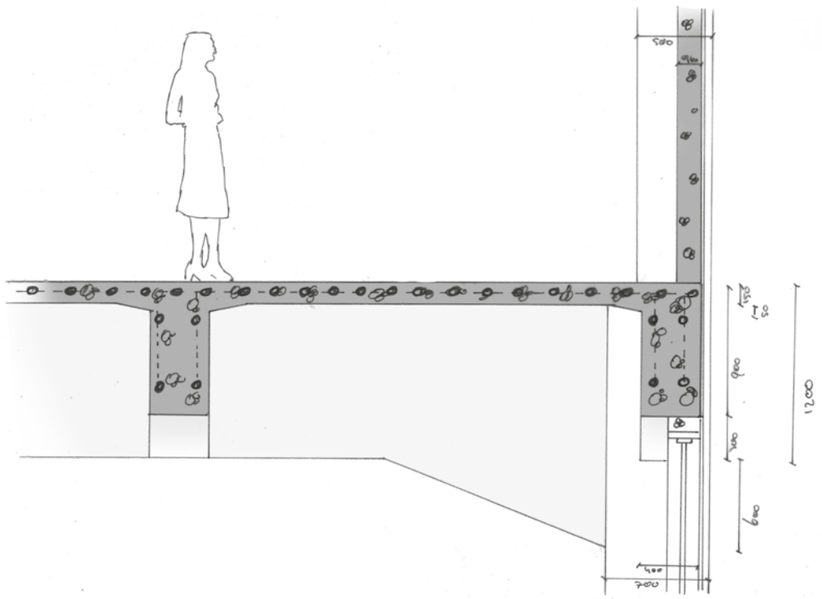
QUESTION
This research is conducted to understand how the building is built.

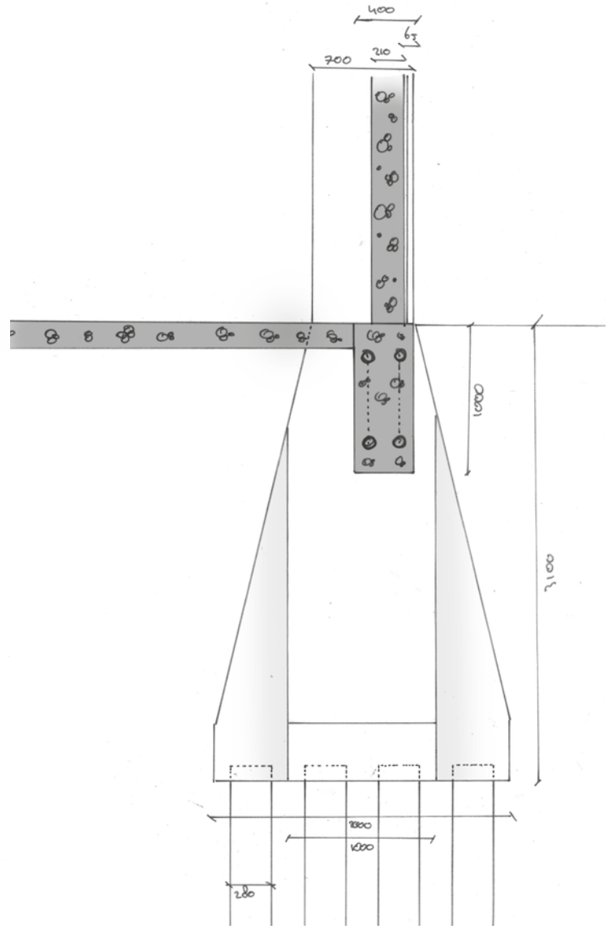
METHODOLOGY
By drawing the most seen and interesting details.

FINDINGS
The main construction method is monolithic reinforced concrete casting on situ. The large size of primary beams has lightened the space. The trace of wood casting plate can be found on each original surface built in 1916. However, on the south façade, this trace is lost and replaced by small popping plaster texture which was applied after reconstruction.

The entire building expresses itself well with the structure, without complicated decorations. Everything seems to be built in a functional aspect. However, the window frame was carefully made, metal frame followed the shape of structure.







105)

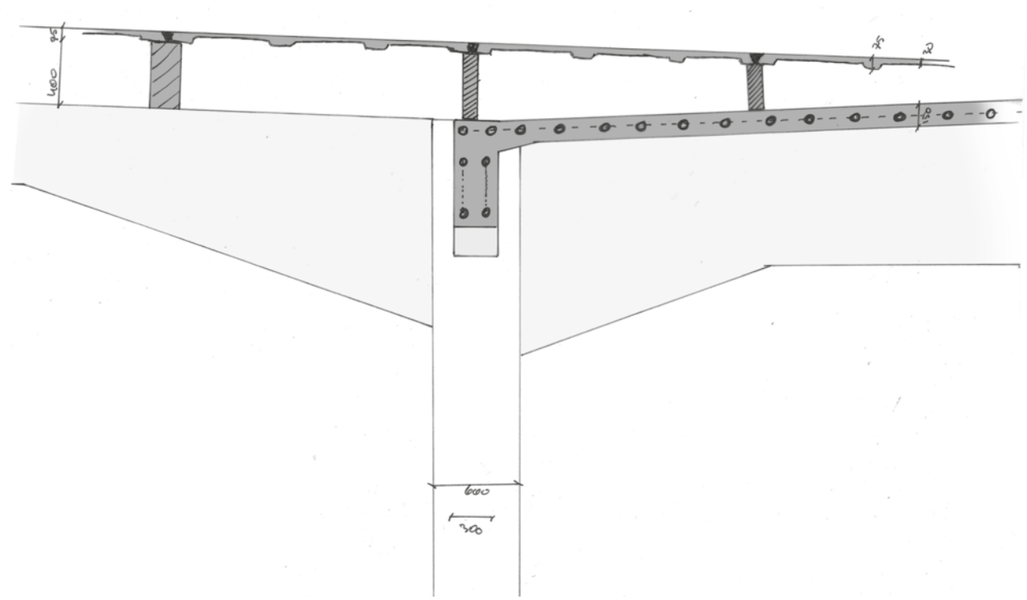
Sources
Own Illustrations

DETAILS
REPETITIVE PARTS

FINDINGS
The indoor climate was poorly maintained. On the ground floor, double glazing is placed in some palces. On the first floor, it maintains single glazing and generally poorly maintained. There is no climate system and insulation found in the building, based on the thickness of walls and assuming from previous function.

There are some minor details are unsure: the connection of side window with roof and gutter along the side window.

CONCLUSION
Details are repeated in the building. The connection of original and additional is intriguing. Everything seems to be built in a functional aspect. However, the window frame was carefully made, metal frame followed the shape of structure. Lastly, indoor climate should be taken into concern in future design/



106)

Sources
Own Illustrations

DAMAGES
SOUTH FACADE

QUESTION
This research is conducted to understand which level of damages can be found in the building.

METHODOLOGY
By observing on site and noting with photos.

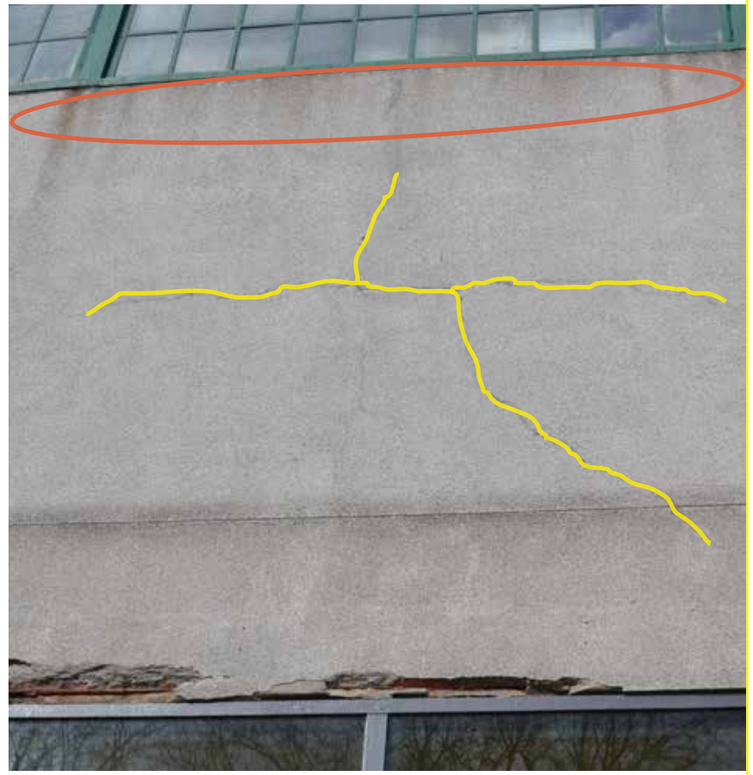
FINDINGS
Reinforcement corrosion

On the south facade there are in general three types of damages:
1. Rusting of the reinforcements which caused the concrete to spall
2. Staining on the facade
3. Some individual cracks

The rusting of the reinforcements is regularly found in this building, but the most server case is on this facade. The explanation how this can happen, by MDCS.monumentenkennis.nl.

CONCLUSION
The most serious concern is rusting reinforcements with spalling concrete.

Note:
The full explanation can be found in appendix.



1.	Rusting reinforcements with spalling concrete	
2.	Staining	
3.	Indiviual cracks	

107)

Sources
Own Illustrations

DAMAGES
NORTH FACADE

FINDINGS
On the north facade the rusting of the reinforcements is also present, though not as severe as on the south façade. There are three other damages present on this façade: Leaching, soiling and biological growth.

Leaching can mainly be found underneath the balcony, next to the beams.

CONCLUSION
The most serious concern is rusting reinforcements with spalling concrete.

Note:
The full explanation can be found in appendix.

1.	Rusting reinforcements with spalling concrete	
2.	Leaching	
3.	Soiling	
4.	Biological growth	

108)

Sources
Own Illustrations

DAMAGES
WEST FACADE

FINDINGS
In general is this façade the least damaged. As the previous facades this façade also has rusting reinforcements and spalling concrete. Only on this façade it only happens on two places and the damages are not very severe.

There are some damages found on the bricks. Some soiling is found and on one part of the wall the bricks are spalling.

CONCLUSION
The most serious concern is rusting reinforcements with spalling concrete.

Note:
The full explanation can be found in appendix.

1.	Rusting reinforcements with spalling concrete	
2.	Spalling of the brick	
3.	Graffiti	

109)

Sources
Own Illustrations

CONCLUSION

GENERAL

In order to understand Fenix II, different scales and aspects have been analysed from urban level, site level, and building level in architectural approaches. Overall, the available information in Rotterdam City Archive is still limited; the visits of Fenix II private space as Biennale Rotterdam on first floor and Provimi factory interior were made. Besides that, the analyses also focused on the history background, previous and current usage, and space quality; some assumptions were made during the analyses.

REFLECTION

The structure itself is relatively simple, mainly with reinforced concrete and under repetitive grids. Also, the floor span is two directions, which justifies the resilience of the new openings on the floor made in phase 3. The structure shows the spirit of the building within the shape and material. Advanced techniques was applied to Fenix II, even though the original function was only storage.

The most destructive intervention from current function is the new openings from circus, that these openings can be one of potentials since it has been made. However, the maximum openings in future intervention should be further designed, with reinforced materials and possible maximum spans. Moreover, physical models can be used as a method of investigation.

The indoor climate should be well-concerned. There is zero insulation within the building. The intervention should provide a second skin, in order to create suitable climate condition. However, the optimal solution should be further discussed, and prevent interference of the spirit of original structure and façade.

The damages in general are not severed. However, the more specific repair technique needs to be researched further.

The assumption are made. There are still two parts information missed due to lack of accessibility: new foundation in phase 2, and roof floor.

HERITAGE & ARCHITECTURE

CULTURAL VALUE

INTRODUCTION

PURPOSE OF THE REPORT

The aim of the Culture Values Report is to determine what types of culture values we found, how these values integrate and reflect on current situation and finally give subjective priorities of these values. With these defined values, it gives a clear point of view of how cultural values represent on different perspective and it will be the foundation and background for the future design.

METHODOLOGY

Overall, the Chronomapping and Culture Value Matrix have been used as tools to organize the gathered information and give opinions.

CHRONOMAPPING

By gathering different period of the drawings, chronomapping can reveal the building volume transformation through time, showing the demolishment and addition layers.

CULTURE VALUE MATRIX

For the starting point of analyses, the methodology of Culture Value Matrix has been applied. The concept of matrix is based on Alois Riegl and Stewart Brand. The matrix contains two main topics: tangible (Brand) and intangible (Riegl) matters. The different intangible values discussed by Riegl are made tangible through the layers of Brand. By using the matrix analyse system, it can cover from site level to building level and integrated with existing and potential values in the building.
The following readings are mentioned as background of Culture Values Matrix
Chapter 1 and 2 of How Buildings Learn: What Happens After They're Built (Brand, 1994)
Historical and Philosophical Issues in the Conservation of Cultural Heritage: Reading 6-Alous Riegl, The Modern Cult of Moments: Its Essence and Its Development. (J.Paul Getty Trust ,1996).

INTRODUCTION OF RIEGL AND BRAND

For the starting point of analyses, the methodology of Culture Value Matrix has been applied. The concept of matrix is based on Alois Riegl and Stewart Brand. The matrix contains two main topics: tangible (Brand) and intangible (Riegl) matters. The different intangible values discussed by Riegl are made tangible through the layers of Brand. By using the matrix analyse system, it can cover from site level to building level and integrated with existing and potential values in the building.
The following readings are mentioned as background of Culture Values Matrix
Chapter 1 and 2 of How Buildings Learn: What Happens After They're Built (Brand, 1994)
Historical and Philosophical Issues in the Conservation of Cultural Heritage: Reading 6-Alous Riegl, The Modern Cult of Moments: Its Essence and Its Development. (J.Paul Getty Trust ,1996).

Stewart Brand

The original concept of shearing layers was from a British architect named Frank Duffy. He believed that: "A building properly conceived is several layers of longevity of built components" which orientated towards interior work in commercial buildings, and then divided into four layers: Shell, Service, Scenery, and Set.

Brand elaborated the concept from Duffy and generated into more general-purpose layers. "Time is the essence of the real design problem." The use of the building through time should be emphasized and considered, in order to have sustainable relation between users and buildings. Brand developed the concept into six layers: Site, structure, skin, service, space plan, and stuff.

Alois Riegl

"By common definition a work of art is any tangible, visible, or audible work of man of artistic value; a historical moment with any of the same properties will possess a historical value".
From the point of view of "The Relationship of Commemorative Values to the Cult of Monuments", it can be seen into three parts: Age Value, Historical Value, Deliberate Commemorative Values. On the other hand, " The Relationship between Present-Day values and the cult of monuments" can be divided into two parts: Use Value and Newness Value.

In order to have a more completed understanding, there are few additional perspectives put into matrix. On the tangible perspective of Brand, surroundings, surfaces (interior), and story have been added. On the intangible perspective of Riegl, non-intentional commemorative value, Art value, Rarity value, Spirit of place, and Dilemma have been put.

From both directions of tangible and intangible aspects, the facts have been analyzed in a comprehensive way from larger scales to smaller scale, from site level to detail level. By conducting the analyses, it gives a sound overall understanding and leads to further discussion of which matters will be preserved and cherished, have potentials, reach sensitive topics which needs extra attention, and even be removed from current situation.

AVAILABLE MATERIALS

There are several materials have been applied to these analyses: previous drawings , documents and photos of Fenixloods, old pictures and maps of harbor area from Rotterdam City Archives; history background of Holland Amerika Lijn and Katendrecht(referred to previous chapter: Architectural Analyses- Site Analysis- historical background); information and background of Fenixloods architect from previous newspaper in the New Institute (Het Nieuwe Instituut) in Rotterdam; research reports of Ruimtelijke onderbouwing Fenix1, Ruimtelijke onderbouwing Fenix2, FENIX bouw- en kleurhistorisch onderzoek van de gevel aan de Veerlaan van Fenix-loods 1, and site observation through sketches and photos.

* Drawings and photographs are ours; unless it is stated.

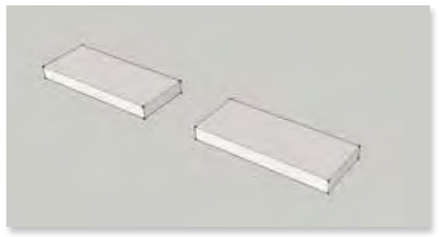
HERITAGE & ARCHITECTURE

CULTURAL VALUE CHRONOMAPING

VOLUME

1910

Original wood sheds



1916-1922

San Fransisco, Holland America Line

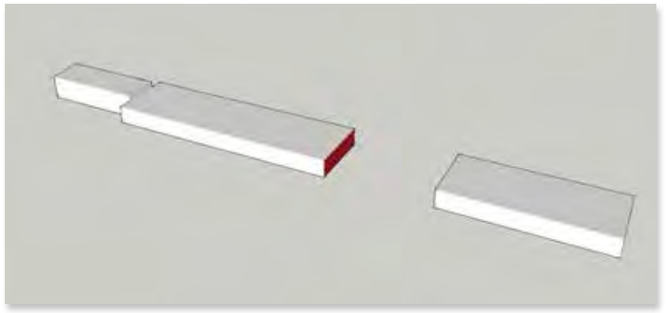
1944

WWII

Quay side damaged

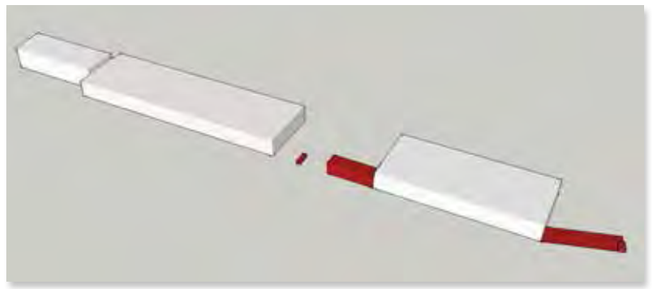
1947

San Fransisco to Fenix l, Fenix II



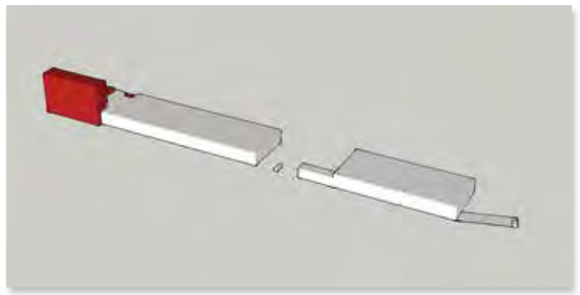
1951

Canteen



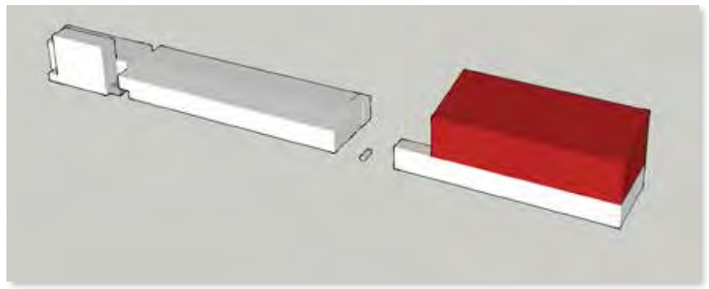
1969

Provimi Factory



2018

Fenix I-New residential



110)

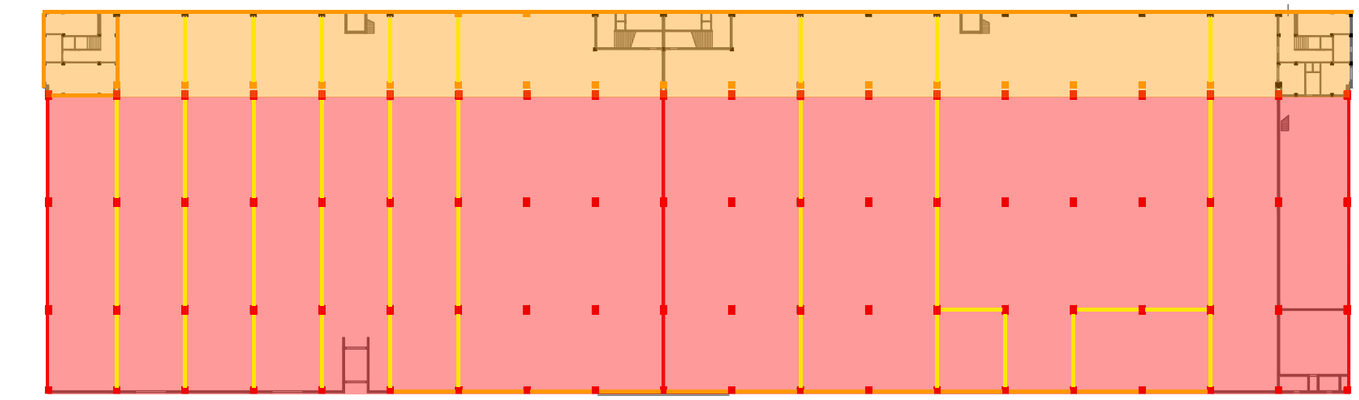
FLOORPLAN

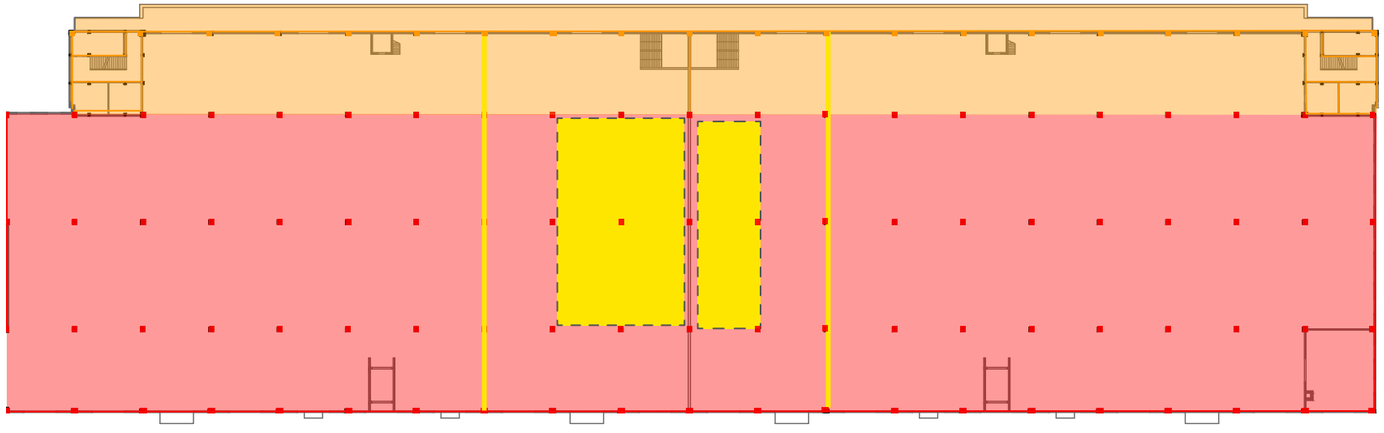
QUESTION
This research is conducted to understand the history of the changing construction in different phases.

METHODOLOGY
By looking at the plans over periods and the changes have been highlighted with colors.

FINDINGS
The different layers are clearly visible in the floorplans. The original construction remains mostly. In the phase 2, the north façade (waterfront side) was damaged and reconstructed. The building had a recession and a new span was added. Also, there were few division walls were added, according to new functions. In phase 3, the most destructive intervention of structure is the two new openings made from circus and Codarts, in order to create 11 m high ceiling. These openings can be one of potentials since it has been made.

CONCLUSION
The change can be seen clearly over time. In phase 2, the building had a recession and a new span was added. In phase 3, the most destructive intervention of structure is the two new openings made, in order to create 11 m high ceiling. These openings can be one of potentials since it has been made.





111)

Sources
own illustrations and photos

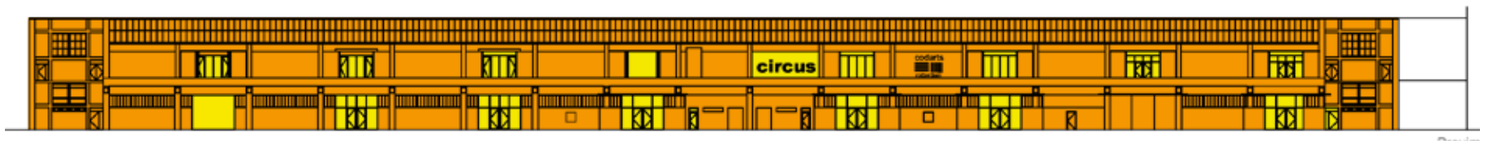
FACADES AND SECTION

QUESTION
This research is conducted to understand the history of the changing facades in different phases.

METHODOLOGY
By looking at the facades and section over periods and the changes have been highlighted with colors.

FINDINGS
The different layers are clearly visible in the facades and section. The original façade remains mainly on the south side (Deliplein). In the phase 2, the north façade (waterfront side) was damaged and reconstructed. The building had a recession and a new span was added. In phase 3, the change are mainly new entrances on both sides of facades.

CONCLUSION
The change can be seen clearly over time. In phase 2, the building had a recession and a new span was added. In phase 3, the change are mainly new entrances on both sides of facades. The façade on the north side and new entrances on the south side can be one of potentials since they were made in later periods.

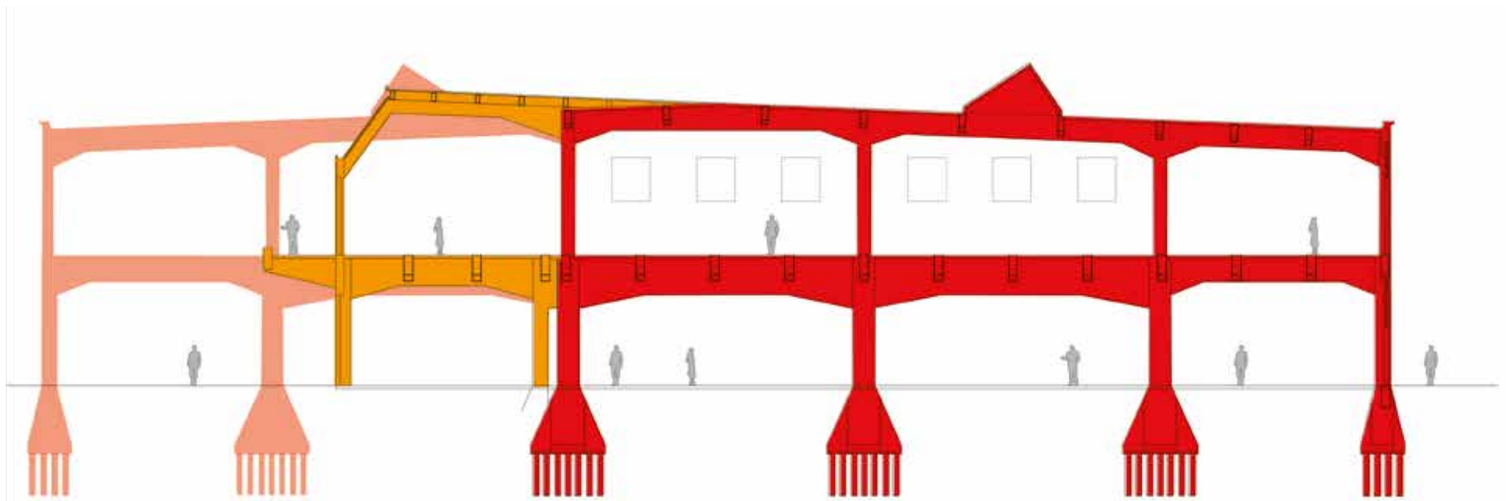


1916

1916, but is demolished

1951

2014



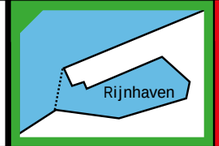
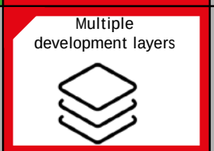
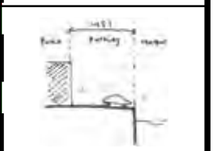
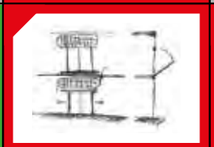
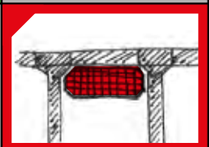
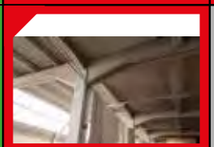
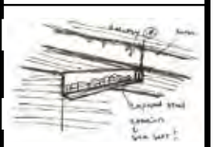
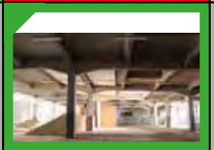
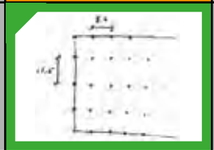
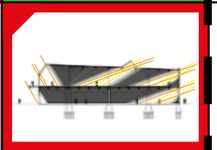
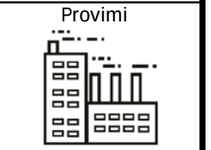
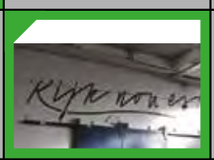
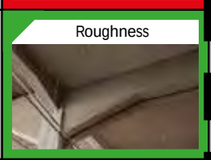
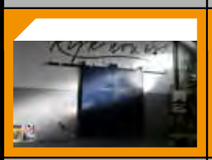
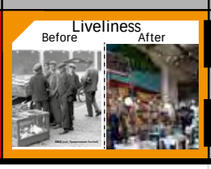
112)

Sources
own illustrations and photos

HERITAGE & ARCHITECTURE

CULTURAL VALUE MATRIX

MATRIX

Riegl / Brand	Age value	Historical value	Intentional commemora-tive value	Non-intentional commemora-tive value	Use value	Newness value	Art value (Relative)	Rarity value	Spirit of place	Dilemma
Surroundings/ setting		Holland Amerika Lijn								
Site										
Skin (exterior)	 1									 2
Structure										
Space plan										Provimi 
Surfaces (interior)										
Services										
Stuff										
Story			Fenix 					Holland Amerika Lijn 		

Sources
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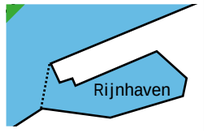
HERITAGE & ARCHITECTURE

CULTURAL VALUE
VALUES

VALUES

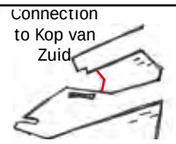
Surroundings / Setting



Age value
• The Rijnhaven originates from 1893 and look the same as it did then, even though it has aged.

Holland Amerika Lijn

Historical value
• The Rijnhaven: the Holland Amerika Lijn was deeply involved with the development of the harbour from Katendrecht to Kop van Zuid, including our building. (See architectural analyses, chapter historical background)
• Former prosperous trading harbor: the Fenix II ones was a connection point to the world through trade. (See architectural analyses, chapter historical background)

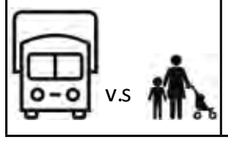


Newness value
• The new physical connection to the Kop van Zuid. (See architectural analyses, chapter accessabilaty)

Art value
• The aesthetics of the bridge connecting the Kop van Zuid with Katendrecht

Rarity value
• From the site you have a front seat to the waterfront and the iconic skyline of Rotterdam

Spirit of place
• Former harbor glory is presented at the site, because of the remnante of the past harbour function, for example the tracks.



Dilemma
• Trucks vs residential. The trucks form a border between the building and the neighbourhood.

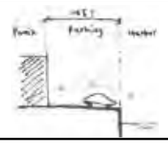
Site

Historical value
• Multiple development layers of history in the building (See architectural analyses, chapter historical background)
• Once the longest warehouse in Europe (See architectural analyses, chapter historical background)
• Part of the reconstruction of the harbour of Rotterdam after WWII (See architectural analyses, chapter historical background)
• Historic connection with the river (See architectural analyses, chapter historical background)

Non intentional commemorative value
• Survivor of the bombimg of Rotterdam in 1944 during WWII.
• Part of the reconstruction of the harbour of Rotterdam after WWII (See architectural analyses, chapter historical background)
• Survivor of fire damage in 1947

Use value
• The new functions; food factory, the museum, studios and start ups.

Spirit of place
• Hipster atmosfeer
• Temporary active programs



Dilemma
• Parking space at the waterfront makes the disconnection to the inside activities.

Sources
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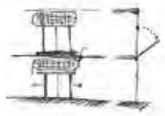
VALUES

Skin (exterior)

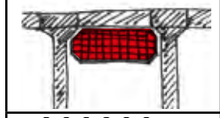

1

Age value
- The facade looks aged and damege because of the patina.



Historical value
- The facade show the former function as a warehouse
- Shows the former harbour glory
- The layering of the materials used to restore the facade are similair to the original material (see technical analyses, chapter details)

Intentional commemorative value
- The name of the former company is painted on the facade to commemorate the history



Art Value
- The shape of the windows
- The colour on the facade

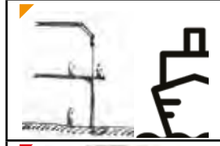

2

Dilemma
- How to deal with the damaged parts of the facade

Structure

Age value
- The roughness of the structure, the patina, shows its age

Historical value
- The building itself tried to show modernity by applying advanced construction techniques (See technical analyses, chapter history of the structure)

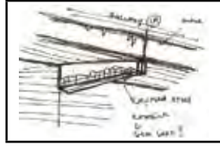


Use value
- The former use as a warehouse also entails the connection between the building and the river. The structure used to be located directly at the waterfront, that the crains on the roof could load the goods off the ships and move inside the building. However, this connection is no longer locatd directly at the waterat this moment.

Rarity value
- The shape of the structure

Patina

Spirit of the place
- The patina of the structure adds to the experience of the building



Dilemma
- How to deal with the damaged parts of the structure

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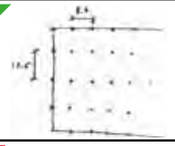
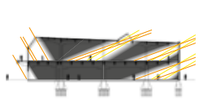
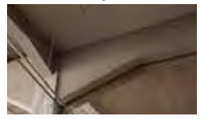
VALUES

	
	
	
Provimi 	

Surfaces (interior)	
	Intentional Commemorative value • The name of a new company on the interieur wall commemorates the rebirth of Fenix
Roughness 	Spirit of the place • The roughness of the surfaces adds to the atmosfeer

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VALUES

Services

Age Value
- Authenic doors and windows from 1916

Historical Value
- The tracks next to the building are reminders of the history of the building and the harbour activities.

Dilemma
- How to deal with the damage on the original doors and windows

Story

Historical Value
- The original warehouse, San Francisco, was designed by C.N. van Goor. He was important within the architecture world. (See architectural analyses, chapter background architect)
- The building itself tried to show modernity by applying advanced construction techniques (See technical analyses, chapter history of the structure)
- Former prosperous trading harbor: the Fenix II once was a connection point to the world through trade. (See architectural analyses, chapter historical background)
- Warehouse San Francisco: once ran business by Holland Amerika Lijn

Fenix

Historical Value
- The name Fenix is a reference to the rebirth of this warehouse. It survived WWII then after a fire it was reborn again. (See architectural analyses, chapter historical background)

Holland Amerika Lijn

Historical Value
- Once the longest warehouse in Europe and being the last remaining warehouse of the Holland Amerika Lijn.
- The building itself tried to show modernity by applying advanced construction techniques.

Liveliness

Before

After

Historical Value
- The liveliness of the building. Fenixloods was once very active with single working activity. Nowadays, it shows its liveliness with multiple new functions and a spirit of relaxed and hipster atmosphere.

Sources
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HERITAGE & ARCHITECTURE

CULTURAL VALUE
CONLUSION

CONCLUSION

GENERAL

In order to understand Fenix II, different scales and aspects have been analysed from urban level, site level, and building level in architectural approaches. Overall, the available information in Rotterdam City Archive is still limited; the visits of Fenix II private space as Biennale Rotterdam on first floor and Provimi factory interior were made. Besides that, the analyses also focused on the history background, previous and current usage, and space quality; some assumptions were made during the analyses.

There are 3 aspects can be seen in the followings: obligations, opportunities, and di-lemmas.

REFLECTION

OBLIGATIONS

ORIGINAL ELEMENTS FROM 1916
The transformation of the building is rich. The original elements should be preserved as much as possible. These elements express the essential character of Fenix II. Even though there was an entire recession on the waterfront side, demolished in phase 2, the rest original structure remains well. The reconstruction also provides another character, such as light introduce and spatial quality. The south façade, the expression of columns and whidowe, should be preserved as much as possible.

THE RECONNECTION OF WATERFRONT
The relation of the river should be addressed, how it functioned and how it has transformed due to different requirements. The emphases are not only because the history of busy trading harbour activities, but also and used the water to bring prosperity.

OPPORTUNITIES

CONTINUITY
The transformation of the building is rich. The building, San Francisco warehouse, was once an entirety. However, as a survivor of WWII and fire damage, the entirety has separated into two parts, Fenix I and Fenix II. How can it be relinked in a harmonious way and shown as once the longest warehouse in Europe?

LIVELINESS
The former glory of Rotterdam industrial harbour should be brought back, in any form representation. The transformation of liveliness should be relinked with current needs and further discussed.

CONNECTION POINT
In the history background, San Francisco acted once the important connection point to the Netherlands and Europe, and as a gate of international trading. What can be this connection transformed under current situation?

The physical connection point is also an opportunity. Fenix II is close to Kop van Zuid which is the new highlight of Rotterdam, and the integration of public and semi-public functions can boost the flow of visitors. Moreover, the location is the first front row of waterfront and of crossing the south side of Maas River from Rotterdam city center.

MODERNITY AND ADVANCED TECHNIQUE
The spirit shows itself on the top edge and the uniqueness. The new technique can be applied during the intervention.

EXTENSION
The gained waterfront space and Deliplein can be extension as hinterland. The openings from first floor can be further discussed to reconnect these spaces. The accessibility could be rearranged and show the connection on both sides and floors.

OPEN SPACE ARRANGEMENT AND LIGHT INTRODUCE
The open space arrangement can be seen clearly on the first floor, which indicates the history of storage and warehouse spirt. Along with the daylight introduce, especially from skylight, the space quality is spacious and clear, without extra decorations.

THE NAME OF FENIX, RISING FROM ASHES.
The name shows the building as survivor, both from WWII and fire accident. Also, the continuous transformation is a spirit to maintain.

DILEMMAS

THE POSSIBILITY OF CHANGING STRUCTURE AND FACADES
Since it has been mentioned above, the structure and facades represent the main character of Fenixloods. However, the grids are very repetitive. In order to create different atmosphere and space sequence, the demolishment may be required. What is the maximum to demolish and yet preserve the spirit?

THE ATTACHED NEIGHBOR, PROVIMI FACTORY
It is the last remaining proof of industrial activities on Katendrecht. However, the existence interrupts the living quality of surrounding residential area, and also the direct connection the park by the transportation routing. Should it be removed like the other industrial activities to west end side of Maas River? If it remains, what is the possible way to integrate better with future functions? Should the covered part by Provimi reveal itself?

Fenix II has been analyses through different levels. From urban level, the transformation of Fenix II was rich, the survivor of WWII and fire damage. From site level, it represents the former industrial harbor glory by the trace of facade and tracks on the both sides. How should it be transformed and kept as the spirit of Fenix II, as the mark of industrial harbor as once lively production activities? How can the “Glory Layers” apply to the future design?

HERITAGE & ARCHITECTURE

OVERALL CONCLUSION

OVERALL CONCLUSION

GENERAL

Even though the available information in Rotterdam City Archive is limited, the visits of Fenix II private space as Biennale Rotterdam on first floor and Provimi factory interior were still made. Besides that, the analyses focused on the history background, previous and current usage, space quality, and technical aspects; some assumptions were made during the analyses.

In order to understand Fenix II, it has been studied from many approaches: large scale to small scale, from tangible to intangible, from background of the past to the present, and from architecture to building technology.

URBAN SCALE

The reconnection with Rotterdam city center and Kop van Zuid will be an opportunity. Moreover, Fenix locates at the front seat of the waterfront, this can provide characters in diversity, compared to the inner city. The relation of the river should be addressed, how it functioned and how it has transformed due to different requirements. The emphases are not only because the history of busy trading harbour activities and once acted as a gate of international business, but also this relation with water is rare and should be addressed with the context of Rotterdam. Moreover, with the relation with waterfront, natural elements in the city can be re-integrated and provide better living quality.

Fenix II is also suitable to create public space under this context and acts as catalyst of the city to enrich the diversity. Fenix II not only takes advantages of the well-connected physical location, but also can be seen as a reconnection to the former glory of industrial harbour, once full of production activities and liveliness.

BUILDING SCALE

The transformation of the building is rich, happening over 100 years, and still continues. There are 3 phases of transformation: 1916-1922 the completion of San Francisco warehouse, 1944-1951 reconstruction after WWII and fire damage, and 2012-2014 new programs applied. San Francisco warehouse was once an entirety as the longest warehouse in that period, and witnessed the glory of Rotterdam industrial harbour in phase I. Then, it became a survivor of WWII and fire damage in phase II; Fenix has risen from the ashes. However, the entirety was separated into two parts (Fenix I and Fenix II). Even though there was an entire recession on the waterfront side, demolished in phase 2, the rest original structure remains well. Moreover, the reconstruction also provides another character, such as light introduce and spatial quality. The representation of continuity can be translated into physical connections or applied functions in the future design. In phase 3, the new programs has been introduced, and started to bring back the liveness of the building.

The original elements should be preserved as much as possible. These elements express the essential character of Fenix II. The south façade, the expression of columns and window, should be preserved as much as possible. As well as, the remained original structure should be also maintained as much as possible. However, in phase 3, there are two new openings were made on the floor, creating 11 m high ceiling. Even though the cuts were destructive, it changes the interior space entirely. It can be rather seen as new approaches than just destructions. These new cuts create a much different space quality, compared to repetitive open space found in rest of the building.

The lowest values occur in phase 3, mainly new entrances and partitions. As mentioned above, the original elements should be preserved as much as possible since it expresses the essential building characters. However, while preserving the main character of the building, the diversity of the intervention could be limited. Where is the limit of intervention, in terms of architectural, culture value and building technology?

Another aspect can be an opportunity is the fact of the advanced building technique was applied, as reinforced concrete and pre fab concrete materials. New materials and techniques nowadays can be solutions during intervention, either showing the similarity or contrast.

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FIGURES INDEX

HERITAGE & ARCHITECTURE

APPENDIX

Appendix 1- population and age

		Rotterdam Rijnmond in Cijfers https://rotterdam.buurtmonitor.nl/			Rotterdam Rijnmond in Cijfers https://rotterdam.buurtmonitor.nl/					
		population (inhabitants)	**percentage of rotterdam**	**population growth(%)**	**age (%)**					
data year		2015	2015	2009-2015	2015					
					0-9	10 years-19	20-44	45-64	65 and above	total
North area of Maas River	Rotterdam Centrum	32125	5.2%	9.2	6.9	6.4	53.3	21.1	12.3	100
	Delfshaven	75122	12.0%	5.5	12	11.7	44.6	22.6	8.9	99.8
	Overschie	16768	2.7%	5.5	12.9	9.2	33.8	26.5	17.4	99.8
	Noord	51315	8.2%	3.1	10.4	8.9	49.4	20.9	10.5	100.1
	Hillegersberg-Schiebroek	43444	7.0%	5	13.6	11.5	30.1	26.3	18.7	100.2
	Kralingen-Crooswijk	52075	8.3%	5.7	9.8	10.3	44.9	21.2	13.7	99.9
	Prins Alexander	94120	15.1%	4.2	11.2	11	29.7	27.9	20.2	100
site*2 South area of Maas River	Feijenoord	73079	11.7%	5	12.2	11.9	38.6	24.9	12.2	99.8
	Ijsselmonde	58936	9.4%	1.7	12.1	10.8	33.5	25.7	17.3	99.4
site*1	Charlois	65307	10.5%	3.8	12.9	10.4	41.2	22.6	12.7	99.8
Harbor industrial area	Pernis	4794	0.8%	-0.3	11.2	11	29.7	27.9	20.2	100
	Hoogvliet	34187	5.5%	-2.1	10	11.2	30.4	28.5	19.7	99.8
	Hoek van Holland	10110	1.6%	7.2	9.7	10.9	27.7	29.1	22.5	99.9
	Rozenburg	12388	2.0%	x	10.1	11.7	29.1	28.5	20.4	99.8
site*2	Haven- en industriegebieden	186	0.03%	-23.5	5.9	1.6	38.3	37.1	17.3	100.2
Rotterdam		623770	100%	6.3	11.4	10.6	38.4	24.5	15.1	100

Appendix 2- educational level

		GGD Rotterdam-Nijnmond https://ggd-rotterdam.buurtmonitor.nl/				
		educational level(%)				
data year		2012(19-64 years old)				
		high	high-midium	medium-low	low	total
North area of Maas River	Rotterdam Centrum	52	30	11	7	100
	Delfshaven	37	27	20	16	100
	Overschie	37	29	25	10	101
	Noord	52	24	14	9	99
	Hillegersberg-Schiebroek	52	27	16	5	100
	Kralingen-Crooswijk	52	24	15	9	100
	Prins Alexander	37	35	23	5	100
site*2 South area of Maas River	Feijenoord	27	31	26	16	100
	Ijsselmonde	19	38	31	12	100
site*1	Charlois	17	36	32	15	100
Harbor industrial area	Pernis	19	45	32	5	101
	Hoogvliet	19	39	36	6	100
	Hoek van Holland	28	37	31	4	100
	Rozenburg	18	47	33	2	100
site*2	Haven- en industriegebieden	x	x	x	x	0
Rotterdam		33.3	33.5	24.6	8.6	100.1

Appendix 3- nationalities

			Rotterdam Rijnmond in Cijfers									
			https://rotterdam.buurtmonitor.nl/									
			nationalities									
	data year		**2015**									
			Indigenous	Surinamese	Antillean	Cape Verdean	Turkish	Moroccan	Other non-Westerner	Other European	Other western	total
	North area of Maas River	Rotterdam Centrum	50.6	7.7	3.3	2.6	3.8	3.6	11.3	9.7	7.6	100.2
		Delfshaven	34.9	12	4.4	7.6	10	8.5	8.6	9.1	4.8	99.9
		Overschie	65.3	6.9	2.1	2.4	4.1	4.6	4.3	5.9	4.4	100
		Noord	54.2	8	3	2.5	6	5.9	7.2	7.8	5	99.6
		Hillegersberg-Schiebroek	73.6	3.7	1.8	0.7	1.7	2.4	4.3	6.4	5.4	100
		Kralingen-Crooswijk	52.8	7.2	2.2	2	4.5	5.5	9.5	9.5	6.8	100
		Prins Alexander	69	8.4	2.3	1.2	1.8	1.7	5.6	5.2	4.7	99.9
site*2	South area of Maas River	Feijenoord	37.8	11.5	5.6	2.4	14.1	7.4	10.1	7.1	4	100
		Ijsselmonde	59	9.8	5.6	1.4	4.6	2.9	7.1	5.7	3.9	100
site*1		Charlois	44.4	10.8	6.7	2.2	6.7	4.7	9.4	10.8	4.2	99.9
	Harbor industrial area	Pernis	84.2	2.2	2	0.3	0.6	0.4	1.5	5.8	3	100
		Hoogvliet	67.9	8	5.4	1.1	2.2	1.2	4.4	5.3	4.6	100.1
		Hoek van Holland	88	1	0.6	0.3	0.4	0.4	1.2	5.9	2.3	100.1
		Rozenburg	81.8	1.4	1.6	0.2	2	0.5	2.1	7	3.4	100
site*2		Haven- en industriegebieden	76.9	2.8	0.9	0.9	2.8	x	3.7	9.3	2.8	100.1
	Rotterdam		54.7	8.7	3.9	2.4	5.7	4.5	7.5	7.6	4.9	99.9

Appendix 4- family structure

			Rotterdam Rijnmond in Cijfers		Rotterdam Rijnmond in Cijfers								
			https://rotterdam.buurtmonitor.nl/		https://rotterdam.buurtmonitor.nl/								
			households		**family structure**								
	data year		2015		2015								
			figures	%	single	unmarried couple without kids	married couple without kids	unmarried couple with kids	married couple with kids	one-parent household	institutional	rest	total
	North area of Maas River	Rotterdam Centrum	20392	6%	61.2	12.1	9.1	2.3	6.4	6	0.9	1.9	99.9
		Delfshaven	38405	12%	51.1	8.8	8.3	3.9	13.4	11.9	0.4	2.2	100
		Overschie	8120	3%	40.2	6.4	17.2	5.5	18.2	9	2.3	1	99.8
		Noord	28772	9%	54.8	11.3	8.6	3.8	10.1	8.9	0.8	1.7	100
		Hillegersberg-Schiebroek	20991	7%	40	5.6	16.4	6.2	18.1	8.8	4.1	0.7	99.9
		Kralingen-Crooswijk	29863	9%	56.5	9.9	9.6	2.9	9.4	8.8	1.1	1.8	100
		Prins Alexander	46077	14%	41.2	5.2	18.5	5.2	17.8	9.8	1.7	0.6	100
site*2	South area of Maas River	Feijenoord	35771	11%	45.7	6.6	12.1	3.8	15.6	13.6	0.9	1.7	100
		Ijsselmonde	29314	9%	42.4	5.2	16.2	4.8	14.8	13	2.6	0.9	99.9
site*1		Charlois	34011	11%	48.5	7.4	10.6	4.4	12.6	12.4	2.2	1.9	100
	Harbor industrial area	Pernis	2228	1%	41.2	5.2	18.5	5.2	17.8	9.8	1.2	0.8	99.7
		Hoogvliet	16268	5%	36.5	5.3	21.3	4.6	18.8	10.7	2.1	0.7	100
		Hoek van Holland	4731	1%	34.6	5.5	25.1	5.4	20.2	7.9	0.1	1.2	100
		Rozenburg	5717	2%	34.1	5	26.3	4.3	21.4	8	0	0.4	99.5
site*2		Haven- en industriegebieden	108	0.03%	50.9	13.9	17.6	2.8	10.2	2.4	0	1.9	99.7
	Rotterdam		320768		47.1	7.5	13.4	4.2	14.2	10.5	1.2	1.4	99.5

APENDIX 5
DAMAGE EXPLANATION

The explanation how this can happen is, by MDCS.monumentenkennis.nl:

The reinforcement corroded, and the corrosion products (rust) formed layers around the rebar. Possible causes for corrosion are (I) corrosion due to carbonation, (II) due to chloride attack, or (III) stray currents. (IV) Corrosion also can be initiated through cracks or voids in the concrete,

The staining on this facade is present at the original doors and doorframes. The explanation how this can happen is, by MDCS.monumentenkennis.nl:

In case of rust coloured stains, these can originate (I) from corroding reinforcement, (II) from iron containing aggregates such as pyrite, or (II) from pieces of tying wires left in the formwork or other small ferrous objects. (IV) In case the rust stains coincide with the layout of the reinforcement of a soffit, the rust stains can origin from when the reinforcement was placed temporarily of the formwork during construction.

Only on this facade are there multiple individual cracks found. They are classified as individual cracks after research in the placing of these cracks. The explanation how this can happen is, by MDCS.monumentenkennis.nl:
Cracks appear perpendicular to the direction of the stresses. The causes can be manifold. In order to form a hypothesis, the correlation of the crack with the building (element), the detailing, load bearing system and layout of reinforcement, orientation, construction phases etc. should to be reviewed. Some causes can be for example thermal stresses, settlement, shrinkage, corrosion, mechanical impact or overloading.

The explanation for this damage is, by MDCS.monumentenkennis.nl:
Encrustation can occur on lime-containing materials (e.g. limestone, lime (and also cement) mortar, concrete) in the presence of a large amount of water: water dissolves the Portlandite (Ca(OH)2) from the cement paste, and calcium from the CSH gel of the cement matrix. These compounds are transported to the surface where they deposit. This process is often observed on structures where cracks are present, allowing percolation of large amounts of water.

Soiling occurs all over this façade. This makes this façade very dark. The explanation for this damage is, by MDCS.monumentenkennis.nl:
Soiling is due to the deposition of dirt (e.g., dust, particles etc.) originating from the environment. The presence of limited amount of moisture facilitates sticking of the soiling to the surface of the material.

Biological growth is found on the small wall on top of the balcony. There are mostly mosses found here, but some algae and plants as well. The explanation for this damage is, by MDCS.monumentenkennis.nl:
Mosses are small plants, which grow on damp and shady locations. Their appearance is in the form of green cushions or spiky (hairy) tufts; when dry, their color is brown. Mosses do not have roots, but have an axis or stem bearing a sort of leaves. Mosses send rhizoids (root-like structures) into the substrate. Due to the lower pH value (≈3) under the layer of moss, the surface of the concrete can deteriorate. Moist moss can increase the risk for freeze-thaw damage when present in cracks or voids. The presence of moss can facilitate the growth of higher plants

MDCS Hypothesis: Spalling can occur as result of frost action or, in some cases, salt crystallization. Frost action can take place under the following combination of conditions: (i) frost sensitive material;(ii) high moisture content in the material; (iii)sudden drop of temperature below freezing point. Spalling due to salt crystallization is generally the result of salt crystallizing under the surface (crypto-florescence). A salt crystallization process can take place in the presence of both soluble salts and moisture.

The graffiti found on this façade are in some places already removed, but are mostly still present. Graffiti (on monuments or other places where they are not wanted) are the result of an act of vandalism.

Sources
MDCS.monumentenkennis.nl