A Creative Hub on the Sluisjesdijkpier

(re-)activation through transformation

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Introduction

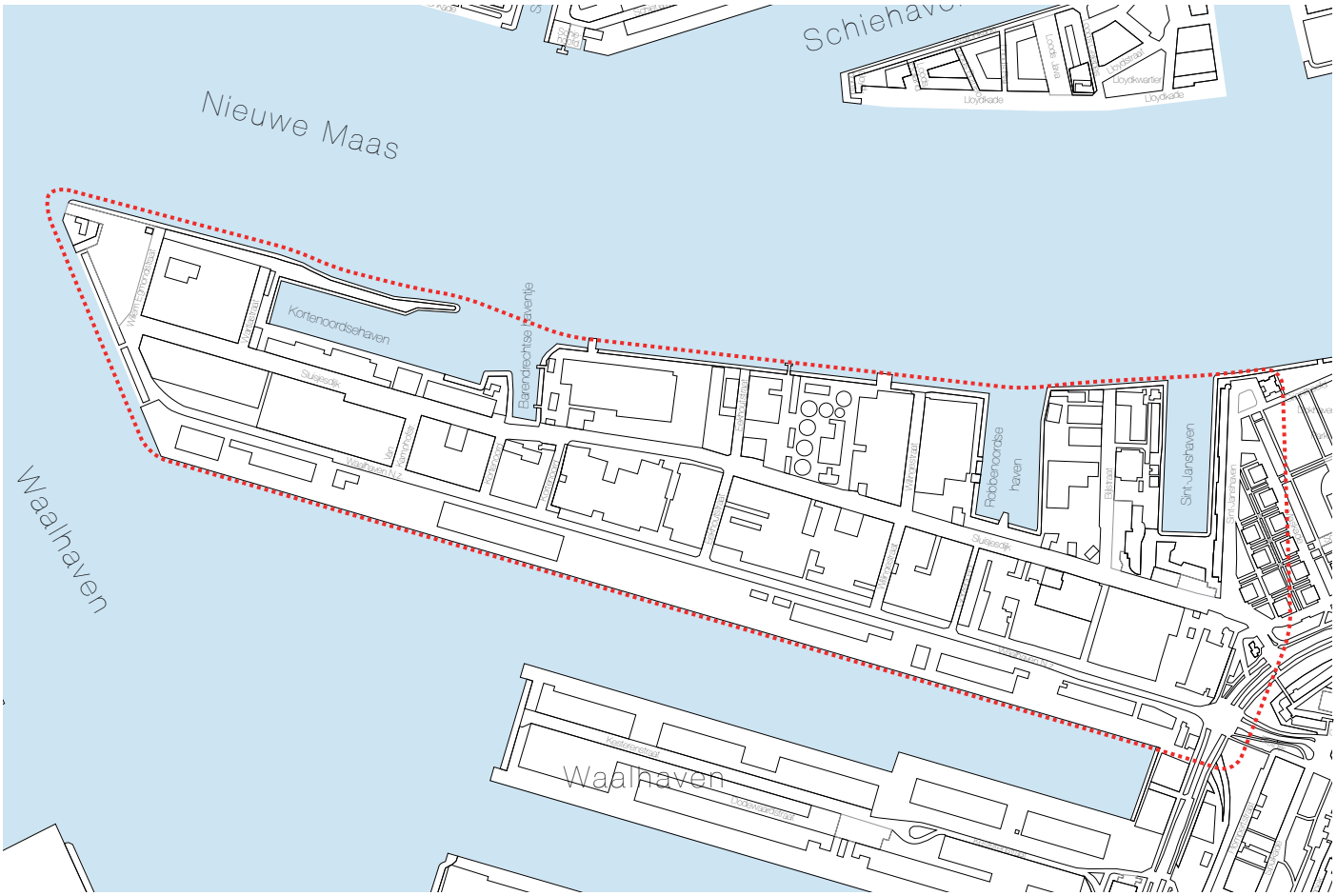
Study: Veldacademie
The Veldacademie is part of the Explore Lab graduation studio of the TU Delft and is a collaboration between the municipalities of Rotterdam and the TU Delft. It is a relatively small studio in the field where students from different courses can individually and jointly work on issues related to the transformation of Rotterdam South. The Veldacademie is aimed at dealing with social issues based on the input of the current context of the area. In the course of my Master of Architecture I have chosen the Veldacademie as it gave me the possibilities to compose my personal graduation project. Another reason I choose for the Veldacademie is the focus the studio has on actual issues, which are translated in realistic assignments.

Theme: Vacancy
Today, vacancy has grown to be an immensely problematic issue which is present in many urban and rural settings worldwide. The large and constantly growing (the construction of new buildings is still the main fashion) amount of vacant buildings causes many social and economical problems to develop or grow.

I firmly believe that in addition to its many problematic features, vacancy also brings forward new possibilities. In order to solve or decrease these issues a logical development would be to start with the transformation and re-use of existing vacant and/or derelict buildings instead of adding new ones to the stock. The process a building goes through during it's lifetime fascinates me. Buildings have the ability to transform from factories to restaurants, from ministries to a workspace for freelancers, from offices to dwellings and so on. Not only does the building or area change because of these transformation processes and the new functions they facilitate, the urban context of the location is being reinterpreted as well.

Location: Sluisjesdijkpier, Rotterdam
Following this believe, I started looking for areas in the South of Rotterdam which faces many issues due to the presence of - and expected increase in the amount of - vacant buildings, but have a lot of potential for facilitating other functions. The area that I have chosen as the location for my graduation project (research and design) is the Sluisjesdijkpier, part of the Waalhaven in Rotterdam (fig. 1).

Fig. 1: The Waalhaven with the Sluisjesdijkpier highlighted in yellow.
Below: the Sluisjesdijkpier



Contents

Summary

Vacancy has grown to be an immensely problematic issue worldwide which causes many social and economical problems. I firmly believe that vacancy also brings forward new possibilities. We have to start transforming existing buildings instead of building new ones in order to decrease the issues. Following this believe, I decided to focus my graduation project on the Sluisjesdijk-pier, a part of the Waalhaven in Rotterdam South which faces many issues due to vacancy, but has a lot of potential for facilitating other functions.

Research Outline
The main research question that I will answer through this research is:
Taking current issues of the Sluisjesdijkpier with vacancy, insecurity and isolation into consideration, which function can be introduced in order to make it a more attractive area and - based on external demands and a set of criteria accompanying this function - which building can best be transformed to realize this?

The research needs to provide general insights into the Sluisjesdijkpier's past, present and future situation and its issues and potentials. It has to introduce a suitable function (including its target groups and an indication of the demand for this function) which is able to contribute to the (re-) activation of the Sluisjesdijkpier and counteract its current issues. The chosen function will be the result of intensive field and desk research into models which were applied to similar areas with comparable contexts. For this function to be designed, the research needs to indicate a vacant building which through transformation is able to accommodate this function. This selection process will be done through the analysis of the present vacant building stock, applying a brief accompanying the function and matching the buildings to a set of criteria which will indicate whether the project is realistic and feasible. The outcomes of the research need to be represented in my final project design.

The Sluisjesdijkpier

History
The Waalhaven (310 acres) is the largest excavated port in the world. Its construction started in 1907 as a result of the Nieuwe Waterweg connecting Rotterdam directly to the sea. The last phase of the excavation finished in 1930. The history of the Waalhaven starts with the Sluisjesdijk, originally a polder located on the South side of the river the Maas and West of the Maashaven. After a major flood in 1374 the area started to develop into its current shape. The first road was constructed and dwellings appeared next to the polder. From 1876 the Sluisjesdijk became the main storage location for petroleum. From 1895 to 1901 major warehouse, petrol and oil companies settled at the Sluisjesdijk. Because further expansion of the Sluisjesdijk was not possible due to lack of space, the refining and storage of oil and gasoline moved to Pernis from 1935. By then the Waalhaven basin was already completed and the strip of land between the river and the Sluisjesdijk evolved into a location for general businesses.

Current Situation
The Sluisjesdijkpier is 1.750 meters in length and has a size of 53 acres. The currently existing buildings on the Sluisjesdijkpier cover 350.000 m2, of which 115.000 m2 is currently vacant and many more buildings are expected to become vacant in the next eight years. At the moment the Sluisjesdijk houses four ports, various businesses (of which many are garages), one appartement building with dwellings, three shops and two educational facilities.

Problem Identification
At the moment the Sluisjesdijkpier has about 30 vacant and degrading buildings (covering 115000 m2), and many more are expected to follow in the coming eight years due to loss of function or expiry of tenancy. The area feels insecure as there aren't many people active in the public spaces and there are many derelict area's. Little social control leads to criminal activities. Currently the
Sluisjesdijkpier is purely a working area, with not many other facilities encouraging social interaction. The presence of a high percentage of garages creates a visually dominant street image and a lot of nuisance. The questionnaire I carried out indicated that inhabitants of the St. Jansflat experienced the Sluisjesdijkpier predominantly as "unsafe" and an area with "nothing to do". The plans of the Havenbedrijf and the City of Rotterdam for the near future are important, however, current issues such as vacancy, insecurity and isolation, might not all be solved or improved by them.

Potential
In my view the Sluisjesdijk has a lot of potential: magnificent views and lines of sight on the Maas river, the center of Rotterdam and port related activities (this was also confirmed by respondents of the questionnaire, indicating the view as the main reason for visiting the pier), the general industrial atmosphere and impressive historic appearance. The pier is easily reachable by car (12 min), public transport (15 min) or bicycle (12 min) from the city center and the highway via two main roads.

Future Plans
The Havenbedrijf Rotterdam (HbR) is developing the Waalhaven (including the Sluisjesdijk) into the service cluster of the Rotterdam port and industrial area. The main plan of the HbR and the City of Rotterdam for the near future is to transform the Sluisjesdijkpier into an attractive working environment, a more port-related area with maritime service companies. The HbR formulated urban planning guidelines which focus on: realizing a better visual quality, dividing the area into multiple lot typologies, creating a good investment climate by optimally facilitating businesses, improving the port-city-river relation, articulating the area by constructing small scale parks, increasing possible uses of the river banks by constructing boulevards and viewpoints.

Creative Hub
In my research I started to look at models which (re-)activated areas with similar features and contexts. Many of the models I found can be classified as Creative Hubs and have a positive effect on the social climate of - and interaction within - areas and the identity of a city, contribute greatly to meeting the demand of flexible and inexpensive working spaces, prevent negative effects of long term vacancy and can make an area or city more attractive for many different target groups without using major investments. A few very famous examples are of formal industrial areas such as SoHo in New York, Shoreditch in London and the NDSM Wharf in Amsterdam.

I have looked at a wide variety of case studies, which helped me to see successful and unsuccessful aspects. In these case studies I focused primarily on quantitative data (former function, current programme, amount of tenants and surface area), as the qualitative data was quite hard to measure given the number of case studies. The fact that I wanted to have a representative and therefore high number of case studies meant that I could not perform extensive research to look at qualitative aspects (e.g. the effect of the respective hub on the area its located in). However, the case studies I choose are all well functioning creative hubs with demonstrated positive qualitative influence within the respective areas. These case studies were of much use in defining a brief for a design of a Creative Hub on the Sluisjesdijkpier.

In my opinion the introduction of a Creative Hub model would be a great (even essential) step towards the development of the Sluisjesdijkpier in reaching the goals and ambitions previously

mentioned in this research in an effective and sustainable way.

Definition

When doing my research on what defines a Creative Hub, I found many different definitions in literature. As they all deviated in different aspects, I choose to formulate a new definition which is comprised of all the different aspects which were present in the different definitions I found:
"*A Creative Hub is an informal built environment which is made attractive for a variety of creative entrepreneurs and cultural organizations in terms of financial and facilitative circumstances. This group is enabled to initiate activities and produce works and services in an inspiring environment not primarily aimed at commercial success. The main characteristics of Creative Hubs are: workspaces, affordable rent, scale, a mix of creative disciplines and a mix of functions.*"

Emergence

From a Dutch historic perspective, today's Cultural Hubs find their roots in the free havens of the 70s and 80s. From the end of the 80s the artistic aspect often formed the crucial factor in the acquisition, legalisation, and/or the toleration of the free havens. At the same time many squats were vacated which caused an even greater shortage of creative working spaces. From 1998 many Dutch cities started to realise that more investments had to be made in artistic subcultures, which heralded the breeding ground policies from 2000 on.

There are two different ways for Creative Hubs to arise: organic and gradual emergence or urban planning over a short period of time. Originally Creative Hubs arose gradually, divided by Straaten & Maverick (2008) in four phases. Low initial value allows users and temporary initiatives to use space for relatively low costs and the creation of value has a high probability (Phase 1: Creative environment). The Hub starts to generate added value as a space for meeting, networking and synergy. The success of the entrepreneurial users rises and the temporary exploitations increase which results in a more public character. Hospitality and other more established businesses can in this phase start to participate and strengthen the process (Phase 2: Interaction environment). A part of the creative entrepreneurs will be increasingly in contact with consumers and regular companies attracted by the products, experience and recreative elements of the Hub (Phase 3: Transaction environment). When these consumers and companies settle in the area under regular conditions of the market, the experimental character of the Hub is outgrown and it becomes a more regular creative production market (Phase 4: Transformation environment).

Target Groups

One of the main strengths of a Creative Hub is the combination and interaction between many different target groups. Not only the creatives have the advantage of a Creative Hub. Also many othe rprofessional and public target groups from outside can benefit from a Creative Hub. Businesses, residents, workers and even tourists can make use of the services and functions present in the Creative Hub.

Current Demand

A Creative Hub can very well function as a catalyst to reactivate the Sluisjesdijkpier. However, in order to make it work there needs to be a demand for such a building. My research (mainly recent literature and interviews) indicates that there is a significant need for working spaces in a Creative Hub in Rotterdam South to facilitate freelancers working in the creative industries from a wide variety of sectors, whic is expected to increase exponentially over the coming years.

Brief

Using the previously gathered information about the Sluisjesdijkpier and the Creative Hub as a model to (re-)activate the area I developed a brief. These practical, qualitative and carefully de-

fined guidelines can be used to find a suitable building to transform and to work out a realistic and feasible design for a Creative Hub on the Sluisjesdijkpier.

Working Spaces
Based on case studies I have chosen for a Creative Hub which is able to facilitate working space for 50 people with an average size of 30 m2 (varying between the 20 and 60 m2). The total amount of surface area of workspaces in the building will be 1.500 m2 excluding 20% storage space. An additional 100 m2 of flexible workspaces will need to be present and 100 m2 will need to be reserved for meeting rooms.

Exhibition and Common Space
The surface area of the exhibition function and the common space are 300 m2. They should be able to be combined into one space, but they should also be able to be used as separate spaces of 200 m2 (exhibition space) and 100 m2 (common space).

Hospitality and Retail
In the questionnaire respondents indicated demand for a terrace along the water, a taxi boat stop, restaurants and shops. For this reason 200 m2 of the building will be reserved for hospitality and retail functions.

Service Area / Circulation Space
When we add up all the above mentioned spaces and add 30% of service area (circulation space, toilets, etc.) the total surface area of the building will need to be 3.350 m2 NFA (net floor area).

Building Selection
In order to select the building from the building stock of the Sluisjesdijkpier which is most suitable for transformation into a Creative Hub, I have developed a set of criteria. This set of criteria is based on the context of the Sluisjesdijkpier, information and case studies regarding Creative Hubs, the brief and additional technical and financial possibilities.

Criteria 1: Vacancy
There are 20 buildings which are currently vacant or which will be vacant (or are expected to be so) in the near future.

Criteria 2: Surface Area
An important criteria is that a building suitable for transformation needs the right amount of square meters matching the amount mentioned in the brief and should also be able to accommodate growth. As indicated the minimum amount of square meters needed for the Cultural Hub is 3.350 m2 NFA (net floor area). 18 buildings match the vacancy criteria (including those which are smaller than 3.350 m2, but are located next to another building which can together add up to an amount of square meters between 3.350 m2 and 5000 m2).

Criteria 3: Characteristic Qualities
Because appearance or beauty as a criteria is quite objective, I further specified concrete characteristic features which are defining in the image and atmosphere: historic appearance (building year, materials) and industrial atmosphere. In addition the buildings need to be located next to the Maas river in an area which provides viewpoints. After matching these criteria two building complexes remained; the buildings along the Gorzenpad and the warehouse buildings on the Eekhoutstraat.

Criteria 4: Technical Possibilities
The Gorzenpad appears to have very limited possibilities to design the floorplan of the various buildings without affecting the main bearing structure. Another disadvantage is the height of the ceiling which is not ideal for studio spaces. In contrast to the buildings on the Gorzenpad the buildings of the Eekhoutstraat have a lot of flexibility regarding the design of the floorplan and therefore are much more suitable for transformation. Another advantage is that the ceiling heights are much more suitable for studio's. A disadvantage at first sight could be the small amount of openings in the facade, but because the main bearing construction is separate from the facade, it is possible to insert extra openings in the facades. However, to conduct proper research I have taken both building complexes into account in the final criteria.

Criteria 5: Financial Feasibility
In a financial analysis I have created a basic initial budget indicating the potential costs and income related to financing the transformation of the buildings on the Eekhoutstraat in a cost effective way. The financial analysis is based on general parameters, expected costs and funding possibilities and base case parameters. The base case parameters are flexible and affect the overall financial feasibility strongly. One of the main parameters which needs to be stable is the Internal Rate of Return (IRR), otherwise investors are likely to drop out. When aiming for a IRR of minimum 8% and based on other market research, I determined a general rent of € 77 per square meter per year, which means the transformation costs can go up until a maximum of € 3.2 million within a duration of 30 years.

Research Outline

3.1 Plan

Central in the research process is a gap[1]; the distance between a suitable function for the (re-)activation of the Sluisjesdijkpier and a suitable building which can accommodate this function. Therefore I will approach this research from both sides. From one side researching for an appropriate function through analysing the location (past, present, future), identifying the problem(s), determining target groups and demands, etc. From the other side I will analyse the present building stock - according to a set of criteria - to find an appropriate building for this function which matches the brief of the function.

At the beginning of my research semester I made a first research scheme (fig. 2), where I divided my research into two phases. In one phase I planned on focussing on a suitable function for the Sluisjesdijkpier. In the other phase I selected a suitable building for transformation.

Figure 3 illustrates my final research plan, which is more elaborated compared to my first scheme.

3.2 Goal and Objectives

The research will need to provide general insights and possible solutions to introduce a new function and transform a vacant building in order to (re-)activate the Sluisjesdijkpier and counteract its current issues. I will need to be able to use these insights and possible solutions in my final project design.

My objectives are:

- To provide insight into the past (history), present (current state) and future (plans by the municipality and the Havenbedrijf and other external developments) of the Sluisjesdijkpier;
- To identify and define the issues and potentials which are currently present at the Sluisjes-dijkpier;
- To research references and provide insight into methods, models and functions which have been used to (re-)activate (counteracting negative social and economical effects as a result of vacancy) other (similar) areas;
- To determine a function that is suitable for the (re-)activation of the Sluisjesdijkpier;
- To create a clear brief for the appropriate function which can contribute to the (re-)activation of the Sluisjesdijkpier;
- To develop a set of criteria to select a suitable building for transformation appropriate for the previously chosen function.

3.3 Main Question and Sub Questions

The main research question that I will answer through this research is:
Taking current issues of the Sluisjesdijkpier with vacancy, insecurity and isolation into consideration, which function can be introduced in order to make it a more attractive area and - based on external demands and a set of criteria accompanying this function - which building can best be transformed to realize this?

[1] Graaf, P. (2011)

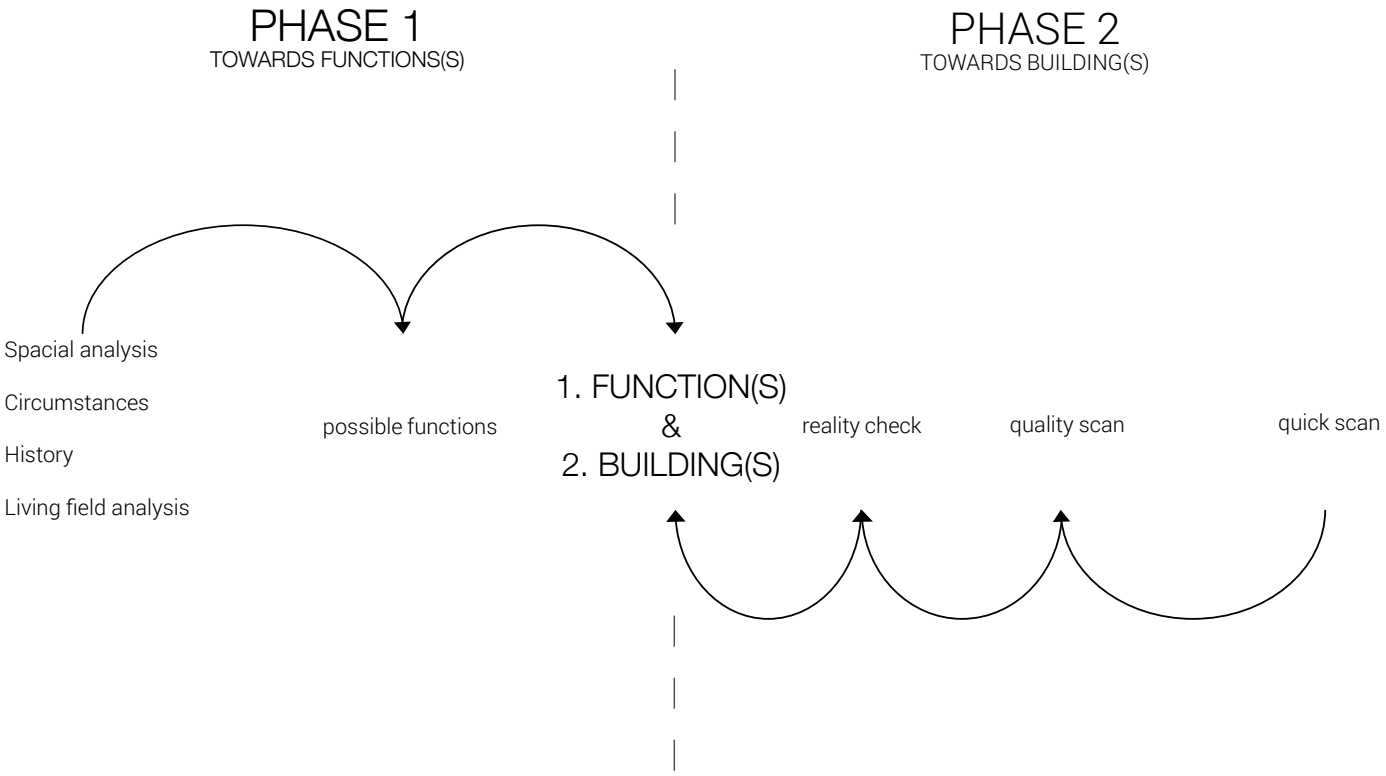


Fig. 2: First research scheme

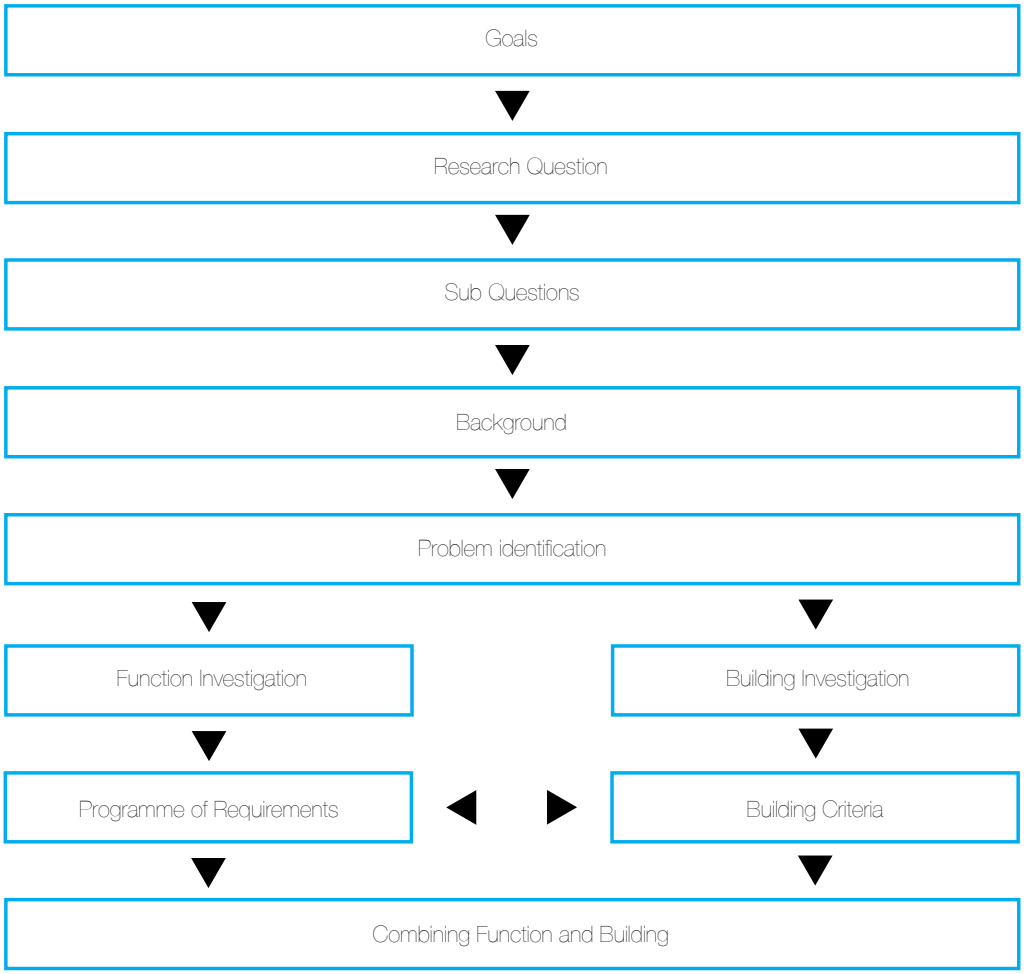


Fig. 3: Final research scheme

I developed the following sub-questions to understand all the facets and the context of the main question:

What is?
- What is the history of the Sluisjesdijkpier?
- Which functions and buildings are currently present?
- Which issues are currently present?
- What is the potential of the area?
- What are the future plans for the area?

What can be?
- Which function could help to counteract the present issues?
- Which models can be found of (re-)activation for similar areas and how do they function?
- What is the brief related to this function in the context of the Sluisjesdijkpier?
- Which set of criteria to select a suitable building for transformation can be drawn?
- Which buildings are suitable for transformation?

In addition to these sub-questions I also developed a set of questions which will become relevant in my graduation project design:

How could be?
- What are suitable options combining function and building characteristics?
- How can interaction between different functions and people be stimulated?

3.4 Methodology
There are four different methods I have applied during my research.

1. Location analysis
In the location analysis I zoomed in on the Sluisjesdijkpier and analyzed different aspects of the location such as the history, accessibility, current functions, characteristics, potentials, etc.

2. Literature / Desk research
In order to find certain facts and figures I have studied literature in the form of relevant books, articles, destination plans, research documents, webpages and images.

3. Fieldwork
To find extra necessary qualitative and quantitative data I have performed different kinds of field-work such as questionnaires and interviews. I also planned meetings and interviews with people who are highly involved with the development of the Sluisjesdijkpier.

4. Case studies and excursions
I have looked at a wide variety of references of re-activation methods in other (similar) areas, which helped me to see successful and unsuccessful aspects. In these case studies I focused primarily on quantitative data (former function, current programme, amount of tenants and sur-face area), as the qualitative data was quite hard to measure given the number of case studies. The fact that I wanted to have a representative and therefore high number of case studies meant that I could not perform extensive research to look at qualitative aspects (for example the effect of the respective hub on the area its located in). However, the case studies I choose are all well functioning creative hubs with demonstrated positive qualitative influence within the respective areas.











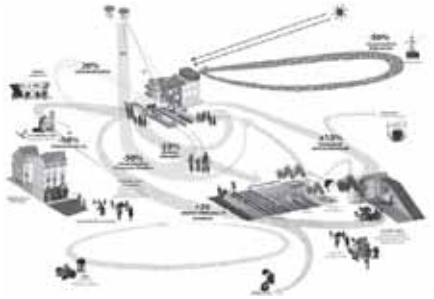





Fig. 4: Display of different case studies studied in order to see succesfull and unsuccesfull aspects.

The Sluisjesdijkpier

4.1 History

The Waalhaven (310 acres) is the largest excavated port basin in the world. In 1872 the Nieuwe Waterweg was finished, which connected Rotterdam directly to the sea. From the early 1900s, this lead to an increasing need for an additional port to load and unload ships. In 1907 the city council of Rotterdam decided to construct the Waalhaven. The first phase of the excavation was finished in 1908, followed by a second phase in 1910 and the broadening of the basin in 1912. In 1920 Waalhaven airport was opened in the South of the Waalhaven for air transportation of cargo to and from England. In 1940 the airport was destroyed, and it was never rebuild. On the West side of the Waalhaven, next to the piloting of the Rotterdamse Droogdok Maatschappij (Rotterdam drydock company), the village of Heijplaat arose which consisted of 355 houses built for employees of the shipyard. In 1928 the third phase of the excavation finished, followed by a fourth (and last) expansion in 1930. Until the 90s the Waalhaven functioned mainly as transshipment port for bulk cargo and containers and a port for Lighter Aboard Ships (ships carrying a crane)[2]. In recent years the Waalhaven houses many well-known maritime businesses and storage spaces.

The history of the Waalhaven starts with the Sluisjesdijk, located on the South side of the river the Maas (the left Maasoever) and West of the Maashaven. In the figures 5 until 10 the development of the Sluisjesdijkpier is illustrated. The Sluisjesdijk was originally a polder. In 1374 the whole area flooded. After this period the area started to develop into the shape of what it has now become. The first road was constructed and dwellings appeared next to the polder. With the construction of the Handelsinrichtingen (commercial establishments) in 1874 the petroleum storage disappeared from Feijenoord and from 1876 the city of Rotterdam selected the Sluisjesdijk as a main storage location. Back then, the Sluisjesdijk belonged to the municipality of Charlois and the river belonged to the state. Immediately after the annexation of the village of Charlois by Rotterdam in 1895, the Pakhuismeesteren (a major warehouse company) established themselves at the Sluisjesdijk. Esso settled there in 1890 and in 1901 the Petrol Installation Rotterdam (a precursor of Shell) settled at the Sluisjesdijk. In 1902 Shell began to refine crude gasoline. Because further expansion of the Sluisjesdijk was not possible due to lack of space, the refining and storage of oil and gasoline moved to Pernis between 1935 and 1940. By then the Waalhaven basin was already completed and the strip of land between the river and the Sluisjesdijk evolved into a location for general businesses[3].

4.2 Current Situation

The Sluisjesdijkpier (fig. 12) is an area of 1.750 meters in length and has a size of 53 acres[4]. To give an indication of the scale of the area, figure 14 indicates roughly the time it takes to walk over the Sluisjesdijkpier.

The pier has four ports; the Sint-Janshaven, the Robbenoordsehaven, the Barendrechtse Haventje and the Kortenoordsehaven. At the moment the Sluisjesdijk houses 51 businesses (fig. 15). Around 10 percent of these businesses are garages (fig. 16). There is only one dwelling building (fig. 17) and three shops (fig. 18). There are two educational facilities (fig. 19).

The pier is reachable via two main roads: the Sluisjesdijk and the Waalhaven Noordzijde. It takes about 12 minutes to get there by car or bicycle from the city center. The pier is easy to reach with public transport due to proper connections. Both main roads of the pier, the Sluisjesdijk and Waalhaven Noordzijde, are adjoined to the Doklaan / Waalhaven Oostzijde roads which are

[2] http://nl.wikipedia.org/wiki/Waalhaven_(Rotterdam) 09.03.2013
[3] http://www.portofrotterdam.com/nl/Over-de-haven/havenontwikkeling/waalhaven/Pages/sluisjesdijk.aspx 11.03.2013
[4] Port of Rotterdam (2013), p. 4

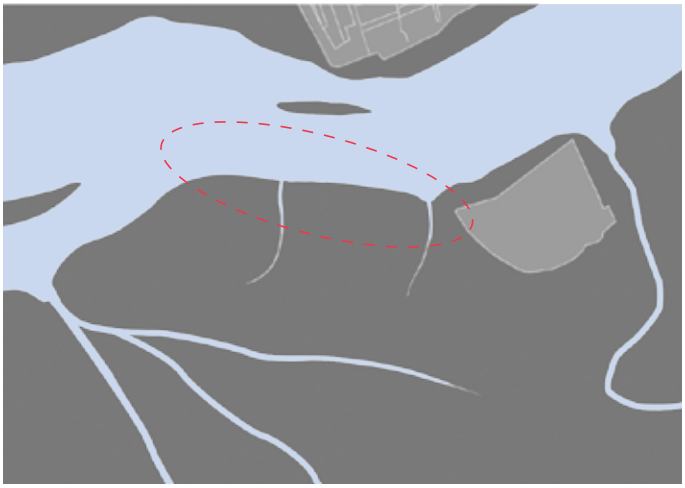


Fig. 5. The Sluisjesdijk 1340.

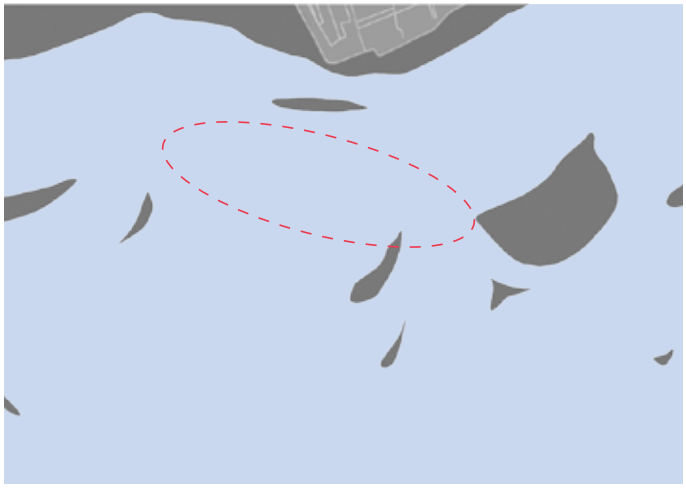


Fig. 6. The Sluisjesdijk 1374.

Fig. 7. The Sluisjesdijk 1600.

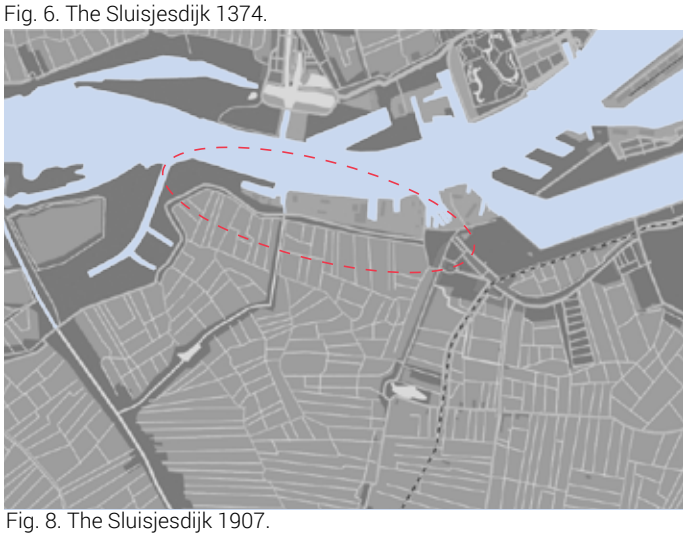


Fig. 8. The Sluisjesdijk 1907.

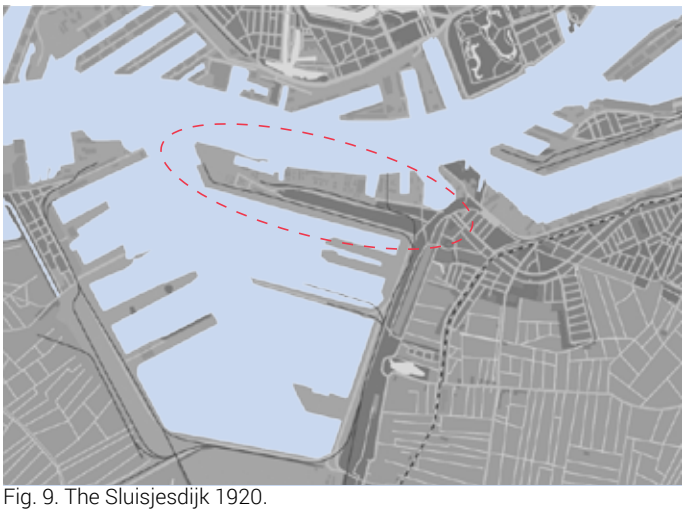


Fig. 9. The Sluisjesdijk 1920.

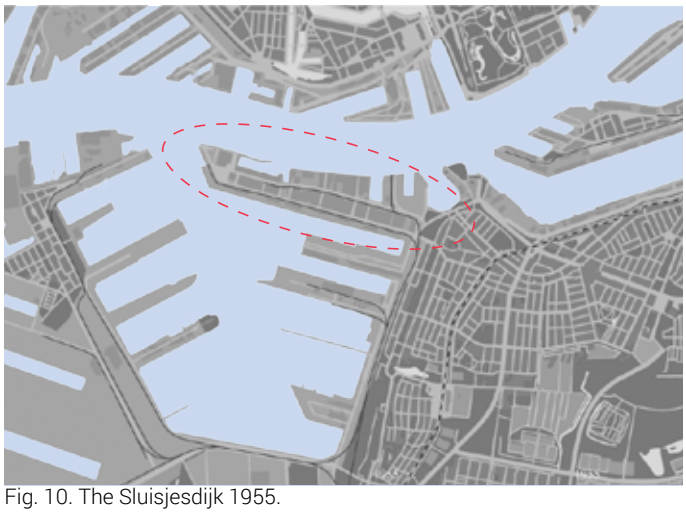


Fig. 10. The Sluisjesdijk 1955.

Fig. 11. View on the Sluisjesdijk around 1600.

Fig. 11. View on the Sluisjesdijk around 1940.

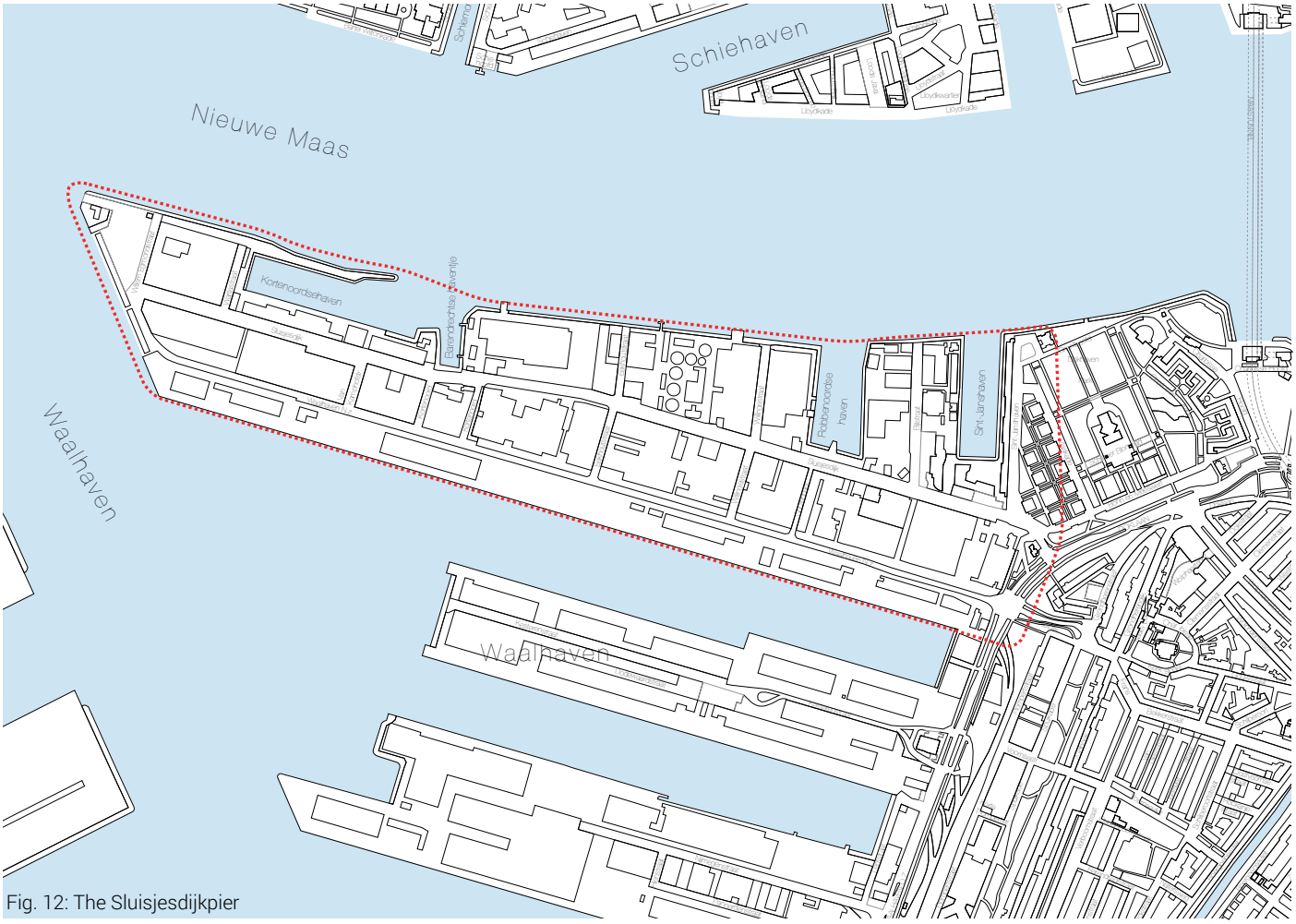


Fig. 12: The Sluisjesdijkpier

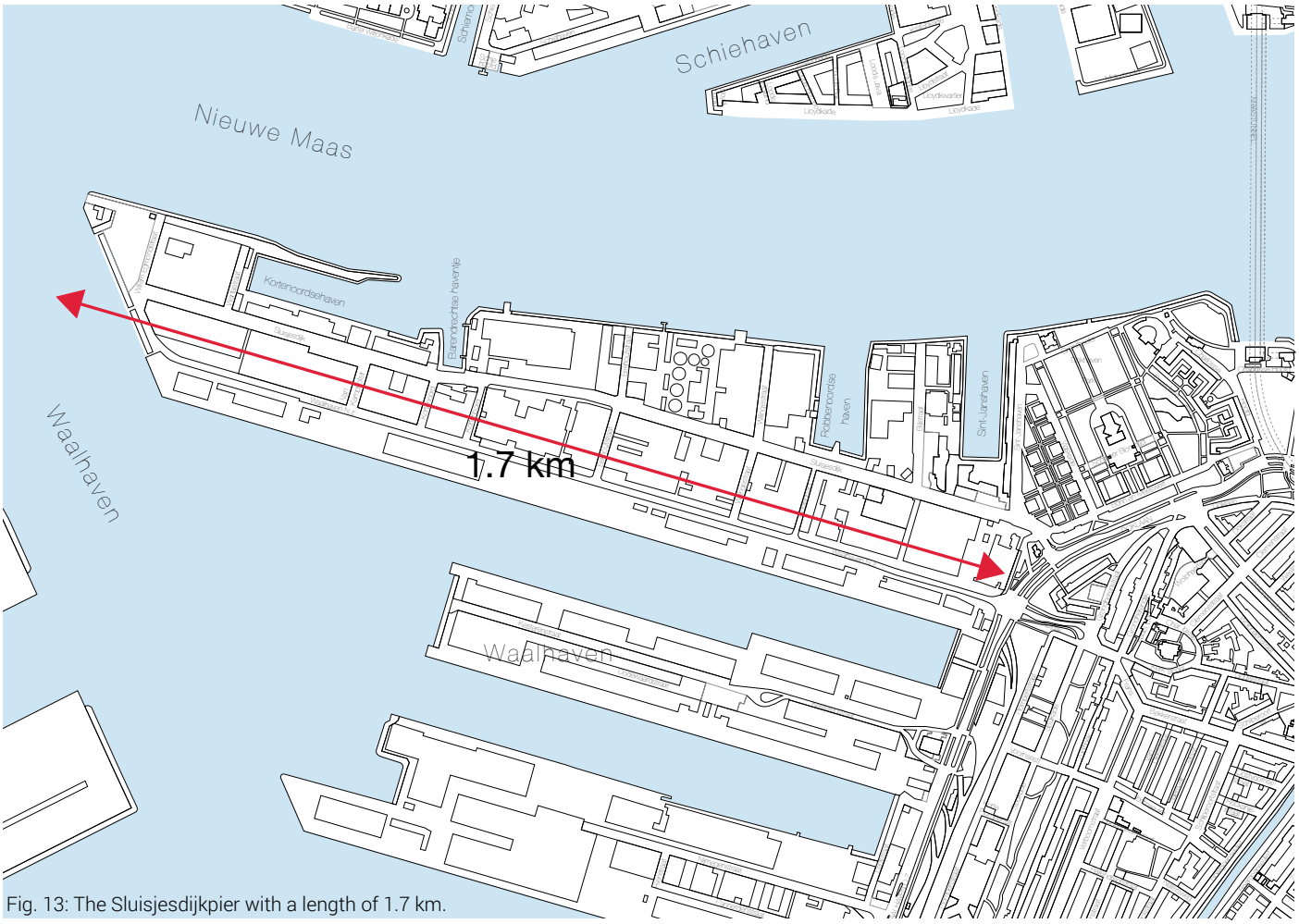


Fig. 13: The Sluisjesdijkpier with a length of 1.7 km.

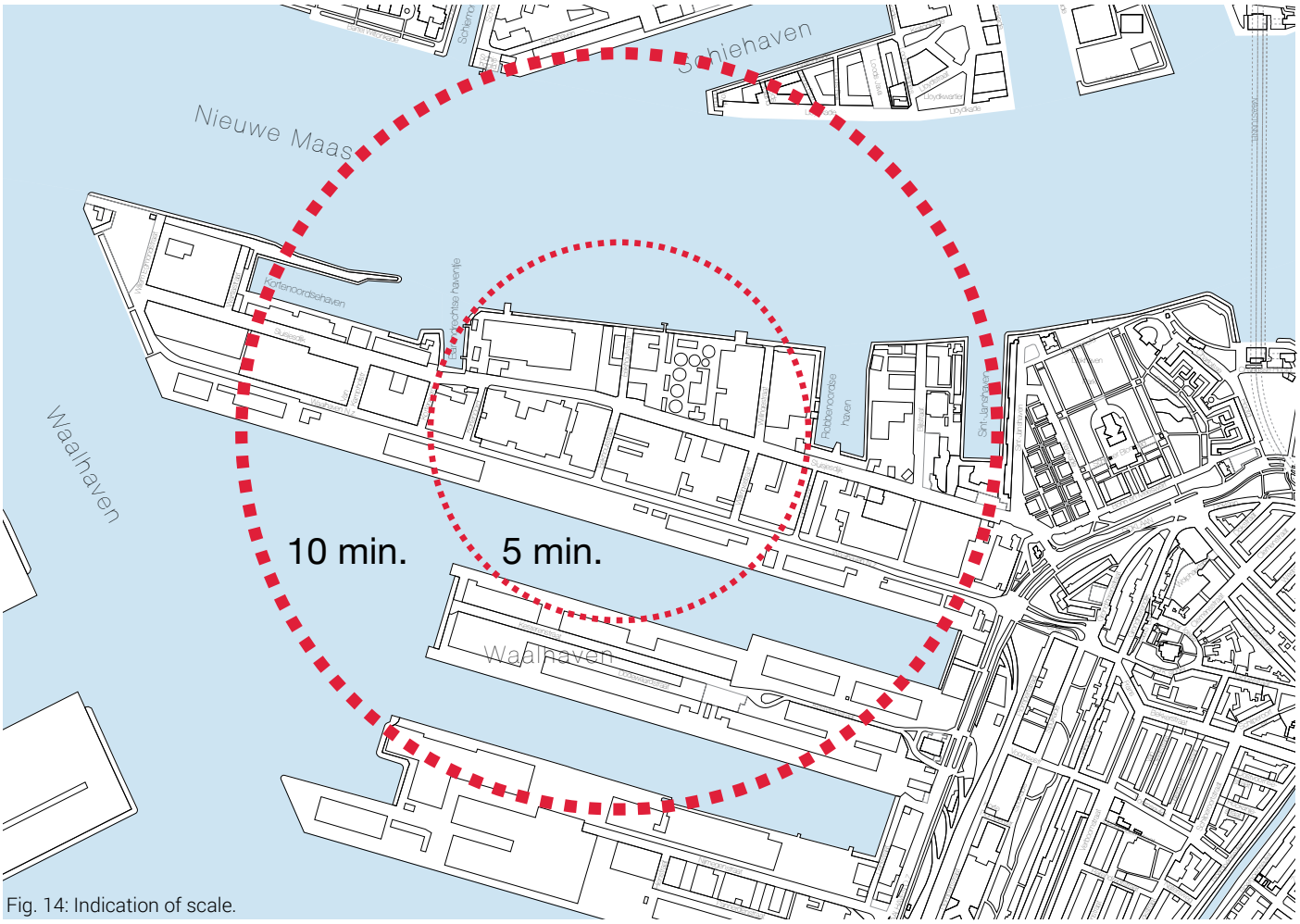


Fig. 14: Indication of scale.

Fig. 15: Businesses on the Sluisjesdijkpier.

Fig. 16: Garages on the Sluisjesdijkpier.

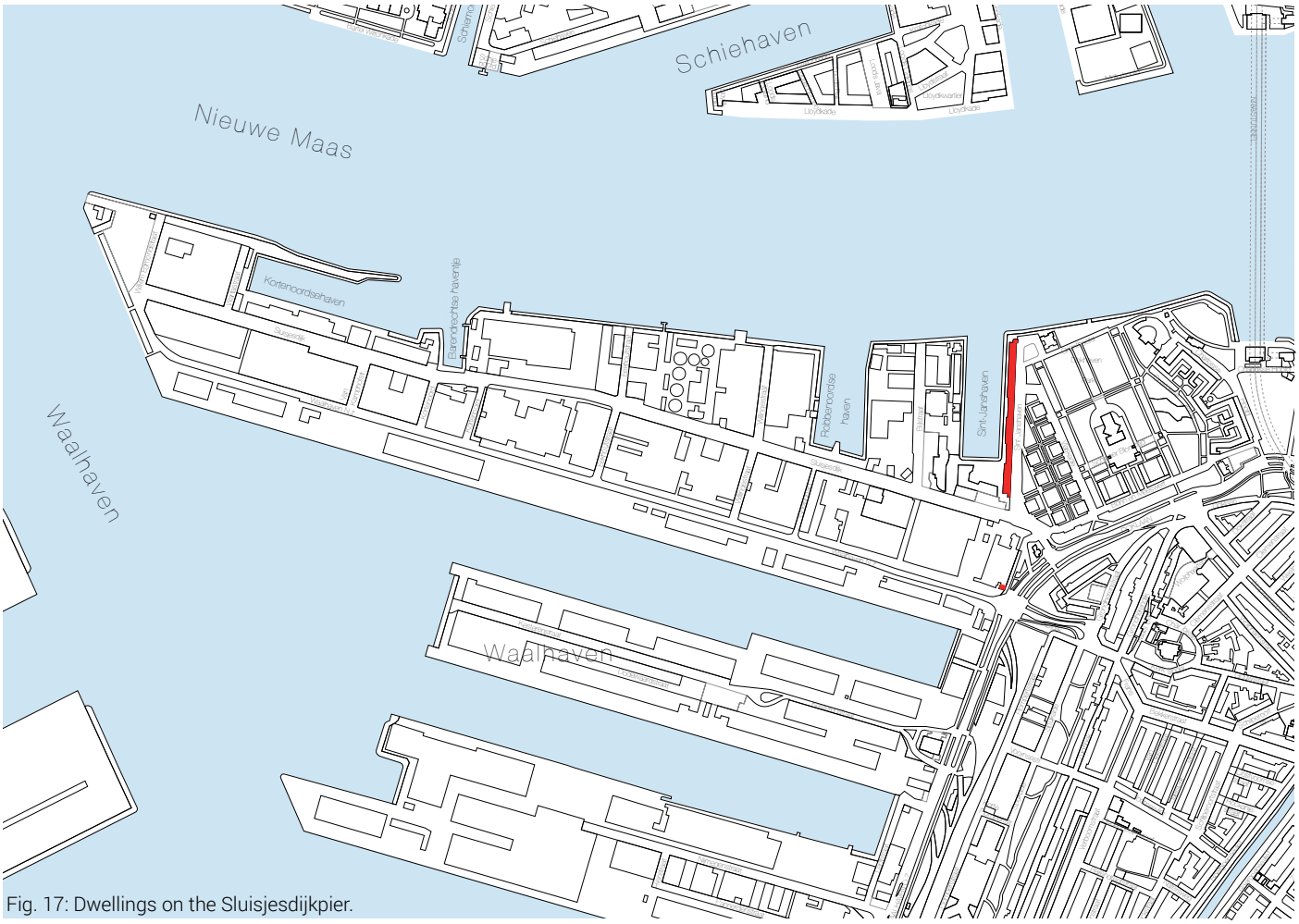


Fig. 17: Dwellings on the Sluisjesdijkpier.

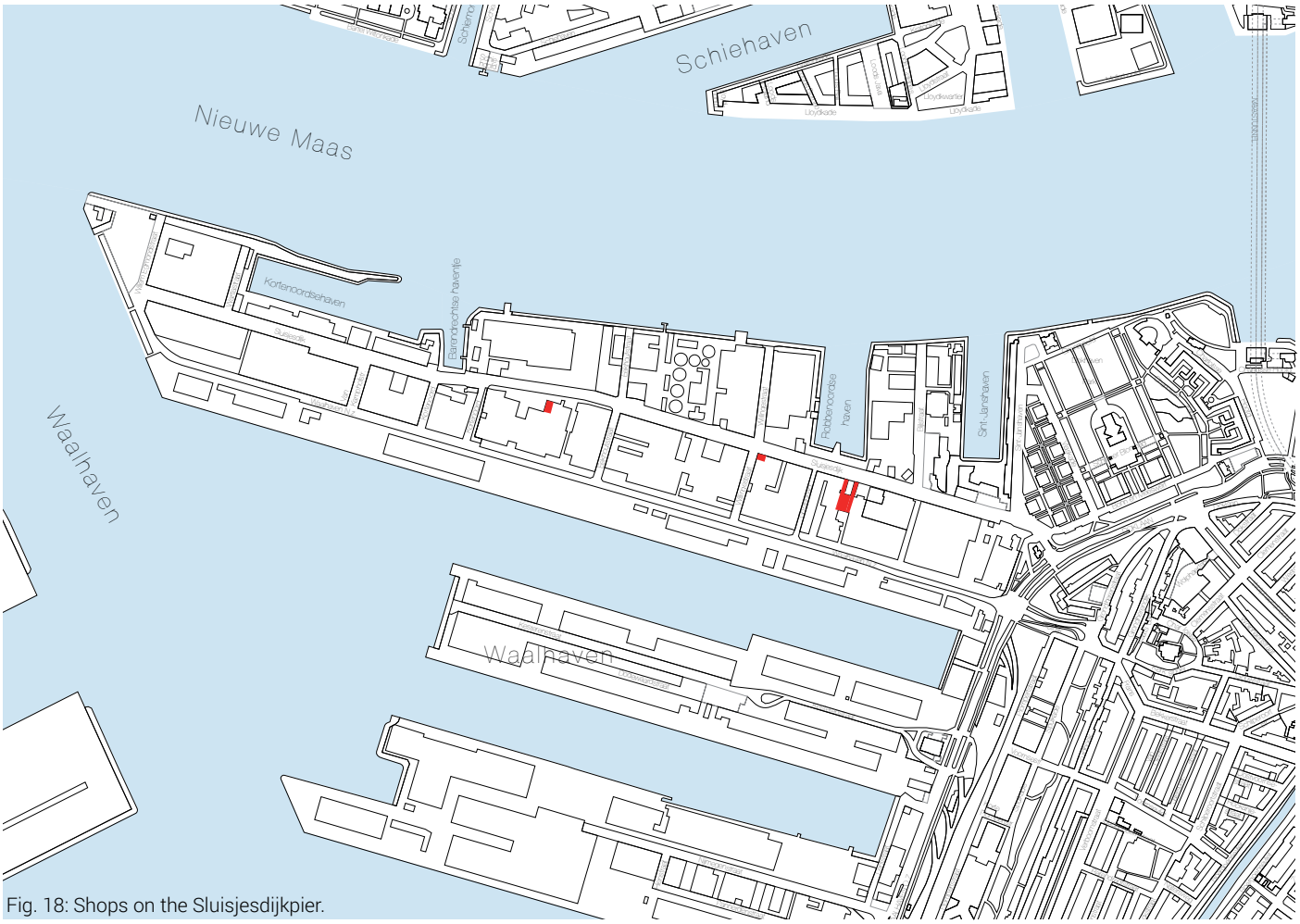


Fig. 18: Shops on the Sluisjesdijkpier.

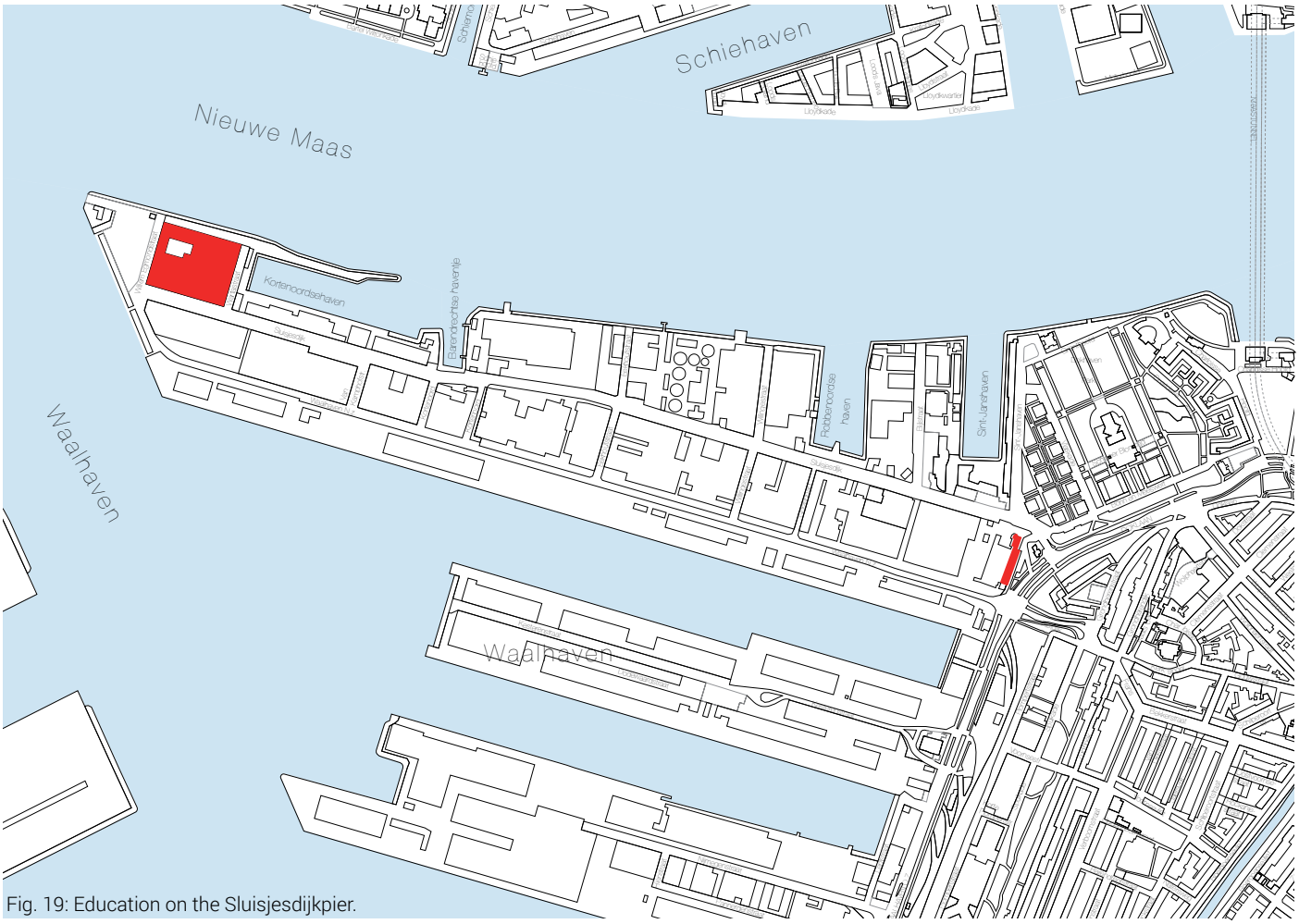


Fig. 19: Education on the Sluisjesdijkpier.

connected to the city wide road-network in the direction of the city and the A15 highway. On municipal level ideas exist to connect the North and South banks of the Nieuwe Maas river with a third city bridge in the far future, something which would increase the accessibility of the Sluisjesdijkpier even further.

4.3 Problem Identification

At the moment the Sluisjesdijkpier area has about 115.000 m2 of vacant (and rapidly degrading) buildings, and many more are expected to follow in the coming years due to loss of function or expiry of tenancy. The loss of tenancy is expected to happen within 5 years[5]. Figure 20 illustrates the buildings that are vacant (in orange), the buildings that will be acquired (dark grey) and the buildings that will lose their tenancy in a short period of time (light grey).

In addition to the vacancy issues, the area feels insecure as there aren't many people active in the public spaces of the area (fig. 21) and there are many derelict area's (fig. 22). Therefore little social control is present which in the case of the pier leads to criminal activities such as drug dealing and street races (fig. 23).

Currently the Sluisjesdijkpier is purely a working area, with not many other facilities encouraging social interaction. The presence of a high percentage of garages creates a visually dominant street image and a lot of nuisance.

When the inhabitants were asked what they experienced as the most negative feature of the Sluisjesdijkpier, the above mentioned problems were all named, "unsafe" and "nothing to do" being the most frequent answers (fig. 24).

The plans of the Havenbedrijf and the City of Rotterdam for the near future are to transform the pier into an attractive working environment, a more port-related area with maritime service companies. Although these plans are important for the future of the area, current issues such as vacancy, insecurity and isolation, might not all be solved or improved by the methods embedded in these plans.

4.4 Potential

In my view the Sluisjesdijk has a lot of potential. One of them is that there are some magnificent views and lines of sight that focus on the Maas, the center of Rotterdam and Port related activities (fig. 25 - 27). During a questionnaire I carried out amongst the residents of the apartment building looking over the Sluisjesdijk, I asked what their main reasons are for visiting the pier. The majority of respondents answered they came to enjoy the views (fig. 26). This indicates the importance of this aspect.

In addition to the views the general industrial atmosphere (fig. 27) is a valuable feature. This atmosphere is mainly caused by the large scale warehouses, port-related machinery and buildings with or without a monumental status which have an impressive historic appearance (fig. 28).

Aside from these predominantly visually orientated potentials, the Sluisjesdijkpier is also very well accessible (fig. 29 & 30). The Sluisjesdijkpier has a strong connection with Rotterdam as it lies next to the Nieuwe Maas and is directly connected to the neighbourhood of Charlois. It is even referred to as "the bridge" [6] between city and port, the place where two different worlds meet.

[5] Port of Rotterdam (2013), p. 77

Fig. 20: Vacancy on the Sluisjesdijkpier.


Fig. 21: Emptyness on the Sluisjesdijkpier.


Fig. 22: Desolated areas on the Sluisjesdijkpier.


Fig. 23: Illegal activities on the Sluisjesdijkpier.

Fig. 24: The most negative features the inhabitants of the Sint-Jansflat experienced.

4.5 Future Plans

The Havenbedrijf Rotterdam (HbR) is developing the Waalhaven into the service cluster of the Rotterdam port and industrial area. The Sluisjesdijkpier is part of this plan. The main plan of the HbR and the City of Rotterdam for the near future is to transform the Sluisjesdijkpier into an attractive working environment, a more port-related area with maritime service companies. Figures 31 and 32 give an impression of the planned green area's and boulevard. Below I have translated and summarized the main components of the plan[7] by the HbR and the City of Rotterdam.

In order to lead all developments on the right track and being able to guarantee the spatial quality, clear urban planning guidelines have been formulated by the HbR:

- To realise a better visual quality of the Sluisjesdijkpier, in both the built and non-built environment;
- Applying a clear structure by dividing the area into multiple lot typologies;
- Creating a good investment climate, through directed issuing and clear location properties, enabling the HbR to optimally facilitate businesses;
- Improving the port-city-river relation; both physically as well as visually qualitative;
- Articulating the area by constructing small scale parks (pocket parks);
- Increasing possible uses of the river banks by constructing boulevards and viewpoints;
- Visualizing the period between now and 2045.

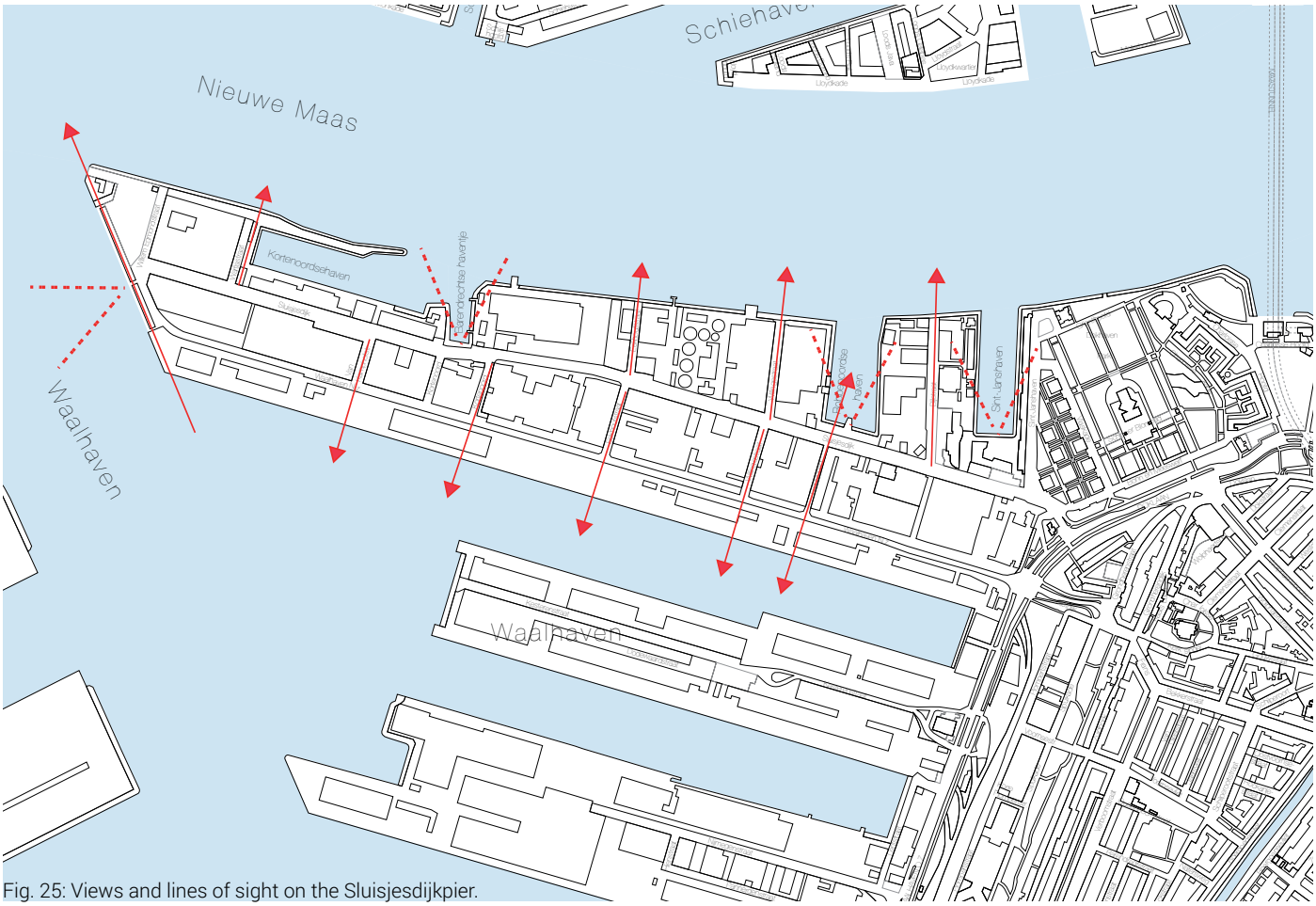


Fig. 25: Views and lines of sight on the Sluisjesdijkpier.

[6] Port of Rotterdam (2013), p. 7

Fig. 25: Views on the city centre of Rotterdam.

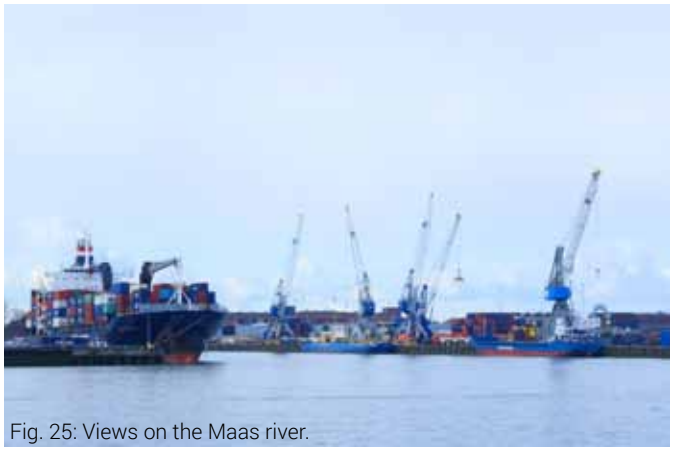


Fig. 25: Views on the Maas river.

Fig. 26: "View" is seen as the most positive aspect of the Sluisjesdijk.

Fig. 27: The industrial atmosphere on the Sluisjesdijkpier.

Fig. 28: The industrial atmosphere on the Sluisjesdijkpier.

Viewpoints and public space
Viewpoints on the water - combined with pocket parks - will be created at three of the ports once the tenancy contracts of the companies now established there have expired. Because of their central positioning and the good accessibility these areas are very appropriate for hospitality companies such as restaurants and cafe's. In addition superpanorama's will be created from the end of the Sluisjesdijkpier and from the dam on the Kortenoordsehaven. Viewpoints on the river will emerge from the side streets.

The walking boulevards alongside the river, with public green zones, will connect the viewpoints, parks and remarkable public locations. Present water-related elements on the banks of the river, such as small piers, will get an appropriate public function when possible. Another important operation in the arrangement plan is the construction of a nearly continuous walking boulevard with trees alongside the Nieuwe Maas. This will greatly improve the usability of the river bank areas and increase the possibilities to enjoy the views.

The Sluisjesdijk road will get a uniform profile. Sidewalks will be constructed on both sides of the road with parking spaces, driveways and bus stops. The cycling paths will be located on the North side, next to parking spaces. The new, calm profiles of the side streets will disclose the terrains belonging to the parcels of the Sluisjesdijk and provide parking spaces. These measures will improve the image quality of the Sluisjesdijk and demotivate undesirable usage of the public roads.
Accessibility
In addition to the already present accessibility, a bicycle route will be formed alongside the Sluisjesdijk, intensifying the interaction with adjacent neighbourhoods. For walkers the river banks and park areas will become very accessible and connected. A new walking route was designed around the end of the pier which offers optimal sights on various port activities, buildings, green and the water. For the accessibility over water there is a taxi boat stop in the St. Janshaven which will be connected to the walking and cycling routes (possibly using the now present small piers).

Cultural and historical elements and objects
The currently present image defining buildings on the Sluisjesdijkpier will be maintained during the transformation, or will be embedded in a new complex. This will make the history readable and creates an interesting, contrast-rich area. On the Sluisjesdijk various commercial buildings with characteristic roof types exist which do not have a monumental status. Possibly these buildings can be integrated in the transformation or overbuild, as a conservation of the historic image. The cranes on the river banks and on the pier are valued image elements which emphasize the industrial character of the port.

Facilities
The Sluisjesdijkpier will be accommodating mainly knowledge intensive businesses and facilities. This will result in more employees and visitors of the pier who will stay on the pier longer and more often. Restaurants and cafe's will provide cater to employees, recreationists and nearby residents. Because the pier will be used more often by more people, social security will increase and the liveliness of the area will be expanded. On the ambition map (fig. 32) four places have been indicated which will become suitable for hospitality businesses.

[7] Port of Rotterdam (2013)

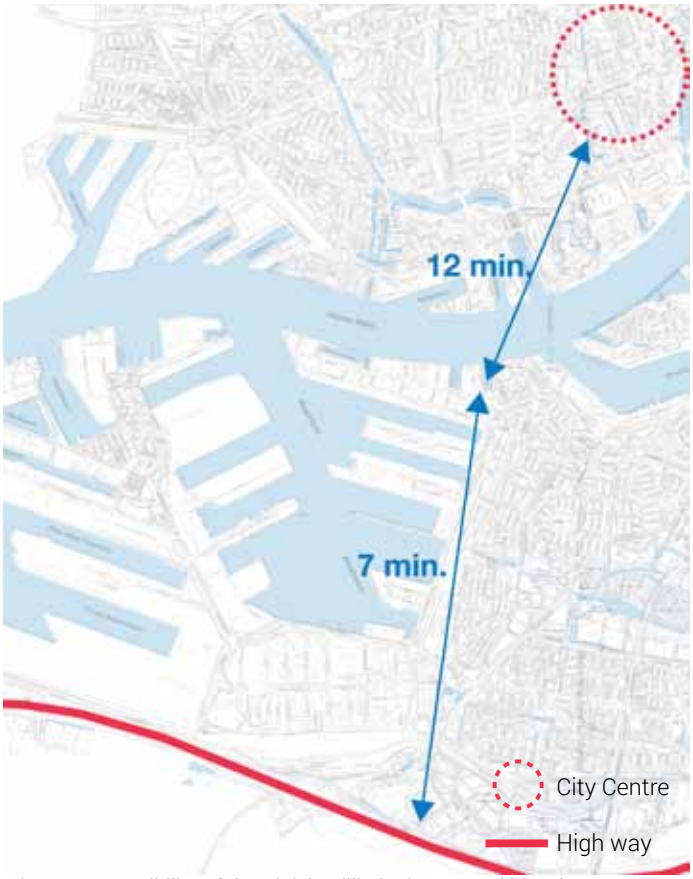


Fig. 29. Accessibility of the Sluisjesdijkpier by car and bicycle.

Fig. 30. Accessibility of the Sluisjesdijkpier by roads and public transport.

5.1 Potential Models for (Re-)Activating the Sluisjesdijkpier

As described in the previous chapter, the Sluisjesdijkpier area currently faces issues with vacancy, insecurity and isolation, which might not all improve because of the measures described in the future plans for the area. The area does however have a lot of potential in both qualitative and practical terms. In order to create an attractive area, many qualities of the area will need to be improved and/or introduced and a wide variety of groups will need to be drawn to the area. The Sluisjesdijkpier needs to be (re-)activated.

In my research I started to look at models which (re-)activated areas with similar features and contexts. Many of the models I found through both desk research and field research can be classified under a collective name, Creative Hubs. History has shown Creative Hubs have a positive effect on the social climate of - and interaction within - areas and the identity of a city, contribute greatly to meeting the demand of flexible and inexpensive working and meeting spaces, prevent negative effects of long term vacancy and deterioration of buildings and therefore can make an area or city more attractive for many different target groups without using major investments. A few very famous examples are of formal industrial areas such as SoHo in New York, Shoreditch in London and the NDSM Wharf in Amsterdam (fig. 33 - 36). As Creative Hubs function as a catalyst within urban (re-)development processes, the main goal is to give a valuable impulse to - and to (re-)activate - the area.

In order to get a better overview of and insight into Creative Hubs I have analysed various case studies through excursions in Rotterdam, Amsterdam (notorious for its history and great amount of Creative Hubs) and The Hague. These case studies were one of the elements that I have used to define a brief for a design of a Creative Hub on the Sluisjesdijkpier. The different analysis and necessary information of these case studies can be found as an appendix.

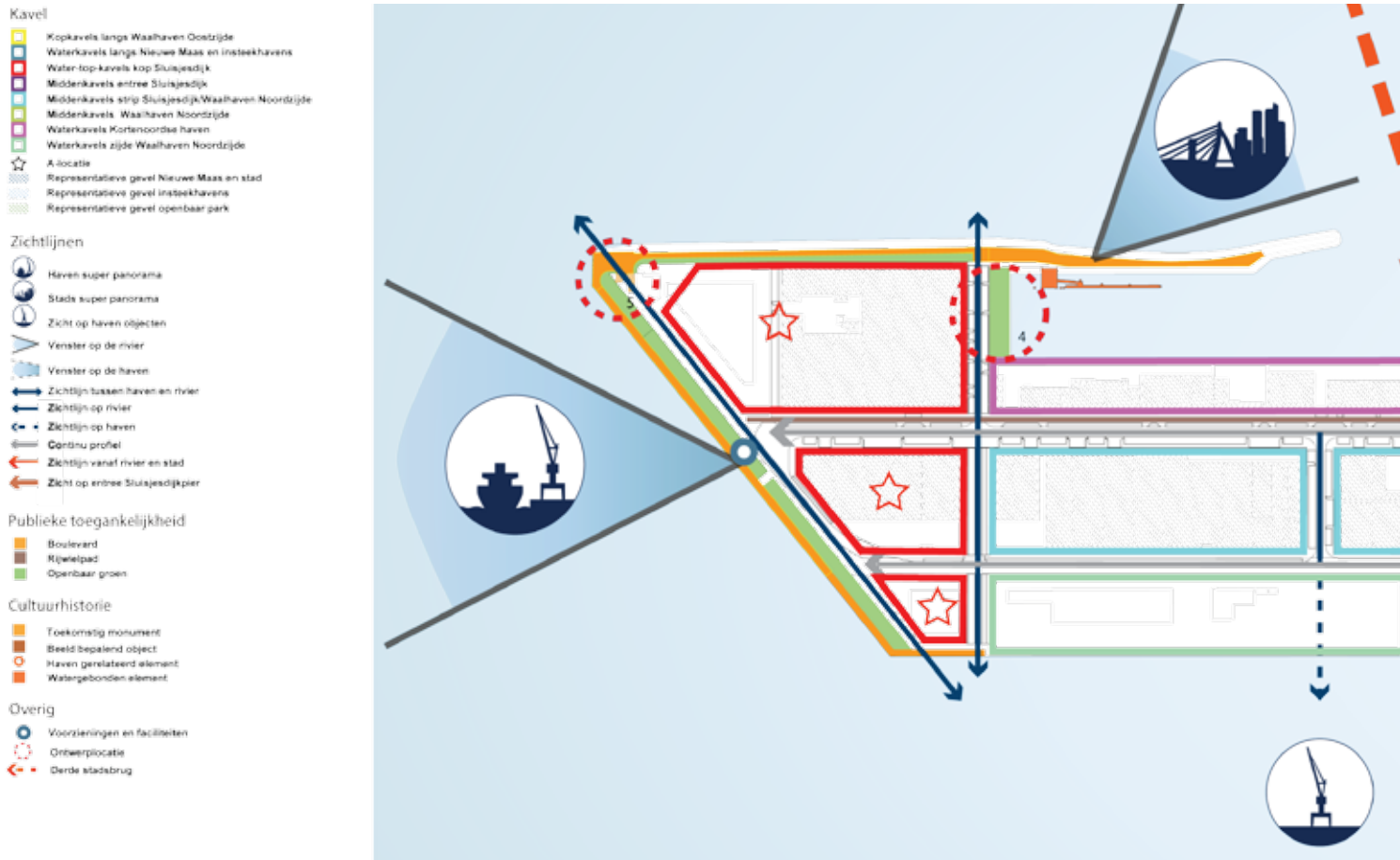
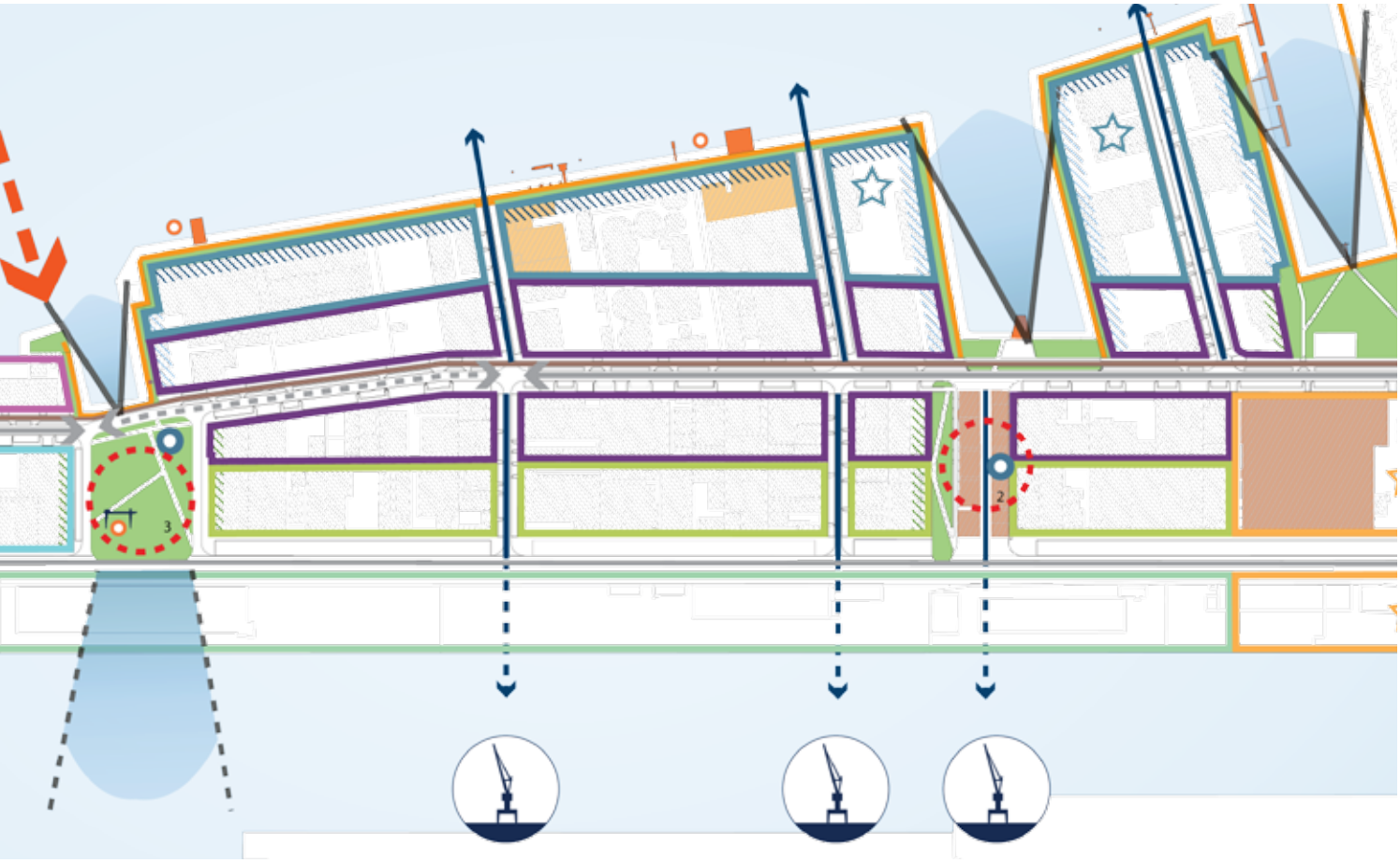


Fig. 32. Ambition map for the future plans for the Sluisjesdijkpier.

Fig. 31. Impression of the future plans for the green pocket parks on the Sluisjesdijkpier.

Fig. 31. Impression of the future plans for the green boulevard along the north side of the Sluisjesdijkpier.



Creative Hubs

In my opinion the introduction of a Creative Hub model would be a great (even essential) step towards the development of the Sluisjesdijkpier in reaching the goals and ambitions previously mentioned in this research in an effective and sustainable way.

5.2 Definition

There are many different definitions for Creative Hubs which can be found in literature and policy documents. The following definitions were the ones I found most applicable;

"*Buildings where creative entrepreneurs work and live. Such hubs partly owe their success to the mix of professionals and upcoming entrepreneurs. Furthermore, the presence and interaction between different creative disciplines and the innovative environment create a valuable impulse. The rest of the success can be attributed to the claim that cultural hubs function as a catalyst within urban (re-)development processes. Recently, this has resulted in high expectations of the effects cultural hubs have on their urban environment*" (Conceptontwikkeling voor creatieve broedplaatsen, 2009).

"*Een informeel woon- en werkverband van cultuurproducenten, ambachtelijke producenten, dienstverleners en technici. Door de levensstijl, productiewijze en visie die ten grondslag ligt aan een broedplaats, vormen de panden een belangrijk 'statement' als culturele vrijplaats binnen de bestaande stad*" (Gemeente Amsterdam, 2000).

"*Een complex van werk- en oefenruimten, al dan niet in combinatie met woonruimten, voor een samenwerkende groep van overwegend culturele ondernemers en kunstenaars(groepen), waar zij onder de juiste financiële en facilitaire condities en in een inspirerend klimaat hun werk kunnen produceren en presenteren, niet primair gericht op commercieel succes*" (Gemeente Den Haag, 2005)

In "Conceptontwikkeling voor creatieve broedplaatsen" the following characteristic features of Creative Hubs were described:

1. Work and Studio spaces (living);
2. Affordable rent;
3. Sense of Scale;
4. Mix of creative disciplines;
5. Mix of features.

The affordable rent matches the financial circumstances of creative entrepreneurs. The scale should ensure that mutual collaboration and interaction can be accomplished, therefore a creative hub should not be too big and not too small. The mix of creative disciplines and functions serve to create the exchange between ideas and foster innovations[8].

Following these definitions derived from literature and policy documents I have formulated the following definition of a Creative Hub which is best suitable for the context of the Sluisjesdijkpier.

"*A Creative Hub is an informal built environment which is made attractive for a variety of creative entrepreneurs and cultural organizations in terms of financial and facilitative circumstances. This group is enabled to initiate activities and produce works and services in an inspiring environment not primarily aimed at commercial success. The main characteristics of Creative Hubs are: workspaces, affordable rent, scale, a mix of creative disciplines and a mix of functions.*"

Fig. 33. SoHo New York


Fig. 34. Shoreditch London


Fig. 35. NDSM Warf Amsterdam

5.3 Emergence

From a Dutch historic perspective, today's breeding grounds find their roots in the free havens of the 70s and 80s. In her graduation thesis Eckhardt (2007) describes how various 70s squats in Amsterdam fostered a great variety of creativity, craftsmanship and socially engaged initiatives. Self-determination and solidarity were considered the most important principles. Artists created the content. From the end of the 80s the artistic aspect often formed the crucial factor in the acquisition, legalisation, and/or the toleration of the free havens. At the same time many squats were vacated which caused an even greater shortage of creative working spaces. A petition in 1998, signed by hundreds of artists from Amsterdam, made the city realise that more investments had to be made in artistic subcultures. This was one of the events resulting in the action plan "No culture without subculture", which heralded the breeding ground policy of Amsterdam in 2000. (Eckhardt, 2007) (fig. 36)

There are two different ways for Creative Hubs to arise. One way can best be described as organic or gradual emergence. The other way for a Creative Hub to develop is at once due to urban planning. In this situation existing vacant buildings are often transformed by the municipality or project developer over a short period of time.

Originally Creative Hubs arose gradually. This development is in my opinion best described by Straaten & Maverick (2008) as cited in "Conceptontwikkeling voor creatieve broedplaatsen" (2009), who divided it in four phases.

Phase 1: Creative environment
Phase 2: Interaction environment
Phase 3: Transaction environment
Phase 4: Transformation environment

At the start of the development of a Creative Hub the building or area used will need to have a low initial value, which allows for the creation of value to have a reasonably high probability. In the creative environment (phase 1) users will need to be able to use space for relatively low costs. The income in this phase is generated from temporary initiatives such as exhibitions and workshops.

Slowly this creative and experimental environment will make its transition into an interaction environment (phase 2) in which the Hub will start to generate added value as a space for meeting, networking and synergy. The creative entrepreneurs are more often asked for jobs and the temporary exploitations increase which results in a more public character of the Hub. Hospitality and other more established businesses can in this phase start to participate in the Hub and strengthen the process.

After some time the Hub arrives in the transaction environment (phase 3), in which a part of the creative entrepreneurs will be increasingly in contact with consumers and regular companies. These are attracted by the products, experience and recreative elements of the Hub.

When these consumers and companies are able to settle in the area under the regular conditions of the market, the experimental character of the Hub will be outgrown and it will enter the transformation environment (phase 4) which can be identified more as a regular creative production market[9].

[8] Verschoor, M. (2009), p. 15 - 16
[9] Verschoor, M. (2009), p. 25 - 26

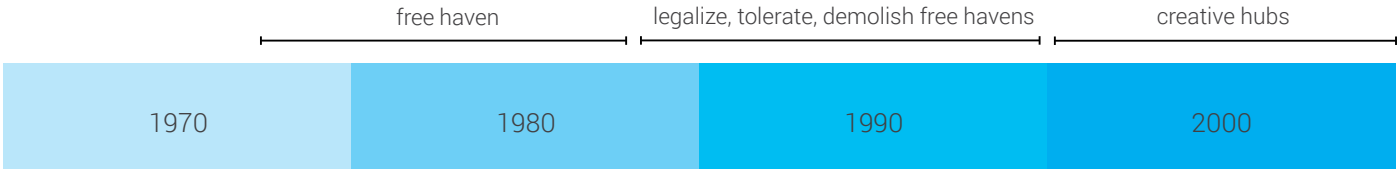


Fig. 36. The history of the emergence of the Creative Hubs in the Netherlands.

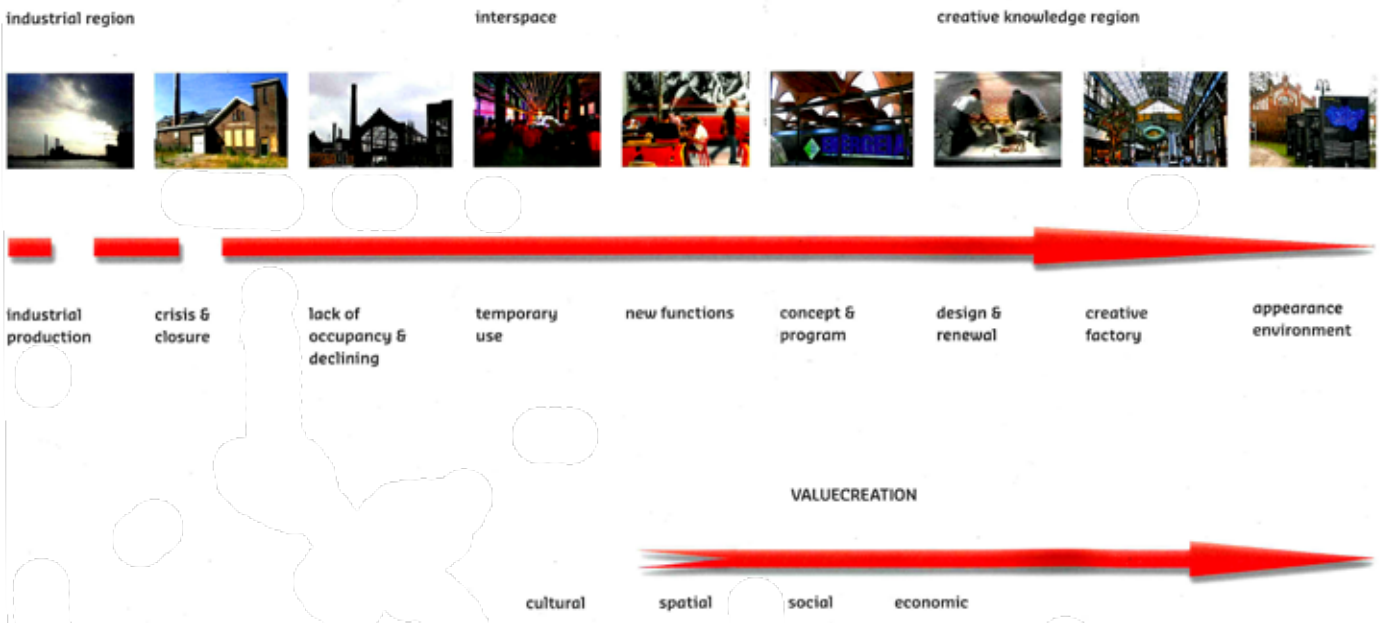


Fig. 37. The history of the emergence of the Creative Hubs in the Netherlands (Creatieve Fabrieken, 2011)

Figure 37 illustrates a model which was published in “Creatieve Fabrieken” (2011) and shows the lifecycle of industrial area’s buildings which over the course of time evolved into creative hubs.

5.4 Target Groups

One of the main strengths of a Creative Hub is the combination and interaction between many different target groups. In first instance the different creative entrepreneurs work together in one building and use each others services (fig. 38). An architectural firm for example could be in need for a website and hire the web designer next door to design it. The same web designer might need a certain typography and hire the graphic designer based in the building, etc.

Not only the creatives have the advantage of a Creative Hub. Also target groups from outside can benefit from a Creative Hub. Businesses, residents, workers and even tourists can make use of the services and functions present in the Creative Hub (fig. 39).

Below I have listed the various target groups for a Creative Hub.

Professional Target Groups:
- (Creative) entrepreneurs (arts, crafts, media, architecture, design, etc.)
- Artists and artist groups (visual arts, performing arts)
- Creative SME’s
- Arts, Cultural and Social organizations
- Public facilities SME’s (hospitality: restaurant, bar, cafe, retailers etc.)
- Public Target Groups
- Businesses

Public Target Groups:
- Residents
- Workers
- Audiences from the neighbourhood, city, region
- Tourists (from the rest of the country or abroad)

5.5 Current Demand

A Creative Hub can very well function as a catalyst to reactivate the Sluisjesdijkpier. However, in order to make it work there needs to be a demand for such a building or the spaces it will offer. Therefore it is very important to look at the demand of freelancers and creatives for workspaces in the South of Rotterdam. In an interview with Edwin Luijendijk from Zelfstandig Op Zuid (ZOZ), he indicated that ZOZ was looking for a building with working space in Rotterdam South for about 200 freelancers, including common spaces, meeting rooms, etc. Due to this meeting and the importance of this demand for the necessity of a Creative Hub on the Sluisjesdijkpier I further researched this demand.

The amount of freelancers is growing fast every year (fig. 40). In “ZZP’ers in beeld Rotterdam Zuid” (2012) the freelancers in Rotterdam South have been mapped. It is remarkable that the majority of freelancers are currently located in Charlois (fig. 41), which lies directly next to the Sluisjesdijkpier. Almost half of the total amount of freelancers has little to no contact with other entrepreneurs with different backgrounds in the municipality (fig. 42), while having the desire to increase external contacts (fig. 43).

When specifically looking at creative entrepreneurs in Rotterdam, it can be said that this group is growing (fig. 44). In addition the amount of working spaces seems to expand in Rotterdam. However, this does not necessarily mean that there is no more demand for working spaces. Waiting lists have been documented from organisations such as Ontwikkelingsbedrijf Rotterdam (OBR), the Chamber of Commerce (KvK), the Stichting Kunst Accommodatie Rotterdam (SKAR) and various Creative Hubs. These waiting lists counted a total of 616 people in Rotterdam still looking for a working space in a collective Creative Hub. The expected amount of people still

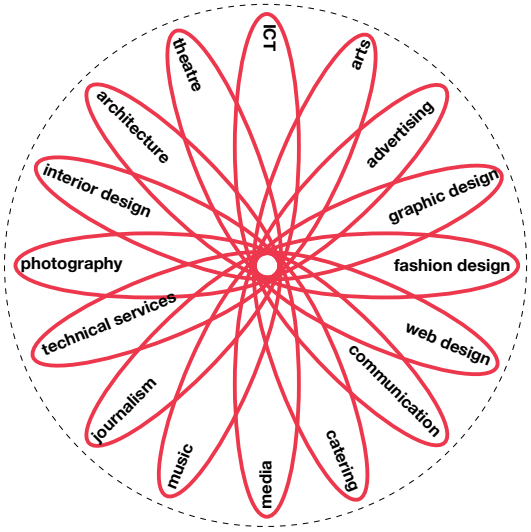


Fig. 38. A main strengt of a Creative Hub is the combination and interaction between many different target groups.

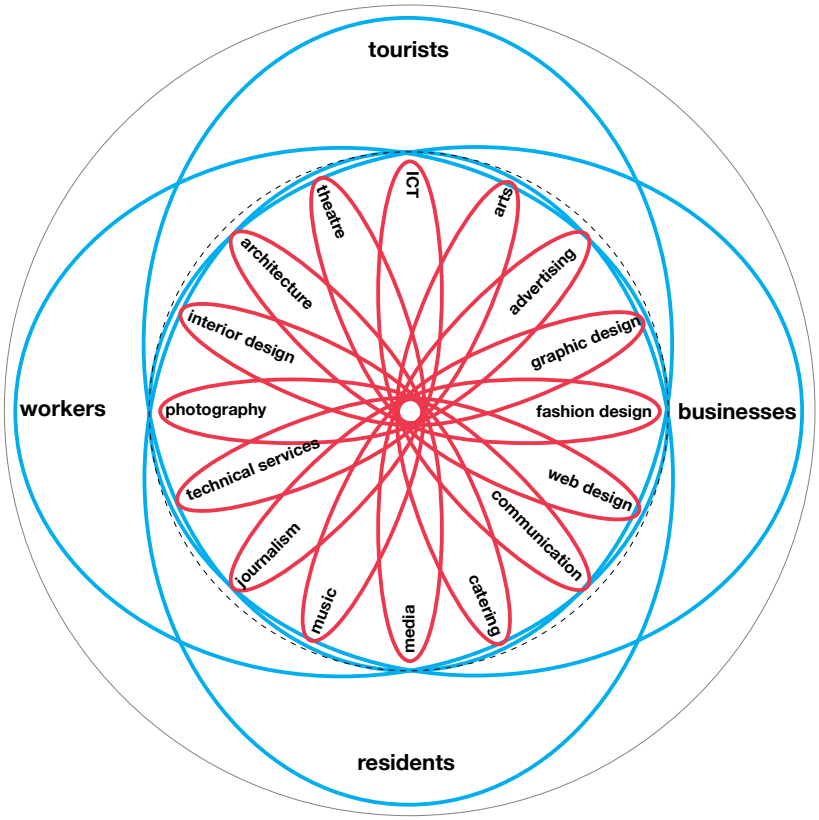


Fig. 39. Also target groups from outside can benefit from a Creative Hub.

looking for working spaces is rated at 250[10]. In an interview which was published in "Ruimte Voor Creativiteit" (2008), almost 80% of 168 correspondents (creatives looking for workspace) indicated that there was a great need for creative company spaces in Rotterdam. If we look at the current growth of the creative industries as indicated by Rutte (2012) and the increase in freelancers, this demand is expected to increase rapidly over the coming years (fig. 47).

The above mentioned data indicates that there is a significant need for working spaces in a Creative Hub in Rotterdam South to facilitate freelancers working in the creative industries from a wide variety of sectors. Using the previously gathered information about the Sluisjesdijkpier and the Creative Hub as a model to (re-)activate the area I developed a brief. These practical, qualitative and carefully defined guidelines can be used to find a suitable building to transform and to work out a realistic and feasible design for a Creative Hub on the Sluisjesdijkpier.

The brief is described below and illustrated in figure 48.

6.1 Working Spaces

The Creative Hub should not be too small (for over 20 people) and not too big (for less than 100 people). When looking at the case studies most Creative Hubs have a general amount of 50 creative entrepreneurs working in one Creative Hub. Therefore I have chosen for a Creative Hub which is able to facilitate working space for 50 people. As indicated before, there is a big demand for working space in Rotterdam South which will limit the risks of insufficient usage.

In "Ruimte voor Creativiteit" (2008) 162 people were asked what kind of working space they were looking for. The majority answered they prefer studios (46%) and offices (23%) (fig. 49). When they were asked what size they preferred for their working space, the majority of the people answered they preferred a size between 20 and 39 m^2 (22%) and between 40 and 59 m^2 (22%) (fig. 50). Therefore, in the brief for the Creative Hub, I have chosen 30 m^2 as an average size for the working spaces. This means the total amount of surface area of workspaces in the building will be (30 x 50) 1.500 m^2. This total amount will be divided in workspaces with sizes varying between the 20 and 60 m^2. Next to the working spaces I added a percen-tage of 20% of the total size of working spaces for storage space.

Most Creative Hubs offer flexible working spaces. This enables people to discuss, work freely and comfortably for a short while. An additional 100 m^2 of flexible workspaces will need to be present in the brief.

According to the "Euronorm" (2013) a meeting room for 10 people requires a minimum surface area of 10 m^2. For a Creative Hub housing 50 people, 10 meeting rooms should be adequate in the brief.

[10] Epskamp, M., Zanden, W. van der (2008), p. 6

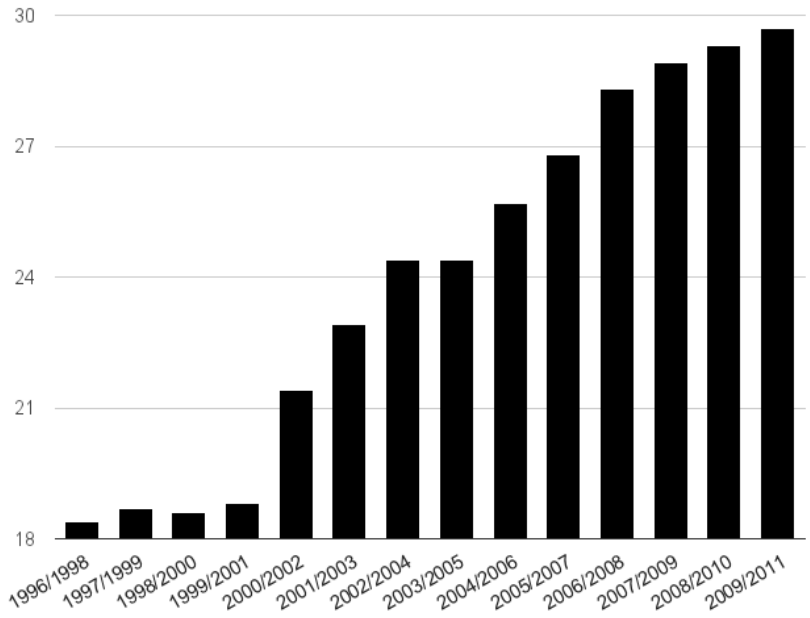


Fig. 40. Amount of freelancers in Rotterdam x 1000

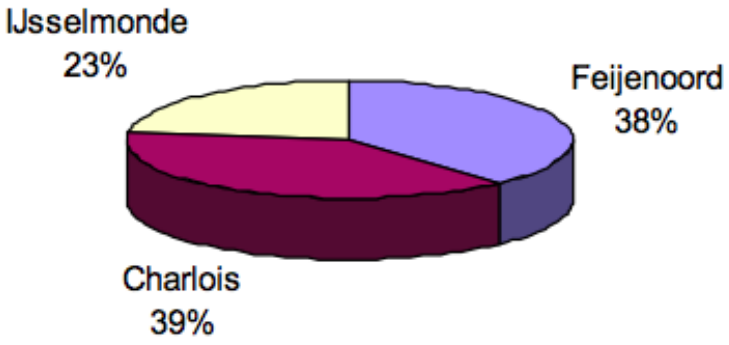


Fig. 41. Location of freelancers based in Rotterdam South per district.

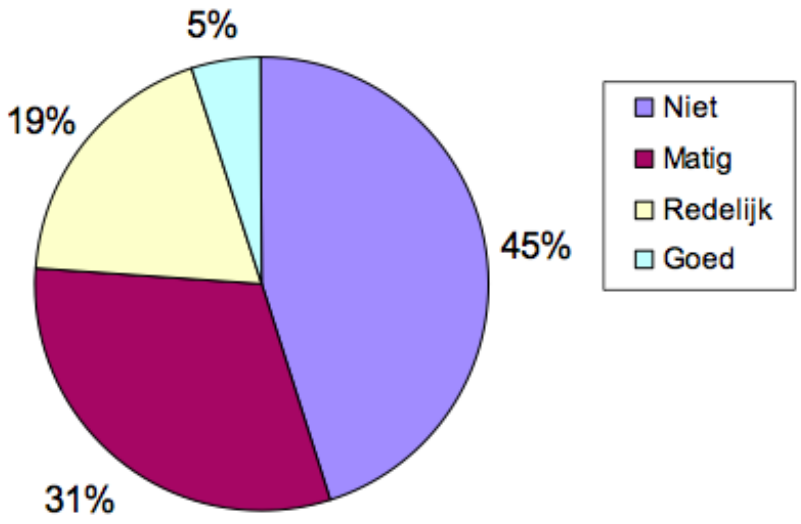


Fig. 42. Quality of - and frequency in which - the contact that freelancers in Rotterdam South have with other entrepreneurs in the municipality.

Behoefte aan informatie, diensten en producten

- De zzp'er heeft vooral behoefte aan informatie over:
    1. Verkrijgen opdrachten van de overheid (o.a. gemeente)
    2. Meer onderling contact met ondernemers in de gemeente
    3. Meer informatie over ondernemen in de deelgemeente
    4. Meer kennis over acquisitie als onderdeel van bedrijfsvoering
    5. Meer informatie over vestigingslocaties binnen de gemeente

Fig. 43. The desire to increase external contacts with other entrepreneurs in the municipality,

Sectoren	Banen 2011	Groei 2000–2011 (in aantallen)	Groei 2000–2011 (% per jaar)	Groei 2009–2011 (in aantallen)	Groei 2009–2011 (% per jaar)
Kunsten en cultureel erfgoed	98.874	39.808	4,8%	10.445	5,7%
Media en entertainmentindustrie	89.296	7.142	0,8%	-3.122	-1,7%
Creatieve zakelijke dienstverlening	92.280	31.369	3,8%	3.223	1,8%
Creatieve industrie	**280.450**	**78.319**	**3,0%**	**10.546**	**1,9%**
Totale economie	*8.065.110*	*729.740*	*0,9%*	*-29.030*	*-0,2%*

Bron: Rutten 2012. (Data: LISA 2012)

Fig. 44. Amount of creative entrepreneurs in Rotterdam.

Sectoren	Vestigingen 2011	Groei 2000–2011 (in aantallen)	Groei 2000–2011 (% per jaar)	Groei 2009–2011 (in aantallen)	Groei 2009–2011 (% per jaar)
Kunsten en cultureel erfgoed	46.053	31.433	11,0%	10.469	13,8%
Media en entertainmentindustrie	30.414	15.073	6,4%	3.798	6,9%
Creatieve zakelijke dienstverlening	40.903	21.465	7,0%	6.654	9,3%
Creatieve industrie	**117.370**	**67.971**	**8,2%**	**20.921**	**10,3%**
Totale economie	*1.219.440*	*364.590*	*3,3%*	*83.980*	*3,6%*

Bron: Rutten 2012. (Data: LISA 2012)

Fig. 45. Amount of offices for creative entrepreneurs in Rotterdam.

Antwoord	Aantal respondenten*	Percentage van het totaal
Het is voor mij van groot belang dat ik juist in Rotterdam bedrijfshuisvesting vind	127	78%
Ik heb liever bedrijfshuisvesting in Rotterdam dan ergens anders, maar er zijn ook andere plaatsen waar ik mijn bedrijf zou kunnen huisvesten	32	20%
Rotterdam is een optie, maar ik huisvest mijn bedrijf net zo graag ergens anders	4	2%
Rotterdam is een optie, maar ik huisvest mijn bedrijf liever ergens anders	0	0%
Totaal	**163**	**100%**

Fig. 47. Importance of and demand for workspace in Rotterdam.

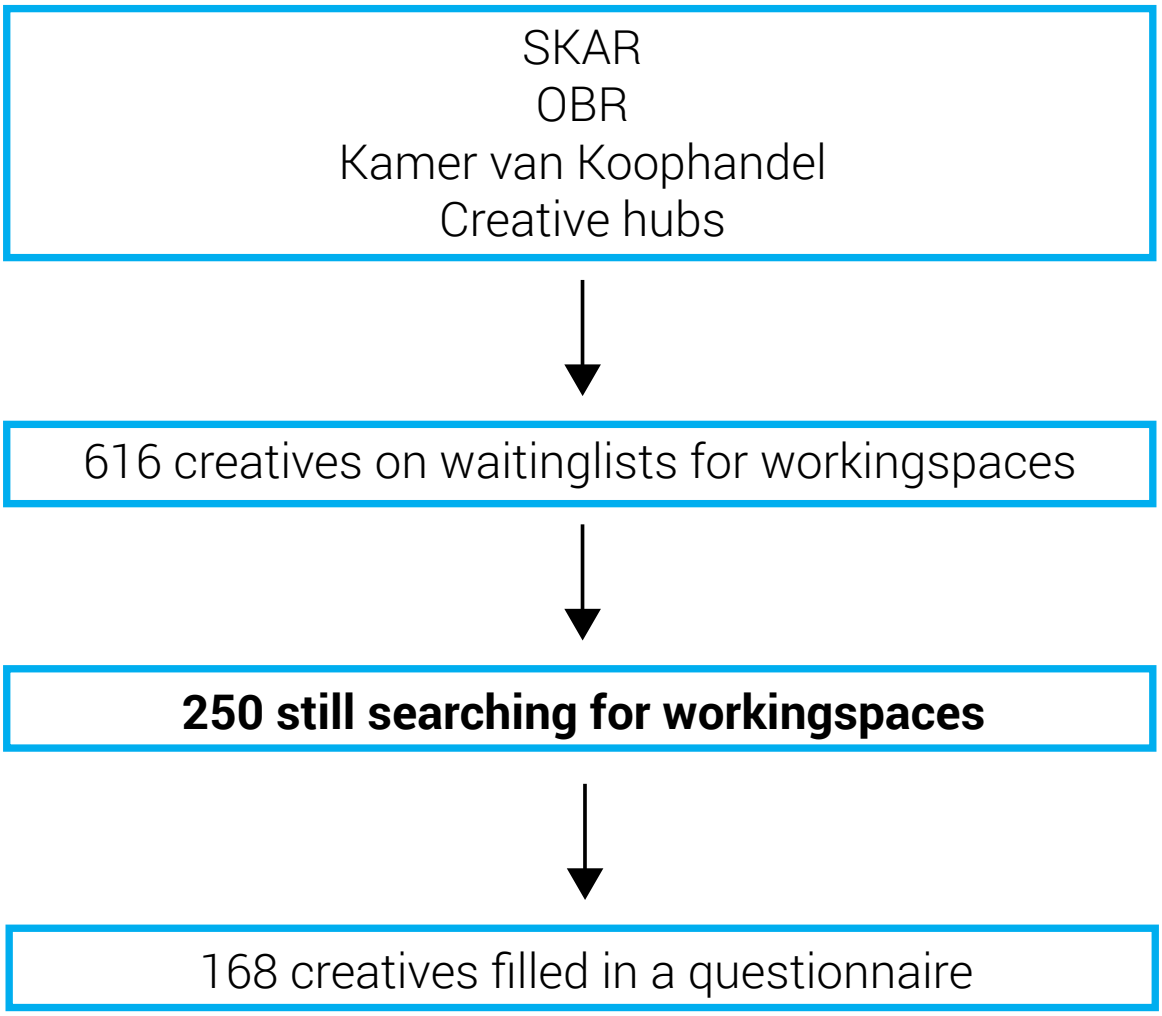


Fig. 47. Amount of creatives in Rotterdam looking for workspaces.

6.2 Exhibition and Common Space
The surface area of the exhibition function together and the common space are 300 m^2. This size offers sufficient capacity for people working on and visiting activities in these spaces. The exhibition space and the common space should be able to facilitate multi-functional use. They should be able to be combined into one space of 300 m^2, but they should also be able to be used as separate spaces; one of 200 m^2 (exhibition space) and the other of 100 m^2 (common space).

6.3 Hospitality and Retail
Out of the results of the questionnaire that was distributed amongst the inhabitants of the Sint-Jansflat apartment block overlooking the Sluisjesdijk, a few important conclusions can be drawn. 52 people filled in the questionnaire. They were asked if they visited the Sluisjesdijkpier, and if so why they visited. More than half of the people answered they did visit the Sluisjesdijkpier and the majority of these respondents answered the view was the most important aspect. When asked what amenities the residents preferred, almost all inhabitants answered they preferred a terrace along the water. The majority answered they preferred a taxi boat stop, restaurants and shops. For this reaseon 200 m^2 of the building will be reserved for hospitality and retail functions.

6.4 Surface Area
When we add up all the above mentioned surface area's this results in a total amount of 2.575 m^2. 30% of this amount should be added up to form the total surface area of the building of 3.350 m^2 NFA (net floor area), including circulation space, toilets, etc.

The case studies showed that a general or average size for a Creative Hub accommodating working space for about 50 people has a surface area of approximately 3.500 m^2. This amount indicates that the calculated total surface area above seems realistic.
In order to select the building from the building stock of the Sluisjesdijkpier which is most suitable for transformation into a Creative Hub, I have developed a set of criteria. This set of criteria is based on the context of the Sluisjesdijkpier, information and case studies regarding Creative Hubs, the brief and additional technical and financial possibilities. In this chapter I will navigate through the criteria one by one and in this process the less suitable buildings will be eliminated from the selection process. The goal of this method is to be able to select the most suitable building(s) which can then be used in the design of a Creative Hub as an important function and tool for the (re-)activation of the Sluisjesdijkpier.

1. Criteria 1: Vacancy
2. Criteria 2: Surface Area
3. Criteria 3: Characteristic Qualities
4. Criteria 4: Technical Possibilities
5. Criteria 5: Financial Feasibility

The process of the building elimination and the criteria are illustrated in figure 51.
7.1 Criteria 1: Vacancy
The first criteria is to indicate which buildings are vacant or are expected to be vacant in the near future. As described in Problem Identification, the analysis of vacancy has been done in three categories; buildings which are currently vacant, buildings that will be acquired by HbR and the buildings of which the tenancy contracts will come to an end within 5 years[11]. Figure 52 illustrates a total of 20 buildings which are currently vacant or which will be vacant (or are expected to be so) in the near future.

7.2 Criteria 2: Surface Area

An important criteria is that a building suitable for transformation needs the right amount of square meters matching the amount mentioned in the brief. The building mustn't be too big, but also not too small. The Hub should also be able to accommodate growth, meaning when the need for working spaces grows, nearby vacant spaces and buildings could be transformed as well to facilitate more working spaces. As indicated in the brief (fig. 48) the minimum amount of square meters needed for the Cultural Hub is 3.350 m² NFA (net floor area). Figure 52 shows the

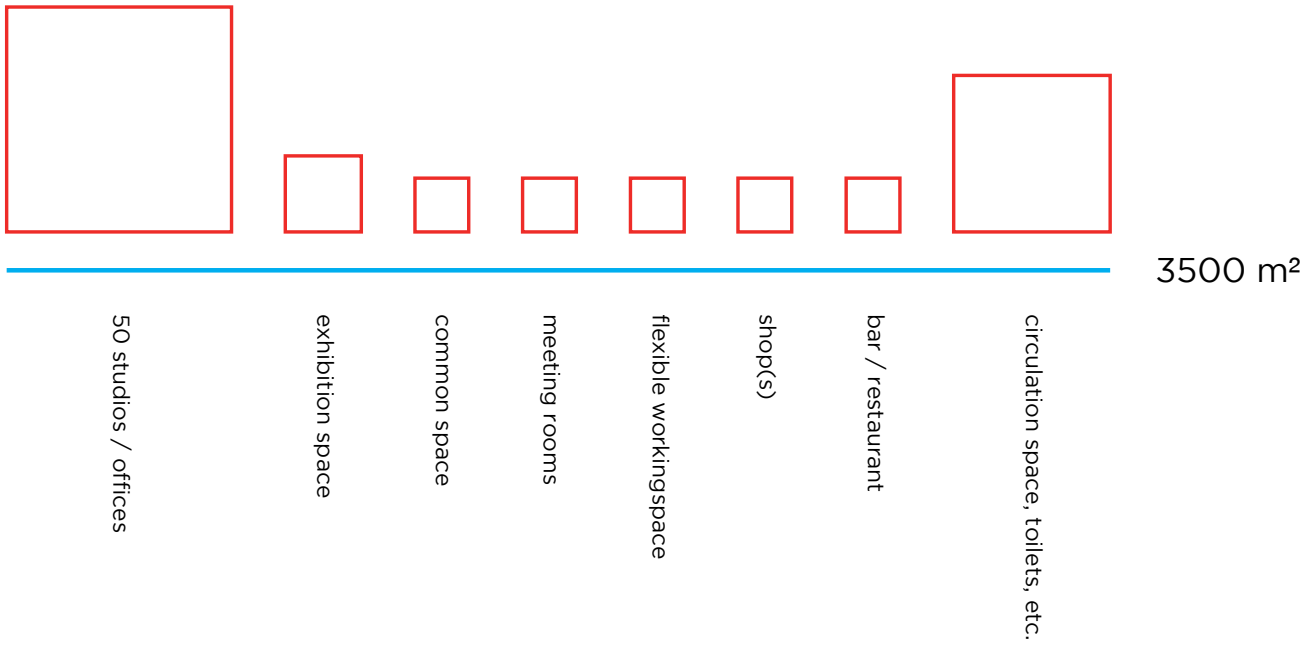


Fig. 48. Brief for a Creative Hub on the Sluisjesdijkpier.

Antwoord	Aantal respondenten*	Percentage van het totaal
Atelier / werkplaats	75	46%
Kantoor	38	23%
Expositieruimte/galerie	1	1%
Ander type bedrijfruimte	15	9%
Combinatie van typen bedrijfsruimten	22	14%
Bedrijfruimte in combinatie met woning	9	6%
Weet niet	2	1%
Totaal	**162**	**100%**

Fig. 49. Preference for type of working spaces.

Aantal vierkante meters	Aantal respondenten	Percentage van het totaal
minder dan 20	4	2%
20 t/m 39	35	22%
40 t/m 59	36	22%
60 t/m 79	22	14%
80 t/m 99	14	9%
100 t/m 119	18	11%
120 t/m 149	7	4%
150 t/m 199	9	6%
200 t/m 399	10	6%
400 t/m 999	6	4%
1.000 of meer	1	1%
Totaal	**162**	**100%**

Fig. 50. Preference for size of working spaces.

surface areas for each of the buildings matching the vacancy criteria. Buildings which have either less than 3.350 m^2 of surface area or over 5.000 m^2 of surface area are eliminated. An exception is made for buildings which are smaller than 3.350 m^2, but are located next to another building which can together add up to an amount of square meters between 3.350 m^2 and 5000 m^2.

7.3 Criteria 3: Characteristic Qualities

This criteria is in a way more difficult to apply on the remaining buildings as it covers multiple qualitative characteristic features whereas the previous two criteria were more or less based on purely facts and numbers. These Characteristic Qualities mainly relate to the appearance of the building and the extra qualities the location has.

Because appearance or beauty as a criteria is of course quite objective, I have tried to further specify concrete characteristic features of buildings which throughout the research have proven to be quite defining in the image and atmosphere of the Sluisjesdijkpier. The following features will need to be present in a potential Creative Hub: historic appearance (built before WWII, brick, steel and glass as construction materials, not necessarily a monumental status) and industrial atmosphere (port-related objects, constructions nearby, etc.).

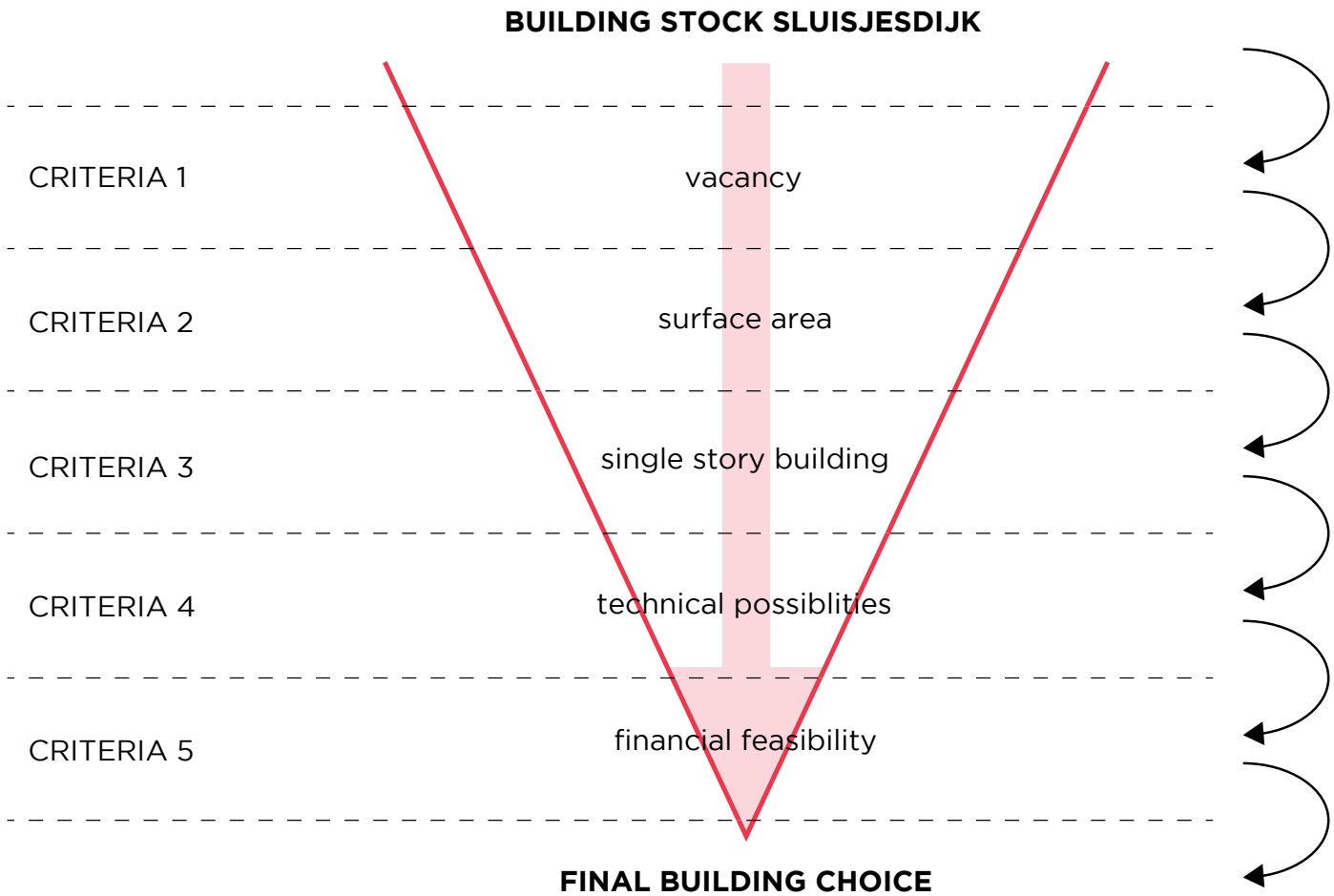


Fig. 51: Process of the building elimintation.

Fig. 52: Buildings remaining after completion of criteria 1.

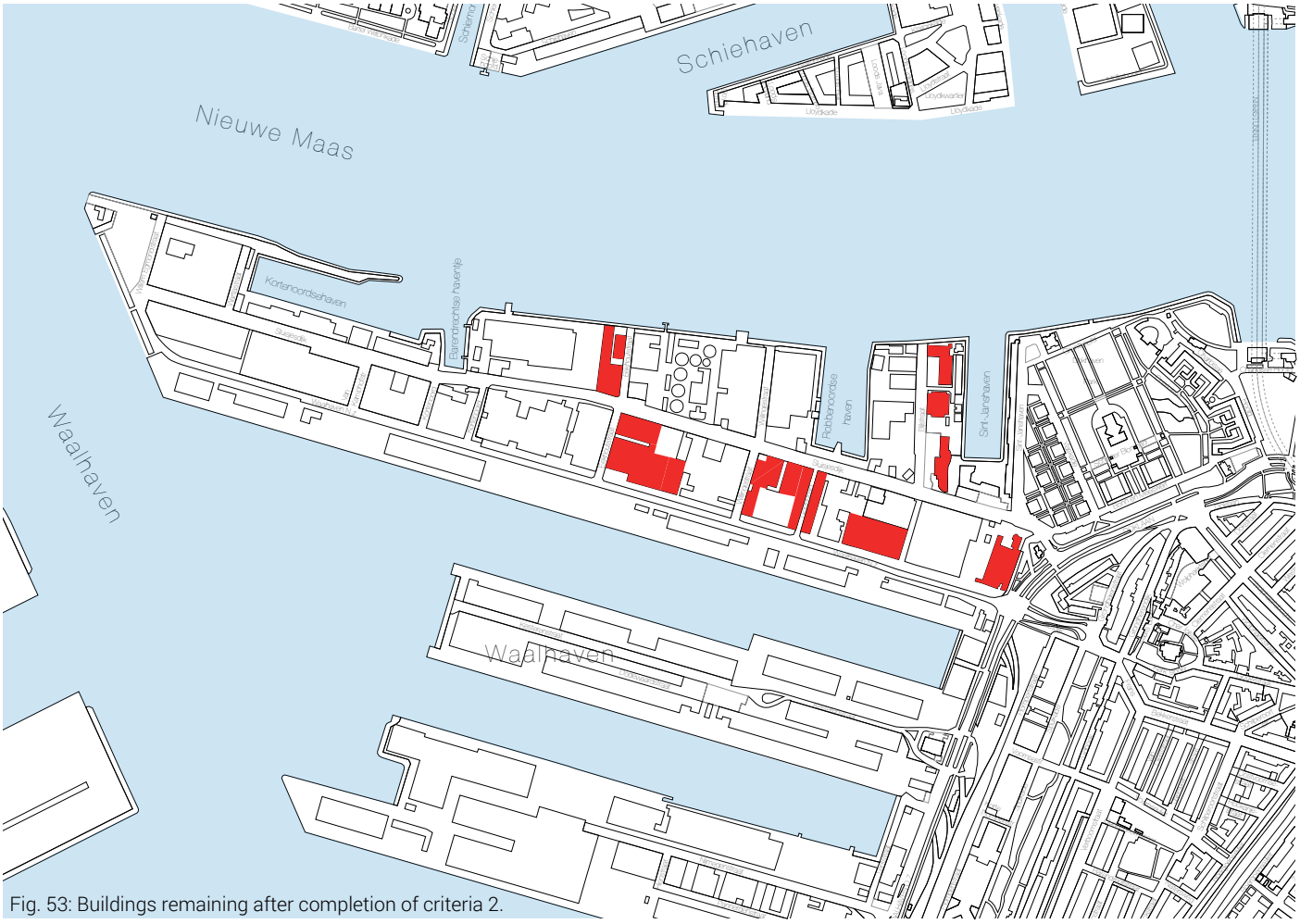


Fig. 53: Buildings remaining after completion of criteria 2.

In addition to these characteristic features the buildings needs to be placed in the right surroundings. In the questionnaire I carried out 99% of the respondents would prefer a terrace along the water on the Sluisjesdijkpier in the future. This function should be combined with the transformation. This means the building should be located next to the Maas river in an area which provides viewpoints.

It will not become possible to create a terrace along the water on the largest part of the South side of the pier, because this side of the pier will remain being used by companies which will keep the right of tenancy for at least 30 years[11]. In figure 55 this part is shaded.

Figure 55 illustrates the two remaining building complexes after these criteria were evaluated; the buildings along the Gorzenpad and the warehouse buildings on the Eekhoutstraat (fig. 56 & 57).

7.4 Criteria 4: Technical Possibilities

Figures 58 and 59 illustrate the main construction of the buildings on the Gorzenpad and the Eekhoutstraat. The Gorzenpad consists of a series of similar buildings of which the partition walls between the buildings have been applied as the main bearing structure. Although the surface area per building is quite large (when the non-load-bearing walls are omitted the spaces are around 320 m^2 each), there are not much possibilities to design the floorplan of the various buildings without affecting the main bearing structure. The height of the ceiling until the edge of the roof is 3.4 meters, which is not ideal for studio spaces.

The Eekhoutstraat consists of multiple buildings. The largest part of the surface area is occupied by a few large halls (thus most relevant) with a main bearing structure consisting of steel columns. When analysing these halls only one hall has been taken as an example in the analysis because the rest of the halls are very similar. In contrast to the buildings on the Gorzenpad the halls have a lot of flexibility regarding the design of the floorplan, therefore they are much more suitable for transformation. Another advantage in comparison to the buildings at the Gorzenpad is that the ceiling heights of the halls on the Eekhoutstraat are 5.1 meters, therefore much more ideal for studio's. Although the depth of the buildings is quite deep (25 meters), enough light comes through due to the roof windows positioned towards the North. A disadvantage at first sight could be the small amount of openings in the facade, but because the main bearing construction is separate from the facade, it is possible to insert extra openings in the facades.

The conclusion can be drawn that referring to the technical aspects the buildings along the Eekhoutstraat are more suitable for transformation than the Gorzenpad buildings. However, to conduct proper research I have taken both building complexes into account in the final criteria.

7.5 Criteria 5: Financial Feasibility

General Assumptions

First off I started with some general assumptions concerning the financial feasibility of the building complex and the envisioned Creative Hub.

In figures 59 and 60 both the owner situations of the building along the Gorzenpad and the Eekhoutstraat are illustrated. It becomes visible that the buildings along the Gorzenpad belong to different owners, while the buildings along the Eekhoutstraat belong to only one owner. Finan-

[11] Port of Rotterdam (2013), p. 77

RESTAURANT PLAYGROUND

TERRACE ALONG THE WATER

PUBLIC WORKSPACES TAXI BOAT STOP

CAFE/BAR EXPOSITION SPACE SHOPS

OTHER

CULTURAL FACILITIES

Fig. 54: Preference of functions of inhabitants of the Sint-Jansflat.

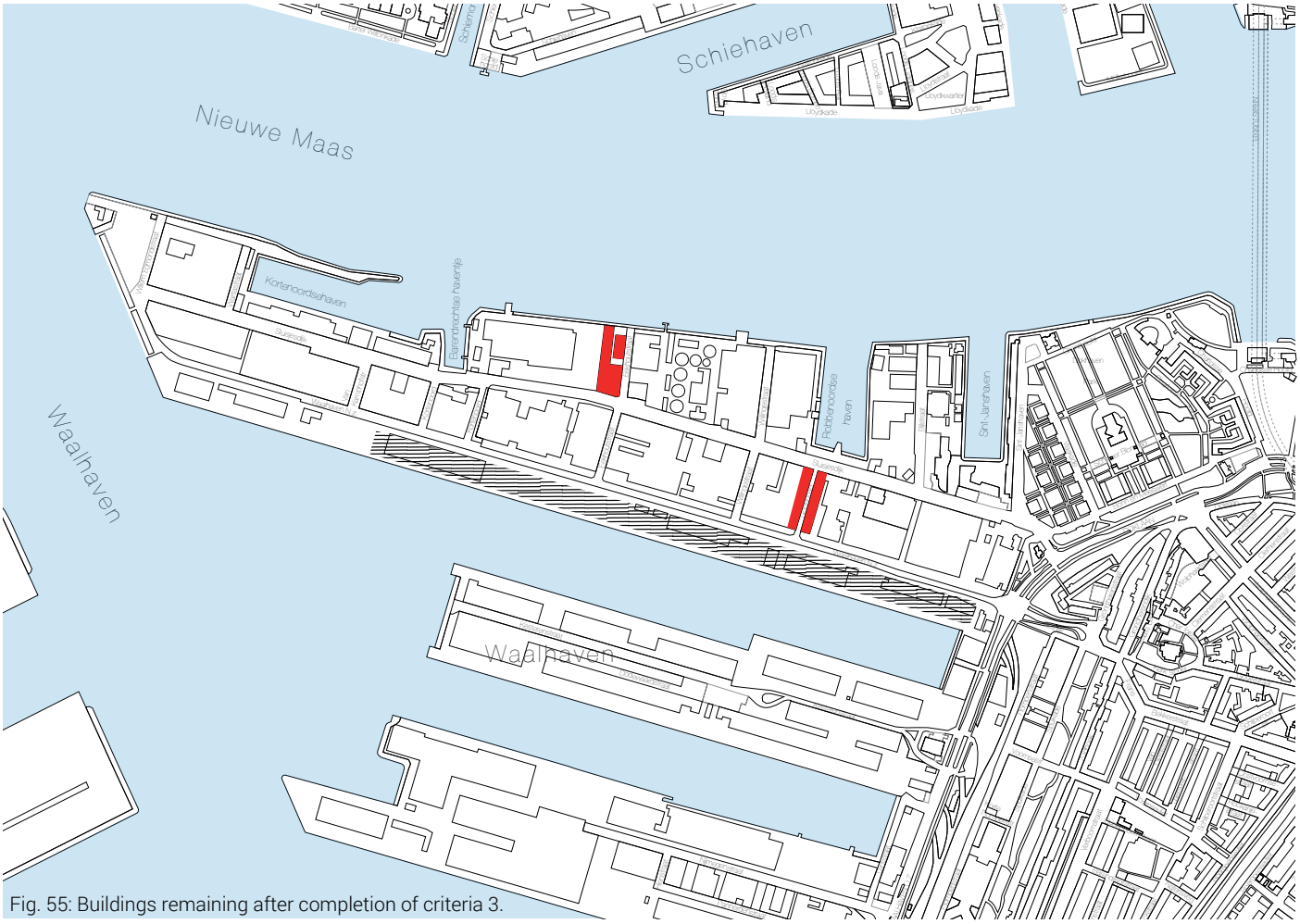


Fig. 55: Buildings remaining after completion of criteria 3.

Fig. 56: Buildings on the Gorzenpad.

Fig. 57: Buildings on the Eekhoutstraat.

cially this makes it much more attractive to buy the buildings along the Eekhoutstraat, since it is likely to be more advantageous to buy a property from one owner than from many different ones.

The buildings on the Eekhoutstraat lie directly next to the water (fig. 61), while between the buildings along the Gorzenpad and the riverbank a road is situated. For this reason a terrace along the water is less easily accomplished on this location, which makes it financially less attractive to buy.

After evaluating both the technical possibilities and the financial feasibility it became clear that the buildings in the Eekhoutstraat were found best for the transformation to a Creative Hub with sufficient space.

Financial Analysis
In a financial analysis I have created a basic initial budget indicating the potential costs and income related to financing the transformation of the buildings on the Eekhoutstraat in a cost effective way.

The financial analysis is based on the following parameters:
General parameters:
Transformation project size: 4.800 m^2;
Purchase price of the buildings: € 750.000;
Cost of the leasehold per year: € 53.000.
Expected Costs and funding assumptions:
Maintenance per year: 1% of the total amount of transformation costs;
Insurances per year: 0.1% of the total amount of transformation costs;
Staff costs per year: € 20.000;
It is assumed that the project (purchase of buildings and transformation costs) will be funded for 70% with a mortgage. The remaining part of the investment are expected to be funded by investors that require a regular IRR (Internal Rate of Return[12]);
Occupancy rate: 100%.
Base case parameters:
Transformation costs: € 5.000.000.-;
Rent per square meter per year: € 100;
Project duration: 25 years;
Mortgage interest: 3%.

Explanation and Remarks
The Internal Rate of Return (IRR) is used as the measure to determine if the project is economically feasible. A typical project will require an IRR of at least 8% (market conform). Based on the Base Case parameters the IRR is 4%. This is not sufficient to attract investors. In order to attract investors some of the key project elements needed to be changed to achieve a minimum IRR of 8%. For this purpose I have done a sensitivity analysis whereby the key parameters were varied over a realistic range as follows:

Transformation costs € 3 - € 5 mln;

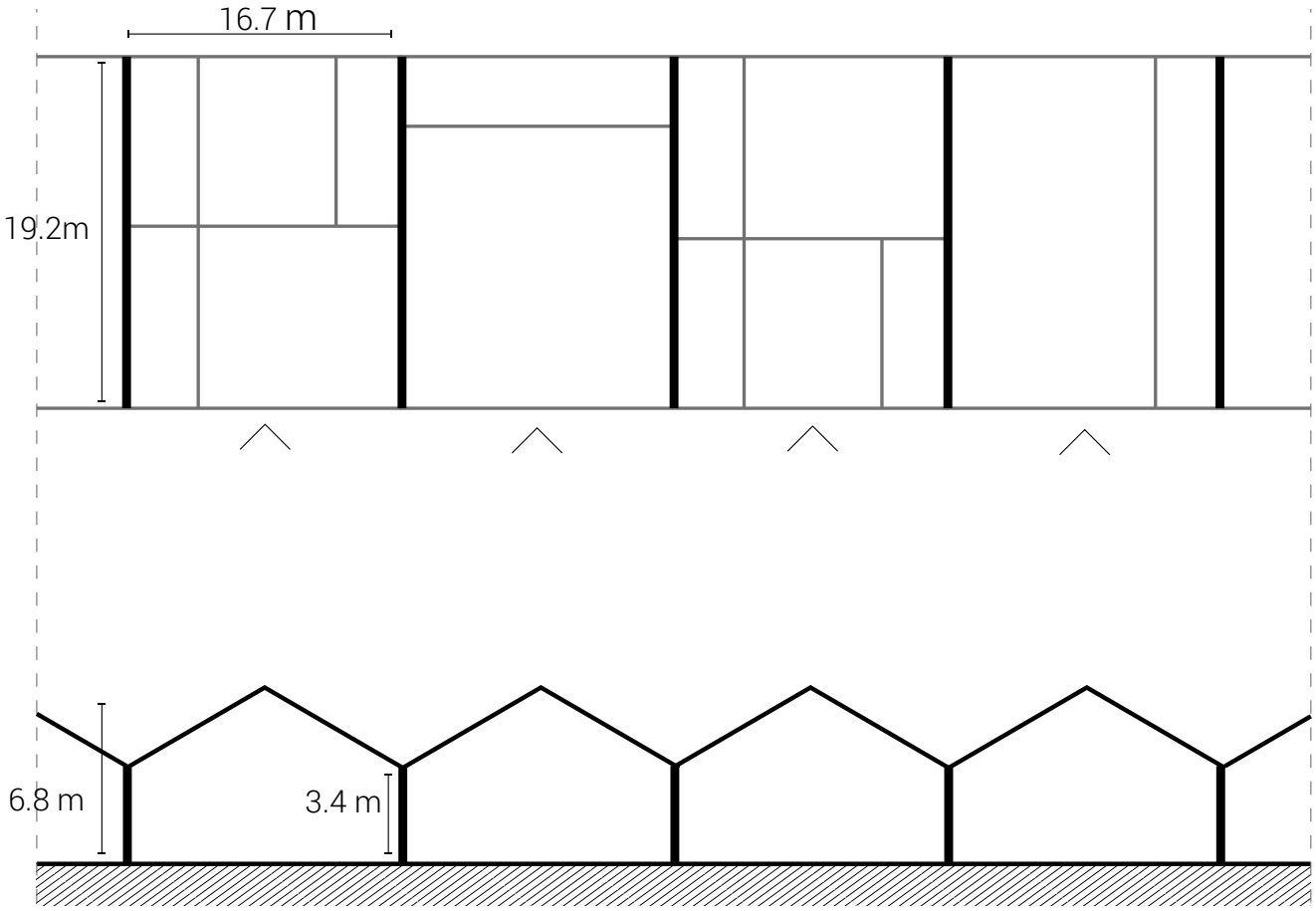


Fig. 58: Construction Gorzenpad.

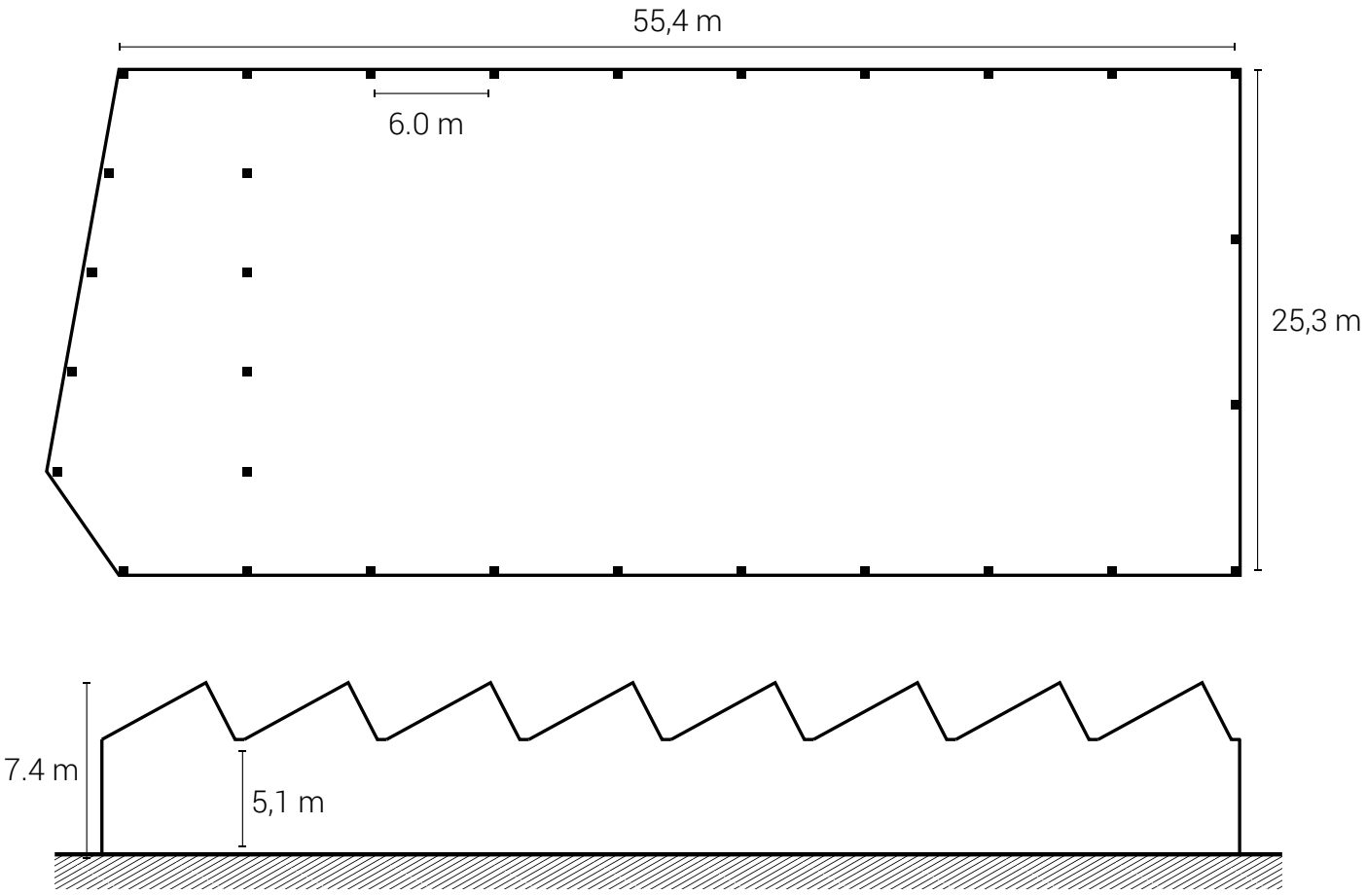


Fig. 58: Construction Eekhoutstraat.

The rent per square meter € 60 - € 110 per m^2;
Project duration 20 - 30 years;
Mortgage interest 2 - 4%;

Figure 62 illustrates a graph that shows the variation and sensitivity of IRR in the ranges of the Base Case parameters of the project. The main aim is providing a 100% occupancy rate of the complex. Market research shows that 76% of creative entrepreneurs is willing to pay a maximum of € 67 per square meter per year. 24% is willing to pay more than € 100 per square meter per year. On this basis the average for the complex on the Eekhoutstraat is a rent of € 77 per square meter per year.

The Creative Hub De Zeep Fabriek in Amersfoort (fig. 63.) has approximately the same surface area as the complex on the Eekhoutstraat. The costs for this transformation were € 3.741.333. This gives an indication of the costs for a similar transformation project. The challenge with the Eekhoutstraat is to transform the complex for less in order to retrieve a threshold IRR of 8%. With a rent of € 77 per square meters per year we can conclude that the transformation costs can be a maximum of € 3.2 million within a duration of 30 years (fig. 65).

[12] http://nl.wikipedia.org/wiki/Interne_opbrengstvoet 16.06.2013

Fig. 59: Division of ownership Gorzenpad.

Fig. 60: Division of ownership Eekhoutstraat.

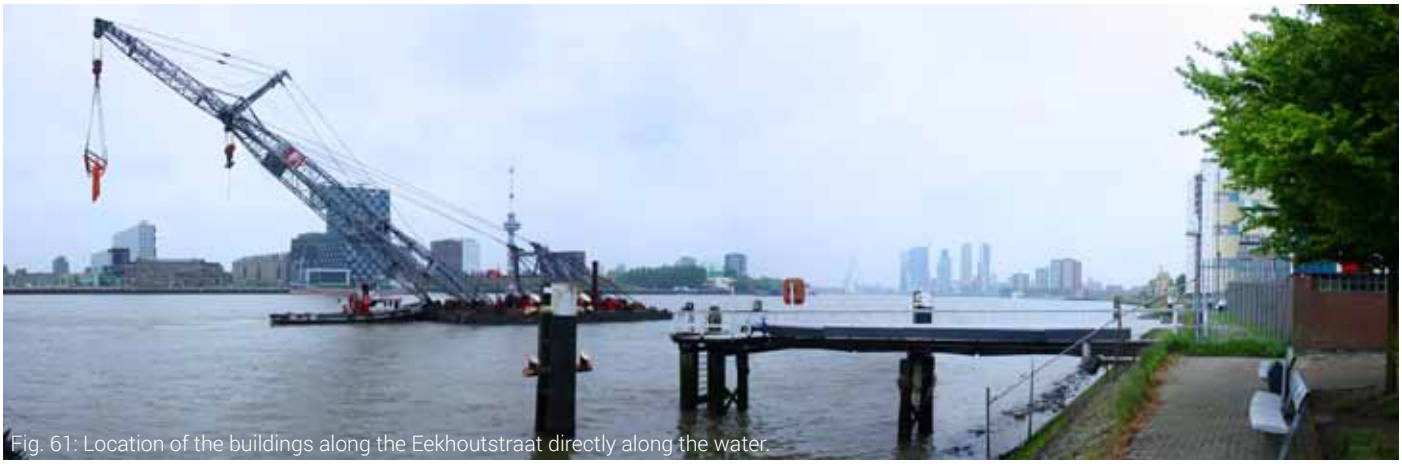


Fig. 61: Location of the buildings along the Eekhoutstraat directly along the water.

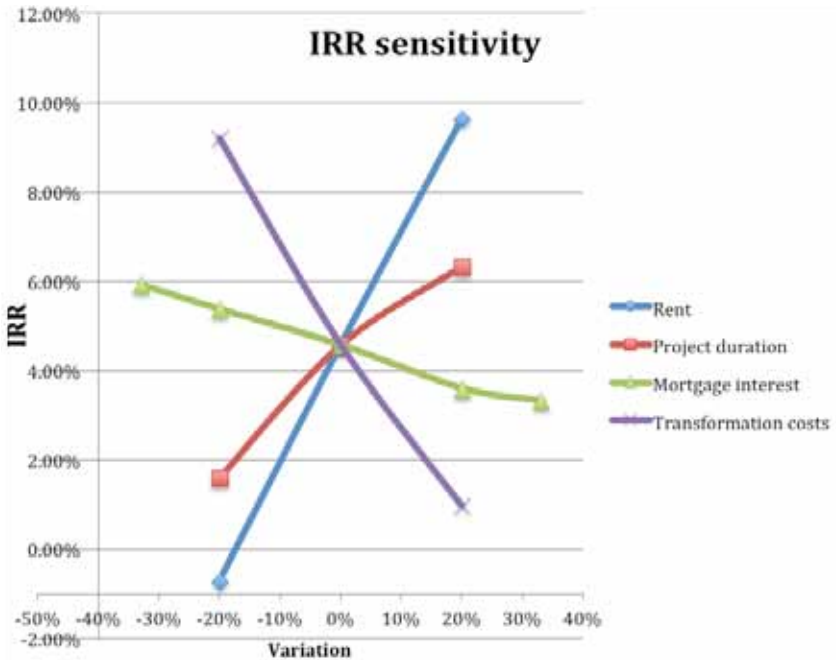


Fig. 62: The variation and sensitivity of IRR in the ranges of the Base Case parameters of the project.

Fig. 63: The Zeep fabriek in Amersfoort.

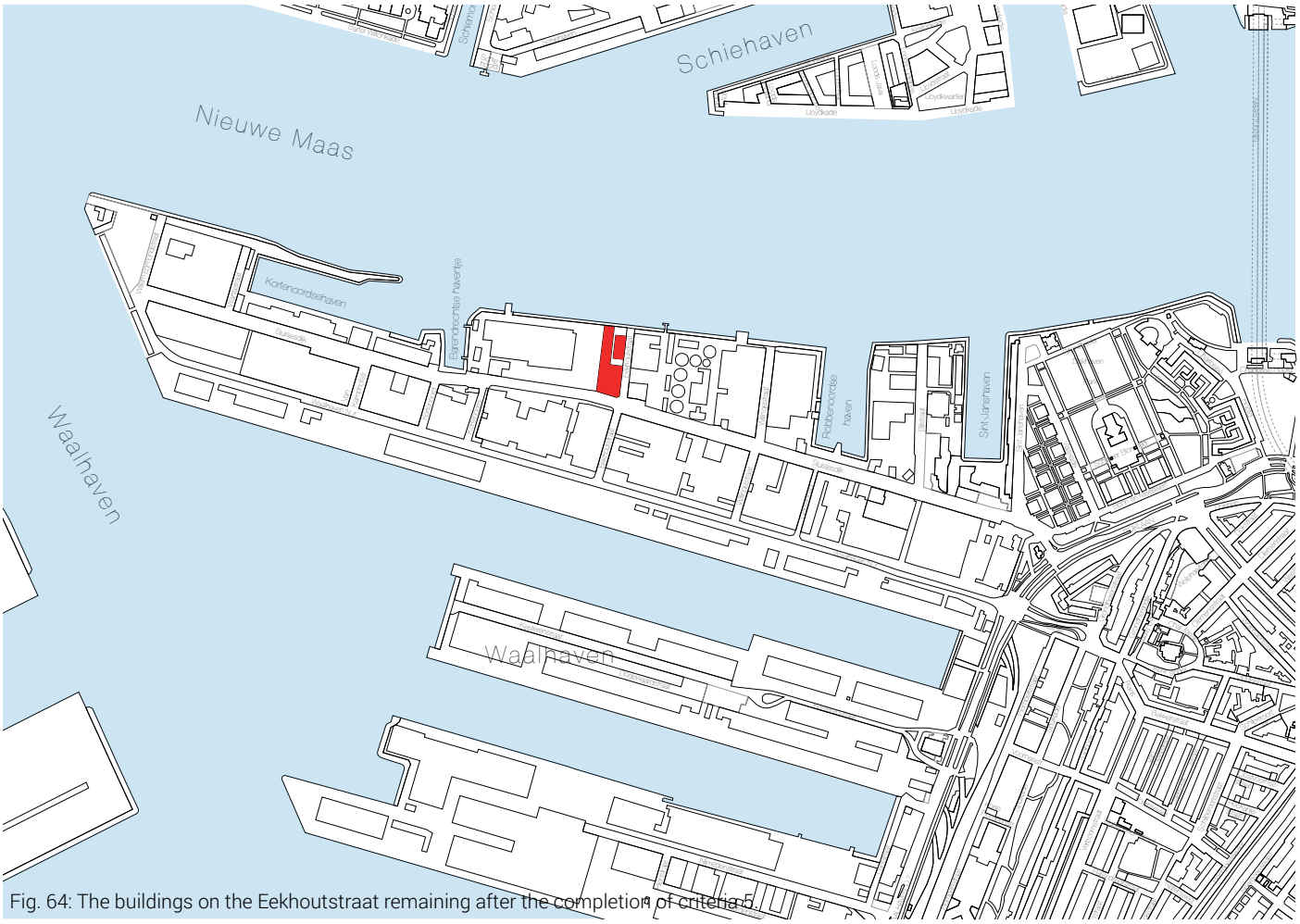


Fig. 64: The buildings on the Eekhoutstraat remaining after the completion of criteria 5.

Cost benifit project overview	Transformation Eekhoutstraat															
Total m2 project	4800															
Purchase price	€750,000															
Transformation costs	€3,160,000															
Leasehold / year	€53,000															
Maintenance % of construction costs	1.00%															
Insurances/OGB/etc. /jaar	€7,000															
Staff	€20,000															
Interest Bank	3.00%															
Assumptions																
Loan bases on 25 years lineair																
Inflation is at 0% (Real Term)																
Fixed costs based on infrastructure etc. Is passed on to the tenants.																
After x amount of years the building will be sold for € 1 million																
Final value	€1,000,000															
Project duration (years amortization)	30															
Money by investor (%)	30.00%															
Rental income/m2/year	€77.00															
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Purchase price	€750,000															
Transformation costs	€790,000	€1,580,000	€790,000													
Leasehold	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,000	€53,0
Maintenance	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,600	€31,6
Insurances/OGB/etc. /year	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,000	€7,0
Staff	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,000	€20,0
Total	€1,651,600	€1,691,600	€901,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,600	€111,6
Loan	€1,078,000	€1,106,000	€553,000	€0	€0	€0	€0	€0	€0	€0	€0	€0	€0	€0	€0	
Interest	€32,340	€62,783	€76,636	€73,899	€71,162	€68,425	€65,688	€62,951	€60,214	€57,477	€54,740	€52,003	€49,266	€46,529	€43,792	€41,0
Redemption	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,233	€91,2
Debt	€1,078,000	€2,092,767	€2,554,533	€2,463,300	€2,372,067	€2,280,833	€2,189,600	€2,098,367	€2,007,133	€1,915,900	€1,824,667	€1,733,433	€1,642,200	€1,550,967	€1,459,733	€1,368,5
Total amount spent	€1,775,173	€1,845,616	€1,069,469	€276,732	€273,995	€271,258	€268,521	€265,784	€263,047	€260,310	€257,573	€254,836	€252,099	€249,362	€246,625	€243,8
Investment	€697,173	€739,616	€516,469	€276,732	€273,995	€271,258	€268,521	€265,784	€263,047	€260,310	€257,573	€254,836	€252,099	€249,362	€246,625	€243,8
Income	€92,400	€184,800	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,600	€369,6
Netto result	-€604,773	-€554,816	-€146,869	€92,868	€95,605	€98,342	€101,079	€103,816	€106,553	€109,290	€112,027	€114,764	€117,501	€120,238	€122,975	€125,7
IRR	**8%**															
Total investment result	€3,161,655															

Fig. 65: Calculation showing that in case of a rent of € 77 per square meters per year, the transformation costs can be a maximum of € 3.2 million within a duration of 30 years.

Fig. 64: The buildings on the Eekhoutstraat seen from above

Fig. 64: The buildings on the Eekhoutstraat seen from the North side.

Fig. 64: The buildings on the Eekhoutstraat.


Fig. 64: The interior of the buildings on the Eekhoutstraat.

Conclusions

As an outcome to my research of models which (re-)activated areas with similar features and contexts (both history, current situation and future plans, issues and potentials taken into consideration), it became clear that the introduction of a Creative Hub model would be a great (even essential) step towards the development of the Sluisjesdijkpier in an effective and sustainable way, counteracting its issues and embracing its potentials and in attracting a wide variety of target groups to the area without using major investments. Furthermore, a Creative Hub could have a positive effect on the social climate of the area and facilitate the great demand of inexpensive working spaces in Rotterdam South.

A brief (fig. 48) (regarding the necessary spaces, surface areas and functions) was developed which functioned as practical, qualitative and carefully defined guidelines for a Creative Hub on the Sluisjesdijkpier.

Based on the brief I was able to develop a set of criteria to select the most suitable building(s) to be used in the design of a Creative Hub. The buildings on the Eekhoutstraat are most suitable as they:

- Are to be vacant in the near future;
- Have sufficient surface area (a minimum of 3.350 m2 as indicated in the brief);
- Have the necessary characteristic qualities (historic appearance, industrial atmosphere, located next to the river, viewpoints);
- Are most suitable for transformation looking at the technical possibilities (flexibility regarding the design of the floorplan, high ceilings, light allowance, possibilities to construct extra openings, etc.);
- Accommodate the most financially feasible transformation (based on general assumptions and an extensive financial analysis).

Based on these research conclusions and the research goals, I will use the Eekhoutstraat buildings as the location for my graduation project design.

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Fig. 63 - http://architectuur.nl/project/transformatie-zeepfabriek-rohm-and-haas-amersfoort/ - 03.04.2013

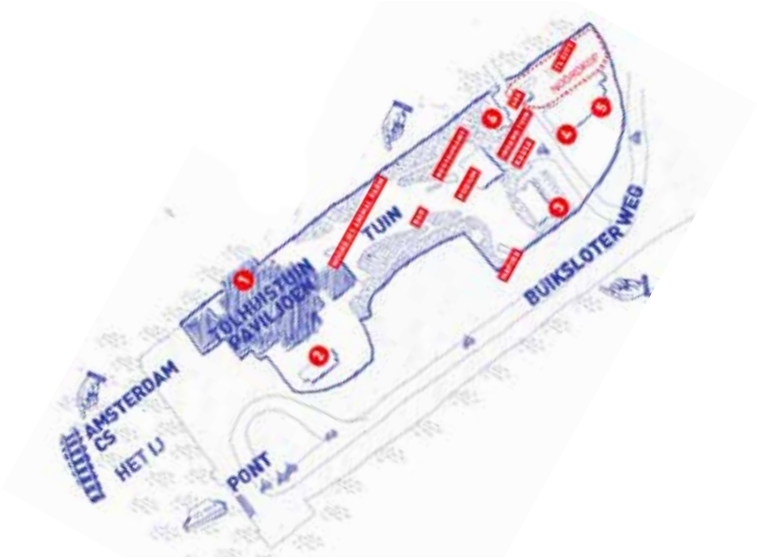
TOLHUISTUIN, Amsterdam

Used to be: Shell proberty

Current programme: Divided between 4 buildings:
the Public Pavilion; expostition spaces, dansstudios, theatre
Villa Abspoel; studios
the Poortgebouw; offices
the Staalvilla; studios
Garden

(Possible) amount of tentants: 45

Surface area (buildings): +/- 3000 m^2




Kassa
ZOMER ZOMERZOMER

IJ Kantine, Amsterdam

Used to be: office, cafeteria and assembly of the NDSM werf

Current programme:
Cafe - Restaurant, meeting rooms, spaces for special events

Surface area: +/- 1800 m^2

De Verlichting, Den Haag

Used to be: Eneco property

Current programme:
workplaces, ateliers, offices, music and dance studios

(Possible amount) of tentants: 80

Surface area (buildings): +/- 3500 m^2


SPRINGKUSSEN
BAR & PODIUM
ART EXPO
GEBOUD
GEBOUD HUB
WORKSHOPS
BIOLOGISCH ETEN

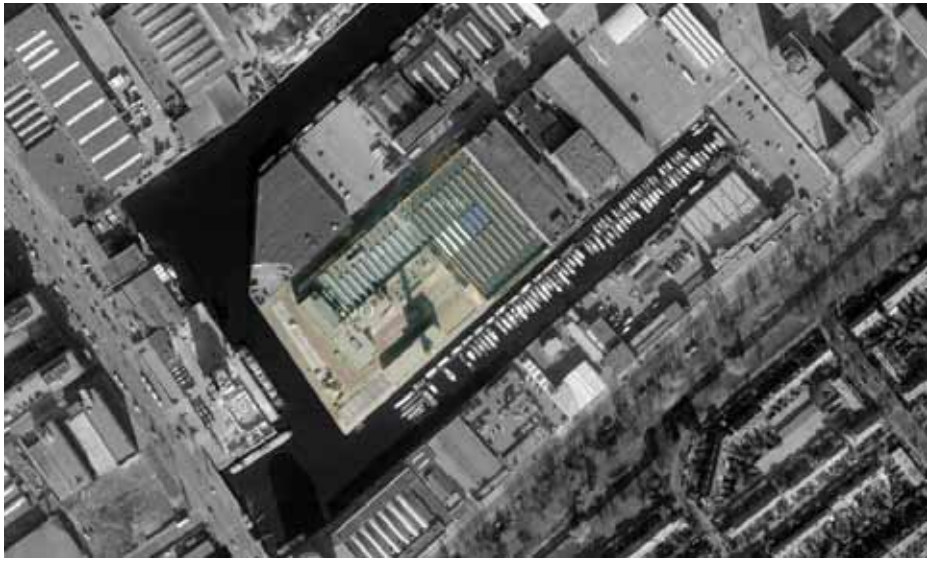
Caballero Fabriek, Den Haag

Used to be: Cigarette Factory

Current programme:
flexible workspaces and offices with dimensions from 25 to 700 m^2
meeting rooms
restaurant

(Possible) amount of tenants: 120

Surface area (buildings): +/- 15,000 m^2



DCR, Den Haag

Used to be: Part of the energy plant

Current programme:
Studios / offices with dimensions from 20 to 70 m²
Exposition space
Workspace
NO collective area's

(Possible) amount of tenants: 40

Surface area (buildings): +/- 3000 m²

Zuid 57, Den Haag

Used to be: school, Stevin College

Current programme:
studios / offices with dimensions from 50 to 90 m²
meeting rooms
cafe
(movie) theatre(s)
gym
flexworking spaces

(Possible) amount of tenants: 45

Surface area (buildings): +/- 4000 m²

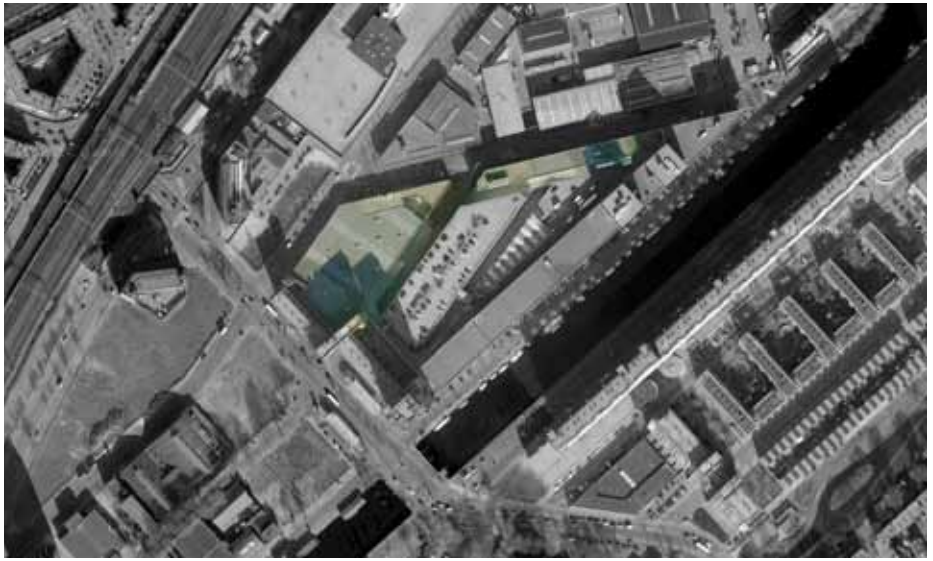
LABS 55, Den Haag

Used to be: school

Current programme:
studios / offices with dimensions from 40 to 200 m^2
meeting rooms
common spaces
flexworking spaces

(Possible) amount of tenants: 50

Surface area (buildings): +/- 10500 m^2



de mouwen
de mou
wen
uit de

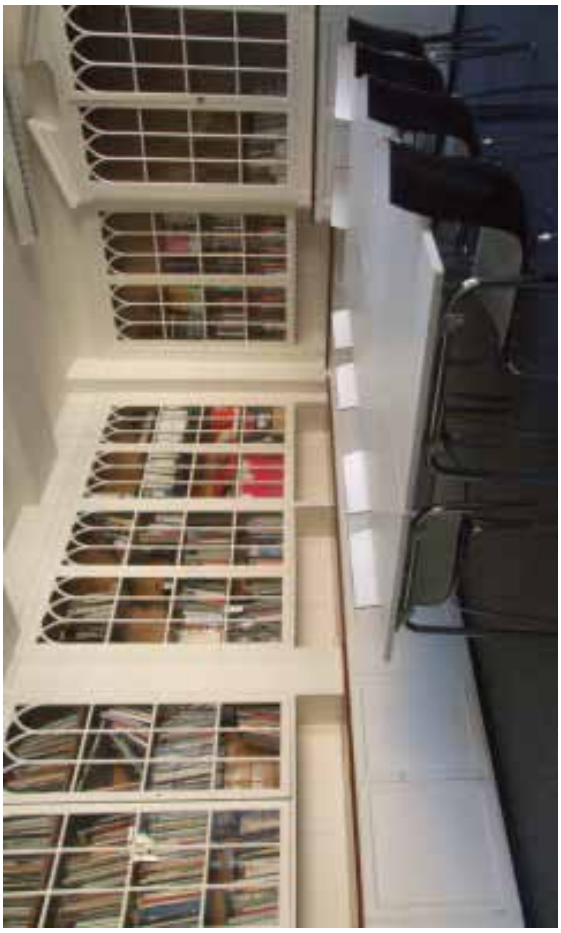
The Blue Coat, Liverpool

Used to be: school

Current programme:
studios / offices
galleries
theatre
cafe restaurant
library
garden

(Possible) amount of tenants: 30

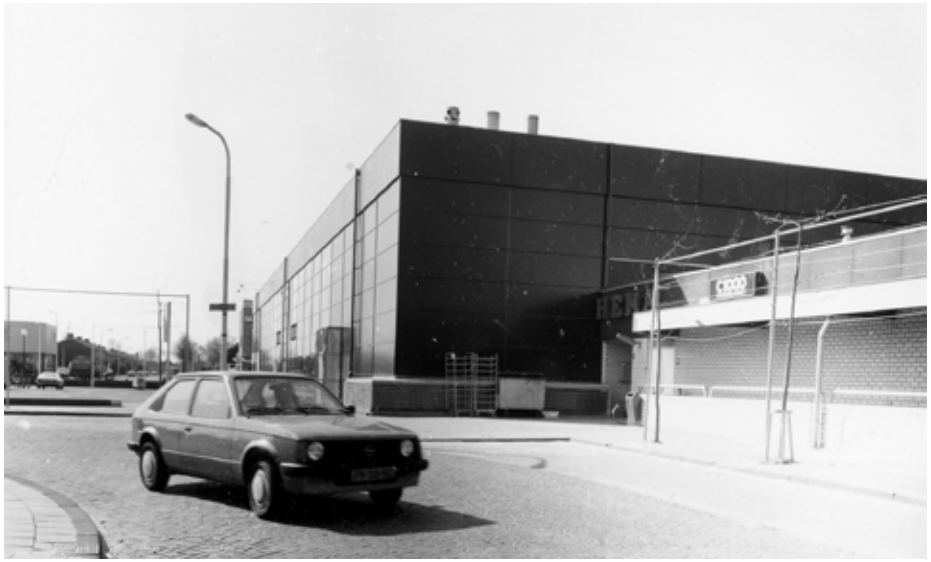
Surface area (buildings): +/- 3000 m^2



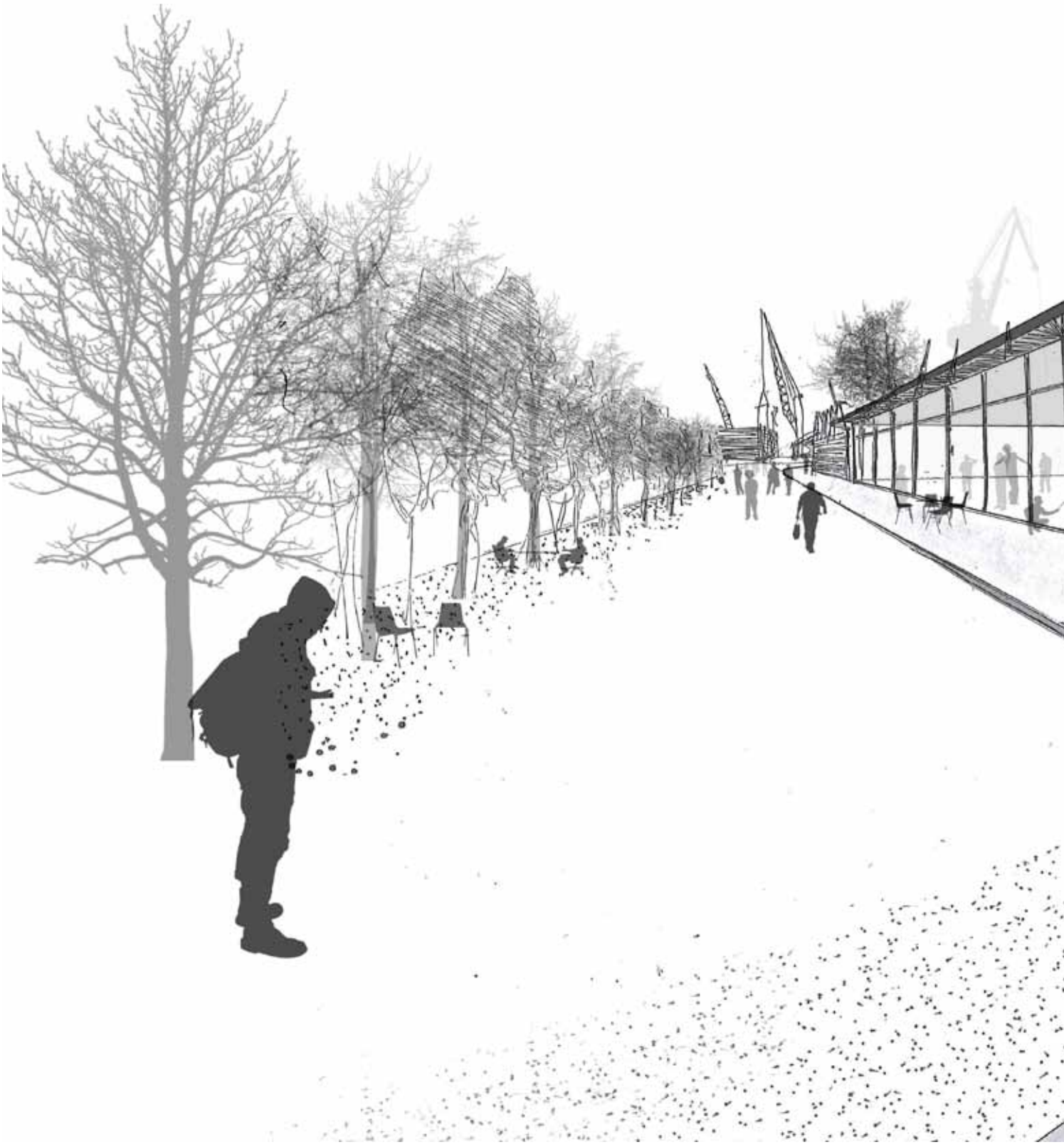
De Meerpaal, Dronten

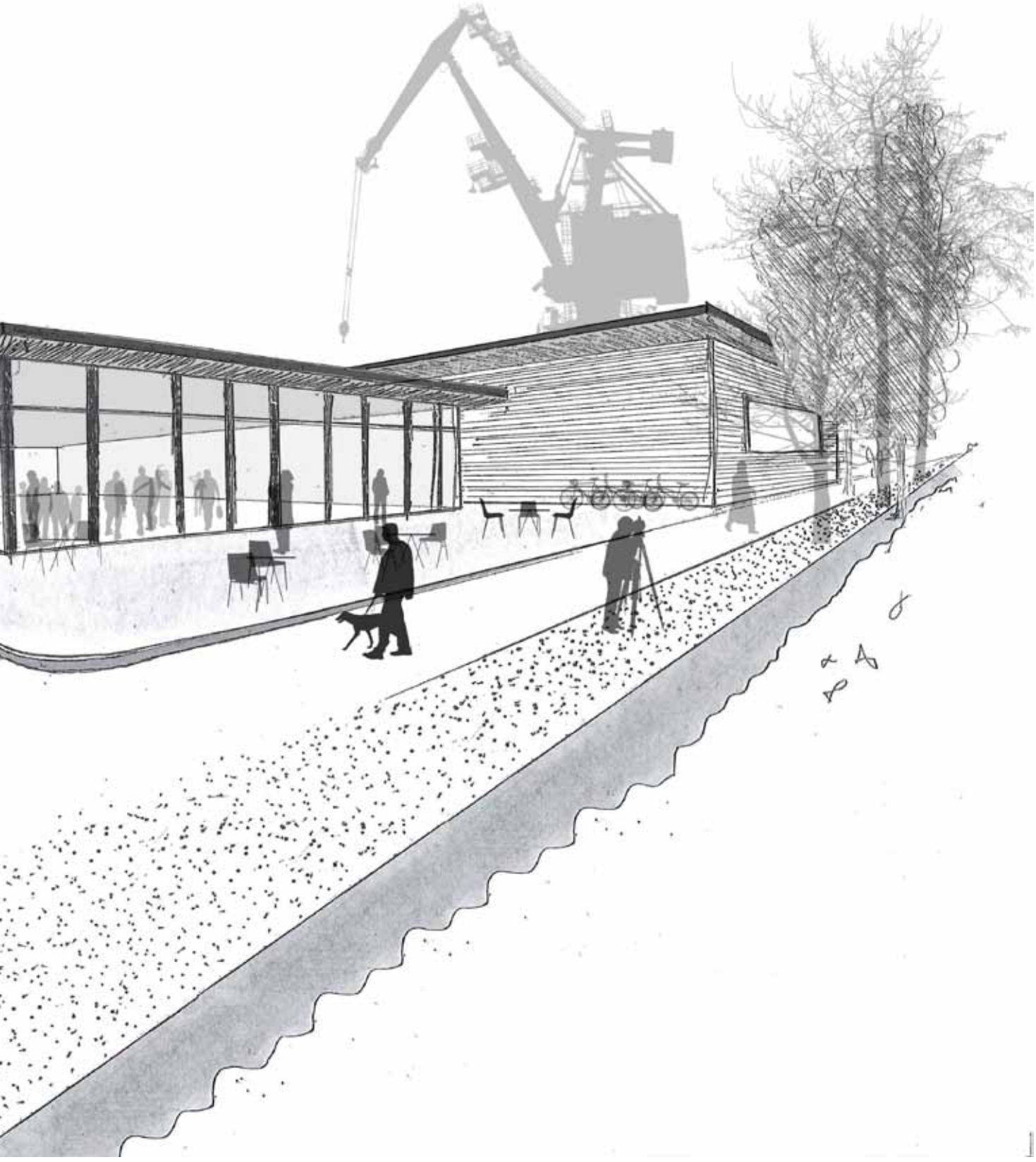
Current programme:
theatre
cultural centre
community center

Surface area (buildings): +/- 3000 m^2

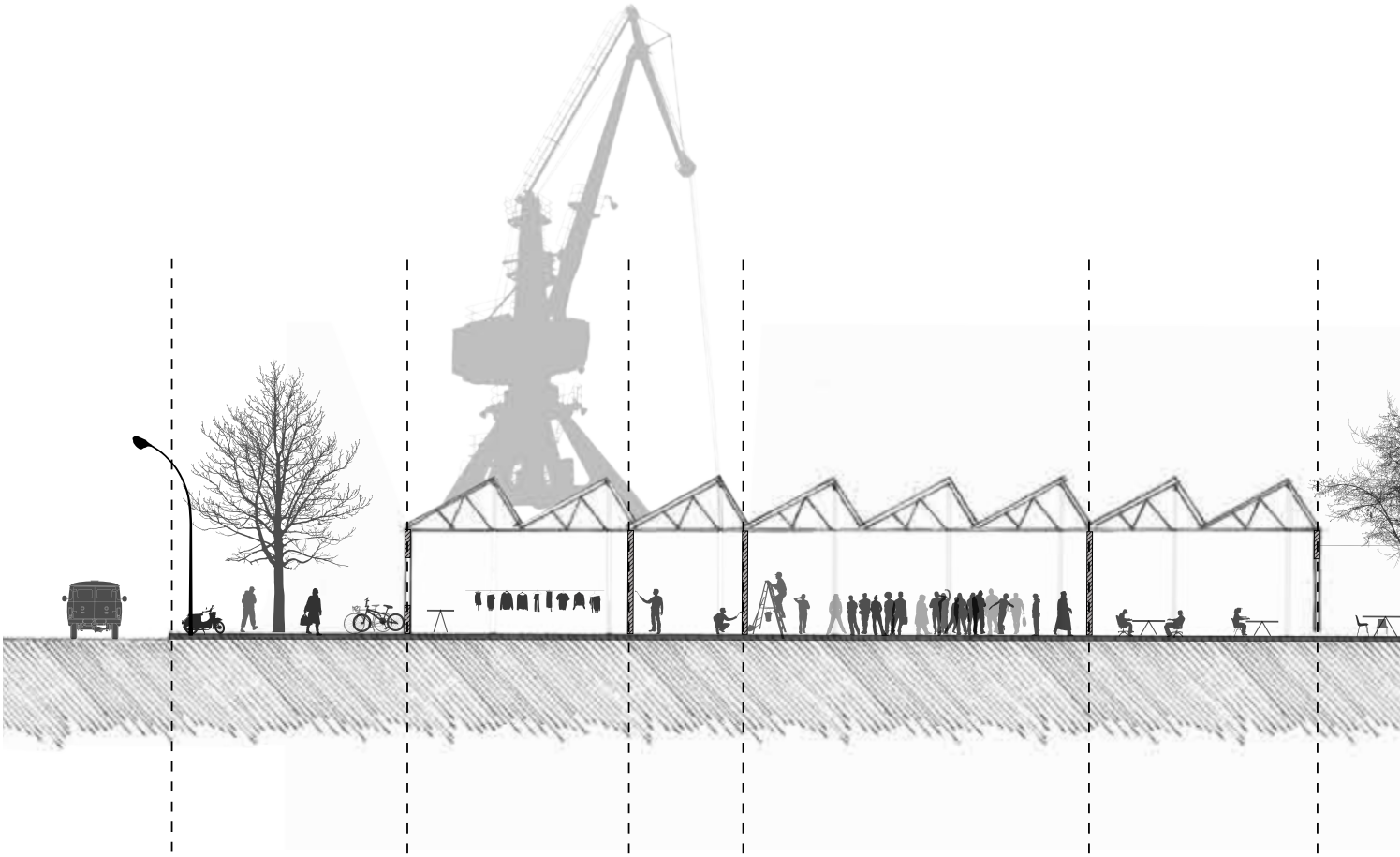


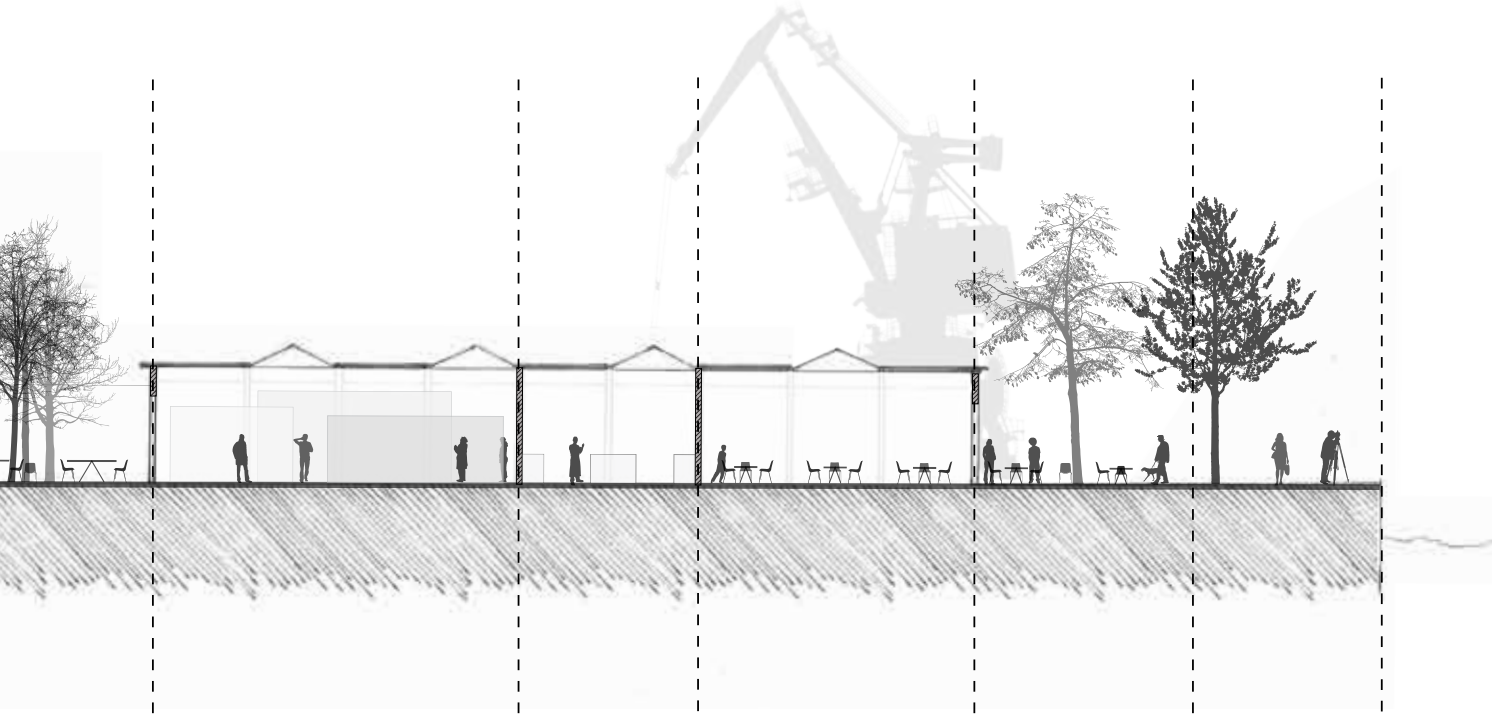
Appendix 10





Appendix 11


Sluisjesdijk
entrance area
shops
small studios
commom space
large studios



garden exhibition space kitchen restaurant terrace green boulevard Maas