



# REVITALISING THE PLINTH

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# O. INTRODUCTION

## CONTENT OF THIS BOOKLET

This booklet is part of a graduation project of the studio Heritage & Architecture as a completion of the master programme Architecture, Urbanism and Building Sciences at the University of Technology in Delft. The graduation studio consists of a project for the Dutch Police, who owns and takes care of 78% of its own buildings (Algemene Rekenkamer, 2015). Due to a changed structure of resources and services, combined with a new way of organizing, a part of their real estate needs to be redeveloped (Weessies, 2017). However, these police buildings, located throughout the Netherlands, deal with unique elements such as cells, security fences and partially closed facades. This means that they cannot simply be regarded as ordinary real estate.

Therefore, the graduation studio focuses on a collection of ten police buildings, whose heritage values and adaptability will be discussed in order to contribute to research into a sustainable future with regard to the role of vacant heritage (Heritage & Architecture, 2021). From these ten buildings, I have chosen the Harbour Police Station at the Sint-Jobsweg 6, in Rotterdam. This police building caught my attention as a result of the fact that it consists of a parcel with three brick buildings from different periods of time. The buildings are located on the quay adjacent to the Parkhaven. They are situated next to each other and two of them are even physically connected through a bridge. It is fascinating that they show some kind of coherence and harmony, although their appearances differ in shapes, sizes and (perceived) accessibility.

The chapters of this booklet consist of a translation of the analysis that is conducted. The Rotterdam Harbour Police Station is in need of a transformation as the building no longer fits its current function. In this booklet a short overview of some choices is depicted. The first chapter highlights the translation of site analysis. This is followed by the translation of building analysis. And as a conclusion, the design proposal is shown.

# O. INTRODUCTION

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- 2.3. Climate & detailing
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# 1. MAIN TAKEAWAYS OF THE ANALYSIS

# 1. MAIN TAKEAWAYS OF THE ANALYSIS

§1

## INTRODUCTION

Before I was able to start with the design, I needed to analyse the building and its surrounding. The Rotterdam Harbour Police station is located in the Parkhaven, near the Maas. In the Analysis Booklet the urban context is analysed and some of the aspects that I needed for my project are depicted. In other words, this chapter includes the translation of the Analysis that was conducted.

- Translation of the site analysis
- Translation of the building analysis

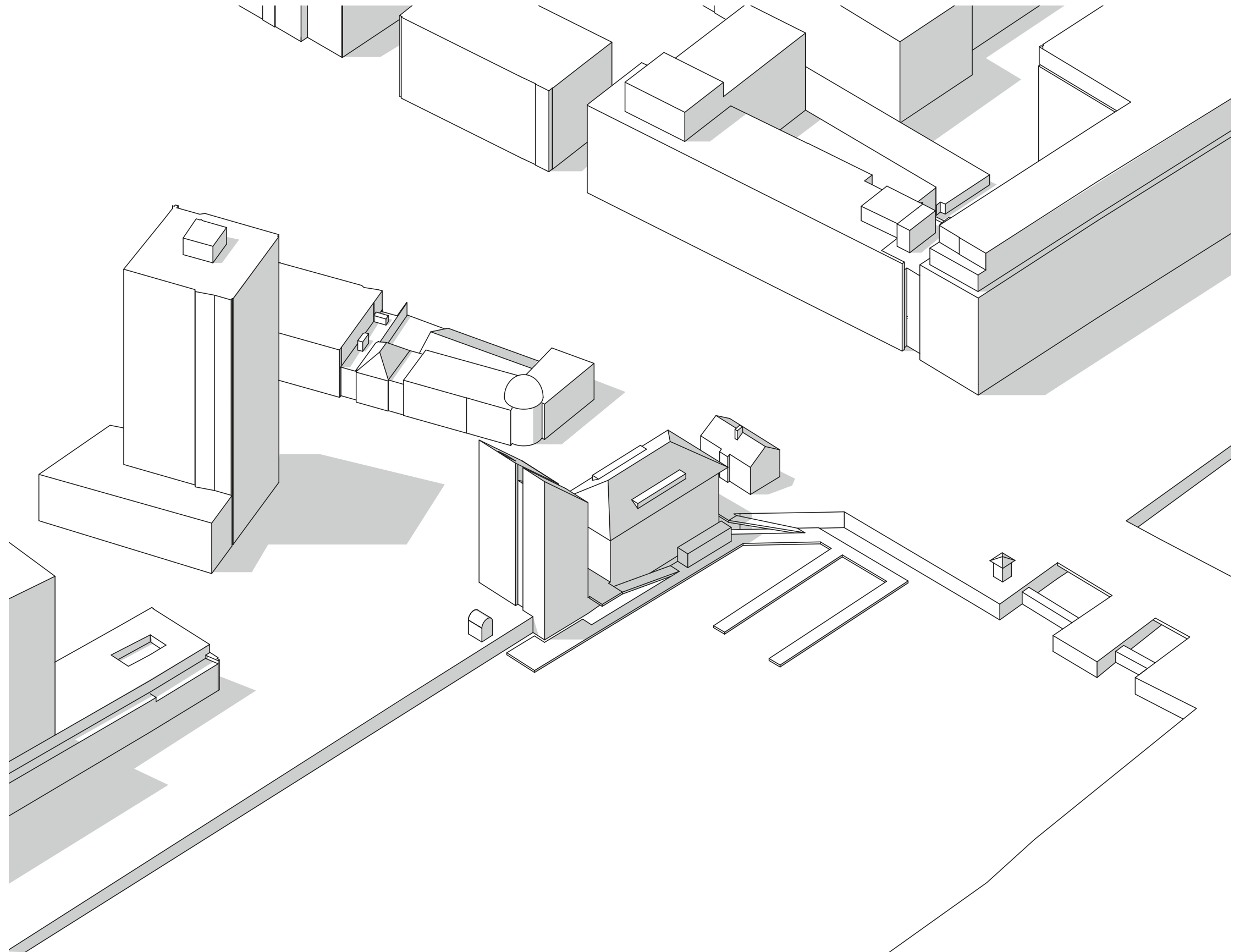


Fig. 1: Birds eye view of the Rotterdam Harbour Police Station

## 1.1. TRANSLATION OF THE SITE ANALYSIS

# 1.1. TRANSLATION OF THE SITE ANALYSIS

## INDEX

This subchapter will consist of a summary of the translation of the analysis of the site into some design guidelines. Namely, the new program is mainly a result of the following two aspects:

- Urban qualities
- Demographics
- Suitable future program

## URBAN DEVELOPMENT

In order to understand the qualities of the area, I want to take you back to the development of the location.

Namely, in the beginning 19th century, the Parkhaven did not even exist. Moreover, the first harbour activities took place between 1850–1900. In 1895 the – former called – River Police was founded and in 1911 they moved into their own residence on a floating pontoon in the Parkhaven.

They started quite primitive but they extended and this led to a lack of space. Therefore, in 1933 they got a new office on the quay at the Sint Jobsweg. In 1940, a residential building, including a workshop, was located next to the River Police. A few years later, during the Second World War, Rotterdam was bombed and the center of Rotterdam suffered heavy losses, while Delfshaven was left untouched, which was good news for the Harbour Police. Nevertheless, the police building became too small

again and in 1994 a new building, next to the existing one, was put into use. The house and workshop in the 1940 building became vacant in this year and later on, it was added to the real estate of the Harbour Police.

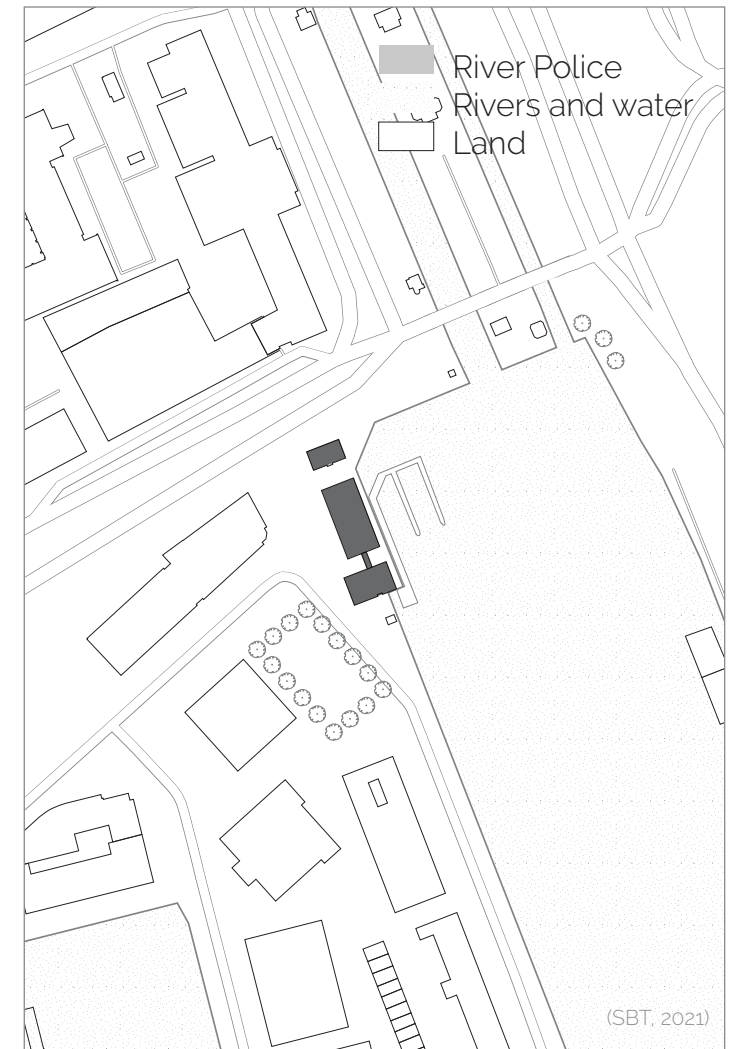
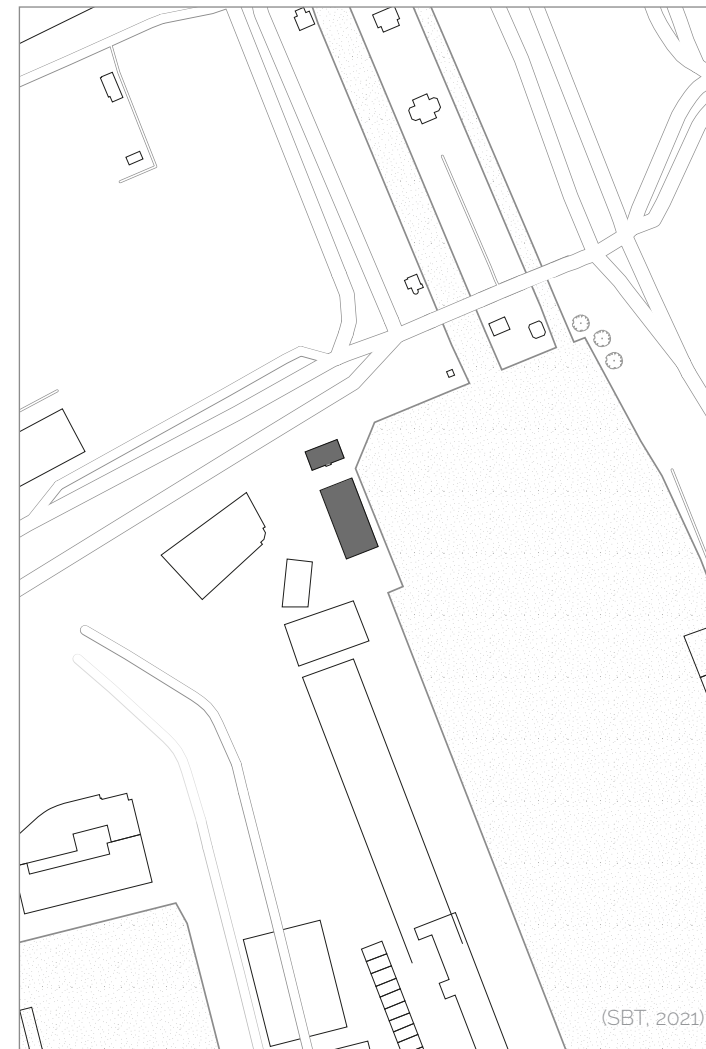
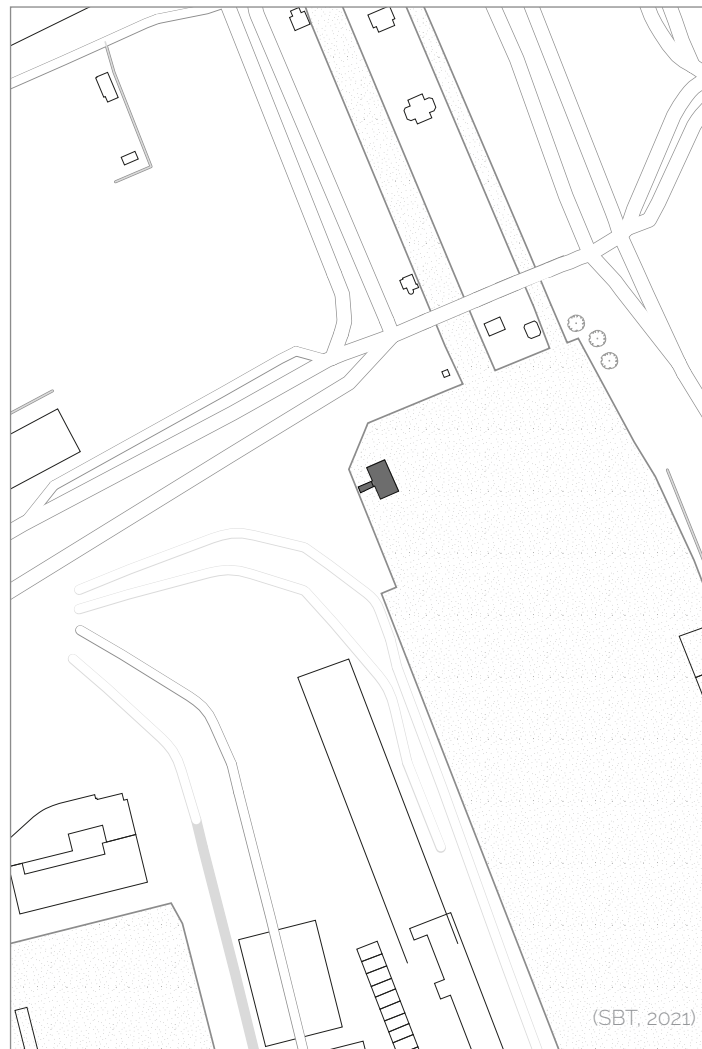
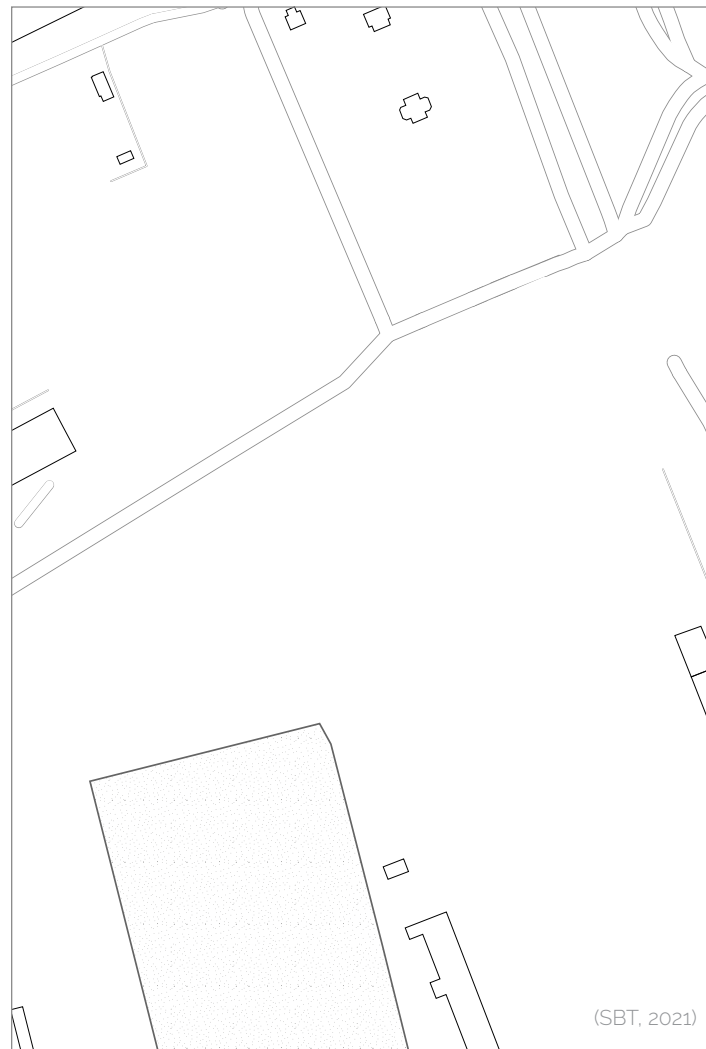


Fig. 2: Development of the Rotterdam Harbour Police Station

### URBAN DEVELOPMENT

When we take a closer look at the urban context, there are a few quite interesting notions. First of all, the site is accessible in multiple ways. You can reach it easily by car, bicycle, public transport or as a pedestrian.

Furthermore, the site is close to several public touristic attractions, like the Euromast and Museum-park. But also a walk along the Maas is only minutes away.

And then, there is the relation with the water. The Harbour Police Station is literally located next to the Parkhaven, but it is also close to the Maas. And more interestingly, it has beautiful sightlines towards the water. And because of the strategic plan, those will be maintained in the future, which is valuable.

Another interesting point is the fact that the Harbour Police is located at the north east side of Schiemond, which is the area below the Westzeedijk. It connects the inner city of Delfshaven with the new residential area on the Mullerpier and Lloydkwartier. It thus has a connecting function.

And like I said, it is close to Delfshaven. So I looked into all kinds of functions to see what is close-by and if there were any needs in the area. As a conclusion, all daily functions are located near the site, and the only two things that are relatively not super close-by were a shopping mall and cafes.



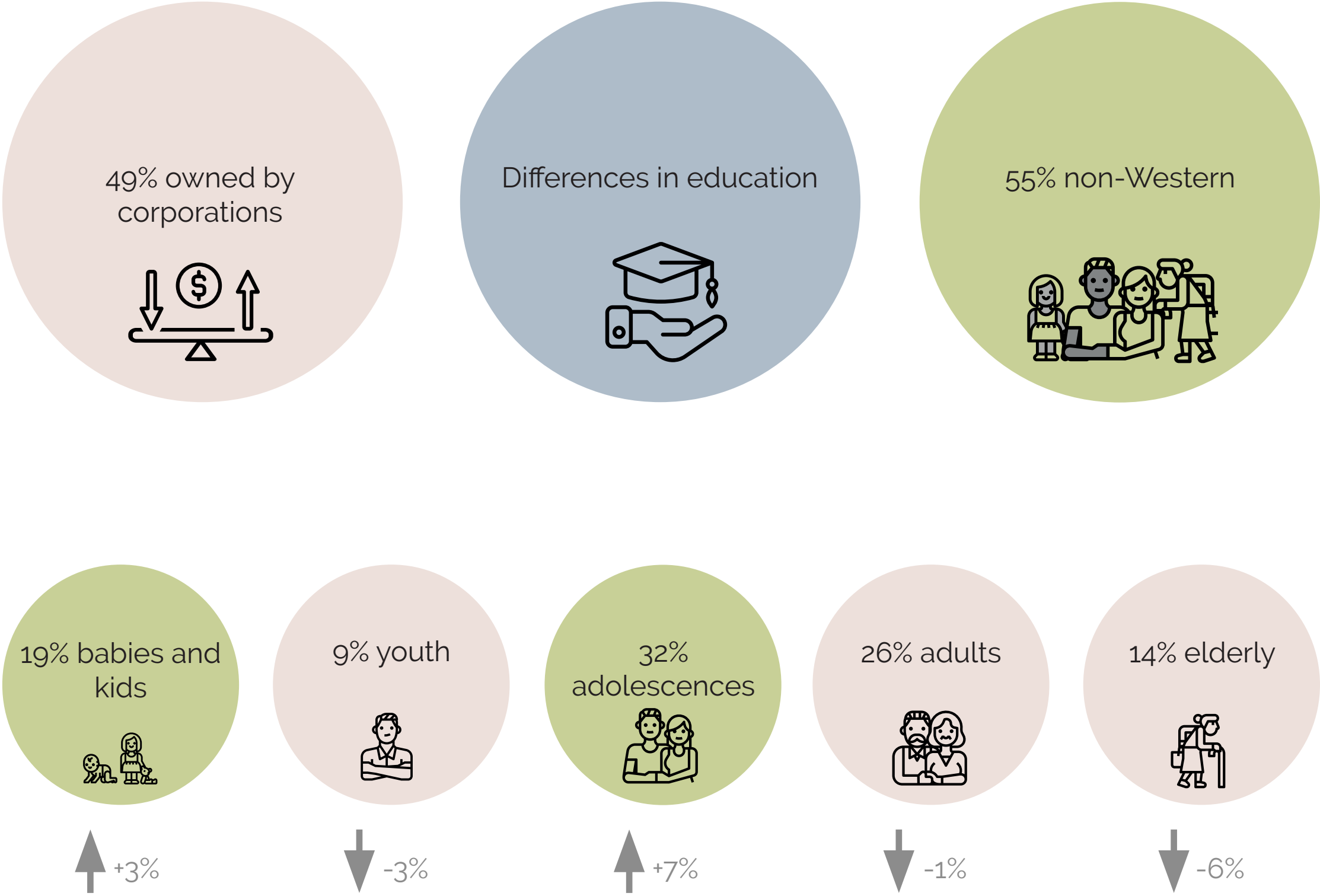
Fig. 3: Development of the Rotterdam Harbour Police Station



CHARACTERISTICS AND TRENDS

Since the area has developed over the last year, the demographics of this area are quite interesting. Namely, about 50% is owned by corporations and this is also in line with the distribution of incomes per house hold. It can be also concluded that there is a good mixture of attained education. And as a cherry on the pie, there are also a lot of different migration backgrounds, which result in a large variety of cultures. All in all, the new residential area is quite diverse.

However, when we look at ages, the amounts are less well balanced. Namely, I looked at the numbers and I compared it to the averages of the whole Netherlands and I found something interesting. The amount of young families is quite high in this area. And this is at the expense of the elderly. So, this is something I want to take into account within my redesign of the building.

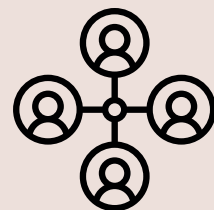


### KEY INFORMANT SET

And now that I shared my main thought on the several scales, I would like to show you how this all comes together. Well, I was able to cluster several notions and I combined it with some relevant trends and developments and this led to three themes. First there should be a space where people can learn and meet. Namely, the new residential area brings a lot of cultural variety. In order to create social cohesion, it would be interesting to create a space where those people can gather and share experiences. Furthermore, in times when everything is digitalized, the amount of loneliness increases and this can be countered by communal spaces, especially on a location that serves as a gateway. Secondly, there should be a social and living environment, which matches the new residential area. And in times of densification and housing shortage, it creates a mixture in functions. The area is suitable for this, since all functions are closeby, there are beautiful views and the neighborhood is already upcoming. Lastly, there should be as space for hospitality and tourism. This entrance area can welcome people from all over the world to show some iconic touristic attraction like the Euromast. At this moment, Rotterdam is focusing on become more of service economy and at a location with such a good accessibility, this can be executed perfectly.

And on the basis of this, I came up with three (or four) functions. The community center will be the place to learn and meet. And it requires public access, a flexible layout and it should be diverse and dynamic. The housing should be appealing and accessible, connected with the surroundings and more emphasis on slow traffic is desirable. The hotel and restaurant should have an public plinth, which will be open and transparent and the sightlines should be accentuated.

Learn & meet



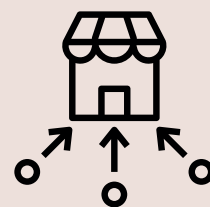
Social & living



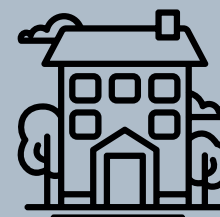
Hospitality & tourism



Community center



Housing



Hotel & restaurant



## 1.2. TRANSLATION OF THE BUILDING ANALYSIS

# 1.2. TRANSLATION OF THE BUILDING ANALYSIS

## INDEX

In order to fit the new program in the existing buildings, the values of the buildings need to be assessed. This is done on the basis of a matrix and a coding system.

- Value assessment
- Implementation future program

DIFFERENT METHODS

As a conclusion of the site and building analysis, I also did a value assessment according to the matrix including Brand’s shearing layers and Rieglian values as mentioned by Kuipers and de Jonge (2017). Aspects such as the use of rhythm and symmetry, the different kinds of used brick, the recognizable staircases, and the central corridor are highly valued. However, the assessment of values and attributes according the methods of Pereira Roders (2012) and Veldpaus (2014) both played an important role as well. The results (from last October) of the elevations and floorplan can be found on factsheet on the following page.

Overall the main values of the building can be summarised by the time layers, the fact that it forms a gate between neighbourhoods, the sightlines and relation with the water, the traditional usage of brick, the geometric shapes, the relation between in- and outside by dormers and depth, the corridor structure and the recognisable staircases.

	Age value	Historical value	Intentional commemorative value	Non-intended commemorative value	Use value	Newness value	(relative) Art value	Rarity value	Other relevant values
Surrounding/ setting	First harbour activities since +/- 1850	The setting involves in different layers of time		The Delfshaven district was left untouched during the bombing of 1940	There are various ways to access the area. It forms a gateway towards the Mullerpiers.	The Mullerpiers has been developed into a residential area recently.			The demography at the site is diverse and has cultural variety. Also, there are several similar (monumental) buildings in the area.
Site	Site is used by the former River Police since 1911.	The site is close to the former center of the Port of Rotterdam.			There is a strong relation with the water, as well as with the city center.			The little distance between the buildings and the water is unique.	All sorts of functions are close-by.
Skin (exterior)	The exterior consist of the original materials.				The openings on the south facade face the River Maas.	The materiality and style form a reflection of the construction periods. The central glass zone is a continuation of the existing.	The 1933 and 1940 buildings reflect the traditional Dutch brick architecture. Also, there is a traditional use of natural stone, rhythmic material, light, wooden doors, high steel window frames and fences.		The buildings are designed by architects of Municipal Works.
Structure	The buildings were built in 1933, 1940 and 1994.				Form follows function in the 1933 and 1940 building. The one from 1994 has flexibility of space.			The 1940 building consists of a concrete roof.	
Space plan		The construction (of the 1933 building) comprise the built-in cells.		During WWII, the cells and attic were used as prison by the German Sicherheitspolizei.	The buildings have a corridor structure, with recognisable stairs. Also, there is flexibility of space through columns.			Even though the three buildings are detached, they incorporate one function.	
Surfaces (interior)							Usage of natural stone and light tiling		
Services					The 1994 building has an elevator to provide accessibility for all.			The 1994 building has swallow roof tiles.	
Stuff				When the Harbour Police was taken over by Germans, the prisoners made a wood carving.					The building is decorated with police signs and boards.
Spirit of place	In 1962 the Port of Rotterdam became the largest in the world.	Rotterdam became the first to act against crime and theft on land and water since 1895.	It was said that they deserved a building that fitted their use and character (1933).				The buildings are perceived as formal, autonomous, businesslike, no superfluous luxury and light.		

Fig. 4: Value assessment matrix

# VALUE ASSESSMENT

## Harbour Police Station, Rotterdam

VALUES & ATTRIBUTES | DAPHNE FAHRNER

### Introduction

In the Cambridge Dictionary (n.d.), 'architecture' is defined as 'the art and practice of designing and making buildings, or the style in which buildings are made'. This implies the importance of the aesthetic and scientific elements of a building. However, in order to value a building, more elements need to be taken into account. According to Pereira Rodgers (2012) the cultural significance can be described by eight primary values. These include the political, social, scientific, ecological, age, aesthetic, historical and economic value.

The building that is researched is the Harbour Police Station, which is located in the Parkhaven in Rotterdam. It consists of three buildings of different shapes and sizes and they are designed by architects of the Municipal Works throughout different periods of time.

### Methodology

The value assessment of the Harbour Police Station consists of various methods. First of all, data was collected. Sources relating to the founding and expansion of the River Police were found in the Rotterdam City Archive. As an example, the book *Dienders te water* (1995) and articles from *Ons Rotterdam* (2014) provided insight into the history of the former River Police. Furthermore, original drawings were found in the Rotterdam City Archive and in the archive of Municipal Works. In addition, the internet was scoured for information regarding the site analysis. Both types of data were directly integrated into one text on the chronological events of the River Police and its site. The text was not paraphrased or adapted in order to maintain the objectivity. By coding this text - written by 11 different authors -, the values and (in)tangible attributes were identified. Several sources within this text showed overlapping information, so values and attributes were mentioned multiple times. Therefore, the next step was to create an overarching overview whereby the values and attributes were visualized in a mind map. As a result, the mind map enabled the translation of values and attributes into a value assessment regarding the facades and floor plans.

### Results

In this project, the identification of valuable architectural elements is based on the coding of values and attributes. On the one hand, the values consist of the eight primary values of Pereira Rodgers (2012) as mentioned in the introduction. On the other hand, the attributes can be identified on the basis of Veldpaus' intangibles and tangibles (2014). These intangibles are made up of asset related, societal and process attributes, while the tangibles are expressed by asset, area and landscape attributes.

After the texts were coded, the information was merged into the overarching mind map in image 1. It shows that the River Police - which is renamed Harbour Police in 2000 - is located in the harbour in Rotterdam. Its location has political and economic value, since it is a center point for logistics and it covers a large area of international trade. Furthermore, the residence can be divided into three buildings, which have different valuable elements. Originally, the 1940 building was not part of the police, but was known as 'that building near the River Police'. However, it was designed by an architect of Municipal Works, i.e. Van der Lecq, who also designed the 1933 building. The character of the 1933 building

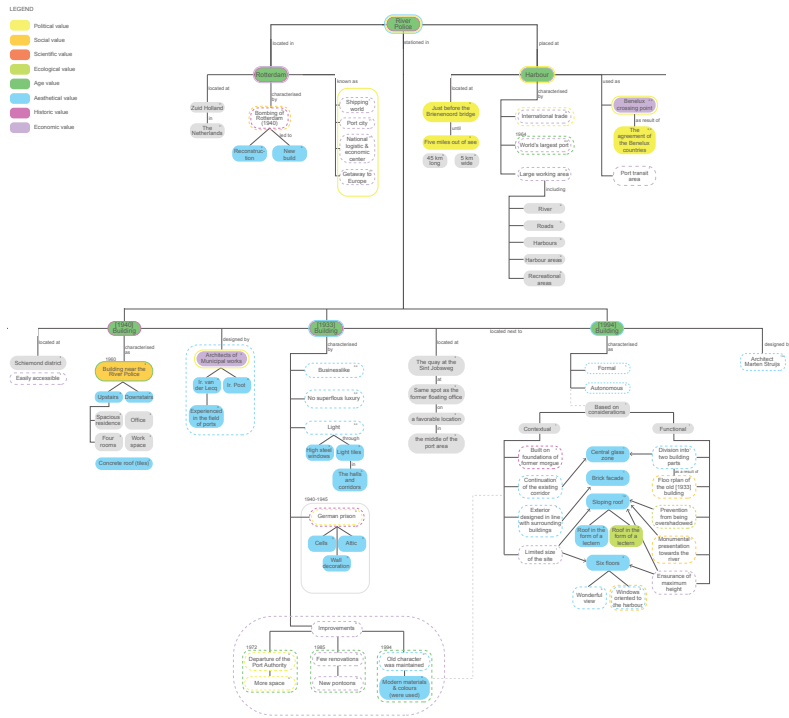


Image 1: Mind map of the coding of objective texts in relation to the Harbour Police Station and its political, social, scientific, ecological, age, aesthetical, historic and economic values and (in)tangible attributes.

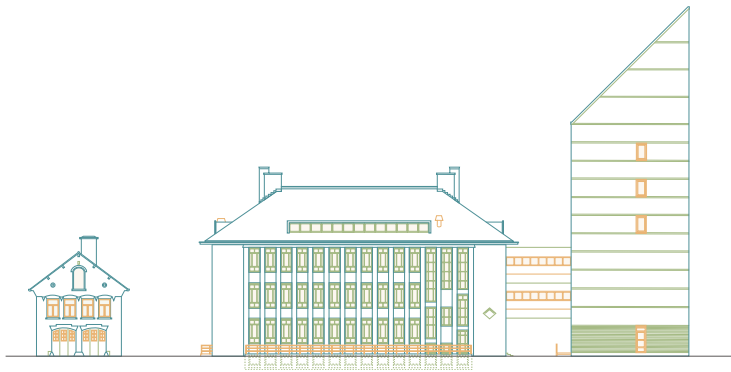


Image 2: Value assessment of the west facade of the Harbour Police Station. Blue = high value; Green = medium value; Yellow = low value.



Images 3 and 4: Value assessment of, respectively, the north and south facade of the Harbour Police Station. Blue = high value; Green = medium value; Yellow = low value.

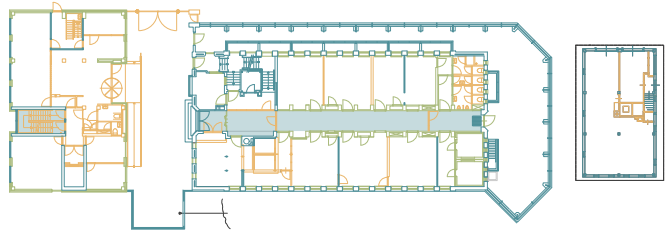
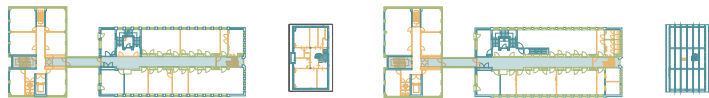


Image 5: Value assessment of the ground floor of the Rotterdam Harbour Police Station. Blue = high value; Green = medium value; Yellow = low value.



Images 6 and 7: Value assessment of, respectively, the first and second floor of the Harbour Police Station. Blue = high value; Green = medium value; Yellow = low value.

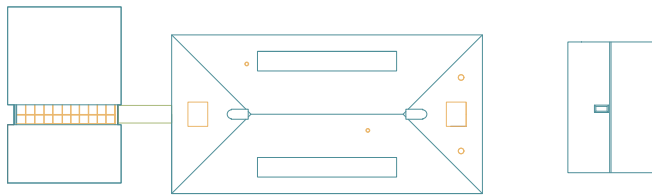


Image 8: Value assessment of the roof of the Harbour Police Station. Blue = high value; Green = medium value; Yellow = low value.

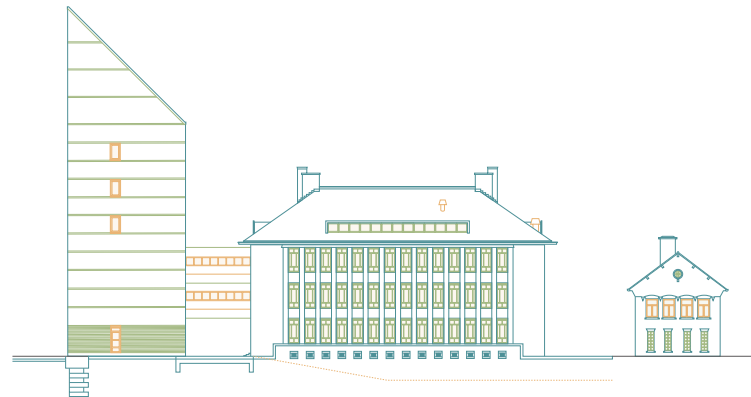
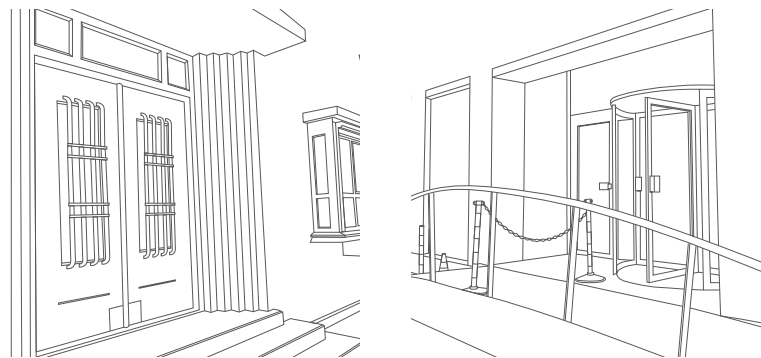


Image 9: Value assessment of the east facade of the Harbour Police Station. Blue = high value; Green = medium value; Yellow = low value.



Images 10 and 11: Sketches of the entrances of the Harbour Police Station. The left sketch visualises the entrance of the 1933 building and the right shows the 1994 building.

# BUILDING ANALYSIS

was described on the basis of some tangible attributes, like the high steel windows and light tiles. The building was most recently renovated in 1994, which is the year that the last building was also constructed. Regarding the 1994 building, the central glass zone and the sloping roof are valued as aesthetic attributes according to this mind map. Also, it is shown that these aesthetic elements are based on considerations with historical, aesthetic, economic social and even ecological values.

Where the coding and mind map were mostly objective, a layer of interpretation is added to the value assessment. In this case, the current situation is compared with the original drawings and the mentioned values and attributes of the mind map. Values in the format of text do not provide sufficient information for concrete plans for the adaptive reuse. Therefore, the values of the spatial structure, the layout and the facades are translated and indicated in drawings of the facade and floor plans on the basis of three colors in images 2-9, as determined by the National Cultural Heritage Agency (2009): Blue represent high values, which are crucial for structure and/or meaning of the object or area; Green represent positive values, which are of medium importance for the structure and/or meaning of the object or area. Yellow represents indifferent values, which are of relatively little importance for the structure and/or the meaning of the object or area. As a result, the most important elements of the Harbour Police Station are the general volumes, the rhythm of the windows and the interior central corridor.

### Design Guidelines

On the basis of this research, some design guidelines can be determined. As can be concluded, the overall essence of the buildings should be respected. Concerning the three buildings, the bricks, the main volumes including the different sizes and the shapes of the roofs are of high importance. Furthermore, in the case of the 1940 building, mainly the west and east side can be considered as valuable in terms of its composition. Regarding the 1933 building, the overall symmetry and rhythm of the composition of the facade, including its entrance (image 10) and its high window frames, should be conserved as they are of high value. In relation to the 1994 building, especially the south facade is of importance as a result of the numerous windows - and thus beautiful views - towards the river. Concerning the interior, the central corridor zone in the 1933 and 1994 buildings, and throughout the connecting bridge, is crucial in the design and should therefore be preserved. Furthermore, changes turn out to be acceptable in several floor plans (except the corridor zone), in the north and south facade of the 1940 building, in the north, east and west facade of the 1994 building, including its entrance (image 11) and in the exterior of the connecting bridge. Nevertheless, all redevelopments must be carried out carefully and with a clear motivation.

### References

- In text**
- Cambridge Dictionary. (n.d.). *architecture*. In Cambridge Dictionary. Retrieved October 19, 2021, from <https://dictionary.cambridge.org/dictionary/english/architecture>
  - Pereira Rodgers, A., & Tarrata Silva, A. (2012, January). *Cultural Heritage Management and Heritage Impact Assessments*. Research Gate. [https://www.researchgate.net/publication/323783537\\_Cultural\\_Heritage\\_Management\\_and\\_Heritage\\_Impact\\_Assessments](https://www.researchgate.net/publication/323783537_Cultural_Heritage_Management_and_Heritage_Impact_Assessments)
  - Rijksdienst voor het Cultureel Erfgoed, Stichting Bouwhistorie Nederland, Vereniging Nederlandse Gemeenten, Afdeling Rijksbouwmeester, & Rijksgebouwendienst. (2009, April). *Richtlijn bouwhistorisch onderzoek*. Rijksdienst voor het Cultureel Erfgoed. <https://www.cultureelerfgoed.nl/publicaties/publicaties/2009/01/01/richtlijn-bouwhistorisch-onderzoek>
  - Veldpaus, L., & Pereira Rodgers, A. (2014, October). *Learning from a Legacy: Venice to Valletta*. Research Gate. [https://www.researchgate.net/publication/26731318\\_Learning\\_from\\_a\\_Legacy\\_Venice\\_to\\_Valletta](https://www.researchgate.net/publication/26731318_Learning_from_a_Legacy_Venice_to_Valletta)

- In coding**
- Berkelbach, C., Devolder, A. M., & Damen, H. (1995). *Architectuur 1970-1995 Rotterdam*. Uitgeverij OIO.
  - Gemeente Rotterdam. (n.d.). *Pandkaarten Sint Jobsweg 2*. Rotterdam RVC. Retrieved October 5, 2021, from <http://rotterdam.rvc.nl/pandkaarten/images.asp?pp=0&pin=0>
  - Huispedia. (n.d.). *Sint-Jobsweg 2-4, Rotterdam (2024 E.d.)*. Retrieved October 10, 2021, from <https://huispedia.nl/rotterdam/2024/sint-jobsweg-2-4>
  - Huispedia. (n.d.). *Sint-Jobsweg 2A, Rotterdam*. Kadasterdata. Retrieved October 10, 2021, from <https://www.kadasterdata.nl/rotterdam/sint-jobsweg-2A/?category=1>
  - Kramer, H. (2014). *Drijvend politiebureau*. Stichting Ons Rotterdam. P.4
  - Manneke, P. (1995). *Dienders te water*. Phoenix & Den Ouden. P. 23,47-49,74,85,98-111
  - Riverpolitie Rotterdam (1985). *Gemeentepolitie Rotterdam: wat doet de Riverpolitie?*. P. 2
  - Rotterdam wach! nieuws op 25.000e schip. (1982, December 15). *Volkscrant*. <https://www.delpher.nl/nl/kranten/view>
  - Stichting Ons Rotterdam. (2014). *Van rivier- tot zeehavenpolitie*. Stichting Ons Rotterdam. n. 3, P.4-5
  - Wikipedia-contributors. (2021, October 4). *Rotterdam*. Wikipedia. <https://nl.wikipedia.org/wiki/Rotterdam>

Fig. 5: Value assessment factsheet



### MAIN CONCEPT

In order to fit the new program in the existing volumes I wanted to make use of the idea of “function follows form”. Therefore I decided that it was the best way to organise the program according to the distribution of functions that is depicted in the image on the right. This is mainly based on the fact that the structure of the 1994 building results in a division of compartments on each floor. Furthermore, the 1940 building really forms the connection and entrance area between the different districts. Last but not least, the 1933 building has beautiful spaces and sightlines to the water. Also, the upper floor levels will be more quiet than the ground floor. And in this way, the plinth can be revitalised in order to create a public and welcoming appearance.

However, some changes and additions should be added in order to house all the functions accordingly. As mentioned before, the plinth will be used to incorporate especially the public functions. The upper floor levels will thus house the more private functions.

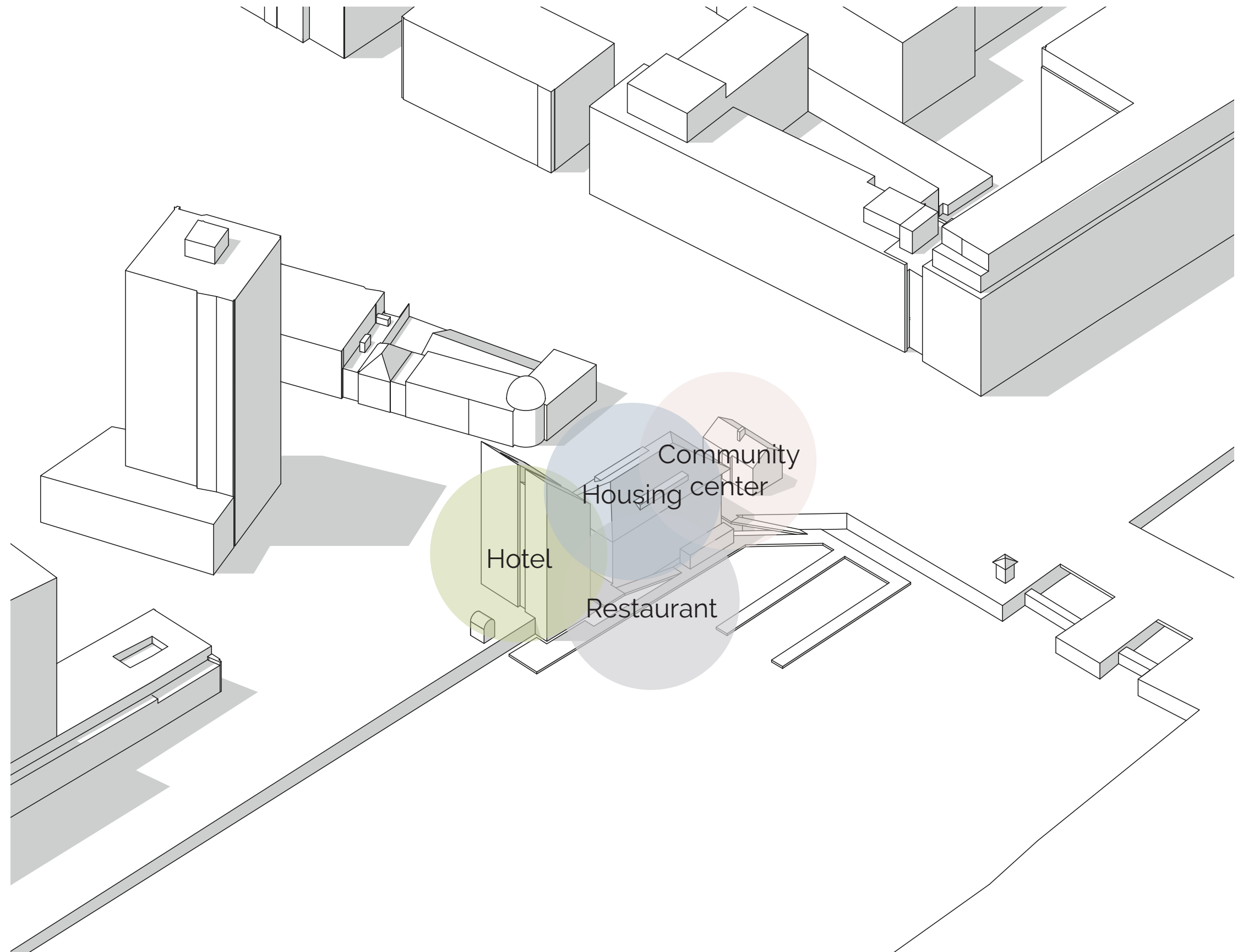


Fig. 6: Main transformation concept for the Rotterdam Harbour Police Station





## 2. DESIGN PROPOSAL

### INTRODUCTION

The main takeaways of the analysis have formed the fundamentals of the design proposal. In other words, the urban context and structure of the building both led to the division of functions. Furthermore, locations or elements of the building that are in need of extensions were appointed. This chapter will elaborate on the design and appoints the following topics:

- Master plan & floor plans
- Elevations & sections
- Climate & detailing

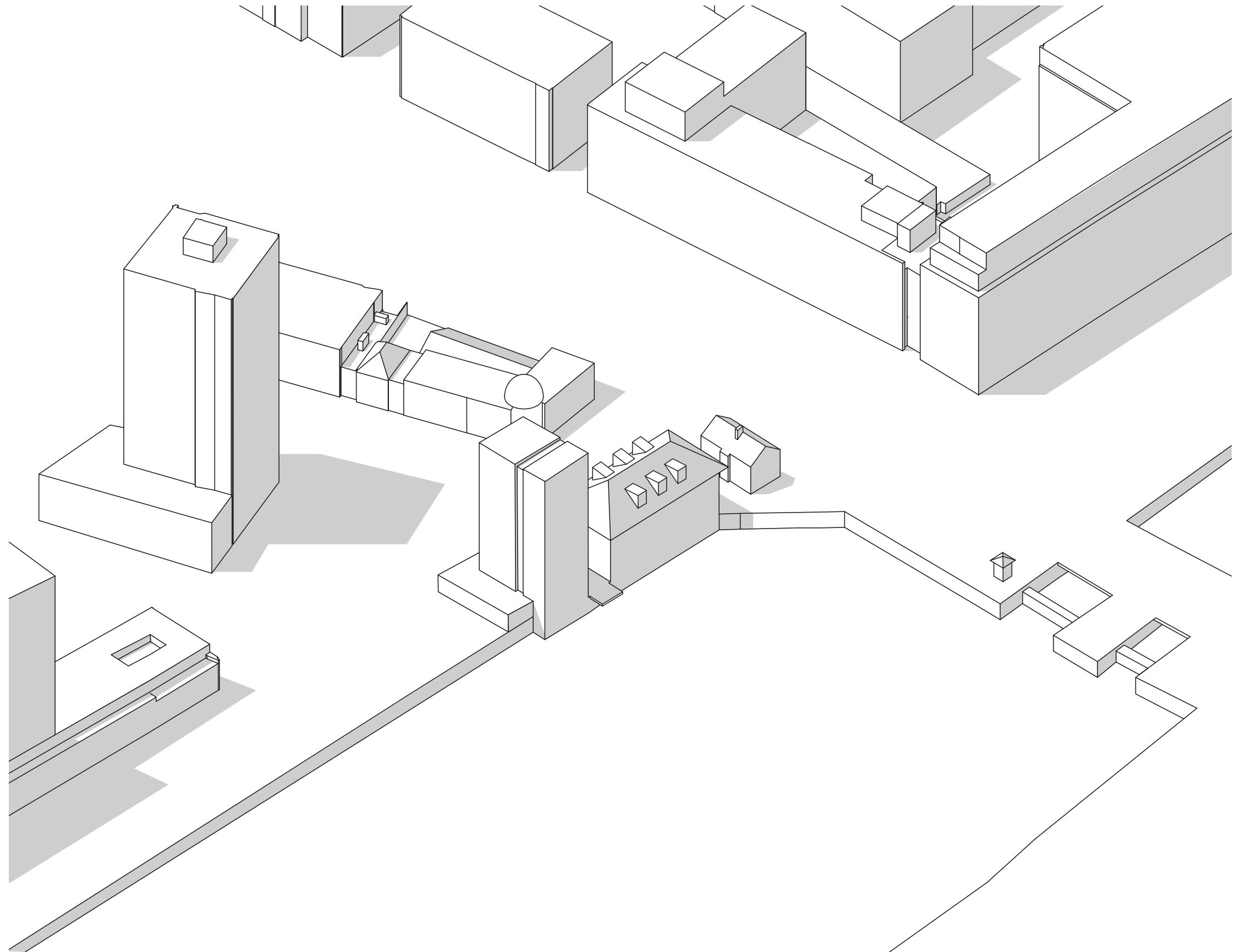


Fig. 7: Conceptual design for the Rotterdam Harbour Police Station

## 2.1. MASTER PLAN & FLOOR PLANS

# 2.1. MASTER PLAN & FLOOR PLANS

## INDEX

As the title of this subchapter already explains, these pages will be devoted to the layout of the new program. The first pages include the new master-plan, which has a focus on creating a public plinth and attracting human activities. The floor plans will then show the relation between this public plinth, the routing and the functions.

- Master plan
- Floor plans



## ENTERING & SIGHTLINES FROM THE NORTH EAST

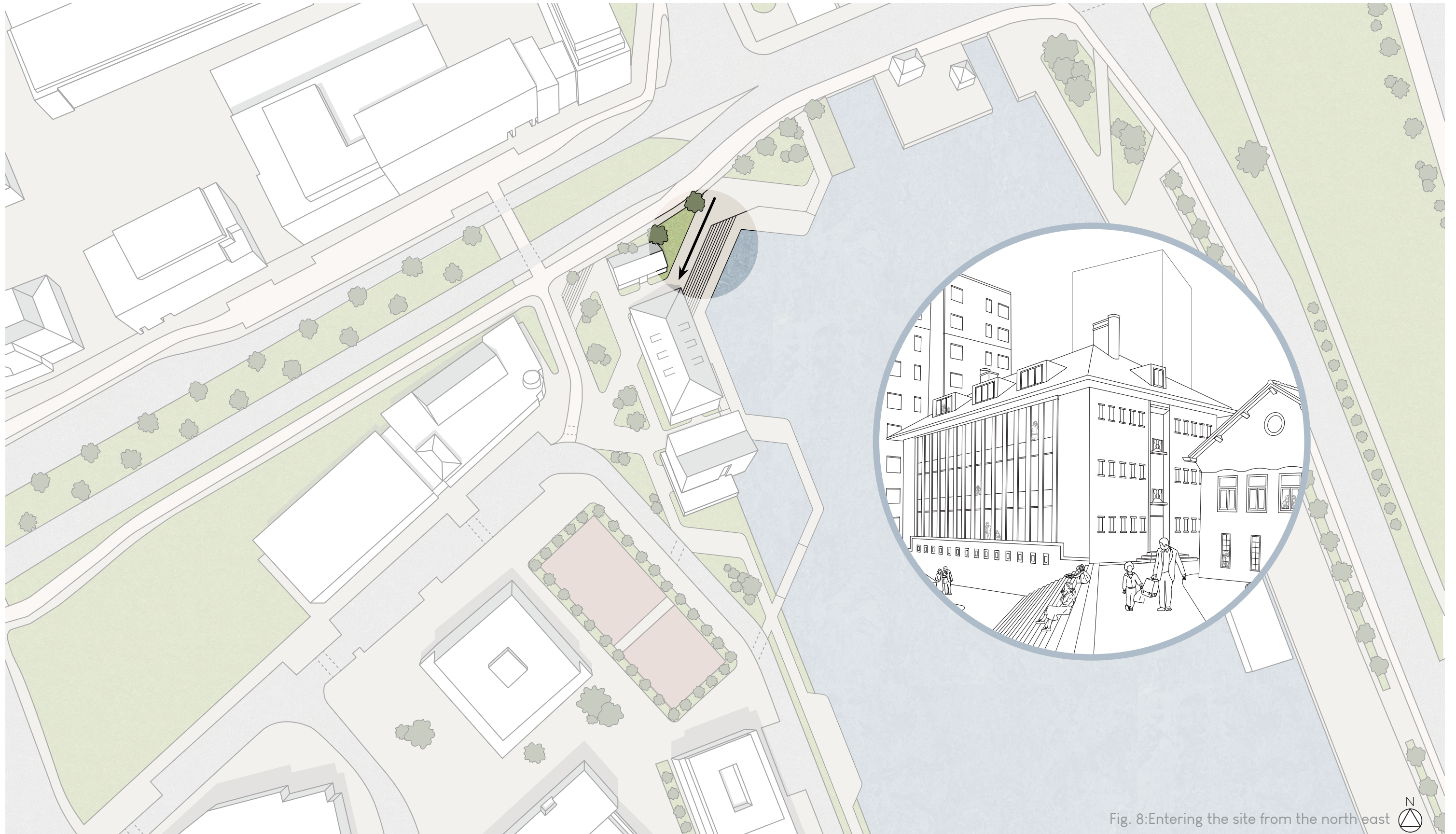


Fig. 8: Entering the site from the northeast





## ENTERING & SIGHTLINES FROM THE NORTH WEST

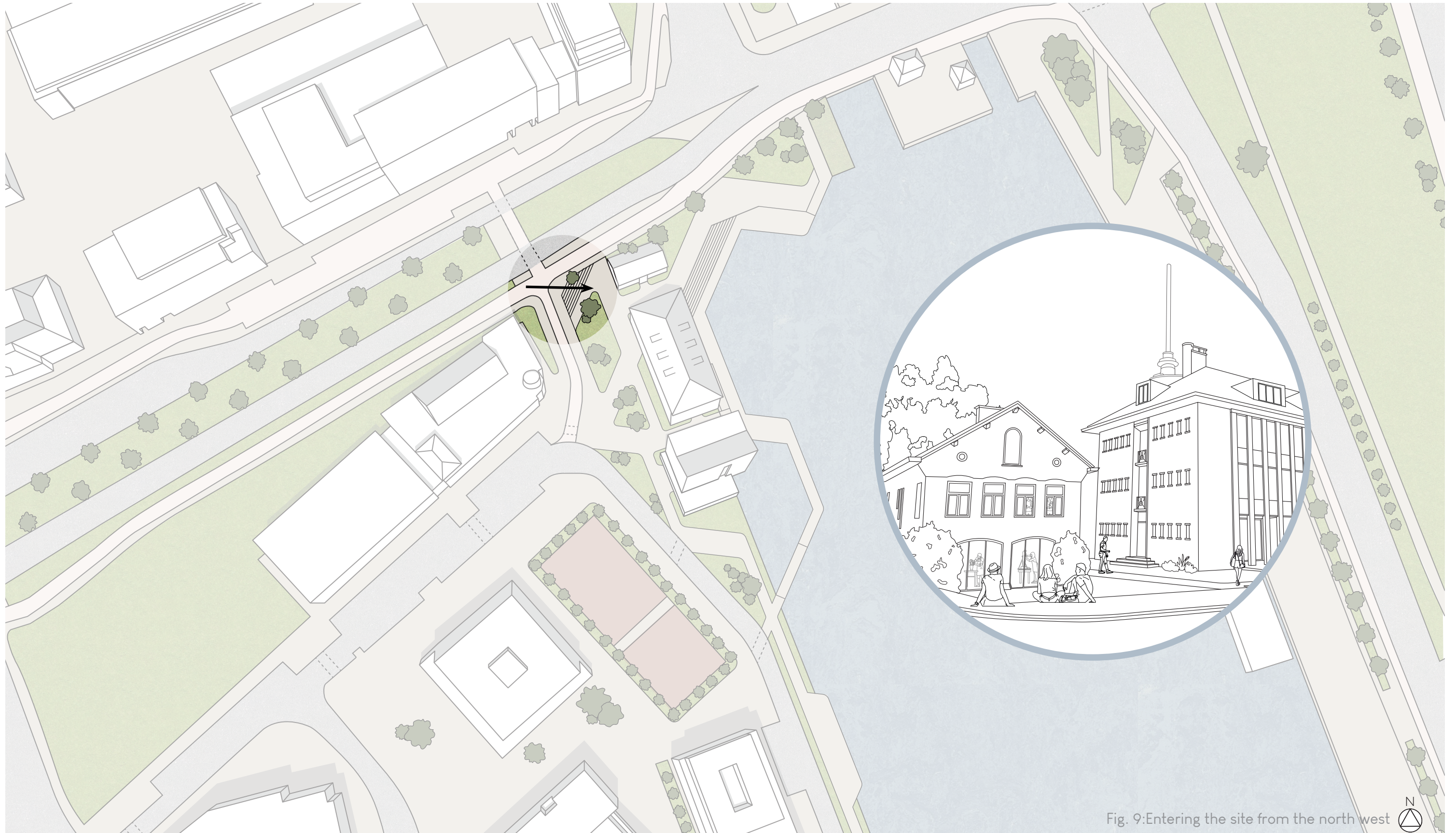
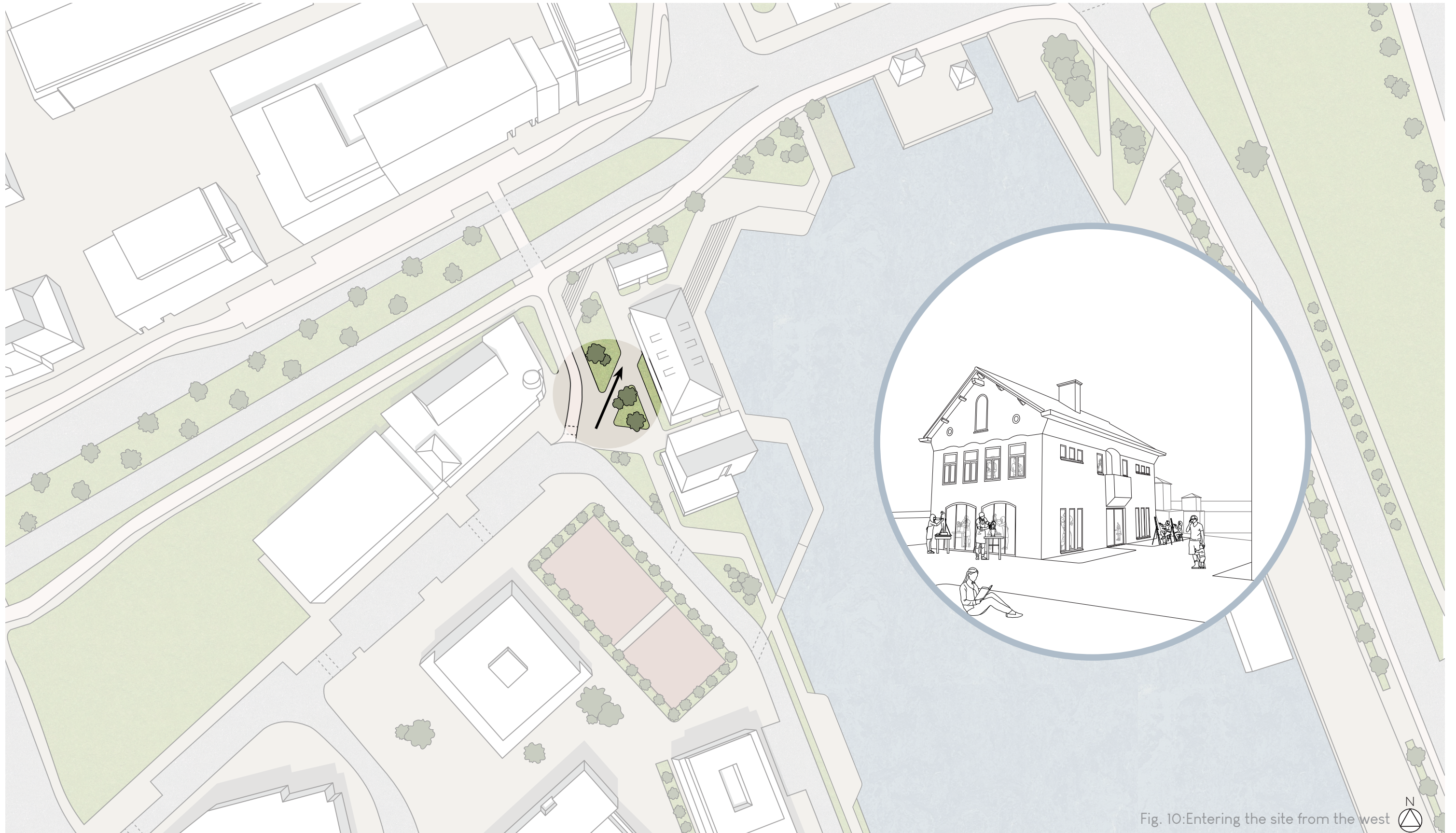


Fig. 9: Entering the site from the north west





## ENTERING & SIGHTLINES FROM THE WEST





## ENTERING & SIGHTLINES FROM THE WEST 2

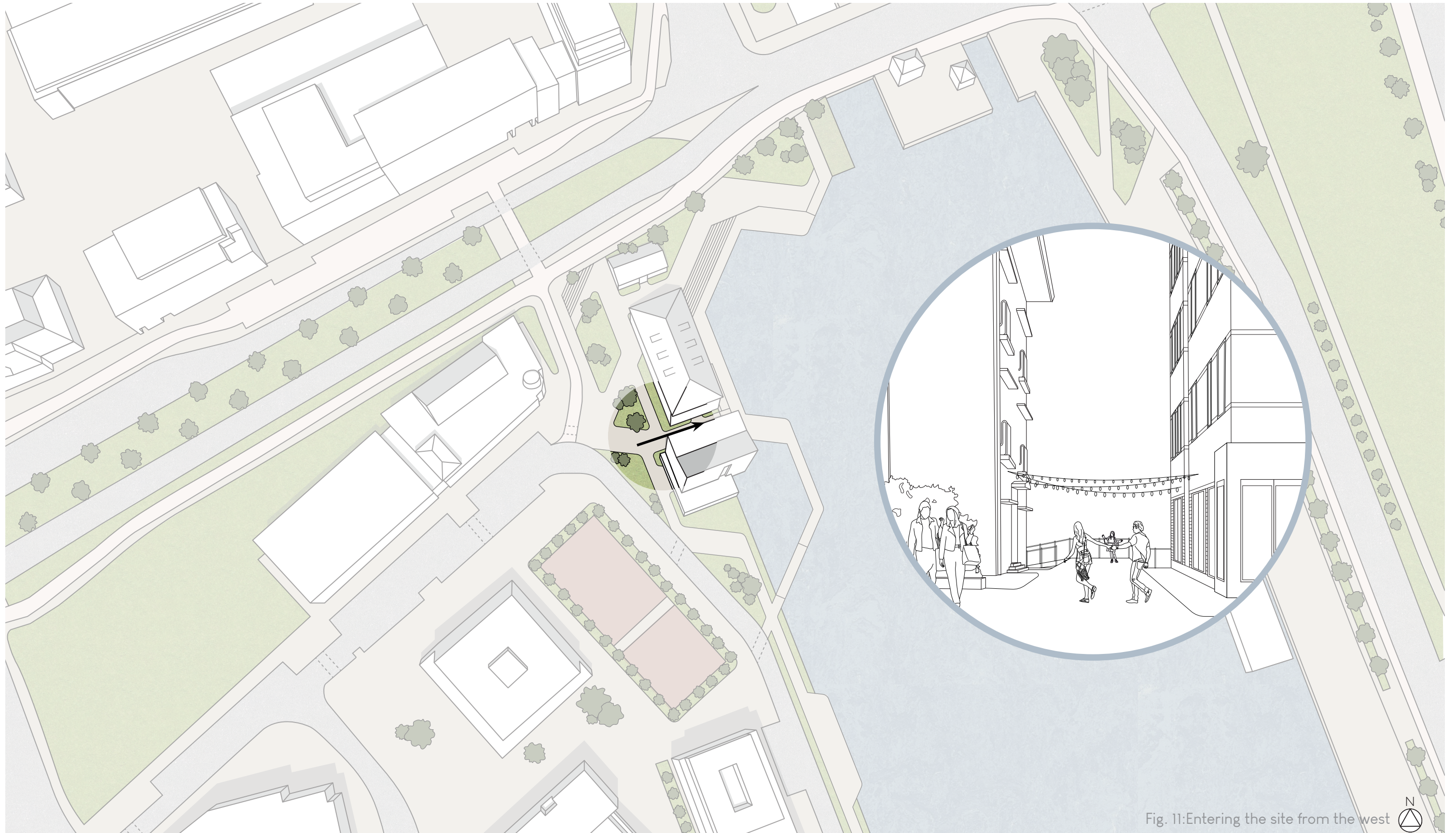
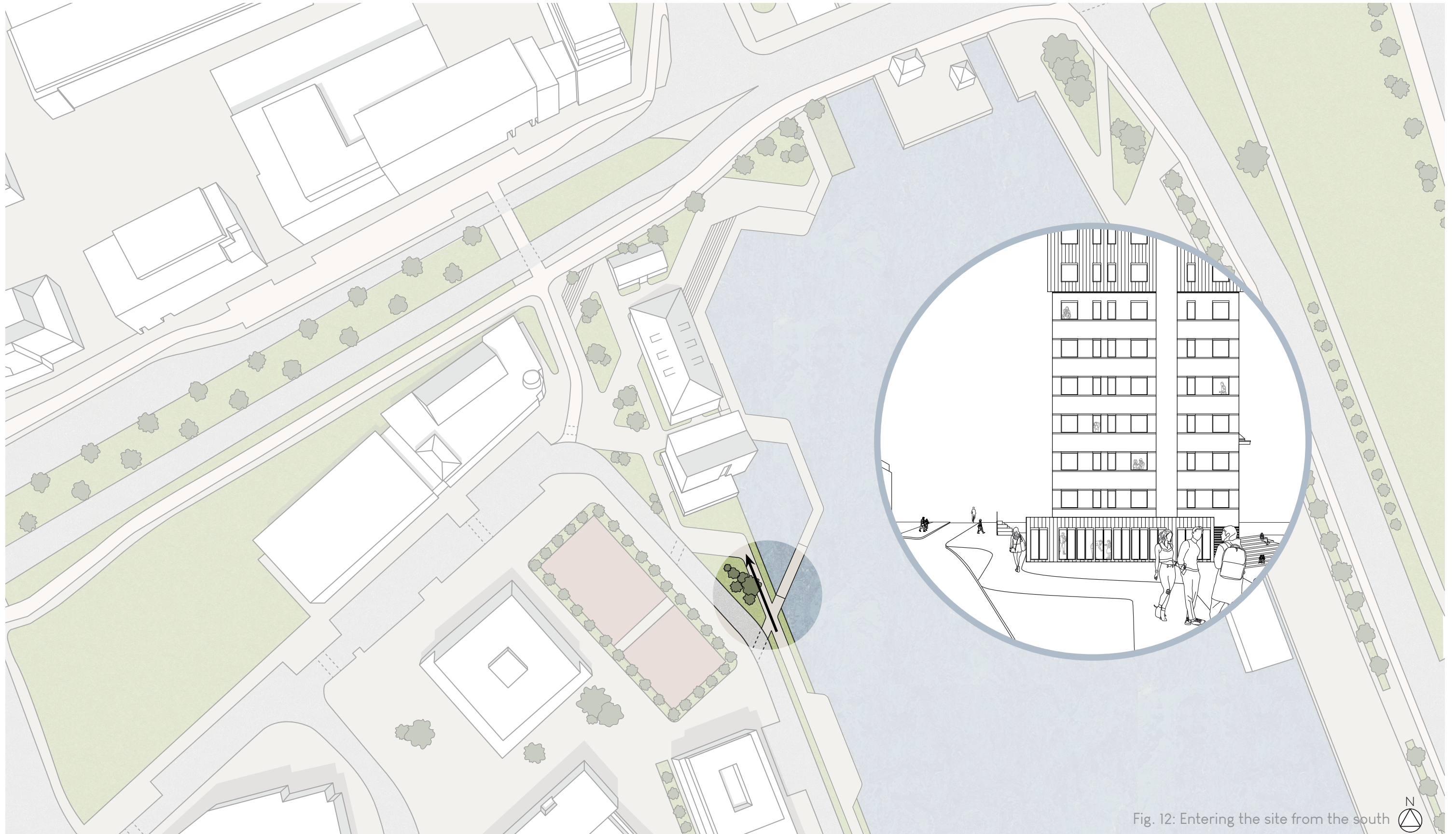


Fig. 11: Entering the site from the west





## ENTERING & SIGHTLINES FROM THE SOUTH





AFTER ENTERING THE AREA...



Fig. 13: Site , incl floorplan 



GROUND FLOOR I COMMUNITY CENTER

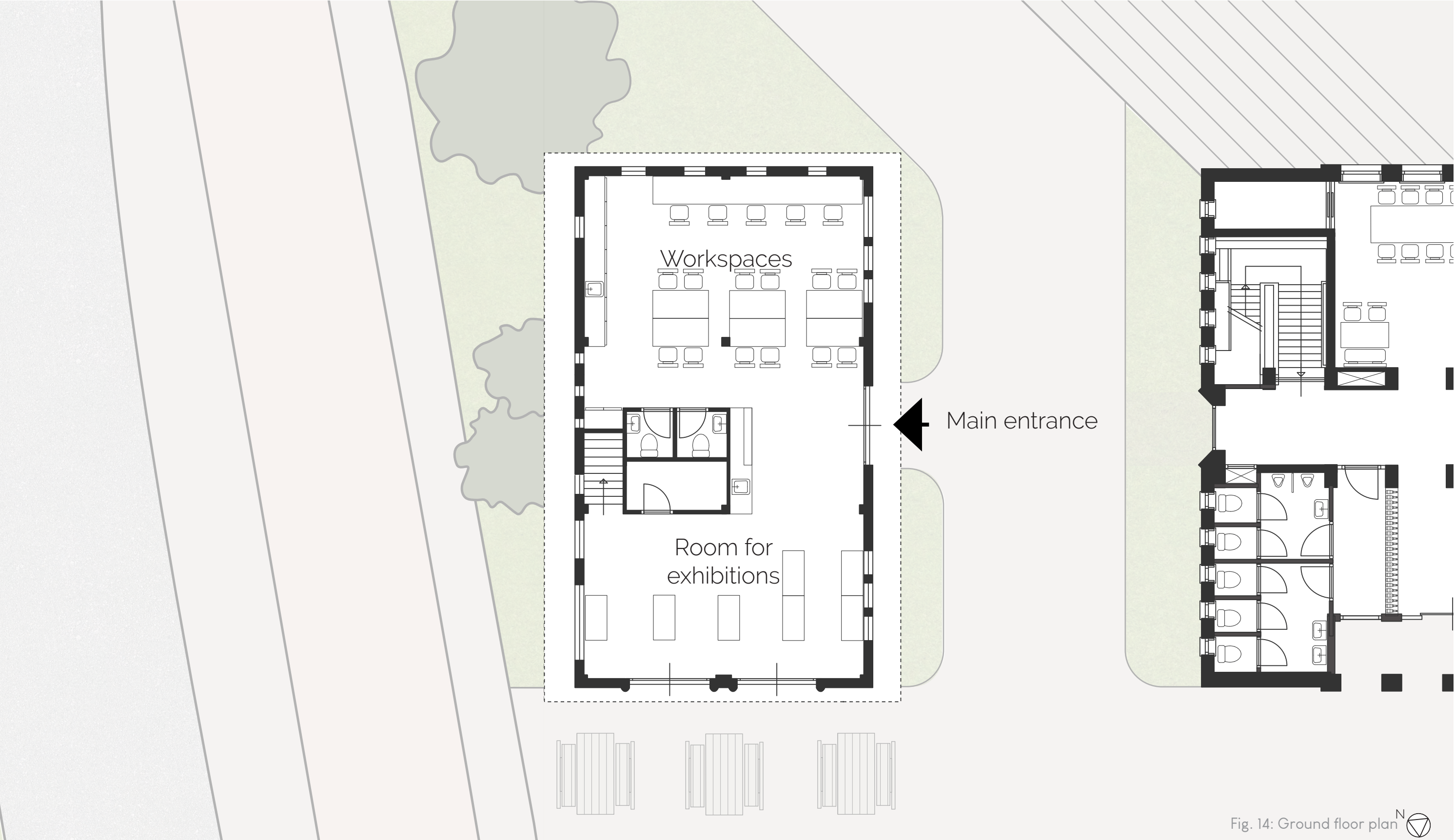
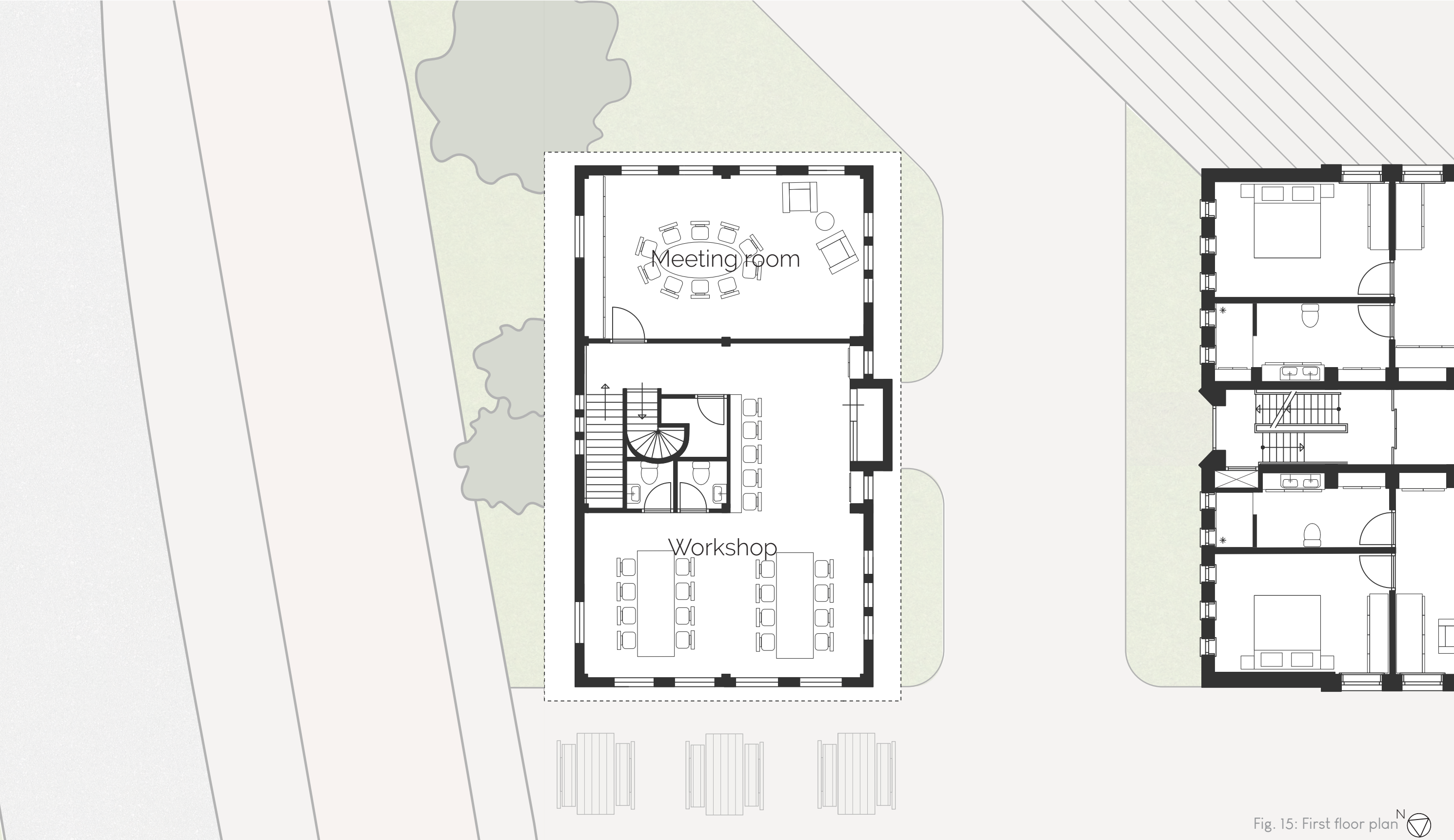


Fig. 14: Ground floor plan

# FLOOR PLAN 1940

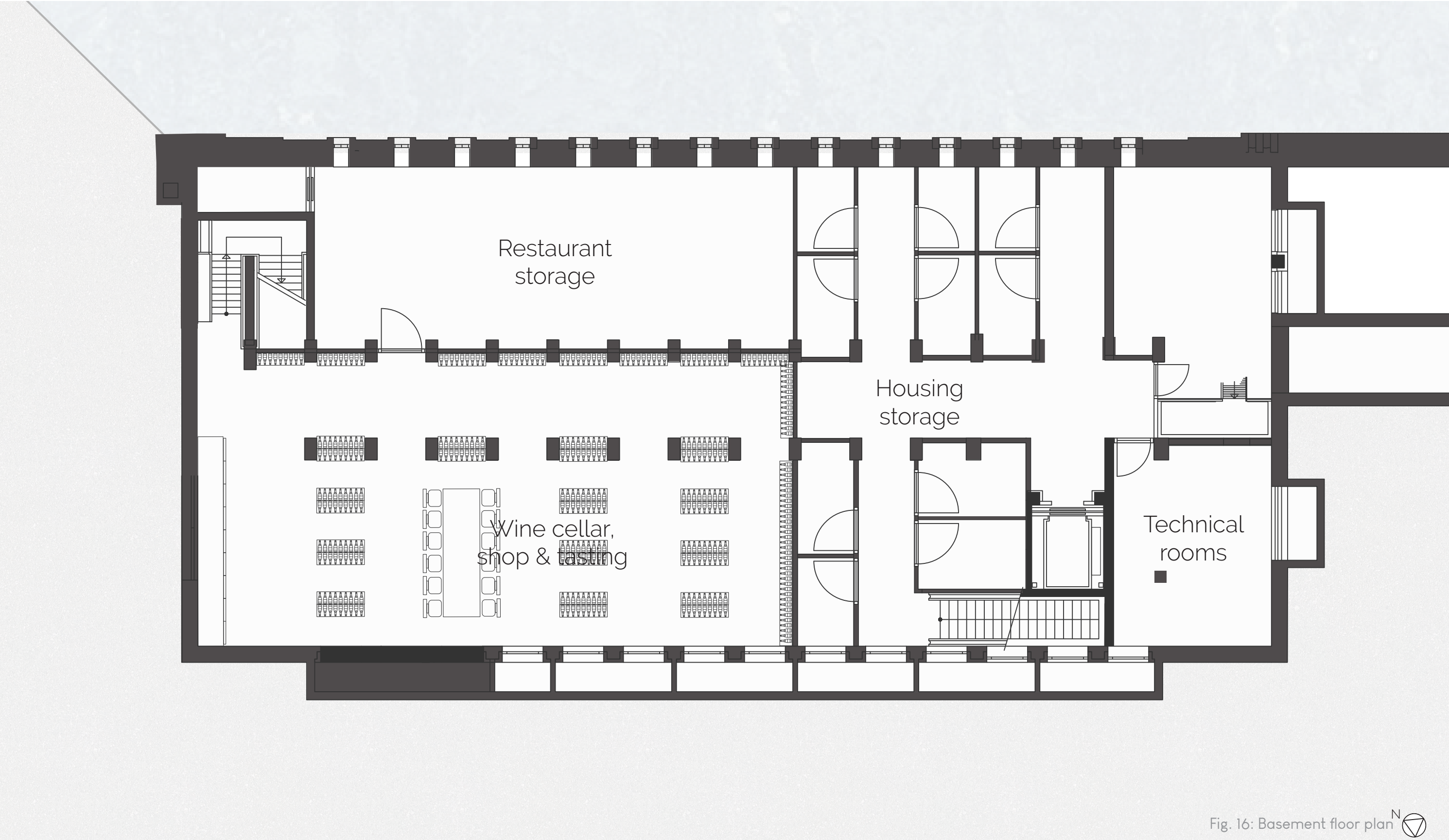
LAYOUT

FIRST FLOOR | COMMUNITY CENTER





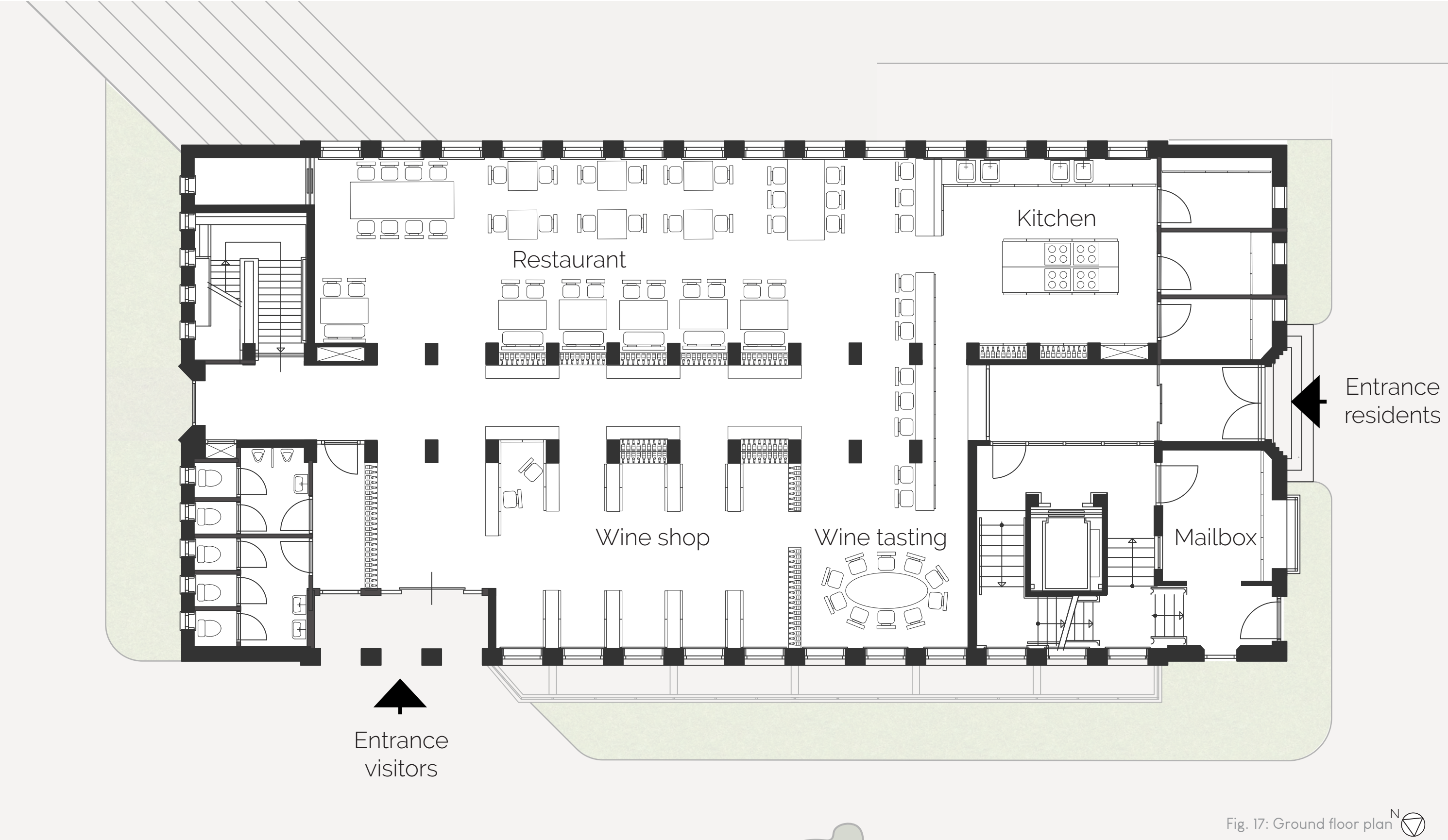
BASEMENT I WINE CELLAR & STORAGE & TECHNICAL ROOMS



# FLOOR PLAN 1933

LAYOUT

GROUND FLOOR | RESTAURANT & WINE TASTING AREA



FIRST FLOOR | APARTMENTS & LAUNDRY ROOM

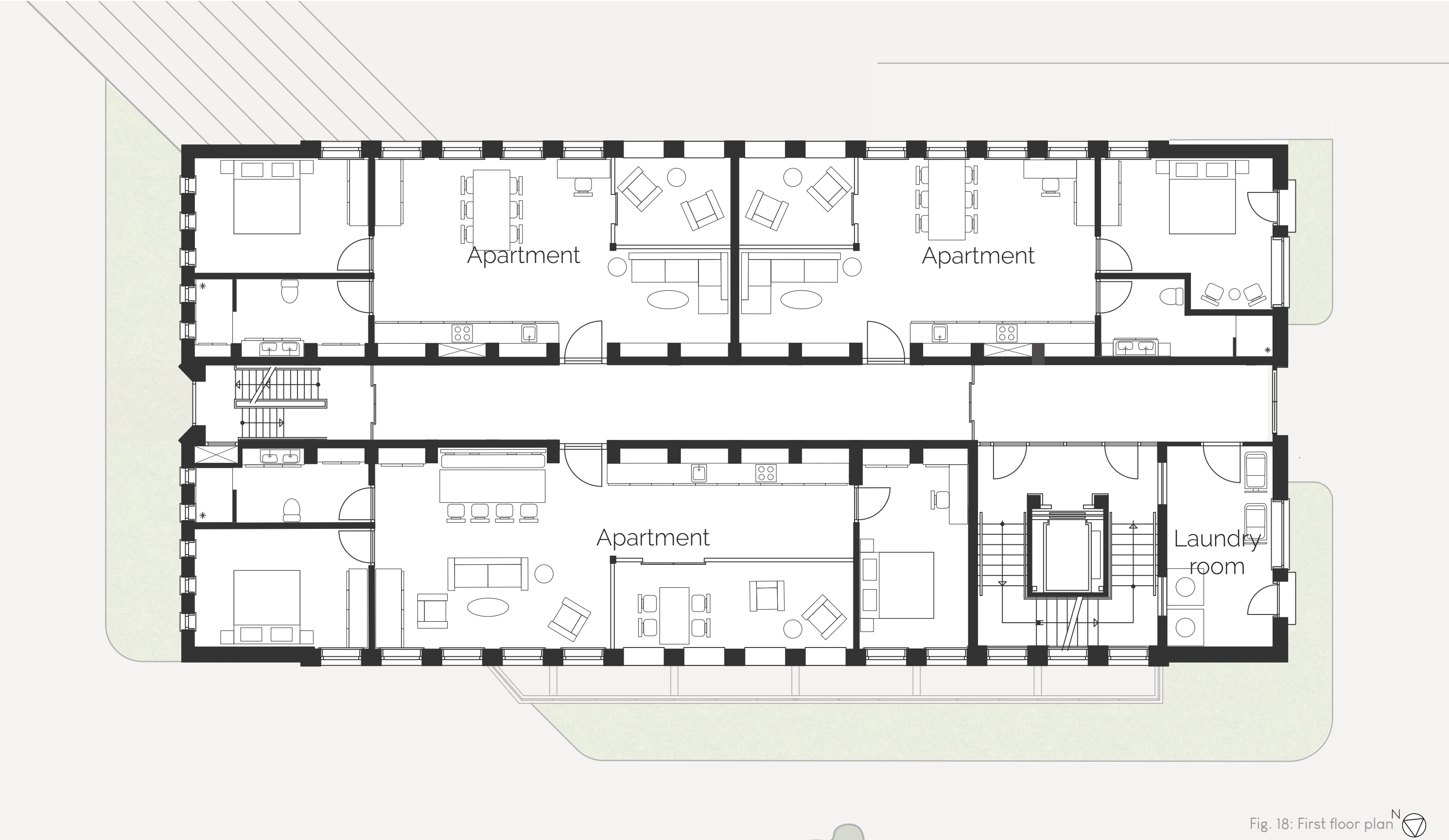


Fig. 18: First floor plan <sup>N</sup>



SECOND FLOOR | APARTMENTS & LAUNDRY ROOM

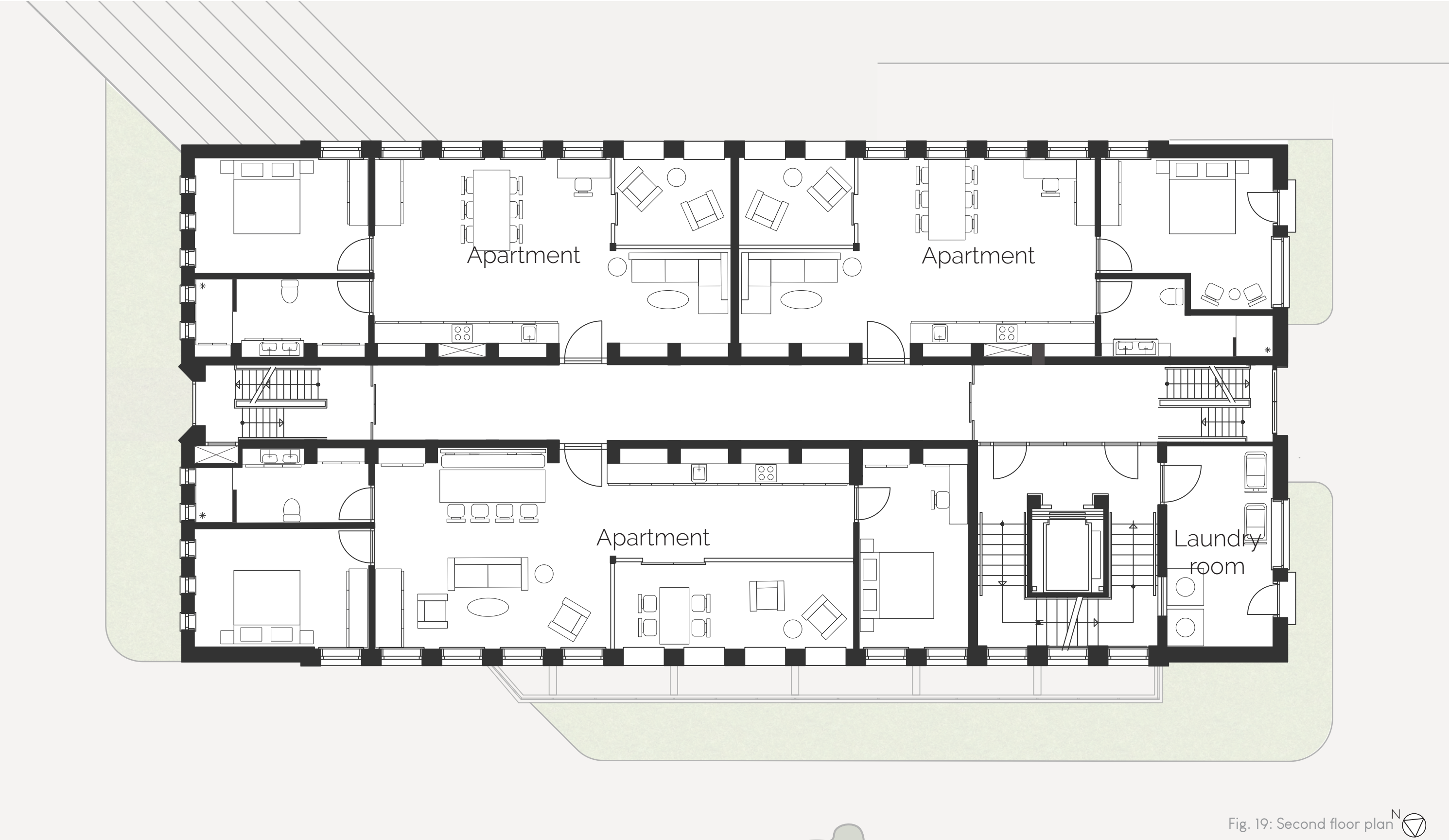
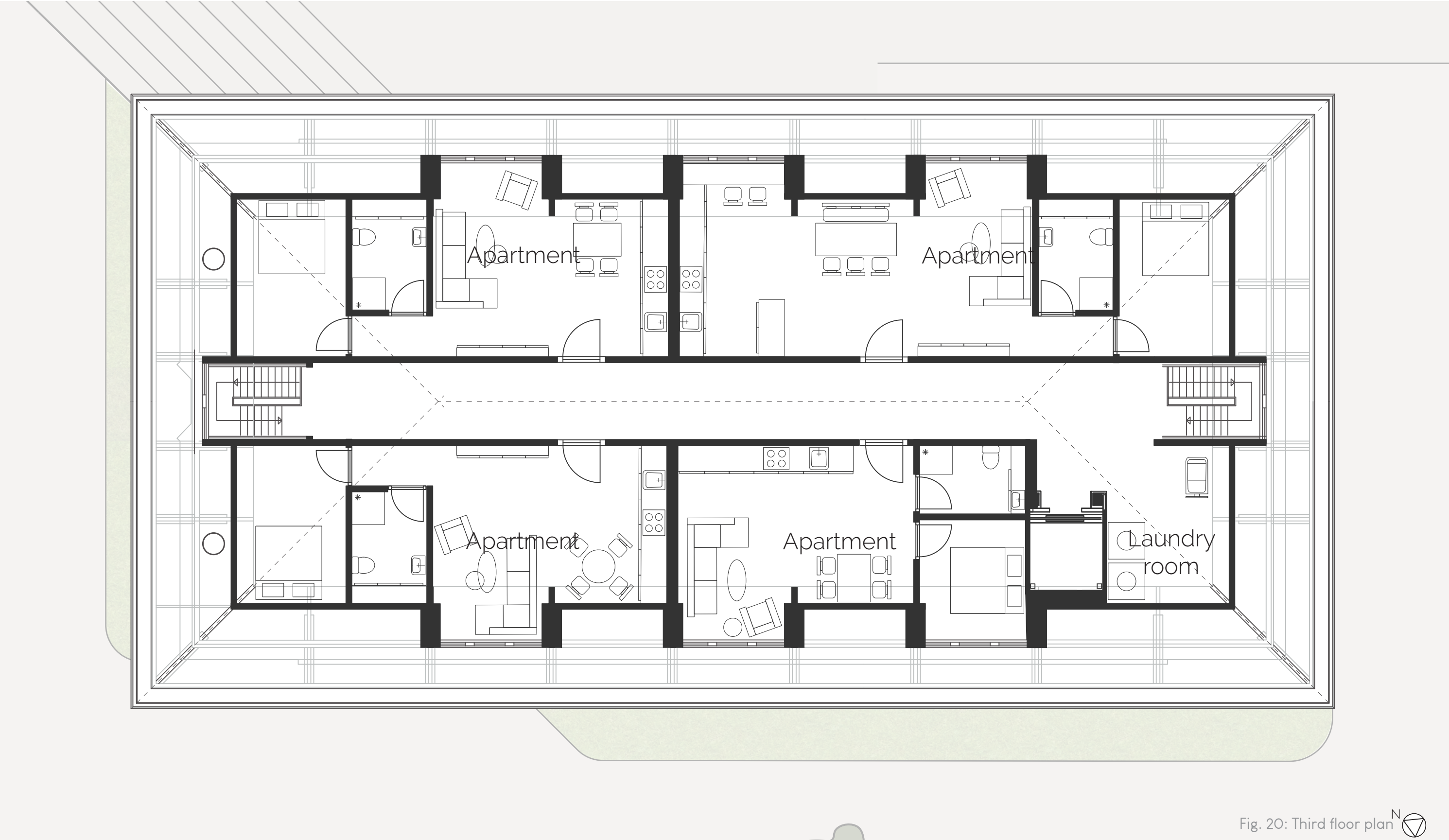


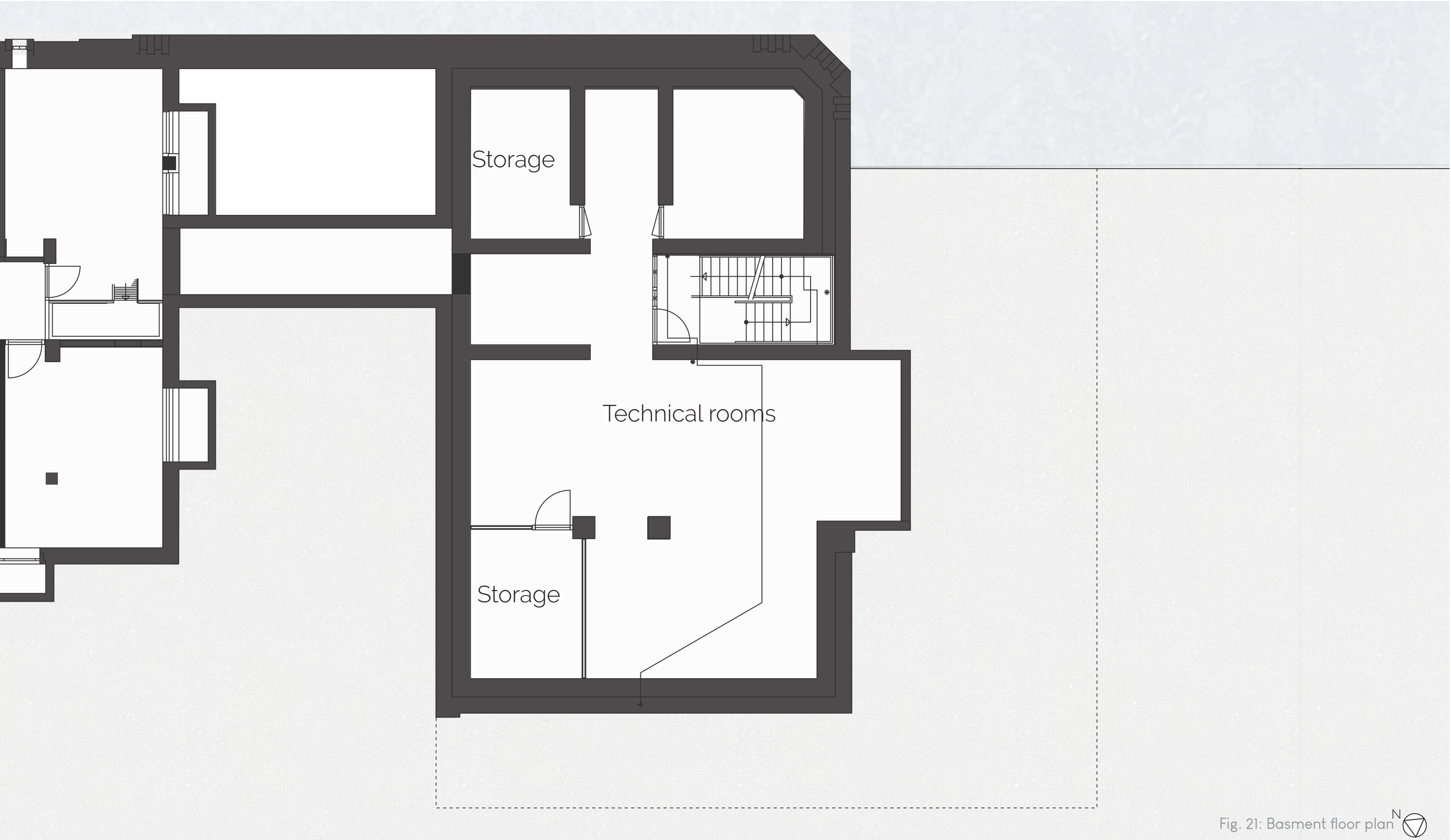
Fig. 19: Second floor plan <sup>N</sup>



THIRD FLOOR | APARTMENTS & LAUNDRY ROOM



BASEMENT I STORAGE & TECHNICAL ROOMS





GROUND FLOOR | RECEPTION & HOTEL FACILITIES



Fig. 22: Ground floor plan

ALL FLOORS I HOTEL ROOMS



Fig. 23: First - Eight floor plan

## 2.2. ELEVATIONS & SECTIONS

## 2.2. ELEVATIONS & SECTIONS

### INDEX

The division of functions as well as the complete layout of the program has become clear on the basis of the masterplan and floor plans. In this second subchapter it will be shown how this influences the exterior design and what redesign decisions are made. Furthermore, sections will show even more information about the layout of the program.

- Elevations
- Sections

# ELEVATIONS

## PROFILE

SOUTH, EAST & NORTH ELEVATION

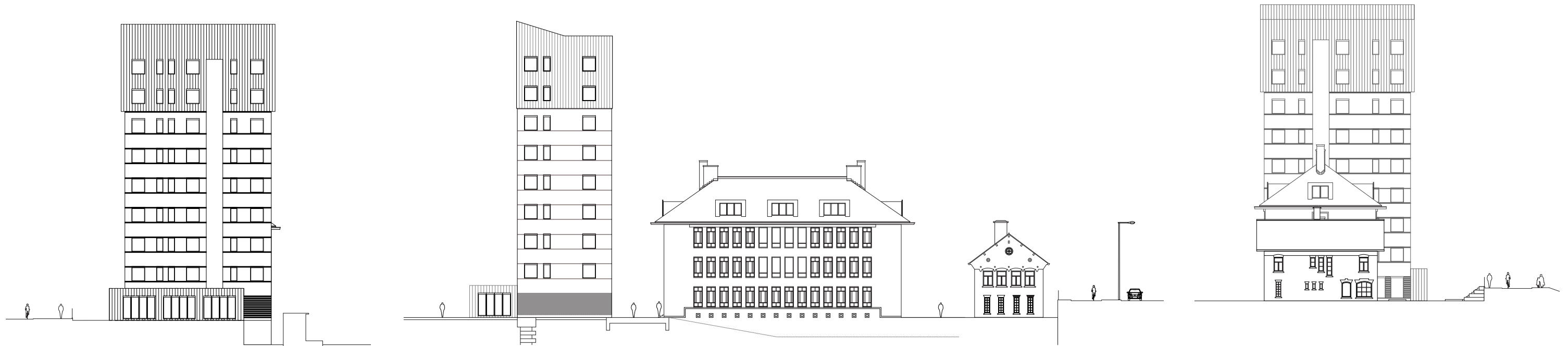


Fig. 24: Three elevations of the design proposal for the Rotterdam Harbour Police Station



## WEST ELEVATION



Fig. 25: West elevation of the design proposal for the Rotterdam Harbour Police Station

SECTION

PROFILE

LONGITUDINAL SECTION

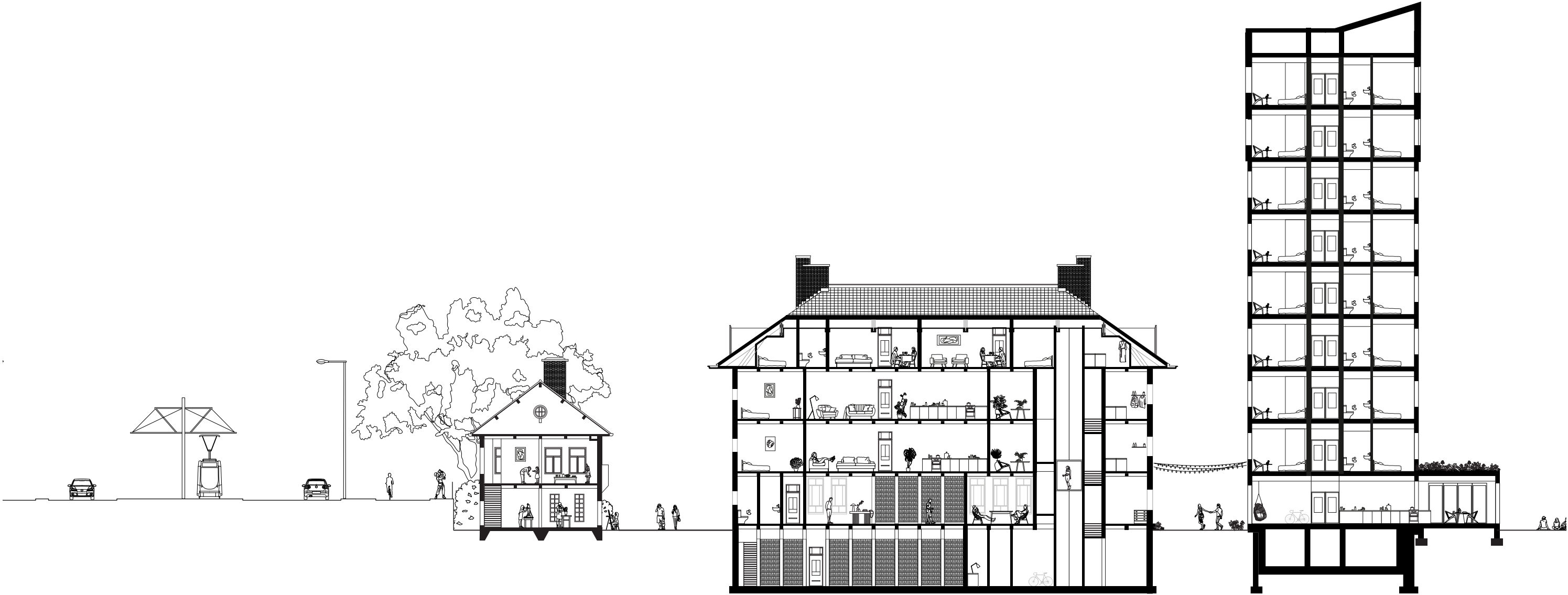


Fig. 26: Section including the functions of the transformed Rotterdam Harbour Police Station

## 2.3. CLIMATE & DETAILING

## 2.3. CLIMATE & DETAILING

### INDEX

As the title already gives away, this subject will be devoted to the detailing and the climate of the design proposal. This can be seen as a continuation and elaboration on the previous subchapter

- Climate concept
- Detailing

# CLIMATE CONCEPT

## NORTH - SOUTH SECTION

### Summer situation

- 1. Interior thermal insulated facade
- 2. Interior thermal insulated roof
- 3. Exterior thermal insulated roof
- 4. Secondary windows
- 5. Adding HR++ glass
- 6. Dynamic sun screens
- 7. Mechanical ventilation
- 8. Natural blowdown ventilation
- 9. Air Handling Unit + Heat Recovery
- 10. Low temperature floor cooling
- 11. Low temperature radiators
- 12. Open Ground Energy System + Heat Pump
- 13. Sedum substrate roof

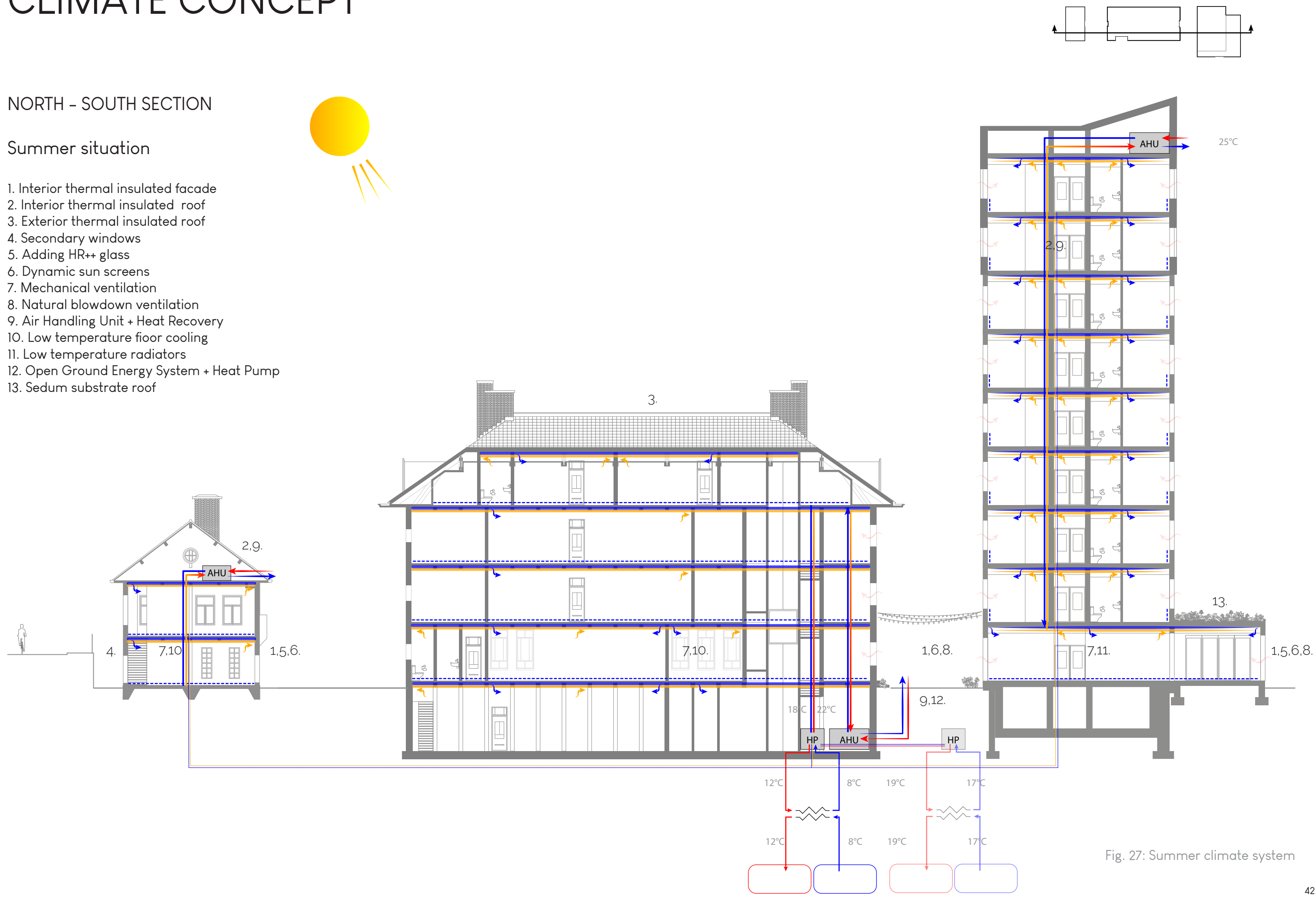


Fig. 27: Summer climate system

# CLIMATE CONCEPT

## NORTH - SOUTH SECTION

### Winter situation

- 1. Interior thermal insulated facade
- 2. Interior thermal insulated roof
- 3. Exterior thermal insulated roof
- 4. Secondary windows
- 5. Adding HR++ glass
- 6. Dynamic sun screens
- 7. Mechanical ventilation
- 8. Natural blowdown ventilation
- 9. Air Handling Unit + Heat Recovery
- 10. Low temperature floor heating
- 11. Low temperature radiators
- 12. Open Ground Energy System + Heat Pump
- 13. Sedum substrate roof

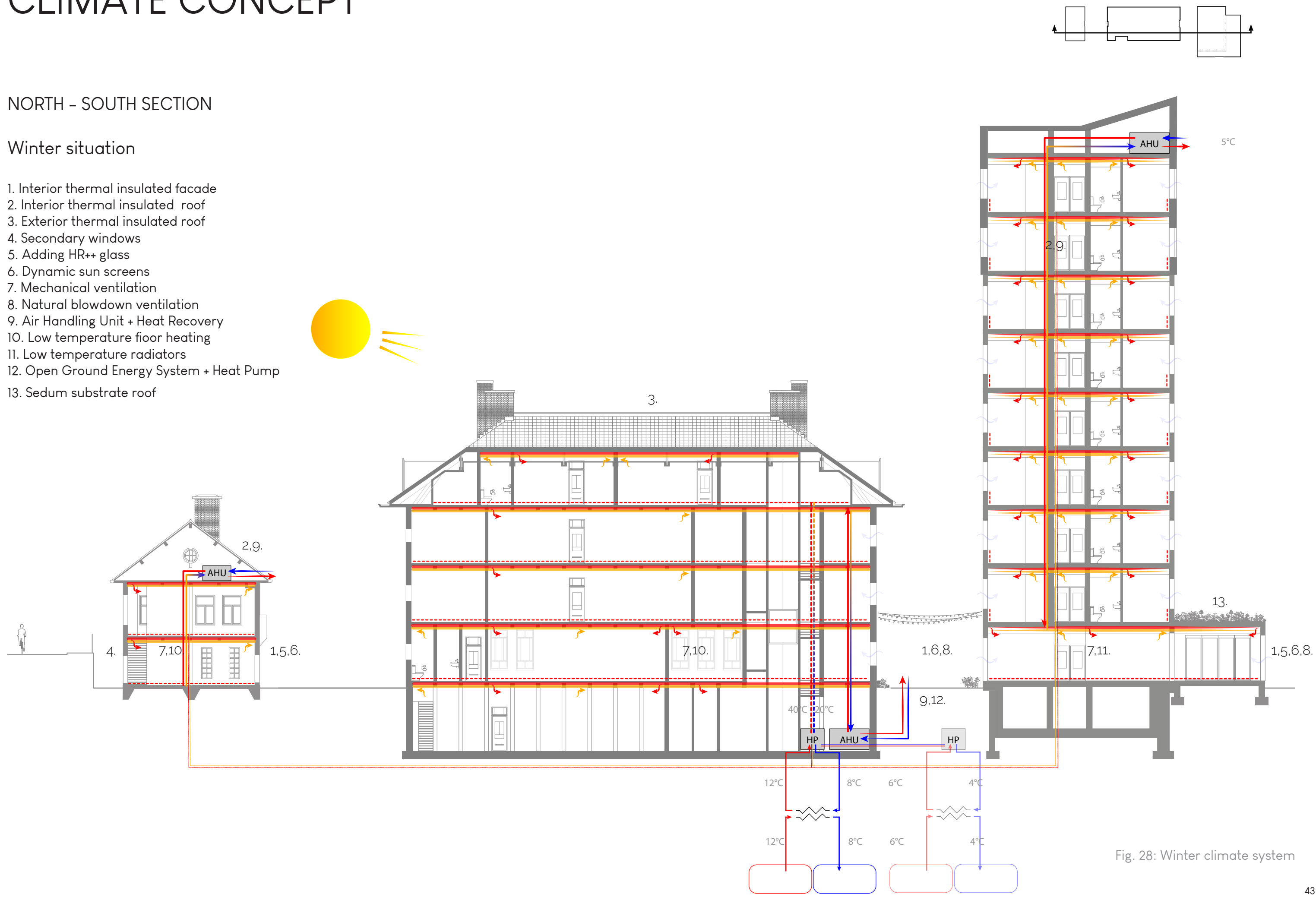


Fig. 28: Winter climate system

# CLIMATE CONCEPT

NORTH - SOUTH SECTION

Winter situation

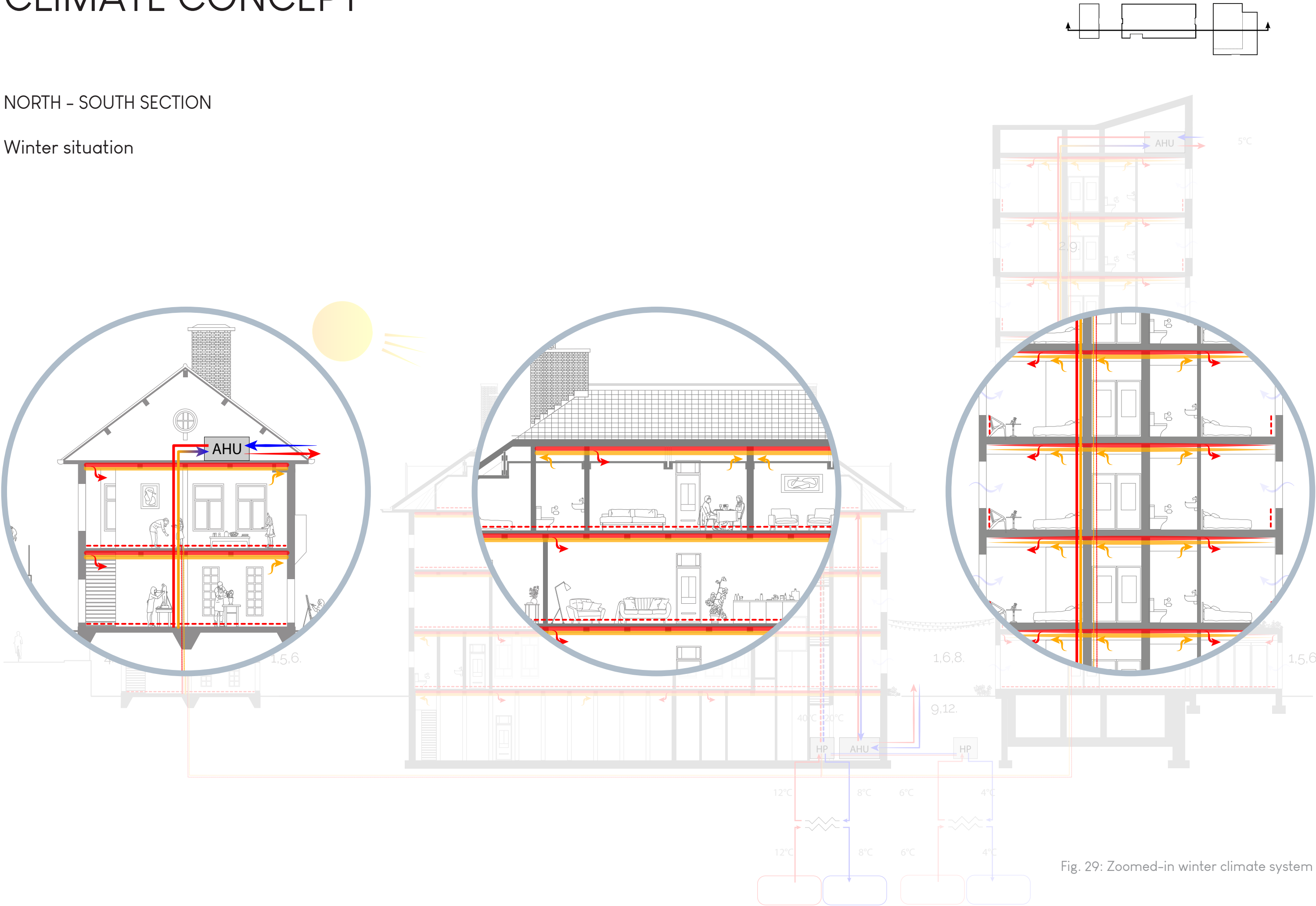
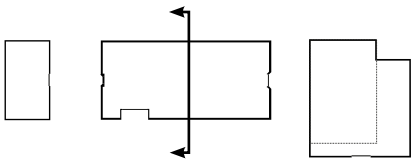


Fig. 29: Zoomed-in winter climate system



# CLIMATE CONCEPT



## WEST - EAST SECTION

### Winter situation

- 1. Interior thermal insulated facade
- 2. Interior thermal insulated roof
- 3. Exterior thermal insulated roof
- 4. Secondary windows
- 5. Adding HR++ glass
- 6. Dynamic sun screens
- 7. Mechanical ventilation
- 8. Natural blowdown ventilation
- 9. Air Handling Unit + Heat Recovery
- 10. Low temperature floor heating
- 11. Low temperature radiators
- 12. Open Ground Energy System + Heat Pump
- 13. Sedum substrate roof

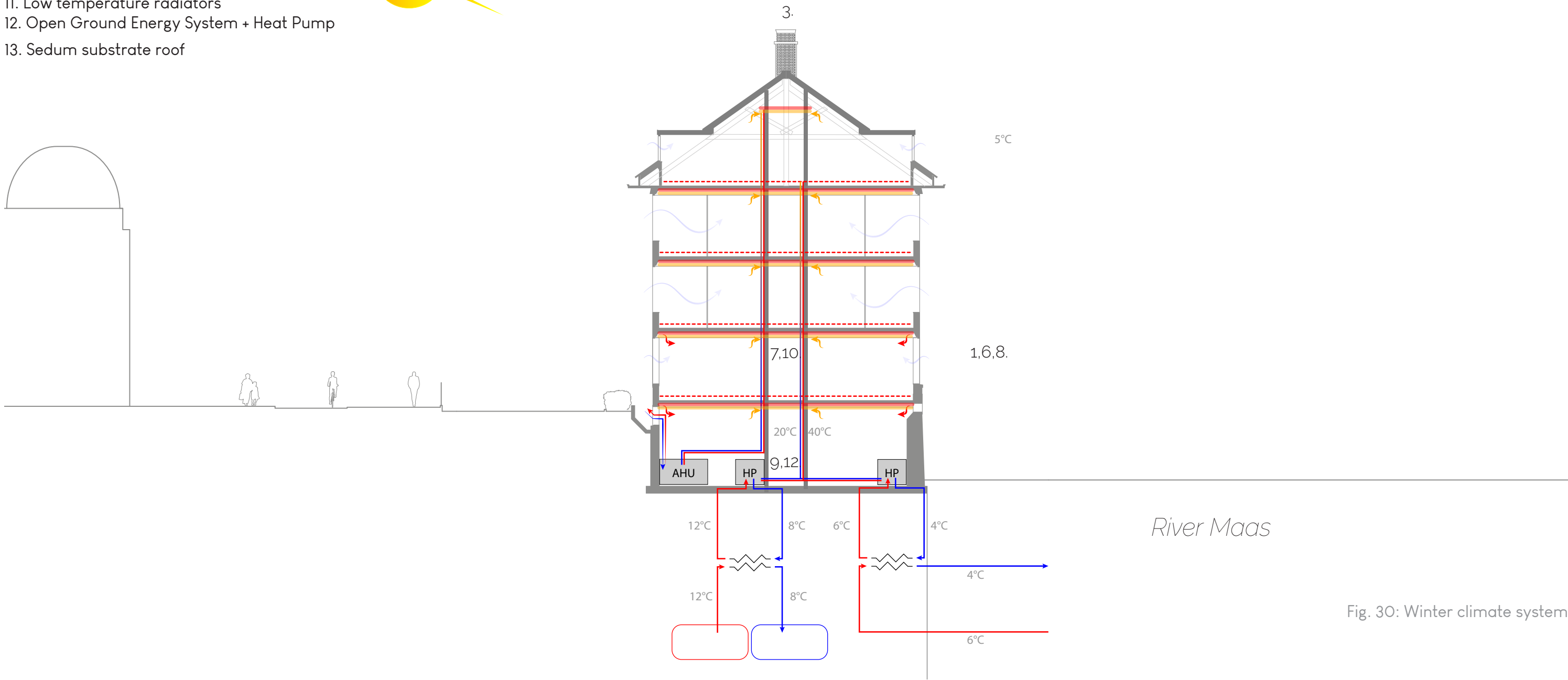
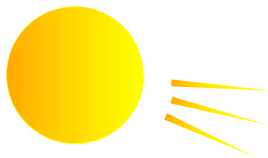


Fig. 30: Winter climate system

SECTION

WEST - EAST

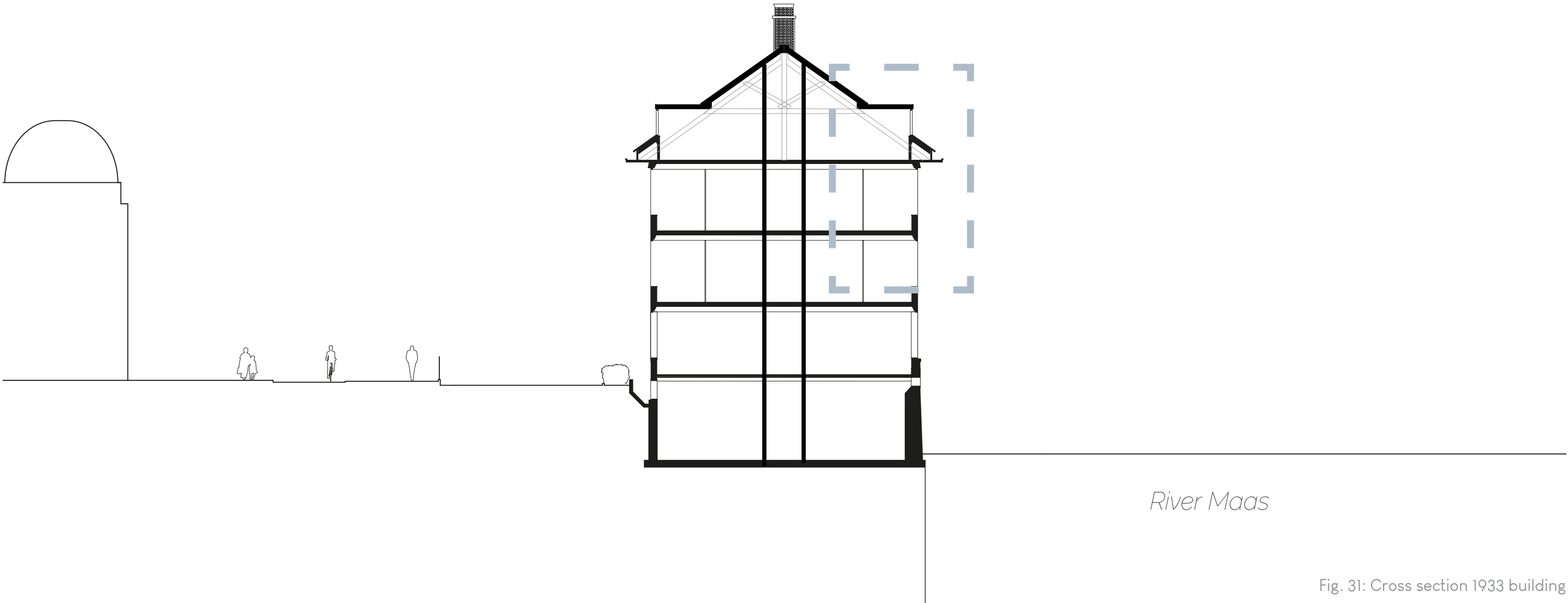
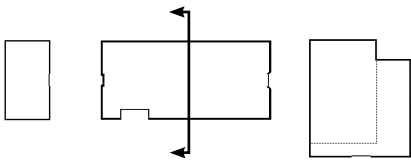
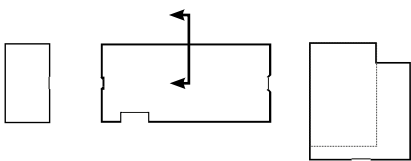


Fig. 31: Cross section 1933 building

# SECTION FRAGMENT



CURRENT SITUATION

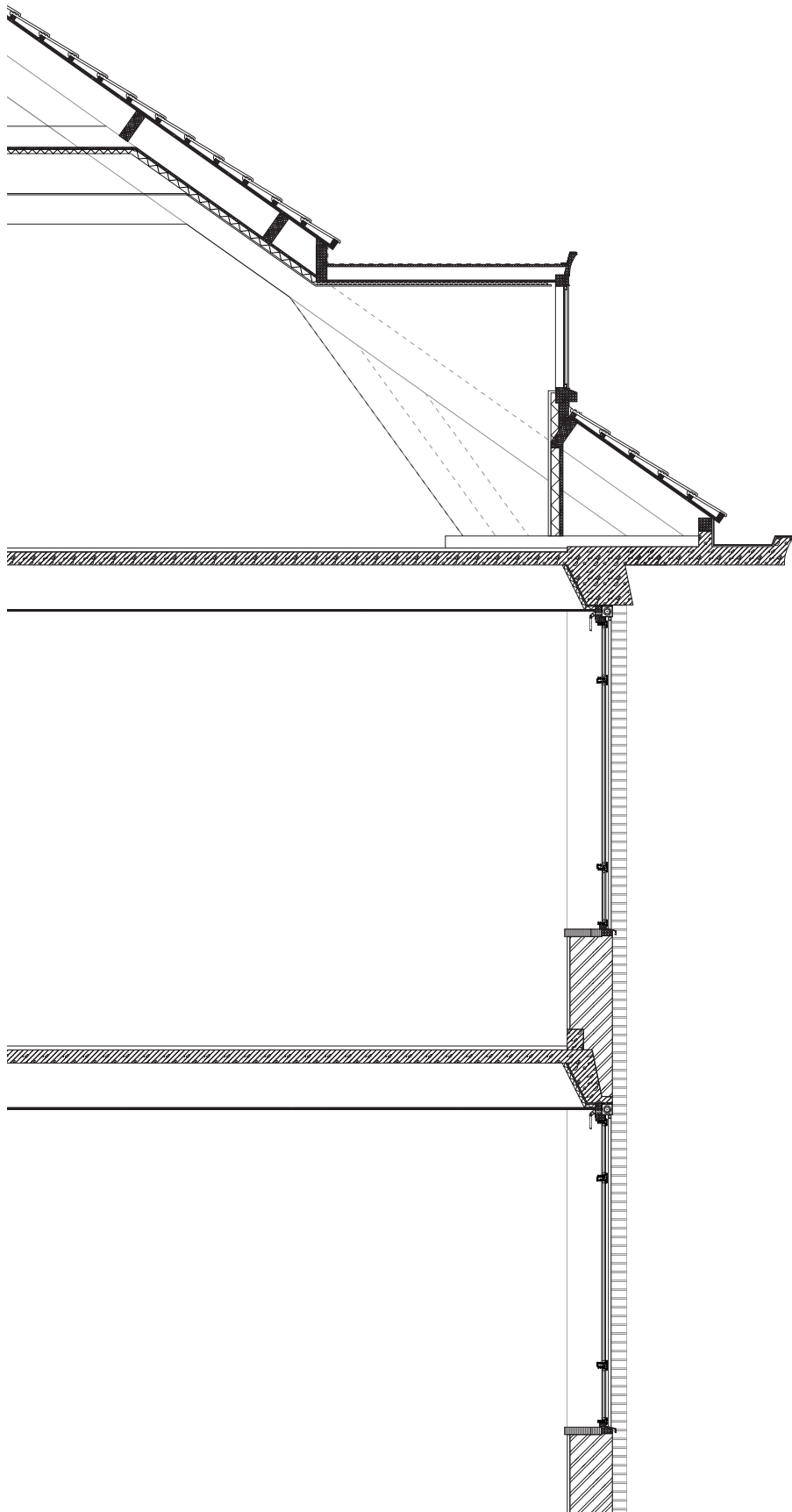
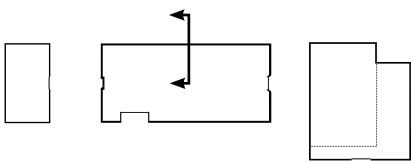


Fig. 32: Section & facade, 1933

# SECTION FRAGMENT



NEW SITUATION

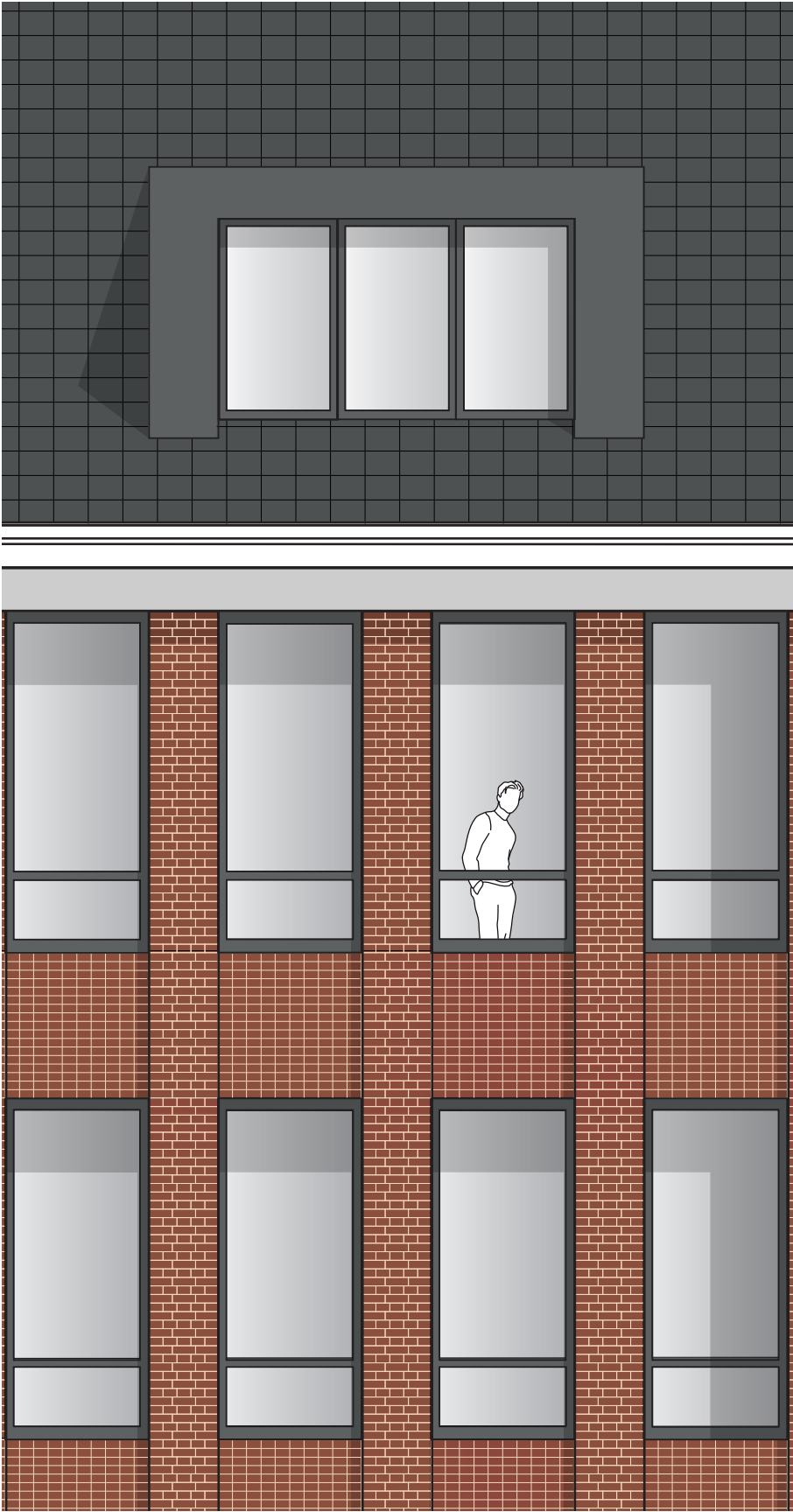
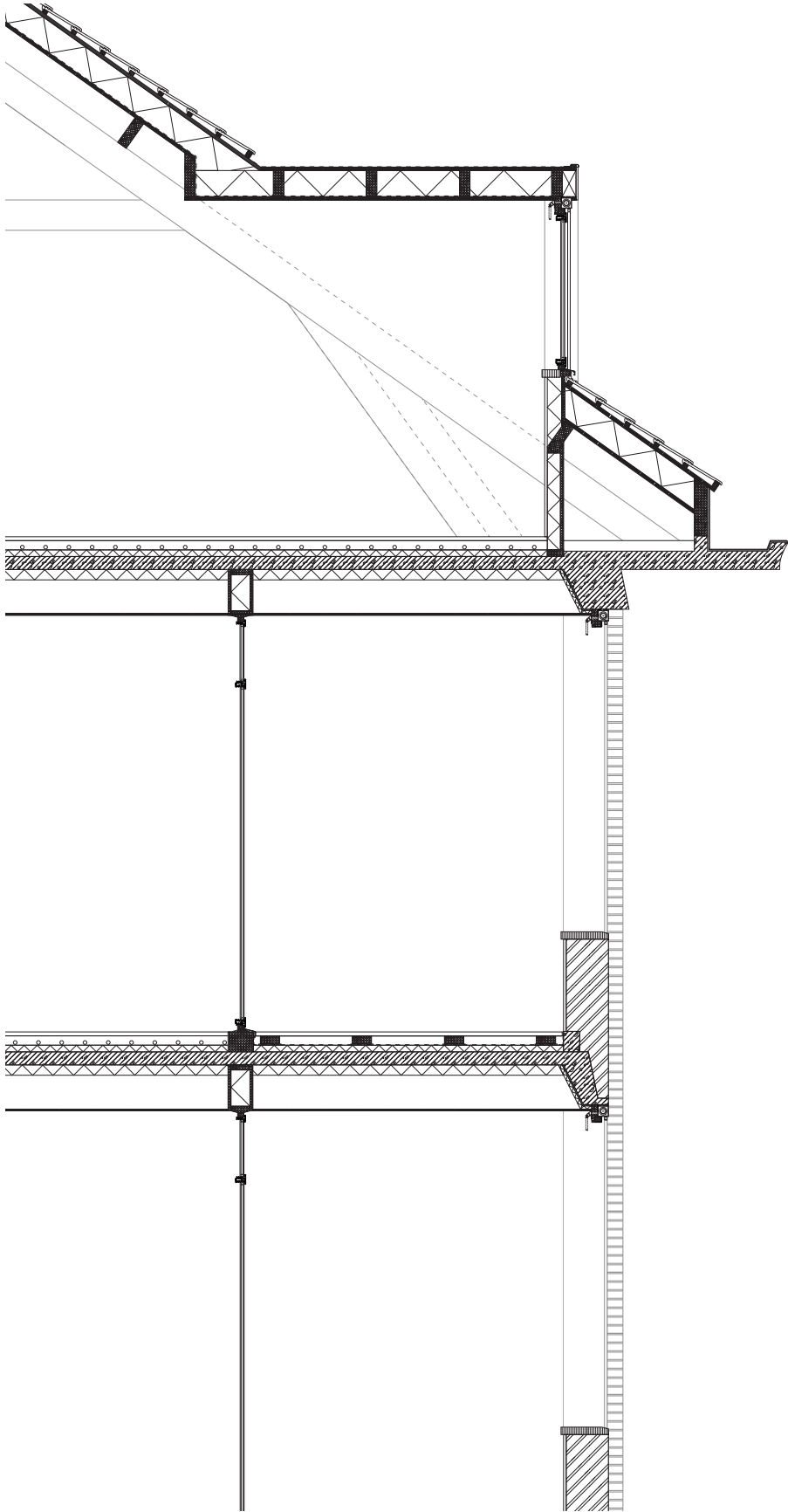
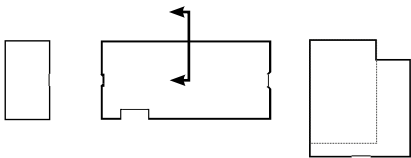


Fig. 33: Section & facade, new

# SECTION FRAGMENT



NEW SITUATION

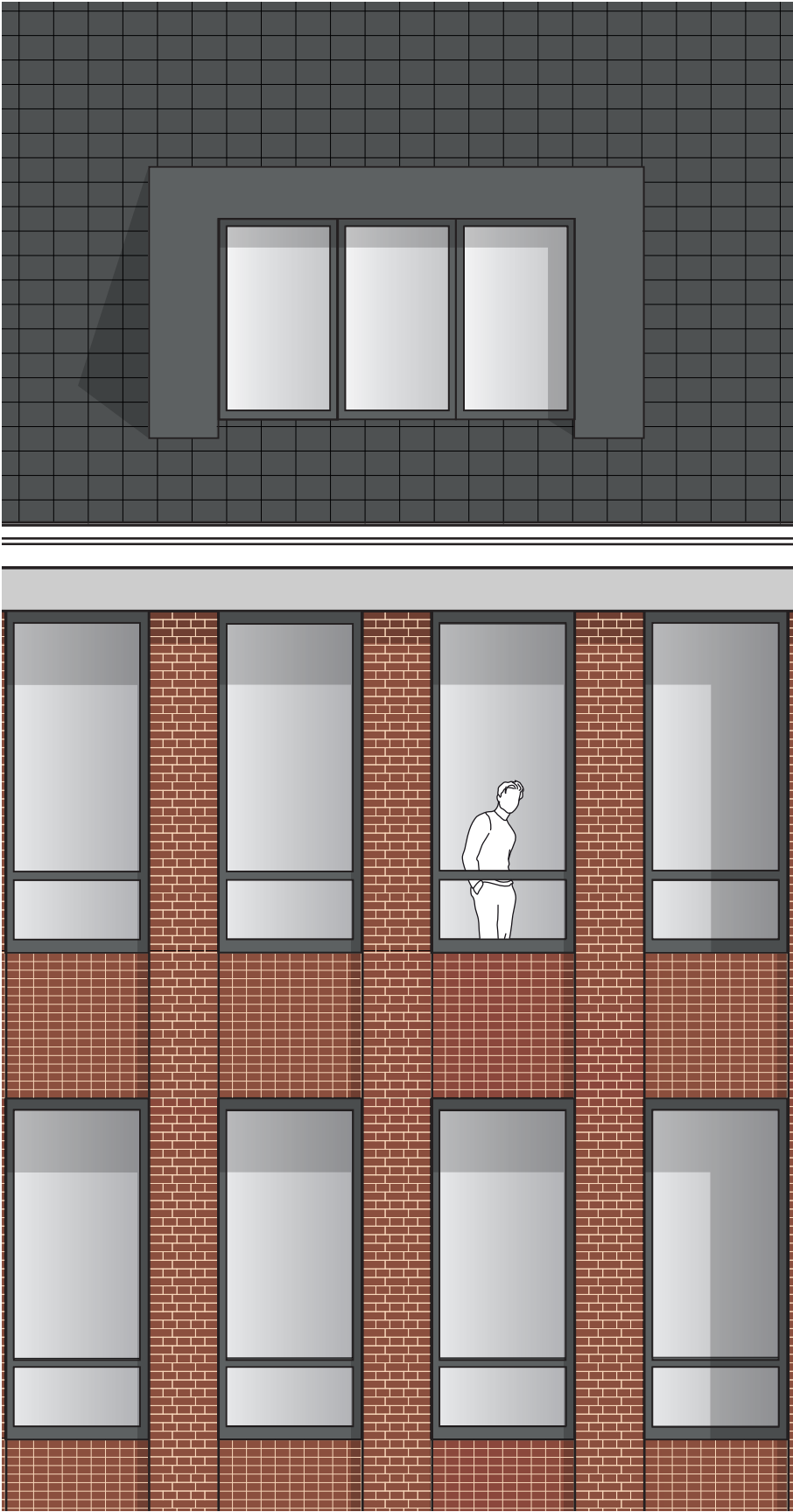
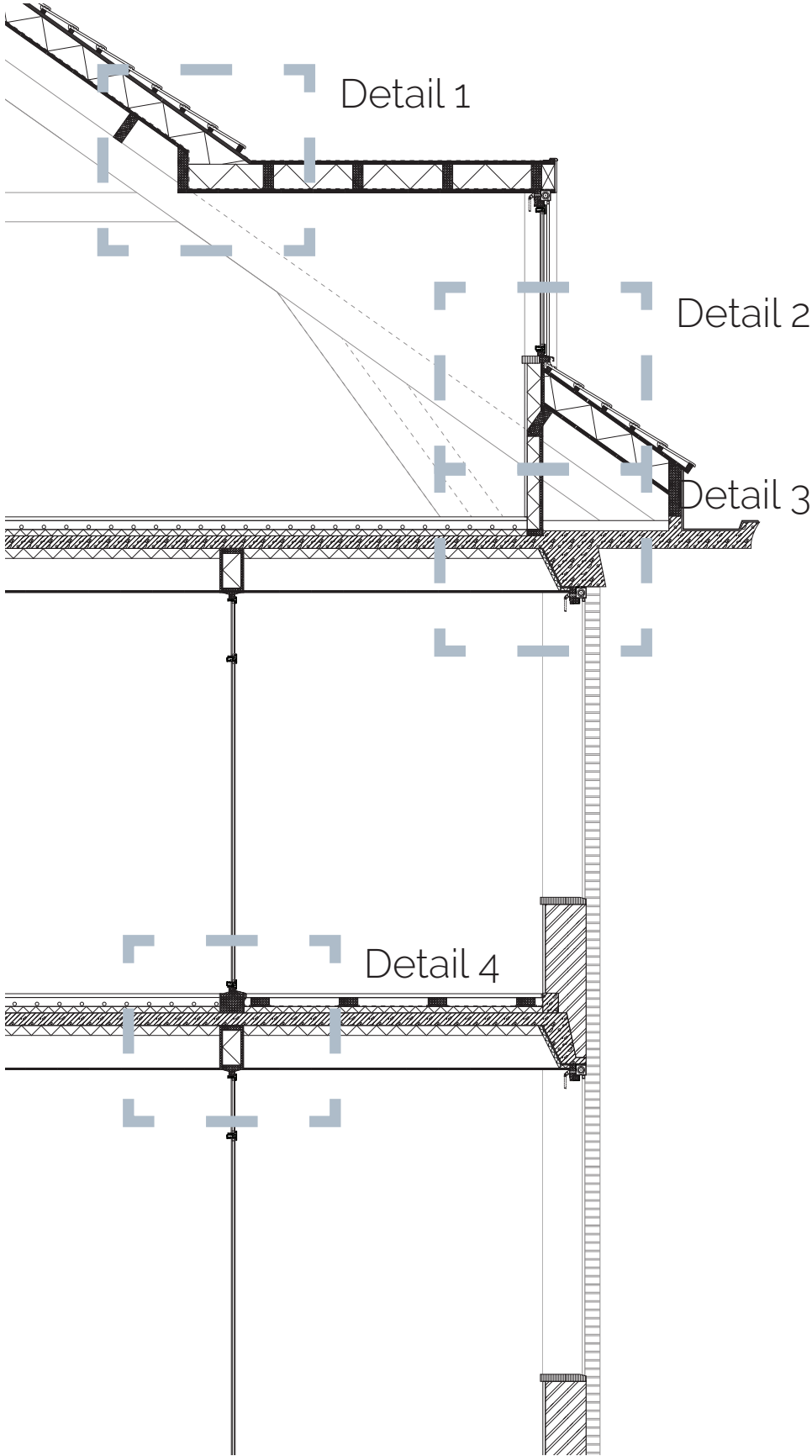
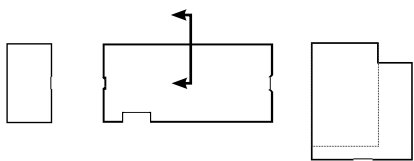
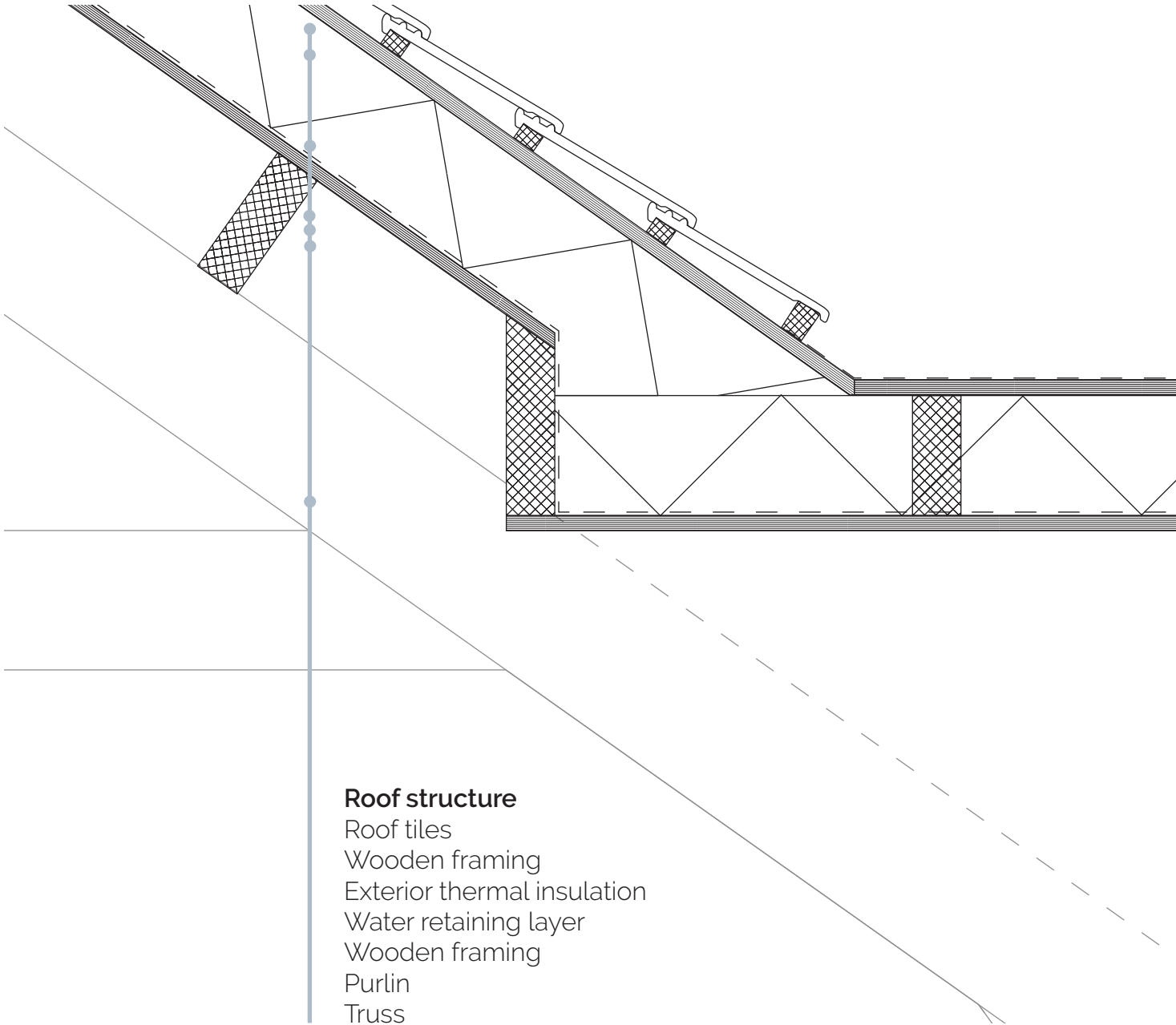
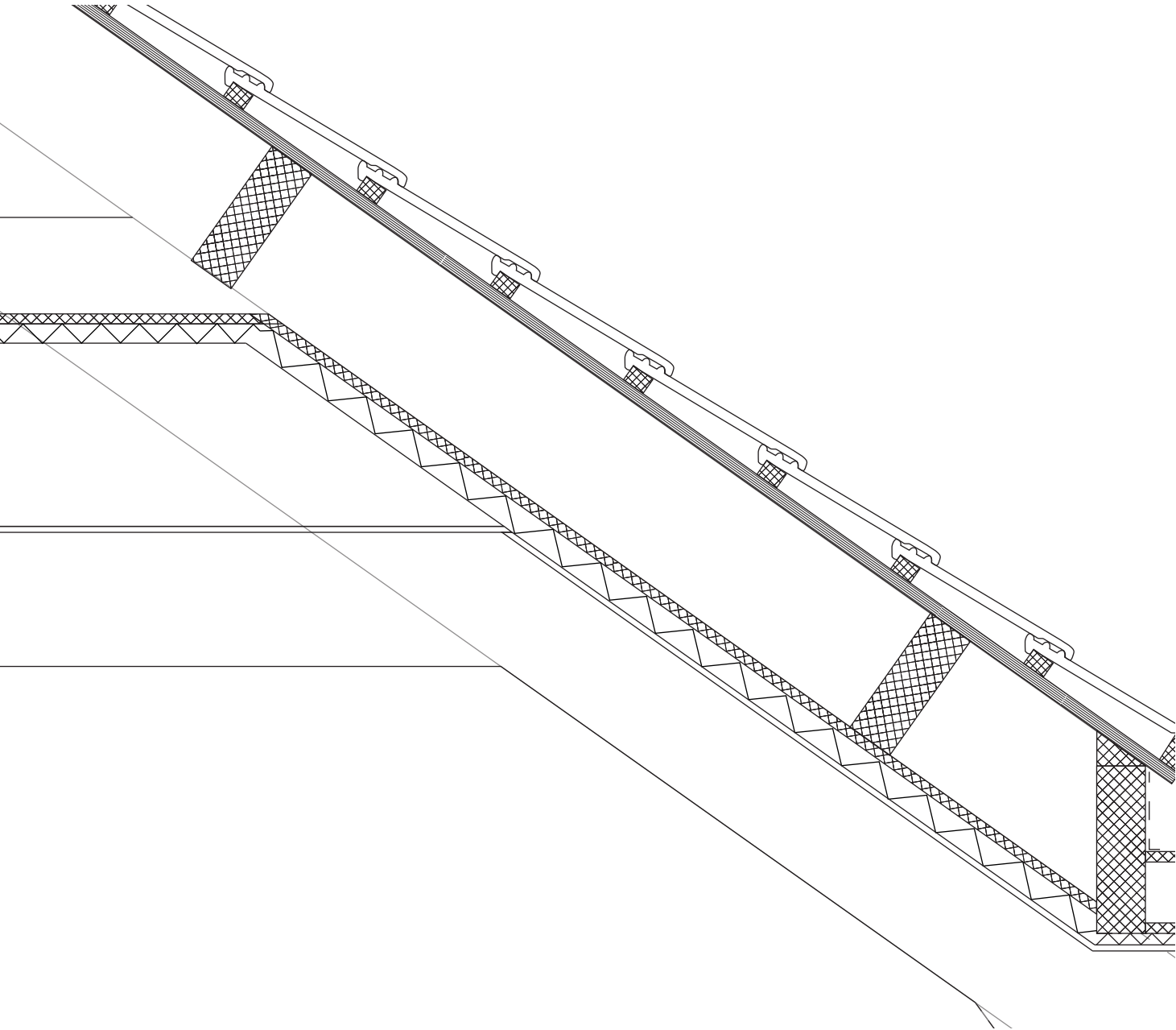


Fig. 34: Section & facade, new

# CONSTRUCTION DETAILS



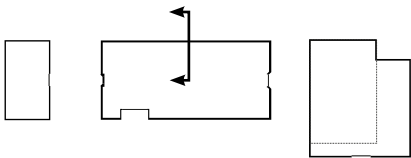
DETAIL 1



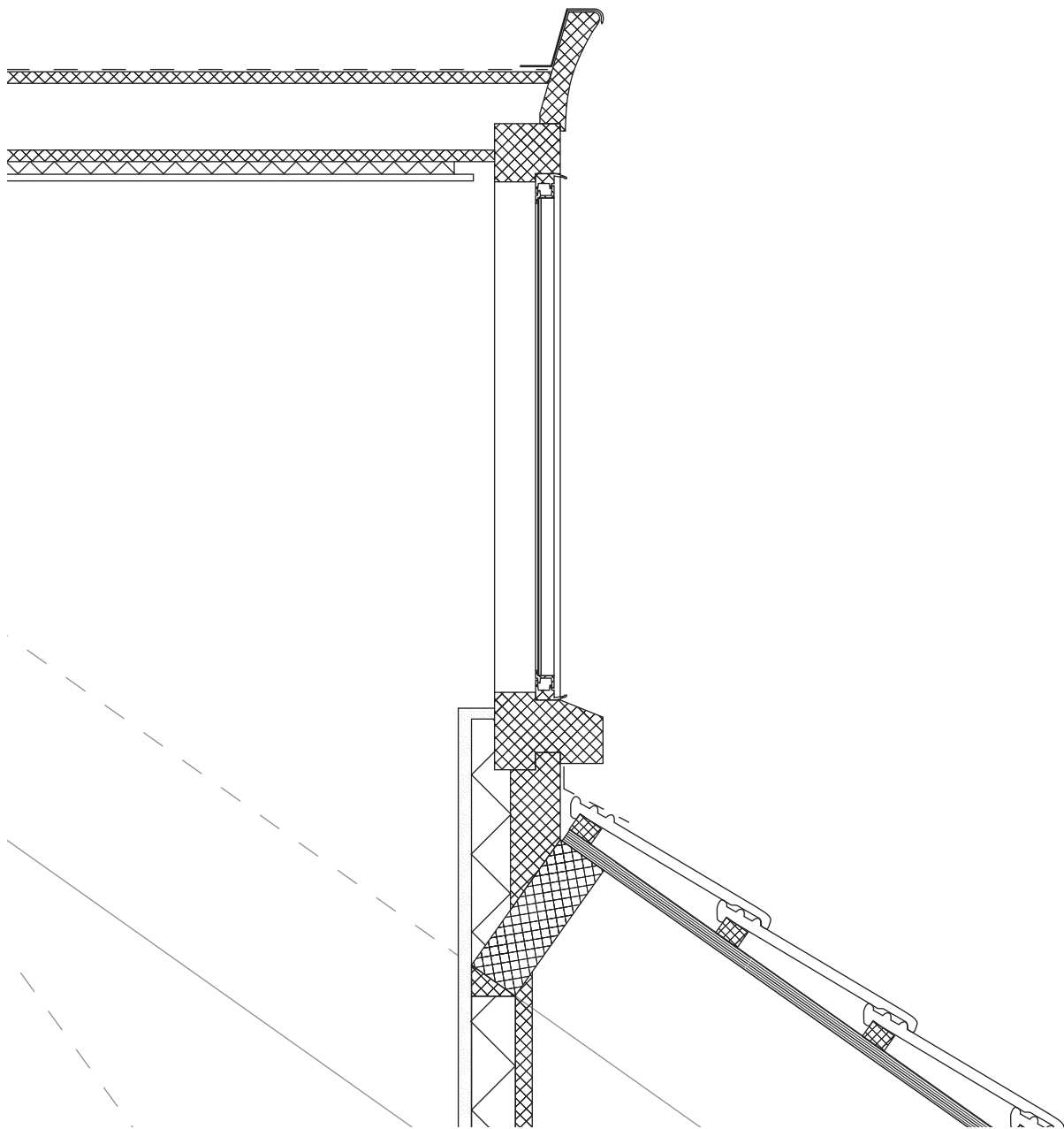
- Roof structure**
- Roof tiles
  - Wooden framing
  - Exterior thermal insulation
  - Water retaining layer
  - Wooden framing
  - Purlin
  - Truss

Fig. 35: Old and new situation detail 1

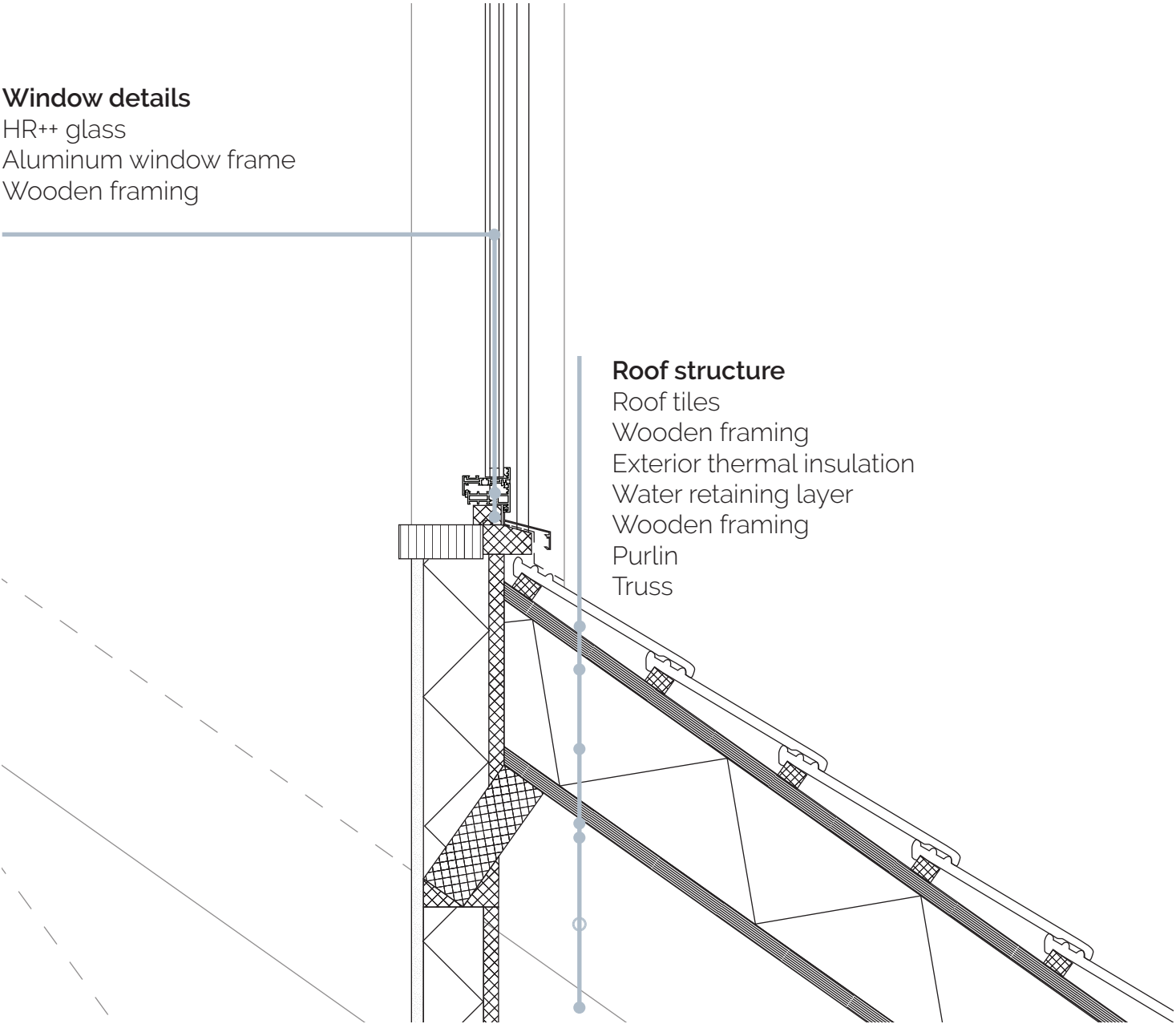
# CONSTRUCTION DETAILS



DETAIL 2



**Window details**  
HR++ glass  
Aluminum window frame  
Wooden framing

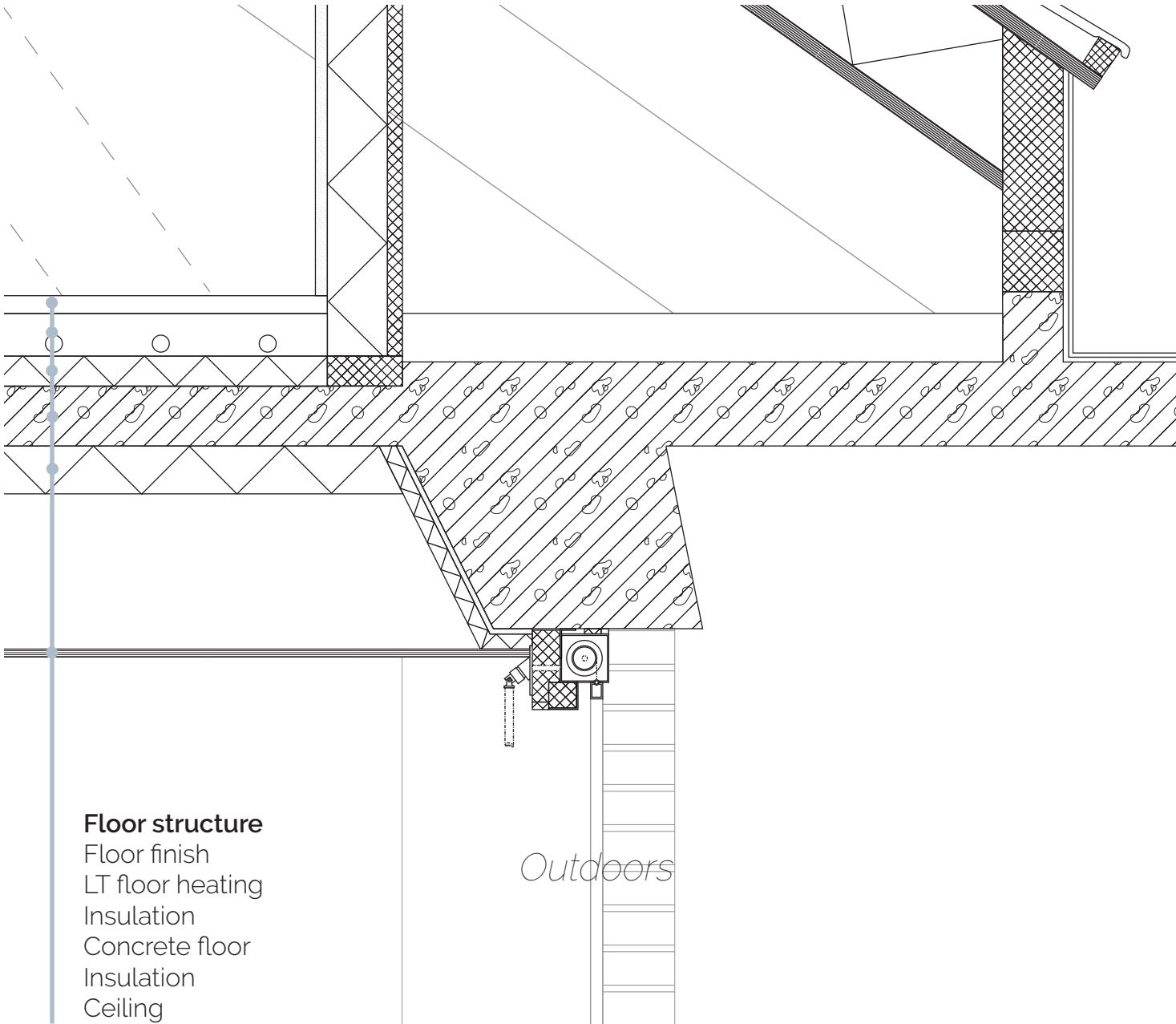
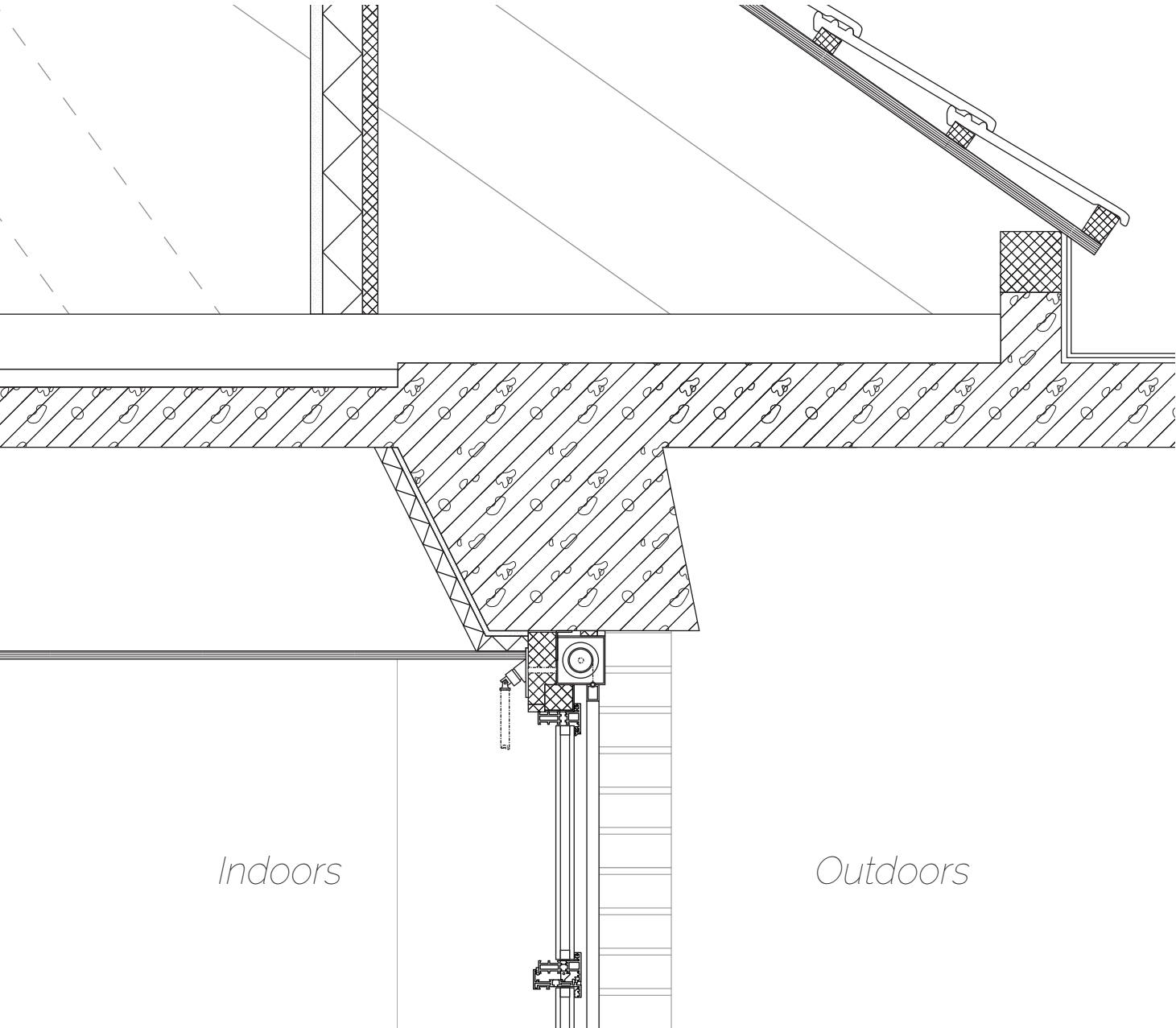


**Roof structure**  
Roof tiles  
Wooden framing  
Exterior thermal insulation  
Water retaining layer  
Wooden framing  
Purlin  
Truss

Fig. 36: Old and new situation detail 2

# CONSTRUCTION DETAILS

DETAIL 3



**Floor structure**  
Floor finish  
LT floor heating  
Insulation  
Concrete floor  
Insulation  
Ceiling

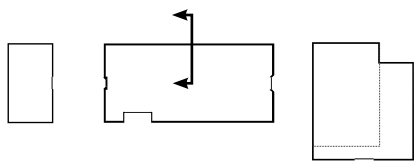


Fig. 37: Old and new situation detail 3



# CONSTRUCTION DETAILS

## DETAIL 4

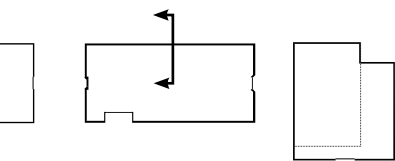
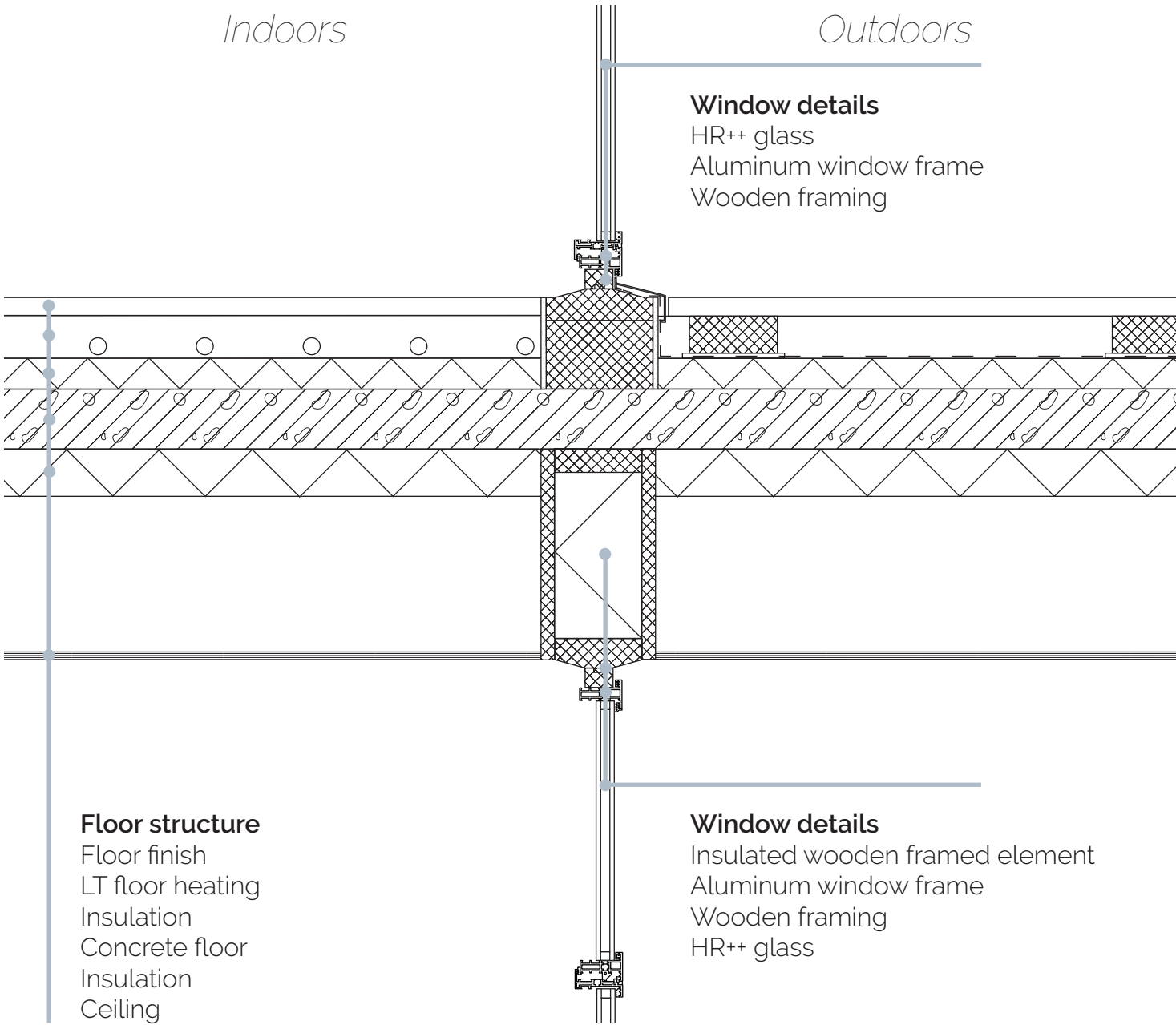
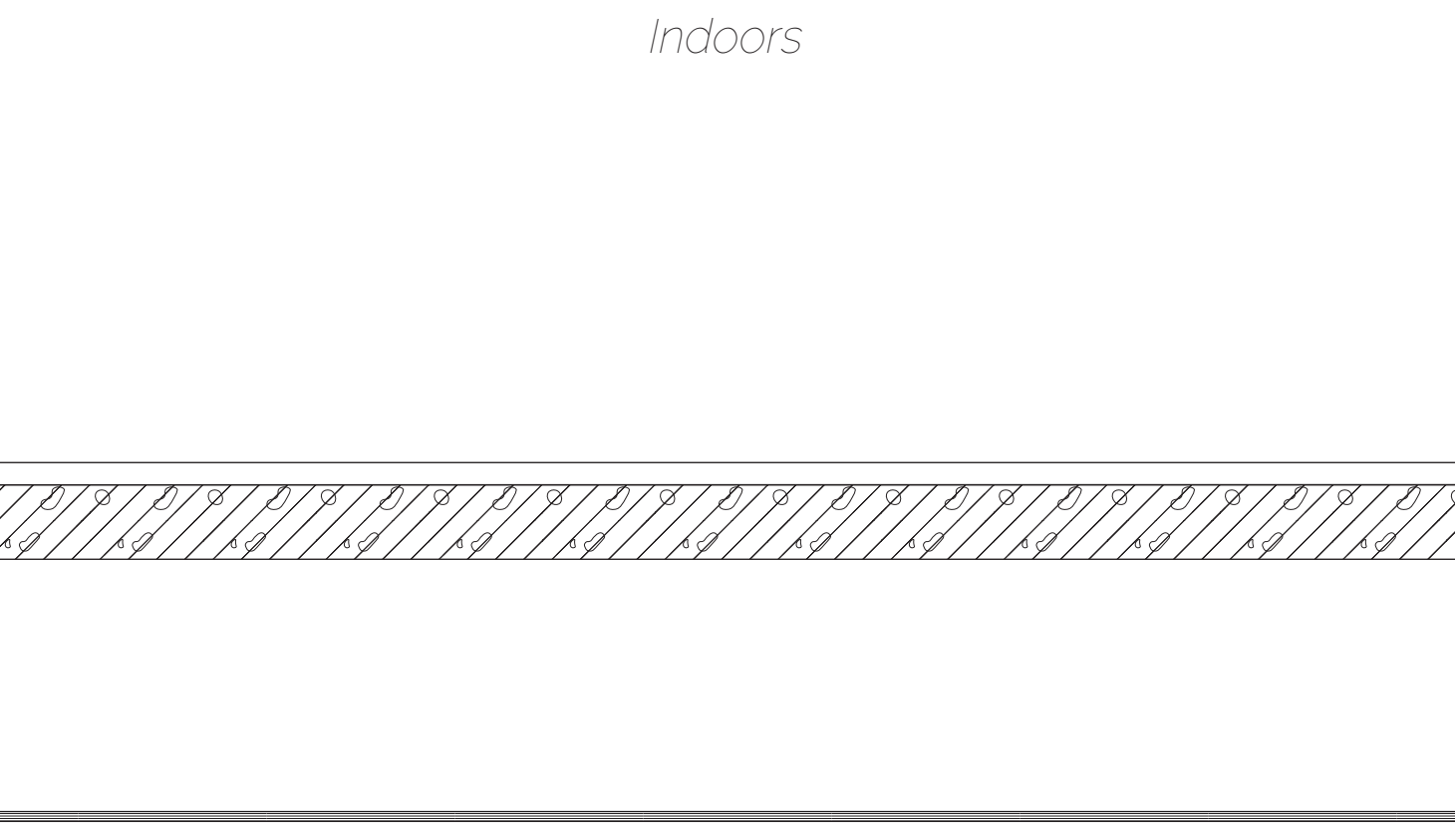


Fig. 38: Old and new situation detail 4

# CONSTRUCTION DETAILS

## TOP EXTENSION, 1994 BUILDING

- 1. Current situation
- 2. Removal of elements
- 3. Added construction
- 4. New situation

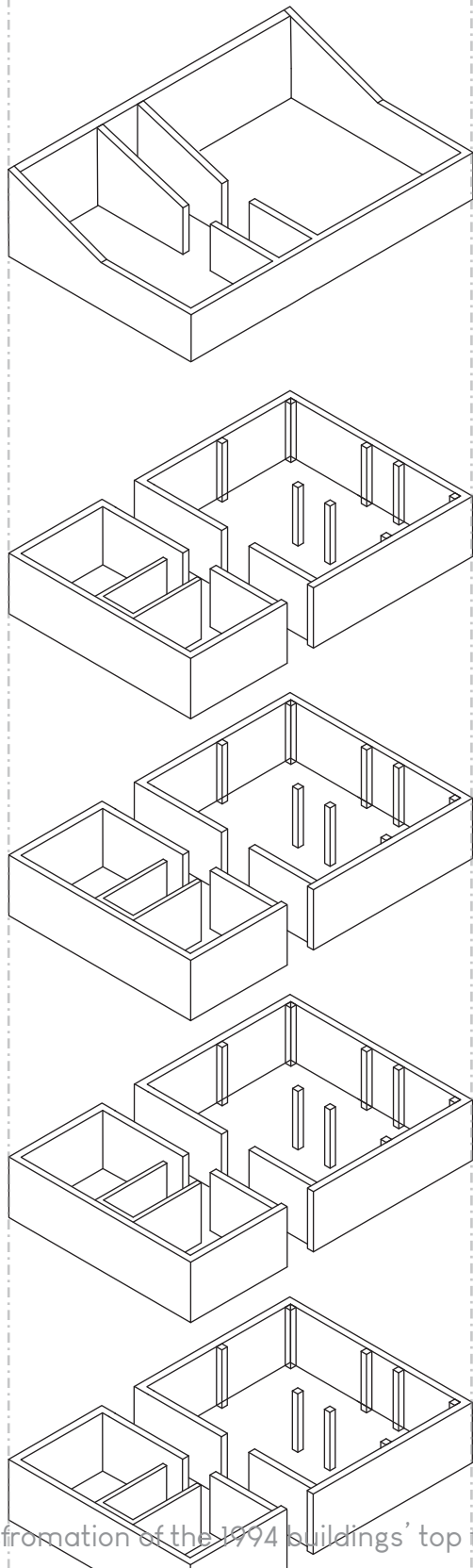
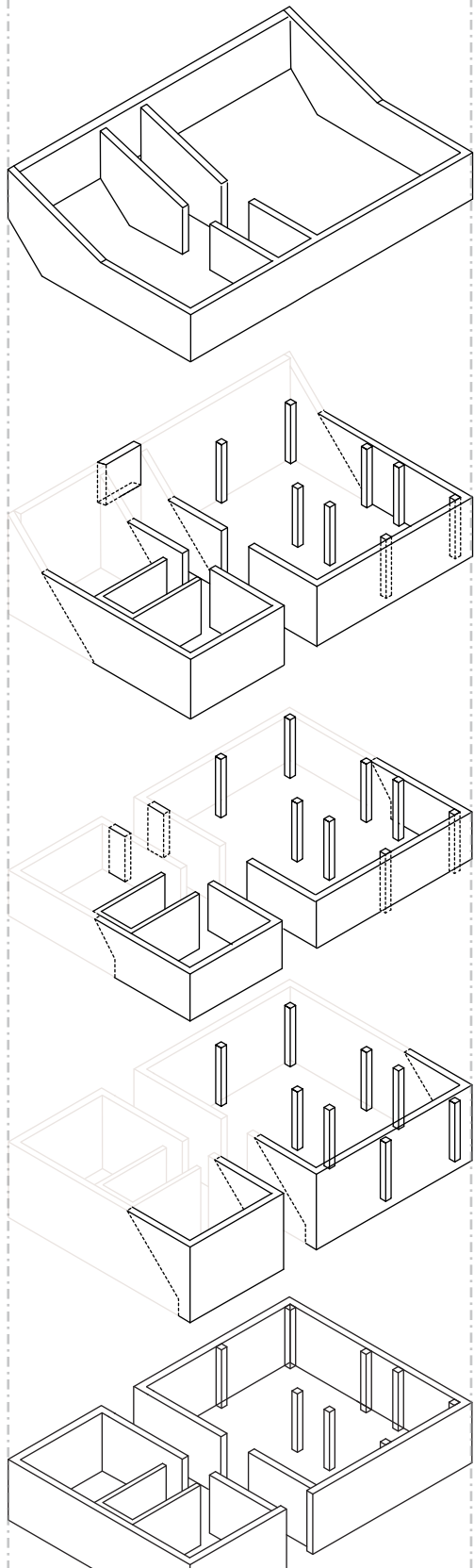
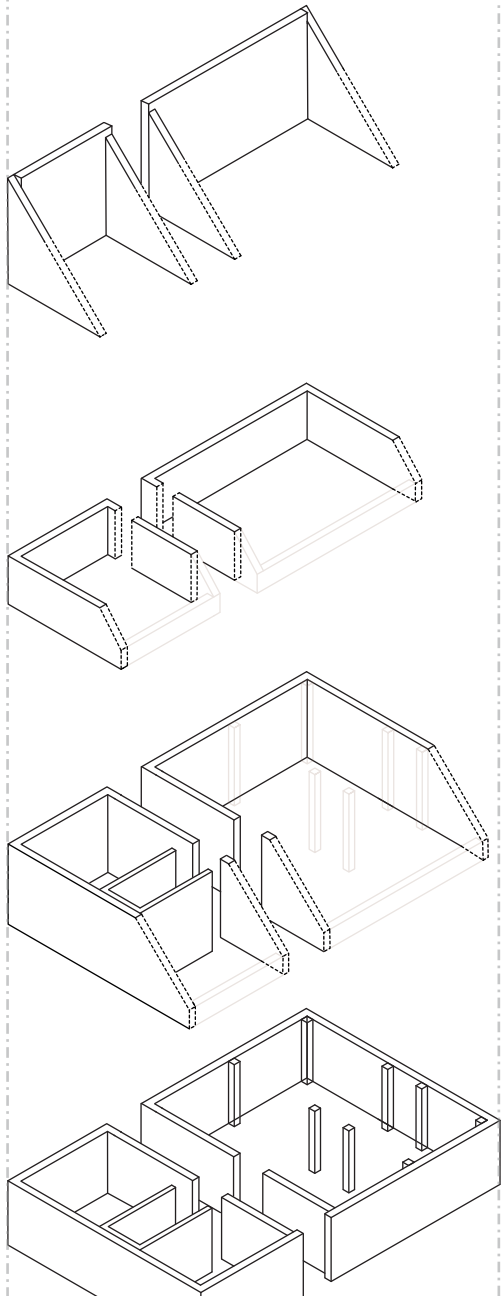
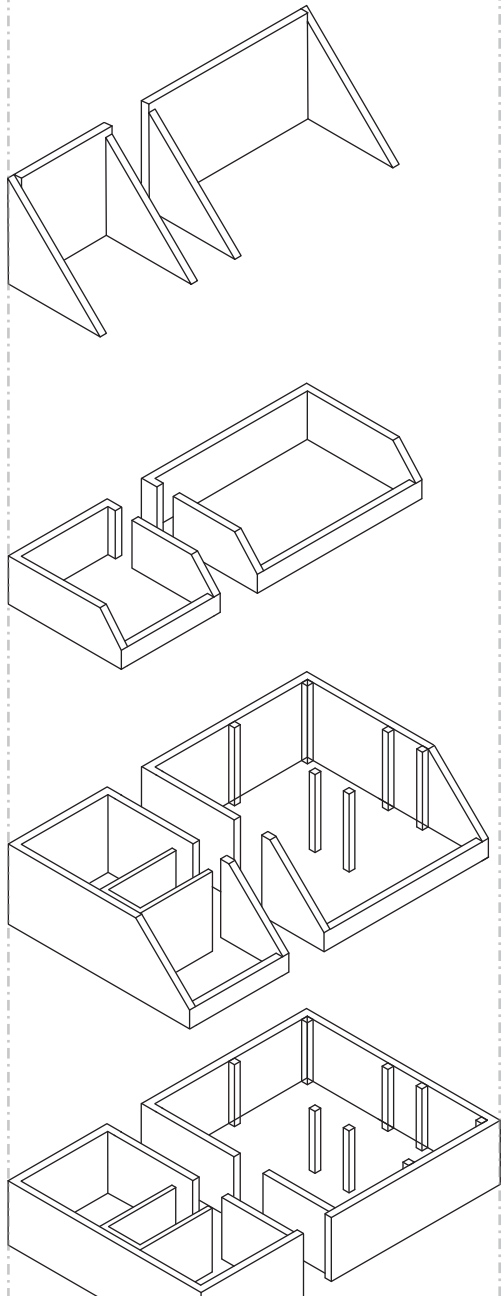


Fig. 39: Transformation of the 1994 buildings' top floors

## 2.4. MODELS

## 2.4. MODELS

### INDEX

During the project I made several models. Some where made to explore ideas, while others were meant to show the final design. The models that were used as an exploration of space and coherence, are left out in this booklet. Nevertheless, the final 1:200 model deserves a spot in this booklet as it shows the total design from different perspectives. The model includes the changes that were made in the exterior, as well as the visualisation of the new entrances and the floor plans of the ground floor level. On a bigger scale, the changes that were made to the surroundings have become clear. It shows the new walking paths that contribute to attracting people to the public plinth.

- 1:200 model



# 1:200 MODEL

## OVERVIEW OF THE REDESIGN

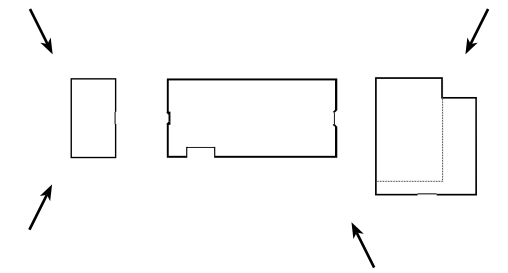


Fig. 40: Pictures of architectural model



# 1:200 MODEL

## OVERVIEW OF THE REDESIGN

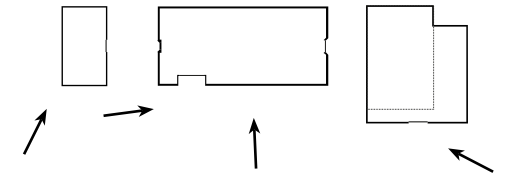


Fig. 41: Pictures of architectural model



