

Master's thesis 2024

MARIEHOLM RESIDENCE

Adaptive Reuse of The Grain Silo in Marieholm, Gothenburg



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ABSTRACT

Over the past decade, Sweden's population has grown by almost one million, thus housing is urgently needed. Gothenburg has a deep root in industry over centuries. However, with the process of modernization and urbanization, many factories and warehouses are no longer in use but the buildings are still in good condition. Considering sustainability, it is better to reuse them instead of constructing new ones.

The thesis question is:

How can the silo be transformed into a residential building that meets the need for modern life while keeping its feature and reinforcing the place identity?

The thesis explored an approach to reuse the neglected silo situated in an extraordinary location in Marieholm by Säveån and Göta River, transforming it into a residential building, particularly for couples and families, respecting the local historical context and meanwhile reinforcing the place identity. The design outcome showed a solution to the modern dwelling typology with a close connection to water. This thesis offered a prime example of how adaptive reuse could play a pivotal role in the area's redevelopment.

The research delved into the modern renovation of silo structures, incorporating local narratives and unique characteristics into the design strategy. Through a mix of models and drawings, it presented a detailed architectural and waterfront landscape design proposal that reimagines the future of Marieholm. This approach not only addressed the pressing housing needs but also contributed to the sustainable and thoughtful evolution of urban spaces, reflecting a balance between new and old, modernity and tradition.

Keywords: Silo, adaptive reuse, housing design, waterfront landscape design, place identity

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01 INTRODUCTION

This chapter explains the purpose, objectives, thesis question, method, reading instructions and delimitation of the thesis.

PURPOSE

The purpose is to explore the potential of reusing industrial heritage, making it an ideal residence to live in. Meanwhile, place identity is strengthened, and historical cultural values are maintained.

With the success of such transformations, real estate developers turn their attention more to old buildings' renovations and expand urban capacity sustainably and affordably.

OBJECTIVES

Marieholm Residence is a modern dwelling pioneer with its extraordinary location in Gothenburg. It is well equipped with all kinds of facilities.

Apartments are hung outside of the silo. This layout maximizes the river view and daylight in the room. The circular route in the corridor enhances a clear sightline and resembles the old silo's structure. The simplicity and pure aesthetic of the atrium space contrast with the busy river bank.

This building also attracts visitors without disturbing residents. A separate elevator ensures public access to the rooftop restaurant and sky bar overlooking Gothenburg city and port. The transparent roof allows daylight into the atrium.

THESIS QUESTION

How can the silo be transformed into a residential building that meets the need for modern life while keeping its feature and reinforcing the place identity?

METHOD AND PROCESS

The project is explored through research by design.

The design approach began with research about the site as well as a study of the existing silo. This helped readers gain an understanding of the current needs and potential values that can impact the design.

Case studies and literature studies were performed. Hand sketches and 3D model testing were done afterwards. Visualization and physical model were included as well. The thesis produced a design proposal with a focus on the building design and the particular waterfront landscape with its unique place identity.

READING STRUCTURE

The work is divided into five parts.

The first part functions as an introduction to the thesis and contains information and a summary of the thesis. An overview of the research question, purpose, objectives, and method is provided in this introductory chapter.

The second part gives readers a general understanding of the project with its background information, including site history and existing building conditions. This is followed by seven reference projects that have served as inspiration and a knowledge base for adaptive reuse. Theoretical references are also shown afterwards.

The third part looks at the design proposal. After a series of analyses and explorations, it reveals the adaptive reuse possibilities and showcases the final proposal with various drawings that relate to and answer the thesis questions.

The fourth part is a summary and my reflection on this thesis. The last part includes the references list.

DELIMITATIONS

This thesis seeks to explore the possibility of reusing the silo, from the building itself to the adjacent landscape. However, the soil and water conditions are not discussed in this thesis.

The whole proposal is based on an architectural design perspective. Thus it does not take into consideration financial restriction. Nor does it account for construction calculation. The study is also limited by the access to the project site as the silo is closed down. Therefore, the exact measurements of the building are possibly inaccurate.

The outcome of this project does not aim to plan the whole Marieholm area. Scholars and researchers are welcome to use the same method to design other projects but should be aware that this design proposal is site-specific, thus only aiming for the Marieholm silo.

Also, the work should be seen as a pre-study, inspiration, and basis to use in a further discussion about an actual project to renovate the building. A further project will need to include more studies and investigations.



Photo taken by the author 02/2024

02 BACKGROUND

This chapter looks into the silo's background. Studies of the site's history and building context are included together with the silo's original drawings. Selected case studies and literature studies are introduced as inspirations and a knowledge base for the project.

SITE BACKGROUND

The History of Marieholm

Marieholm was originally an island, called Gamlestads holme in 1790, which was located next to the outlet of Sävån in Göta River and outside Nya Lödöse city (founded on August 17, 1473). A ford was located to the west of the city itself, approximately where the railway station in Gamlestaden is today.

In 1790, the ford had filled up so that it became a fixed connection between Gamlestad's islet and the mainland.

In connection with the construction of the Bergslagernas Järnvägar and the Västergötland-Göteborgs Järnväg at the end of the 19th century, the remaining part of the water area between northern Marieholm and Gamlestaden was filled again. Railway yards were built on Marieholm and in the filled-up area. Marieholm was town-planned together with and as part of Gamlestaden.



Map of the area in 1677. The moat around the former town of Nya Lödöse is visible. The ford to Marieholm is marked on the map.



In 1790, Marieholm was connected with Gamlestad.

Marieholm was redeemed by the city of Gothenburg in 1889 for 123,000 kroner. The decision was taken by the city council on September 5, 1889 as the city needed the land as storage for its dredged material from the Göta River.

To the west of the railway, the first industry, Gothenburg's slaughterhouse, was built in 1905. Gradually, more warehouses and industries were built in Marieholm's industrial area which, when the motorway between Gothenburg and Angered was built, became an isolated industrial district in the west separated from Gamlestad.

The location close to the center, the good communications and the quality of the river connection speak for a future development towards higher exploitation with more personnel-intensive activities and preferably also housing and services in accordance with the ambition of a mixed city, according to Göteborgstad's report.



The southern part of Marieholm in 1923 with the Gäddan and Näbbgäddan neighborhood and VGJ:s rangerbangård.



Marieholm in 1932, with more buildings constructed in the area.



1955



2018

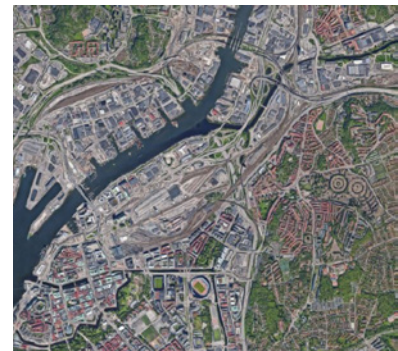


Photo taken by the author 02/2024

LOCAL CONTEXT

Geographical Location

The site is situated on the eastern bank of the river at Marieholm's southernmost tip, where Sävån flows into Göta River. The Central Station is 1.2 kilometers away. The site's southwest orientation and level topography allow for abundant natural light. Deciduous trees line the riverfront towards Sävån, while the quayside towards Göta River offers fantastic views of the city.



Site

Some construction is ongoing around the site. Today, the area is dominated by building materials shop, car repair shop, factories, and warehouses, mostly 1 to 3 floors. It's a 5-minute's walk to the Vassgatan bus stop. Line 59 is the only public transportation that takes people to Vassgatan stop, which runs every half hour in the daytime. Walkways at Gullbergs Strandgata run along the river bank.



Silo

Because of its 33,5-meter height and raw cast concrete construction, the silo is visible from many locations along the river. It was constructed around 1960s and owned by Västsveriges Lantmäns Centralförening until it was out of use in the 1980s. The property is now owned by Svenska Hus AB and is currently facing an uncertain future.



SILOS IN SWEDEN

Since the 20th century, the grain was harvested and dried in the fields in husks to carry out the actual threshing inside the lodge. Later, combine harvesters began to be used, which separated the grain from the chaff out in the field, and the need for drying in warehouses increased. Between 1945 and 1966, the number of combine harvesters in Sweden increased from 1,000 to 38,000, and at the same time, the combine's capacity became greater, which led to the development of new storage techniques. Older grain warehouses were usually designed as flat-bottom warehouses. The grain was stored on flat lofts or so-called bottoms, ventilated with ventilation hatches. You had to reshuffle the grain repeatedly so that it wouldn't "burn" or melt/sprout (Silor-Landskapets landmärken, inventering och dokumentation av spannmålssilor i Skåne, Kulturen Lund, 2012).

During the First World War, for preparedness reasons, there were nine large warehouses built in various locations in Sweden. In these, the lofts were equipped with holes in the floorboards so that the grain would trickle down slowly between the floors and then be brought up again with an elevator. These were called rice

storage houses (rissellagerhus). Larger grain warehouses existed in the cities during the 18th and 19th centuries.

The construction of large silos was closely related to the mechanization and electrification of agriculture. The first silos were built of wood and bricks, a cheaper form of construction. Larger and stronger structures became necessary due to development, and Sweden started using reinforced concrete in its early 20th-century buildings. But it wasn't until the 1930s that concrete silos became more common. Compared to wooden structures, concrete silos have the advantages of increased quantity, stability, and fire safety.



A.B Märten Pehrssons Valskvarn, Silo, Kristianstad. P. L Håkansson Stadsarkitekt. Hazelius 1926.

The first large concrete silo in Sweden was built in 1915, according to Skånska cementgjuteriet's anniversary book (Hellström et al., 1987). It should be a facility for Mårten Pehrson's rolling mill, Kristianstad but no architect is specified. It is now demolished.

As a typical industrial city, silos were once common landmarks in Gothenburg's urban landscape, but they were gradually phased out during the modern development of the city and are therefore rarely preserved. A few examples of demolished silos in Gothenburg are the Gasklockan (opened in 1933 and demolished in 2017), Juvelkvarnen in Eriksberg (opened in 1913 and demolished in 2012), Prippts Brewery malt silos at Odinsgatan (opened in 1930s and demolished in 1980s).

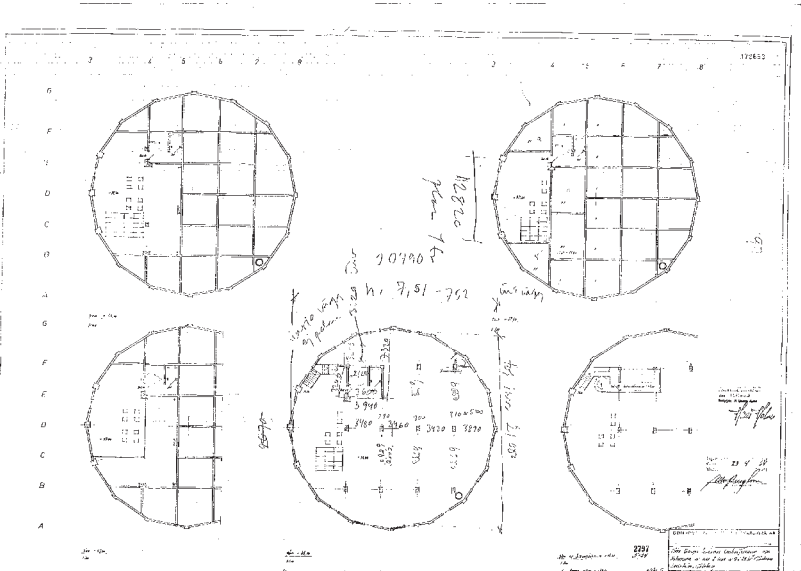
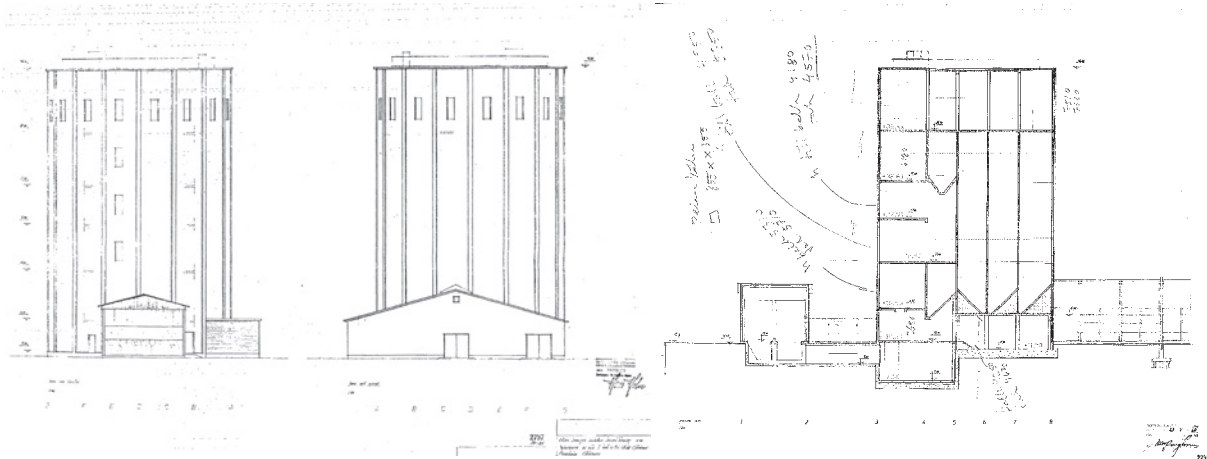
The land where silos were located is often considered highly attractive, central, and close to the river (Johanna, 2021). Some industrial sites bear important memories. These silos connected the past and had deeply rooted in the local context. Also, the environmental benefits that adaptive reuse brings cannot be neglected. As a result, it is of great importance and value, historically

and economically, to reuse silos in the contemporary age.



Gasklockan at the Gullbergsvass gasworks, Gothenburg.

ORIGINAL DRAWINGS (1939)



Drawings from Svenska Hus AB

SITE EXPLORATION

Site Photo



Photo taken by the author 02/2024

SITE EXPLORATION

Site Photo



Photo taken by the author 02/2024

CASE STUDY

Prototype A - Transformation inside the silo

1. SILO
2. Meyster's Buiten
3. Jægersborg Water tower
4. Grünerløkka studenthus

Prototype B - Transformation outside the silo

5. Portland Tower
6. Gemini Residence

Prototype C - Transformation on top of the silo

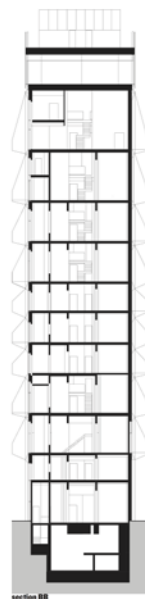
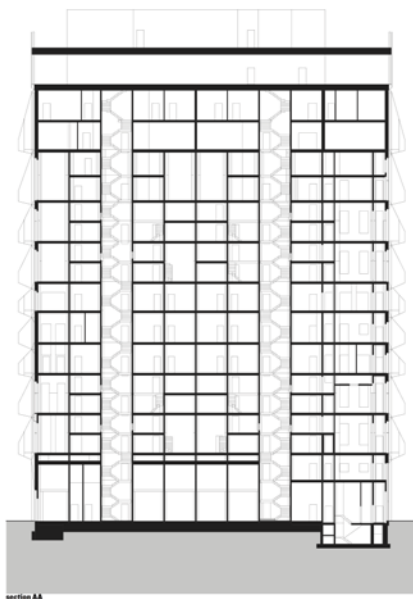
7. Gutmann Pellet Storage

Evaluation and conclusion

Table 1 - List of projects and project information

Table 2 - Intervention Typologies and Structural System Status

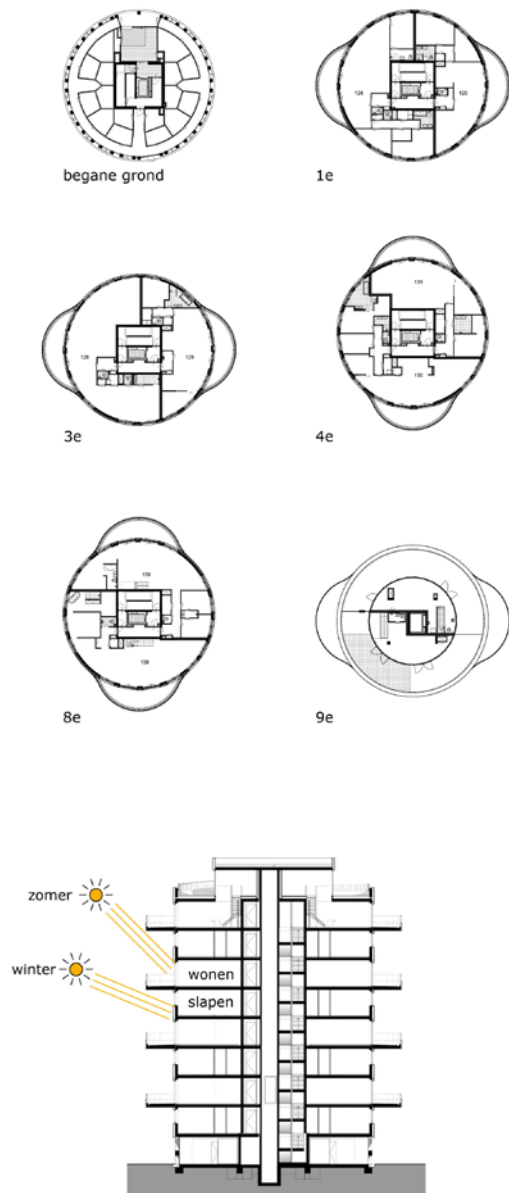
Prototype A - Transformation inside the silo



SILO, Copenhagen COBE Architects

The 17-storey former grain silo is a natural point of orientation in Copenhagen's new neighbourhood Nordhavn. The **spatial variation** within the original silo is immense due to the various functions of storing and handling grain, creating space for 39 unique apartments. Single and multi-level **apartments** range from 73 m² to 305 m² in size with floor heights of up to 7 meters. Both the top and lower levels have **public access**, to ensure a multi-dimensional experience for the various users of the building.

Prototype A - Transformation inside the silo

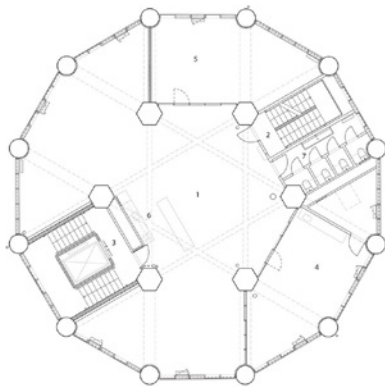


Meyster's Buiten, Utrecht ZECC

The large round silos were used to store soy commodities back in the day. The new residential tower is a direct reference to these silos.

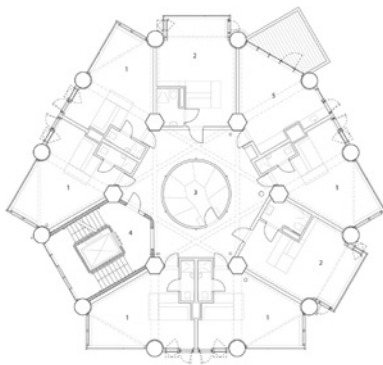
Like the former silo, the tower has a metal facade, and the building is placed on a heavy **concrete structure**. The sleek, round shape of the silos has evolved into a freer form with large fan-shaped balconies. The houses are always **rotated 90 degrees** relative to each other, giving the **balcony** a double-clear height.

Prototype A - Transformation inside the silo



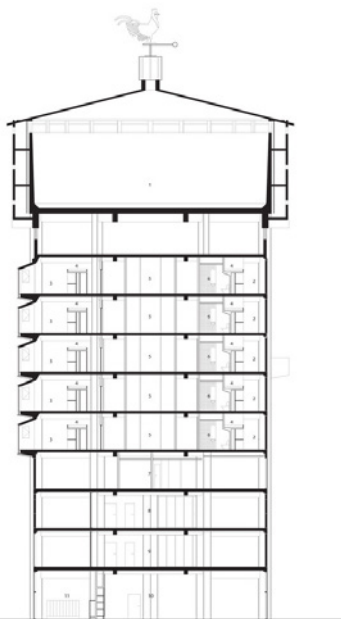
1 Workroom & accommodation
2 Staircase
3 Elevator and staircase
4 Workroom facilities
5 Computer's room
6 Kitchen and "bar"
7 Lavatory

Plan 2, floor 1/100



1 Apartment type A
2 Apartment type B
3 Storage
4 Lift and staircase
5 Community room
6 Bakery

Plan 4, floor



1 Water tank
2 Apartment type A
3 Apartment type B
4 Bed lift
5 Storage
6 Bath & lavatory
7 Storage and staff facilities
8 Workroom & accommodation
9 After-school recreation scheme
10 Multi purpose facilities
11 Cloakroom

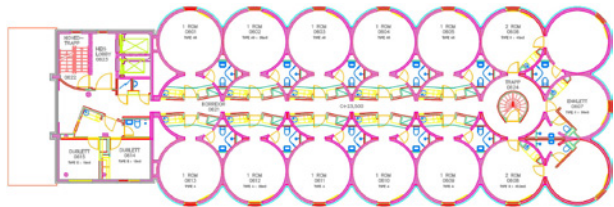


Jægersborg Water tower, Copenhagen Dorte Mandrup

The former water tower was converted into a mixed-use building. On the upper floors, **student housing** units mark the perimeter of the **existing structure**. Each unit is expressed by a protruding crystal-like **add-on** that brings **daylight** into the apartment, and offers **views** to the surrounding landscape.

The lower floors are inhabited by a **youth center**. Large garage-style doors on the ground floor open up to extend the active indoor space into the outdoor playground.

Prototype A - Transformation inside the silo

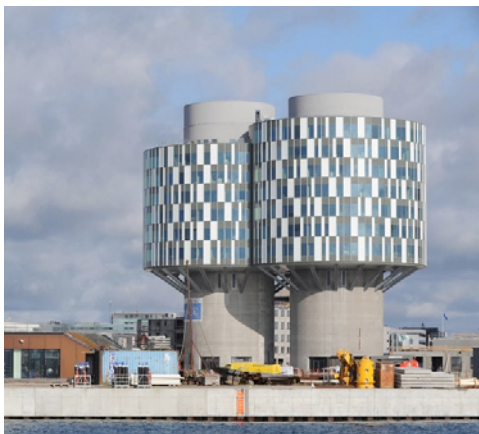


Grünerløkka studenthus, Oslo HRTB Architects

Grünerløkka Studenthus is a 1950s grain elevator located along the Akerselva River in Oslo that has been converted into a 19-story **student housing** facility.

The structure consists of three rows (21 silos in total) in rows of 7 silos. The interior of the building, which is used as a student housing complex, is used and no new mass has been added to the outside of the building. Most of the building was left in its **original state**.

Prototype B - Transformation outside the silo

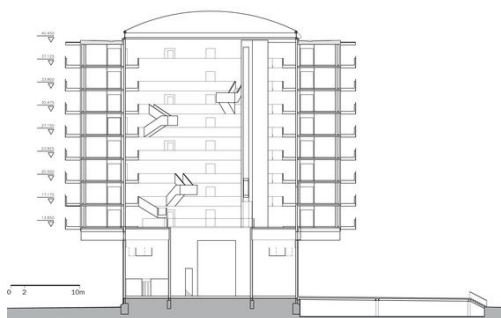
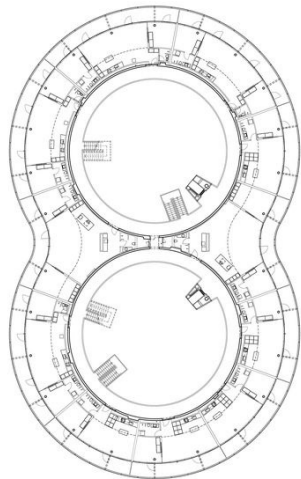
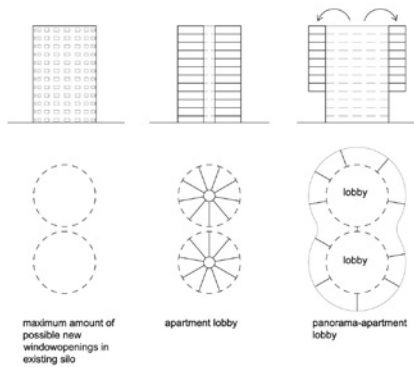


Portland Tower, Copenhagen Design Group Architects

The Portland silos, erected by Aalborg Portland in 1979, have been transformed into **multi-user offices**. The two vertical silos hold the **stairs and lifts**. Hung onto the silos are 6 floors of offices with magnificent views over the city and the harbour.

The transformation concept is to preserve the vertical concrete silos and add a circular cantilevered light glass construction that wraps around the silos and emphasises the **circular form**. Right at the **top** lies a shared canteen and a panoramic outdoor terrace for the building's tenants to use.

Prototype B - Transformation outside the silo

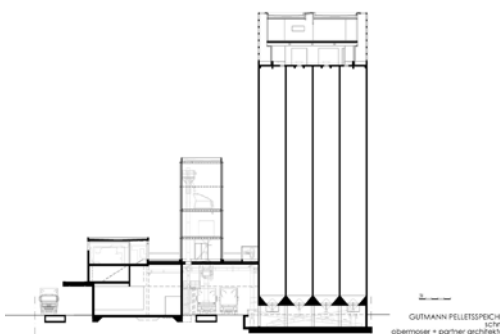
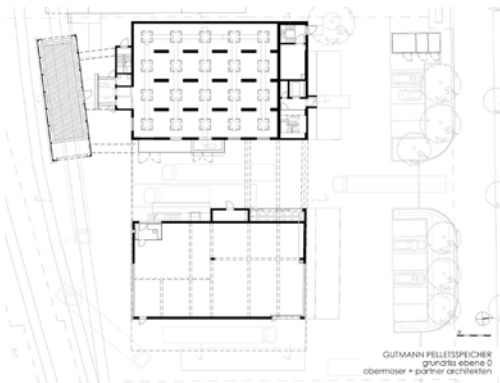
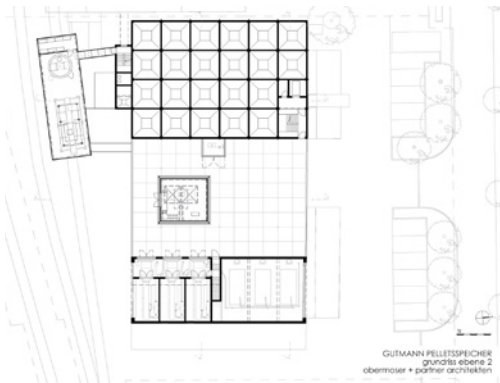


Gemini Residence, Copenhagen MVRDV

The 84 apartments along the floors are hung on the outside of the silo creating two 'supershfts' which contain all obstructing objects and lobby areas whilst allowing each room to profit from maximum views and flexibility.

The two rotundas are capped with a Texlon roof for natural light, creating a lobby area as tall as the building itself. The apartments have floor-to-ceiling windows and balconies along their entire length.

Prototype C - Transformation on top of the silo



Gutmann Pellet Storage, Innsbruck Obermoser+partner architekten

The design task was to transform an existing grain silo from 1978 into a **transshipment center** for wood pellets with a new and expanded use. The client asked for a new **art lounge** on the silo's **top** for business use and events created by this local landmark.

The structure was determined by the silo, which was visible from distance and, combined with other remnants of its former use, like rusty tanks and dilapidated roofs, exuded the atmosphere of an abandoned industrial facility.

Table 1 - *List of projects and project information*

Building name		Architect	Location	Year of construction	Year of renovation	Old function	New function	Height
Transformation inside silo	SILO	COBE	Copenhagen	1960	2017	Grain silo	Residence; Office; Art	62m
	Meyster's Buiten	ZECC	Utrecht	1908	2011	Soy silo	Residence	30m
	Jægersborg Water Tower	Dorte Mandrup	Jægersborg	1955	2006	Water tower	Residence; Education	45m
	Grünerløkka	HRTB Architects	Oslo	1953	2001	Grain silo	Residence	54m
Transformation outside silo	Portland Tower	Design Group Architects	Copenhagen	1979	2014	Cement silos	Office	59m
	Gemini Residence	MVRDV	Copenhagen	1963	2005	Seed silos	Residence	42m
Transformation on top of silo	Gutmann Pellet Storage	Obermoser + partner	Innsbruck	1978	2020	Grain silo	Office; Art	50m

Seven silo adaptive reuse projects were looked at as examples. The primary uses of the silos were for seed, cement, water, grain, and soy storage. As shown in Table 1, silos—which were formerly used for storage—have been used for residential purposes as well as offices, art, education, and other purposes. This allowed for public access to the building of industrial heritage. The silos were built in the 19th

and 20th centuries, and the adaptive reuse procedures were completed in the 21st. The construction of these silos took place in the 19th and 20th centuries, and the adaptive reuse procedures were finished in the 21st century (refer to Table 1).

Table 2 - *Intervention Typologies and Structural System Status*

	Building name	Transformation inside silo				Transformation outside silo		Transformation on top of silo
		SILO	Meyster's Buiten	Jægersborg Water Tower	Grünerløkka	Portland Tower	Gemini Residence	Gutmann Pellet Storage
Structure	Windows on the existing facade	YES	NO	YES	YES	YES	NO	YES
	Existing openings is kept	NO	/	YES	YES	YES	/	YES
	Existing structure is preserved	YES						
	New structure is added inside the building	YES						
	New structure is added outside the building	NO	YES	NO	NO	YES	YES	YES
Architectural design	Concrete continues on the new building's facade	NO	NO	NO	YES	NO	NO	YES
	Atrium inside the building	NO	NO	NO	NO	NO	YES	NO
	Accessible roof	YES	NO	NO	NO	YES	NO	NO
	Layout arranged according to the shape	YES						
	Space and equipment for ventilation/insulation	YES						

An assessment of criteria was made to examine and contrast the buildings. According to the evaluation criteria, the results in Table 2 were reached.

From the structural perspective, efforts were made to minimize the damage to the structural system during the adaptive reuse. There were 5 buildings with openings on the original facade, 4 of which kept

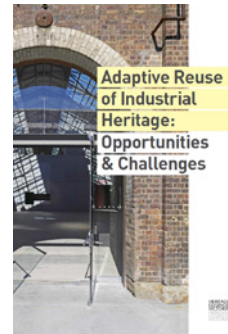
these openings while adding new ones. The structural system of all silos had been retained. All silos had new structures added to their interiors, and 4 of them introduced additional structures to their exteriors, which helped them expand the building area.

From the architectural design perspective, 2 buildings kept or imitated the original

industrial touch on the facade, while the rest introduced new materials such as metal and glass. No atrium was designed when the transformation took place inside the silo. The roofs of only 2 buildings were accessible. The interior layout was designed according to the silo's shape in all projects. Moreover, they all took into consideration ventilation and insulation in the reuse process (refer to Table 2).

THEORY

**Clark, J. (2013).
Adaptive Reuse of Industrial Heritage:
Opportunities & Challenges.**



The author explained the terms of industrial heritage and adaptive reuse. In her discussion of the adaptive reuse of industrial heritage, Clark enumerated several concerns that needed to be taken into account during the reuse process.

Industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural or scientific value (The International Committee for the Conservation of the Industrial Heritage, 2003). These industrial buildings faced extinction as a result of becoming worthless and useless over time as the city underwent modernization. In recent years, the idea of "industrial heritage" has grown significantly in many industrialized countries. People have discussed the definition of heritage, and its content has therefore expanded over time.

The notion of adaptive reuse is not something new. Changing structures and content have been developed and broadened throughout the years. Adaptive reuse is more than simply retaining a building's structure or envelope. A heritage building, site, or area must be understood in a complex way. Other aspects to consider

include spatial structures and configurations, the relationship between the site and its context, views from and within the site, and traces of activities and procedures (Clark, 2013). Rather than demolishing the industrial heritage, adaptive reuse gives it new life and functionality, preserving its vitality.

Industrial heritage sites are an important part of our built environment and landscape. They provide tangible and intangible links to our past and have great potential to play significant roles in the futures of our cities, towns and rural environments (Clark, 2013). Therefore, It is important to preserve its social value and meet people's expectation when touching it, creating new stories and identities. Adaptation for a new use should respect the heritage significance of the site and its context. Think broadly about the possibilities when considering appropriate and viable reuses(Clark, 2013). Masterplans need to be flexible enough to respond to future development.

CONCLUSION

A thorough evaluation before designing

From the information obtained from the case study and literature research, the following conclusions were reached: To reuse the silo buildings, the silos and their surrounding elements must meet the general specifications intended for new purposes. Exploring local context and silo's spacial potential before designing is essential. In some cases, due to design and construction errors, improper maintenance, or remote location with poor infrastructure, it may cost more to reuse than to build a new one. Therefore, a thorough evaluation before the design process is of extreme importance.

Necessary actions to achieve the reuse

Large dimensions of existing industrial elements such as beams and columns may affect the interior space quality. To convert silos into residences or any other facilities, necessary methods need to be conducted, for instance, clearing some columns and adding new load-bearing systems, either inside or outside the building. It is not

advisable to demolish the entire structure and establish a new frame, but if this is the only way to achieve it, then maybe the building is not proper for adaptive reuse. Basic requirements for housing units such as lighting, water, and ventilation, should also be met.

Respect the heritage and speak for future

According to the theory study, silos may convey memories for the community and link life to the past. Social and political contexts affect why and how silos were built back in the day. As communities change and newcomers arrive, while respecting the heritage and presenting the story of the past in memory of the urban-public identity, redesigned silos should also speak for the future and accommodate possible changes. In some of the studied projects, new building materials like metal and glass were introduced as iconic facade features instead of continuing with concrete all over the skin. These critical and creative add-ons are for a better living quality.

03 DESIGN

This chapter looks at the design proposal. After a series of analyses and explorations, it reveals the adaptive reuse possibilities and showcases the final proposal with various drawings that relate to and answer the thesis question.

Design exploration

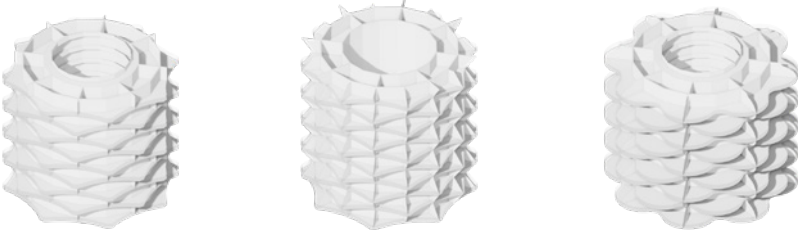
Design proposal

Renders & physical model

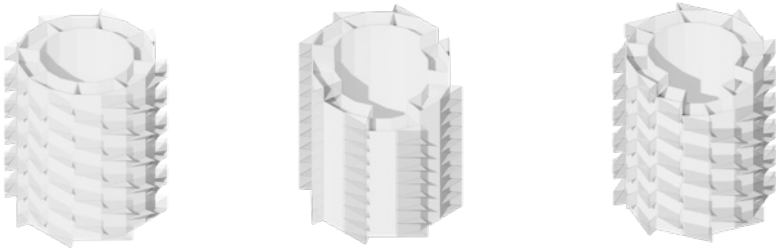
TYOLOGY STUDY



Dwellings locate inside the silo



Petal-shaped balcony



Sharp triangular balcony

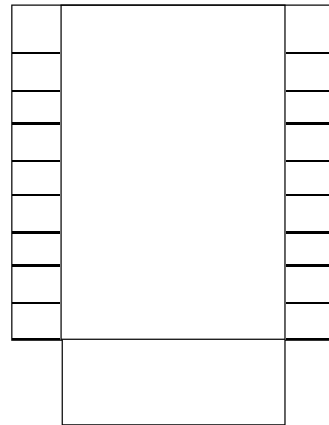


Dwellings with curved balcony

PROGRAM

**GRAIN
STORAGE
SILO
1960S**

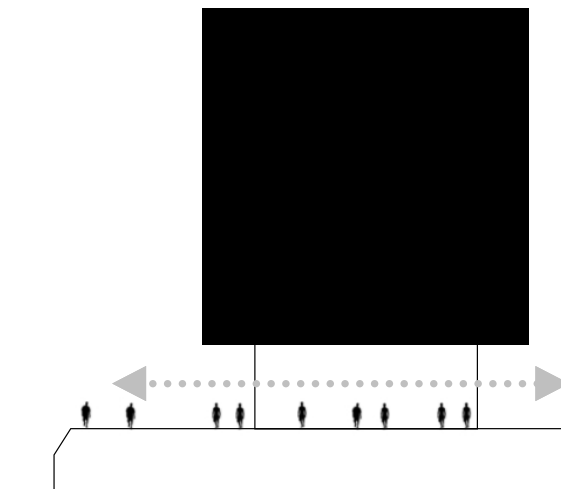
Existing program



New icon

**PUBLIC
HOUSING
PUBLIC**

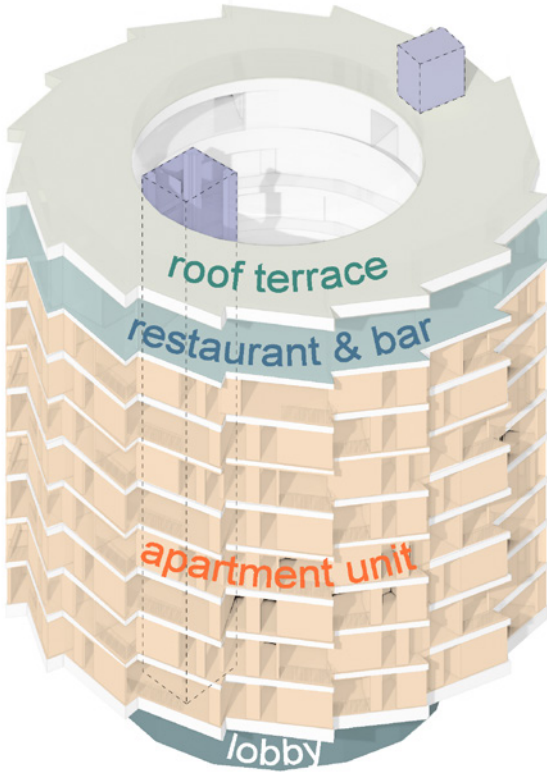
New program



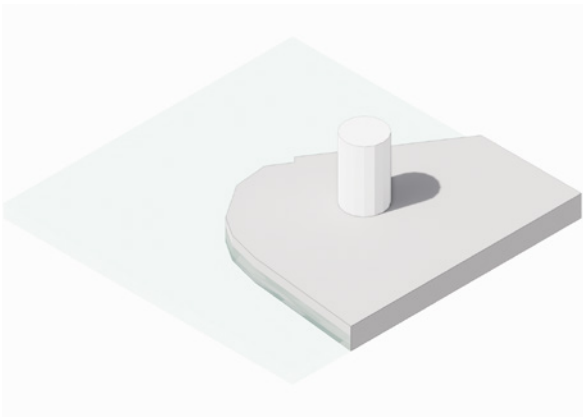
Water connection

Public facilities are on the entrance and top floor, and dwelling units are in the middle. The apartments hang outside the silo in order to benefit from the view and gain more square meters, leaving the original silo body for vertical connection as a spacious and bright atrium. The simplicity of atrium space contrasts with bustling river bank public bath.

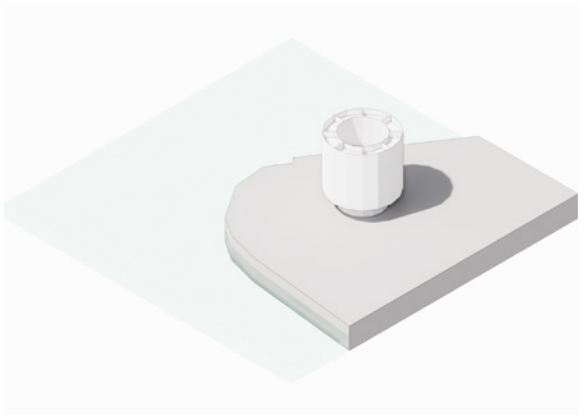
SPATIAL ORGANIZATION



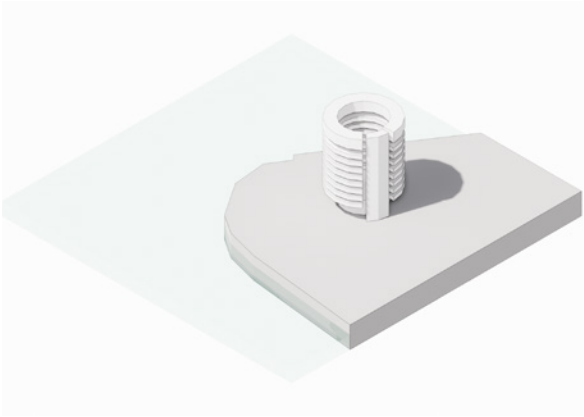
STRATEGY



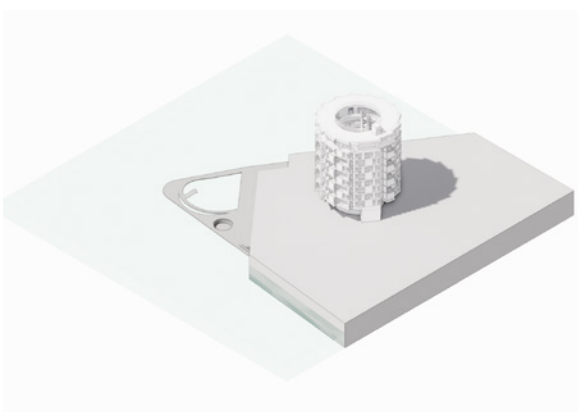
1. Existing silo by the water



2. Apartments hang on the outside

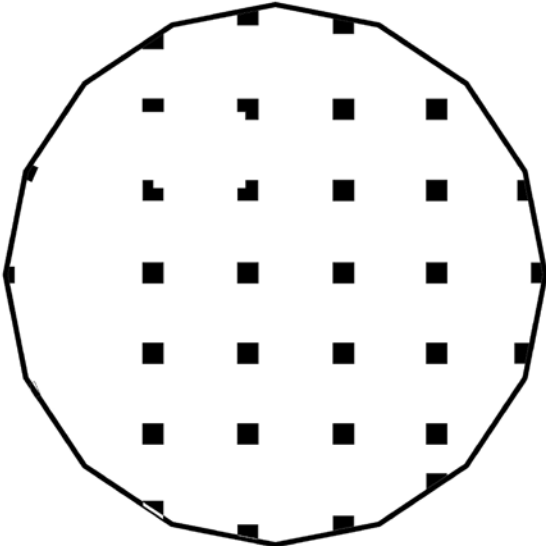


3. Public function on the top and stair well

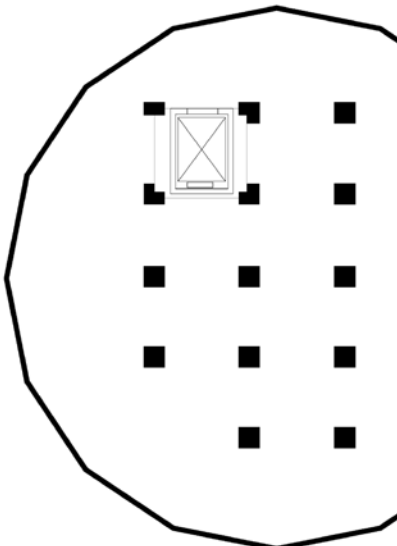


4. Facade and landscape

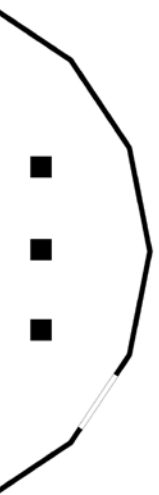
WORK WITH THE EXISTING STRUCTURE



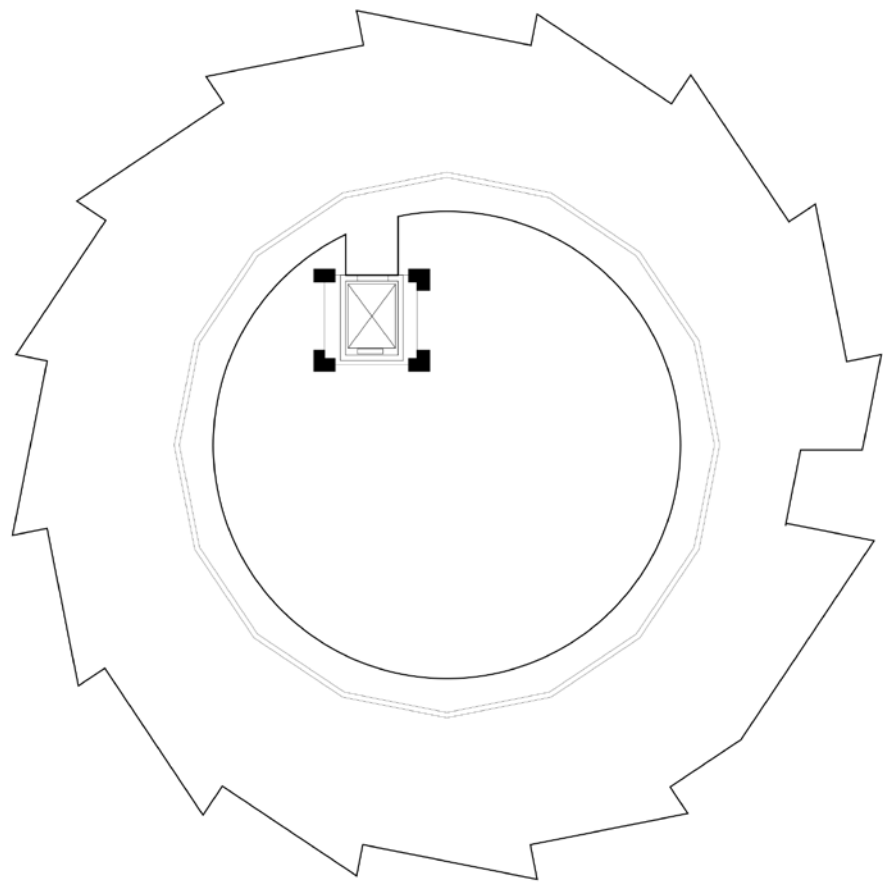
Existing entrance floor



Preserved columns and walls o



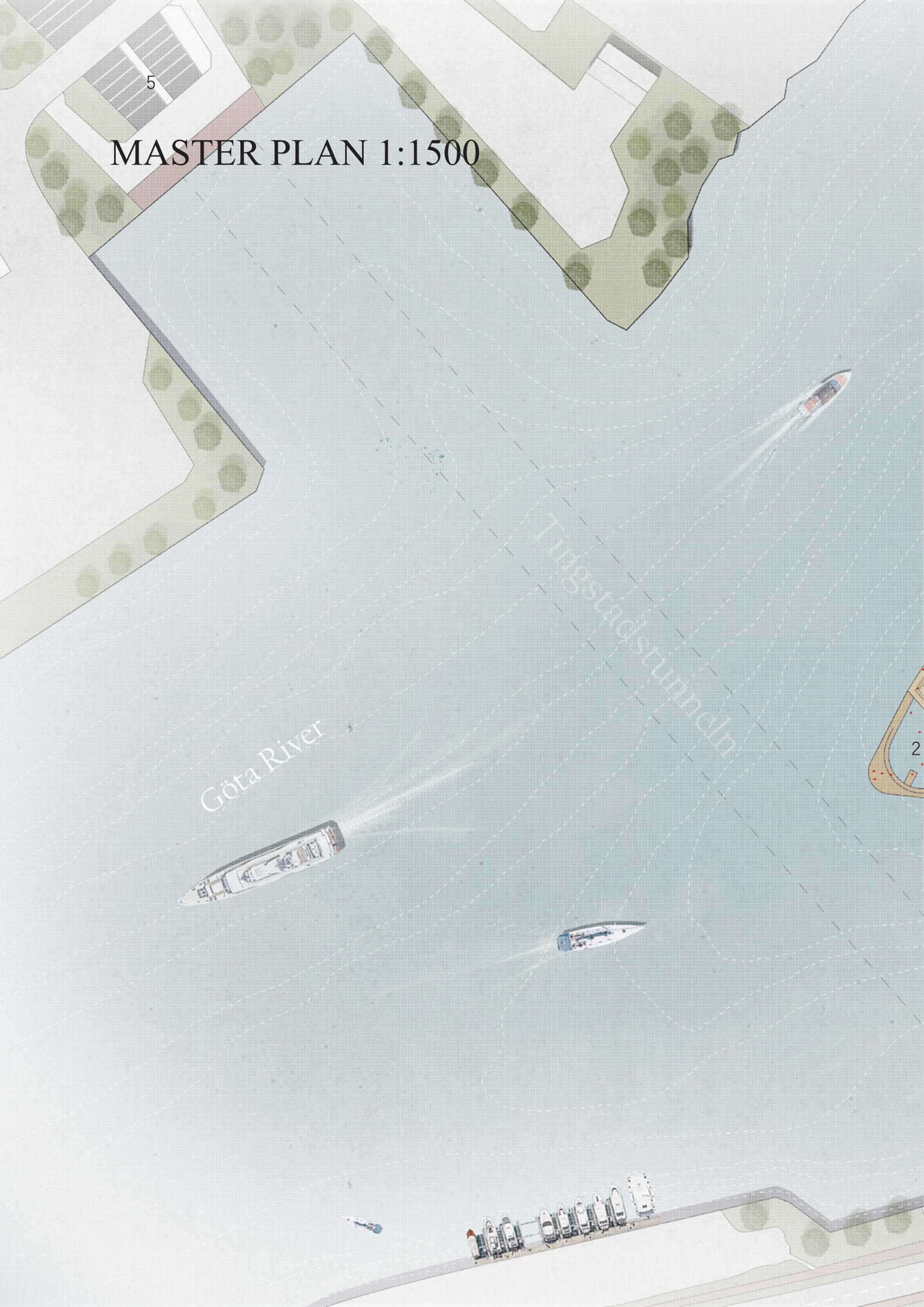
n entrance floor



Preserved columns and walls on 1st-8th floor

5

MASTER PLAN 1:1500



Göta River

Tingstadstunneln

2



10

6

9

7

1

8

3

4

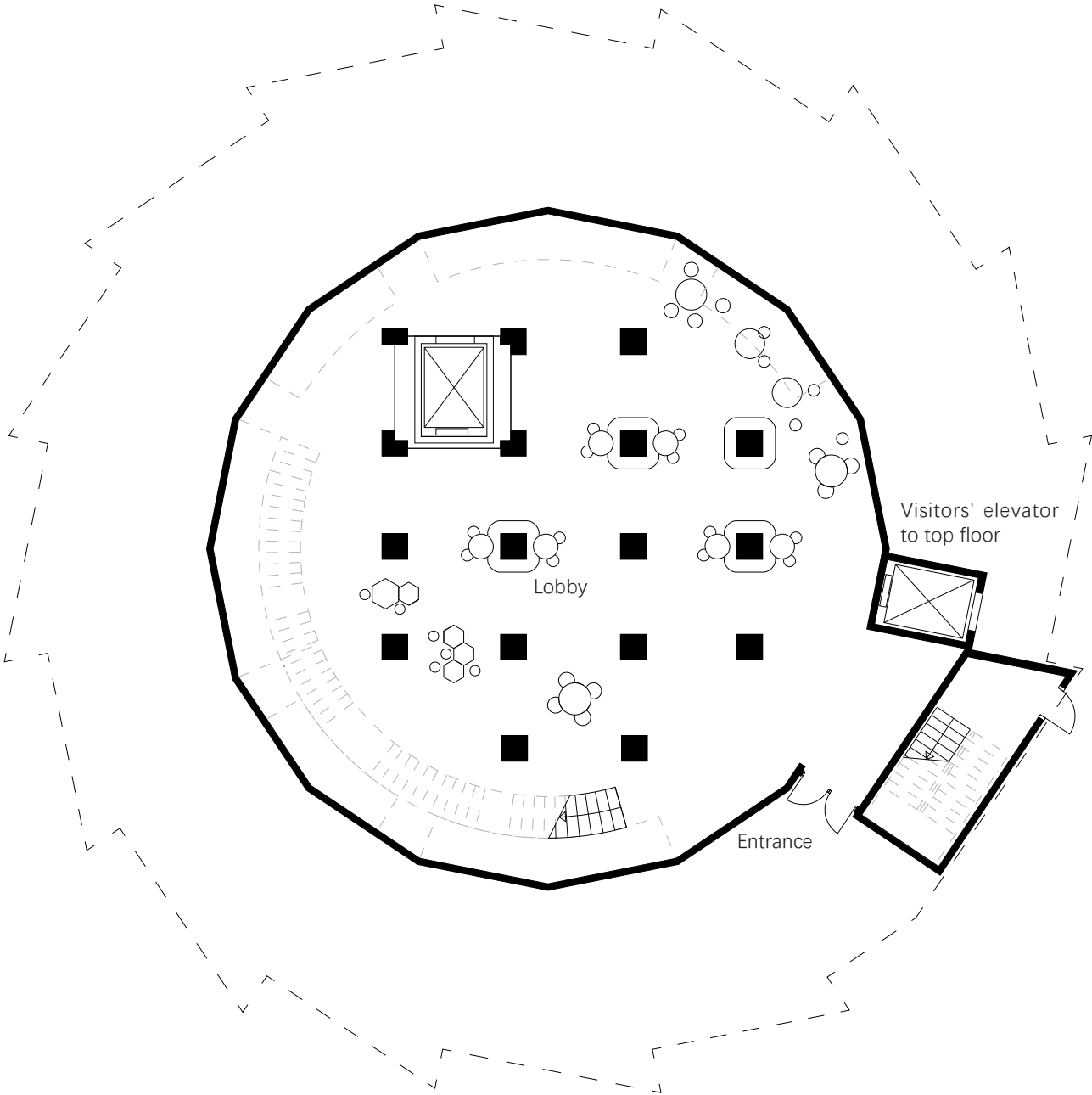
Säveån River

5

- 1. Marieholm Residence
- 2. Public swimming pool
- 3. Parking
- 4. Gullbergs Strandgata
- 5. Tingstads tunnel
- 6. Vassgatan bus stop
- 7. Lunch restaurant
- 8. Machine store
- 9. Car repair shop
- 10. Industrial Equipment Supplier

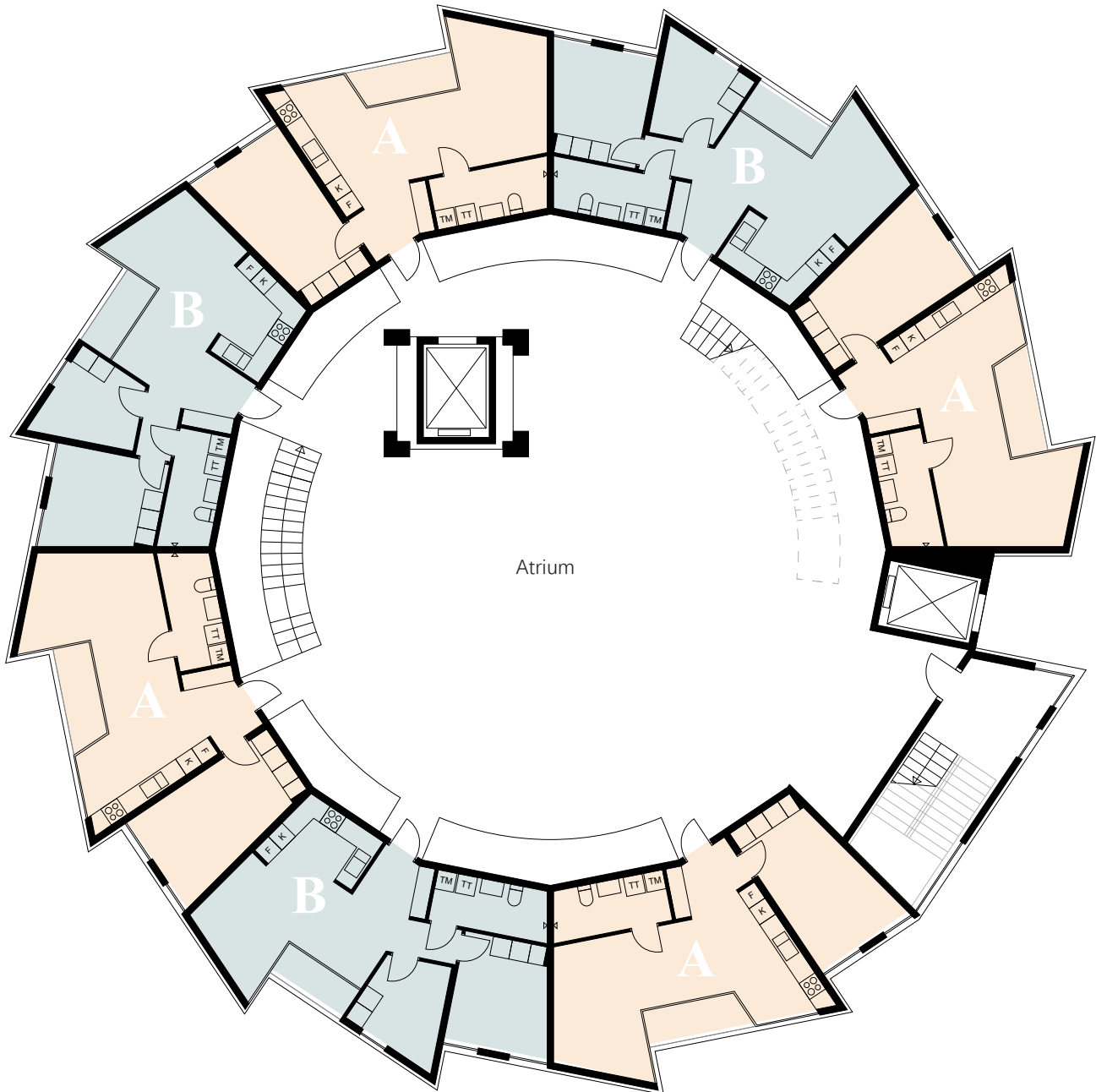
FLOOR PLAN

GROUND FLOOR 1:200

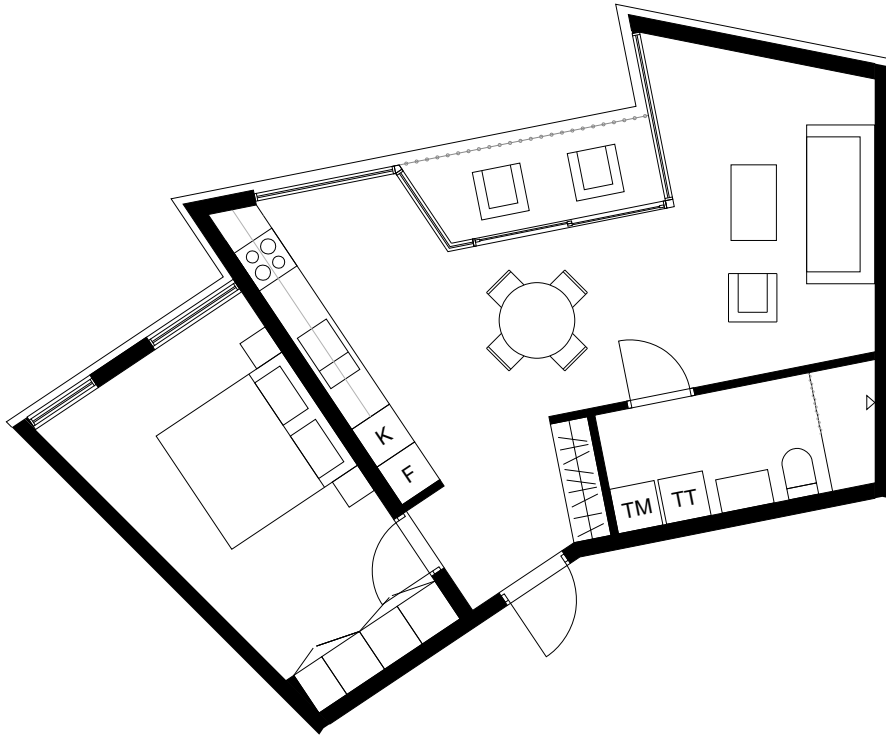


The main entrance to the building and a separate visitors' elevator are located on the ground floor. Most of the existing columns are kept as the structure of this 6.4-meter-high lobby area. While being renovated and redesigned, industrial touches are preserved as much as possible. Light from the atrium gently falls in the greyish-tone lobby, giving a hint of big contrast to the bright space upstairs.

1ST FLOOR 1:200



The additional slab on the outside of the silo is equally divided into eight units, seven of which are apartments and the other is a stairwell. These seven apartments on the first floor (as well as the 3rd, 5th and 7th floor) consist of two layouts: Type A and Type B. First floor features a large atrium that receives plenty of natural light from the roof made with lightweight air cushion. There are 'bridges' linking the atrium to each apartment.

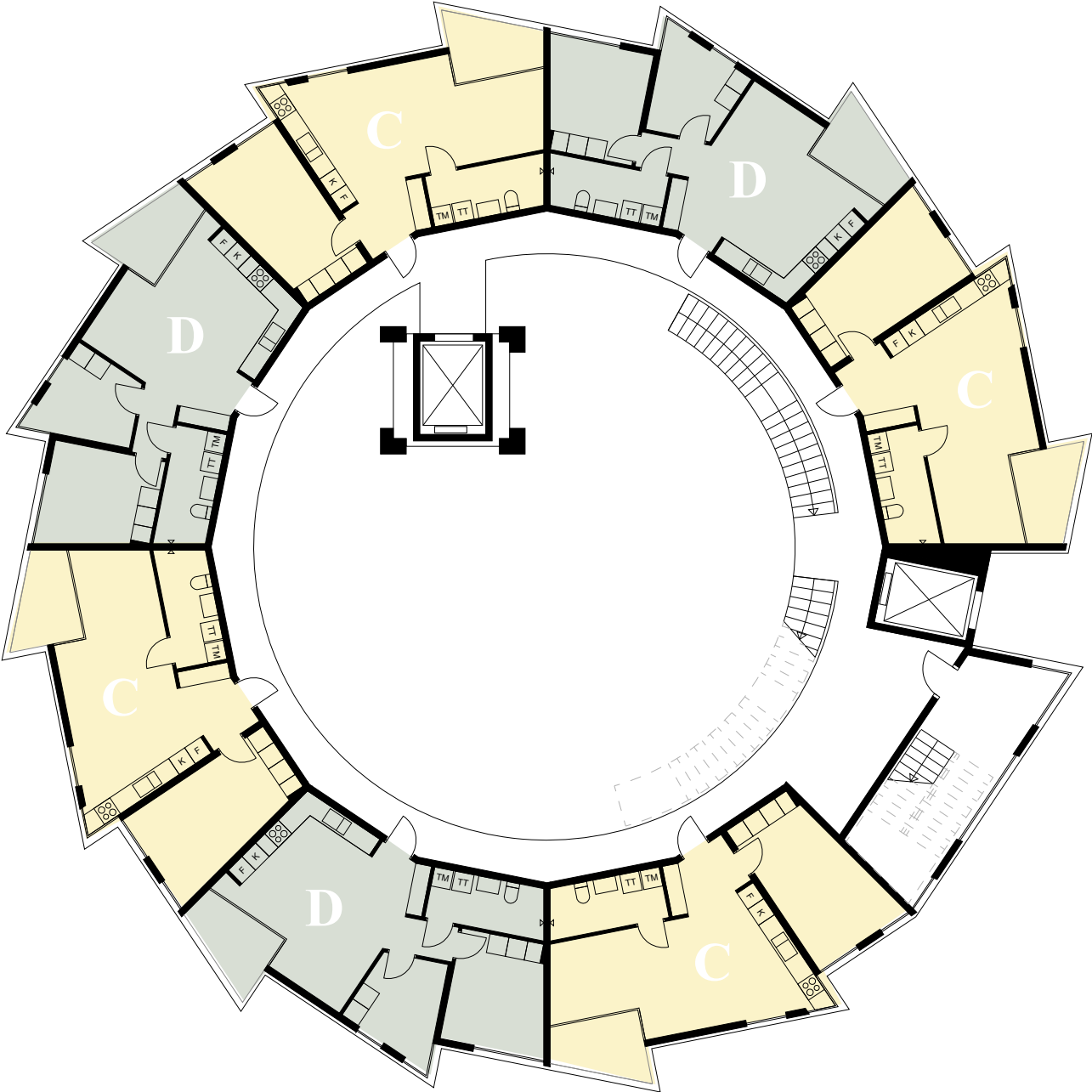


TYPE A 1-bedroom apartment 1:100 59sqm

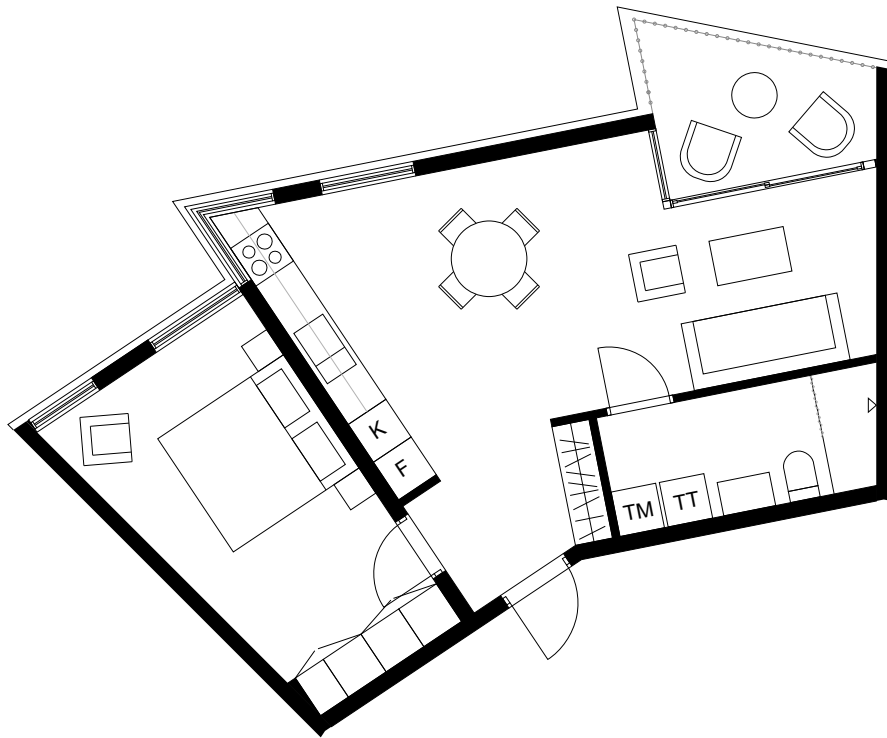


TYPE B 2-bedroom apartment 1:100 59sqm

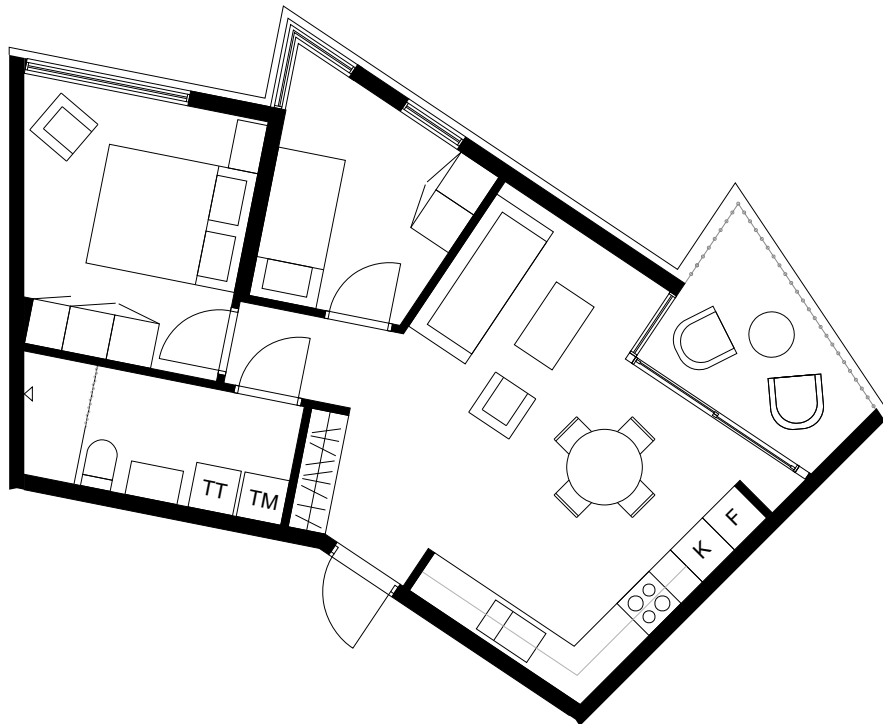
2ND FLOOR 1:200



On the second floor (as well as the 4th & 6th floors), there are seven apartments (Type C & Type D). Part of the apartment's structural wall is the original silo's facade. A spiral staircase encircles the atrium.

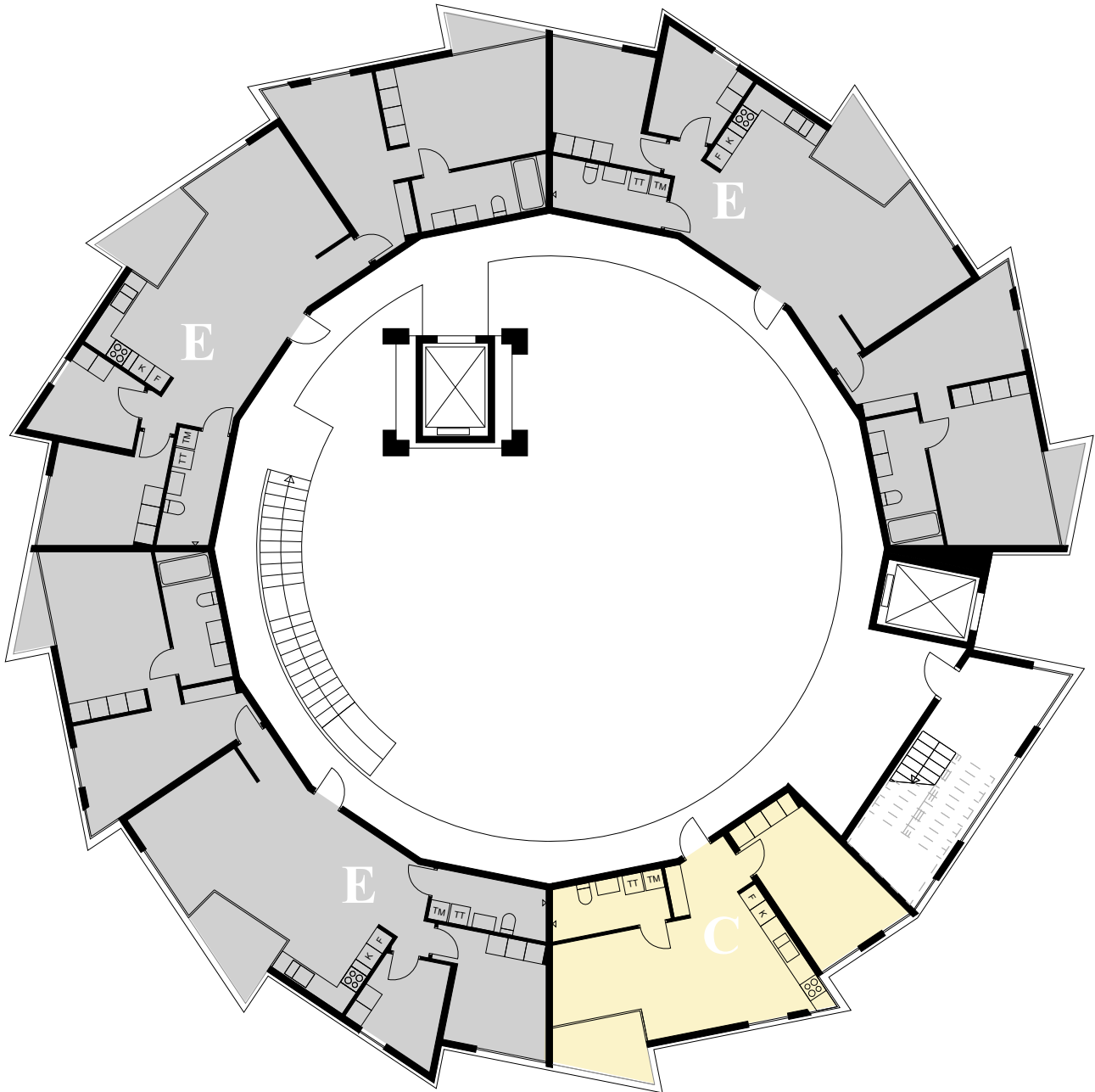


TYPE C 1-bedroom apartment 1:100 57sqm



TYPE D 2-bedroom apartment 1:100 57sqm

8TH FLOOR 1:200

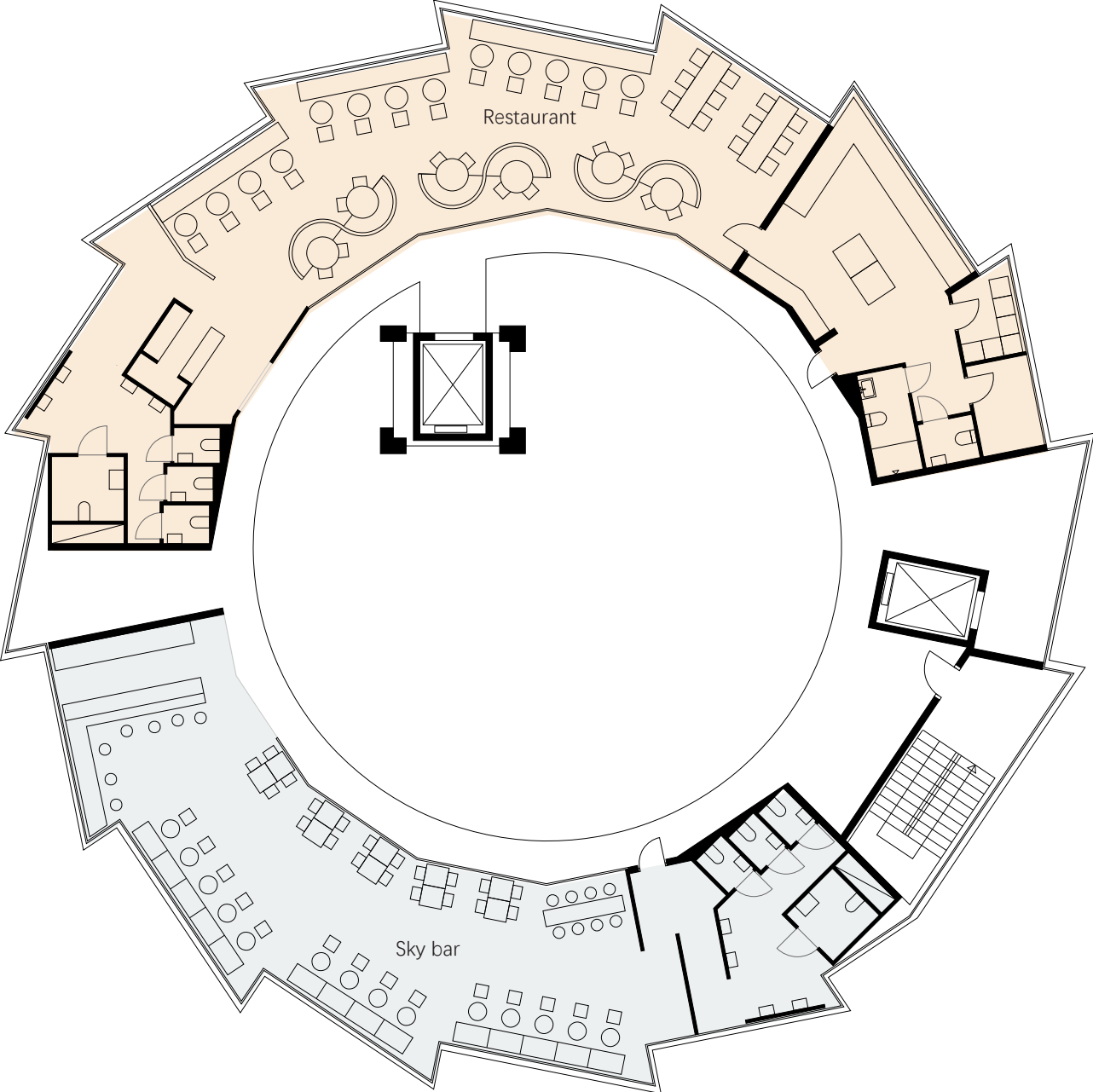


The eighth floor houses four apartments, three 3-bedroom apartment Type E, and a 1-bedroom Type C. The spiral staircase ends at this level for security and privacy reasons. Residents can use the elevator to access the rooftop public viewing platform or the restaurant and bar on the top floor.

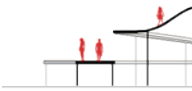


TYPE E 3-bedroom apartment 1:100 117sqm

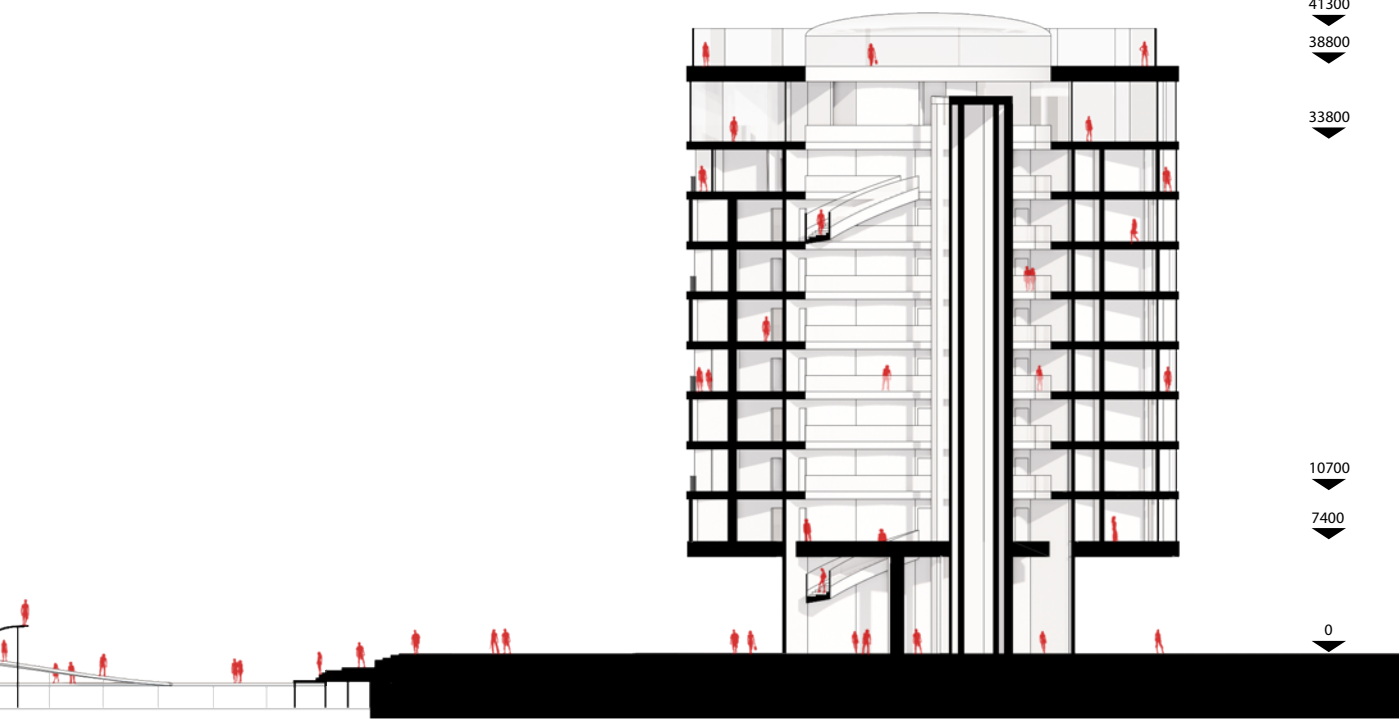
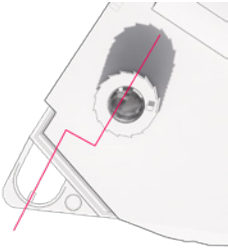
9TH FLOOR 1:200



There is a sky bar and restaurant with stunning views on the top floor. This floor's exterior wall is a massive 360-degree floor-to-ceiling window that provides customers with unobstructed panoramic views of the harbor and cityscape of Gothenburg. The late summer sunsets and night views can be enjoyed from the west-facing sky bar. It will grow in popularity as more people come to take in the cuisine and picturesque scenery.



LONG SECTION 1:500



EXTERIOR VIEW





HARBOUR BATH

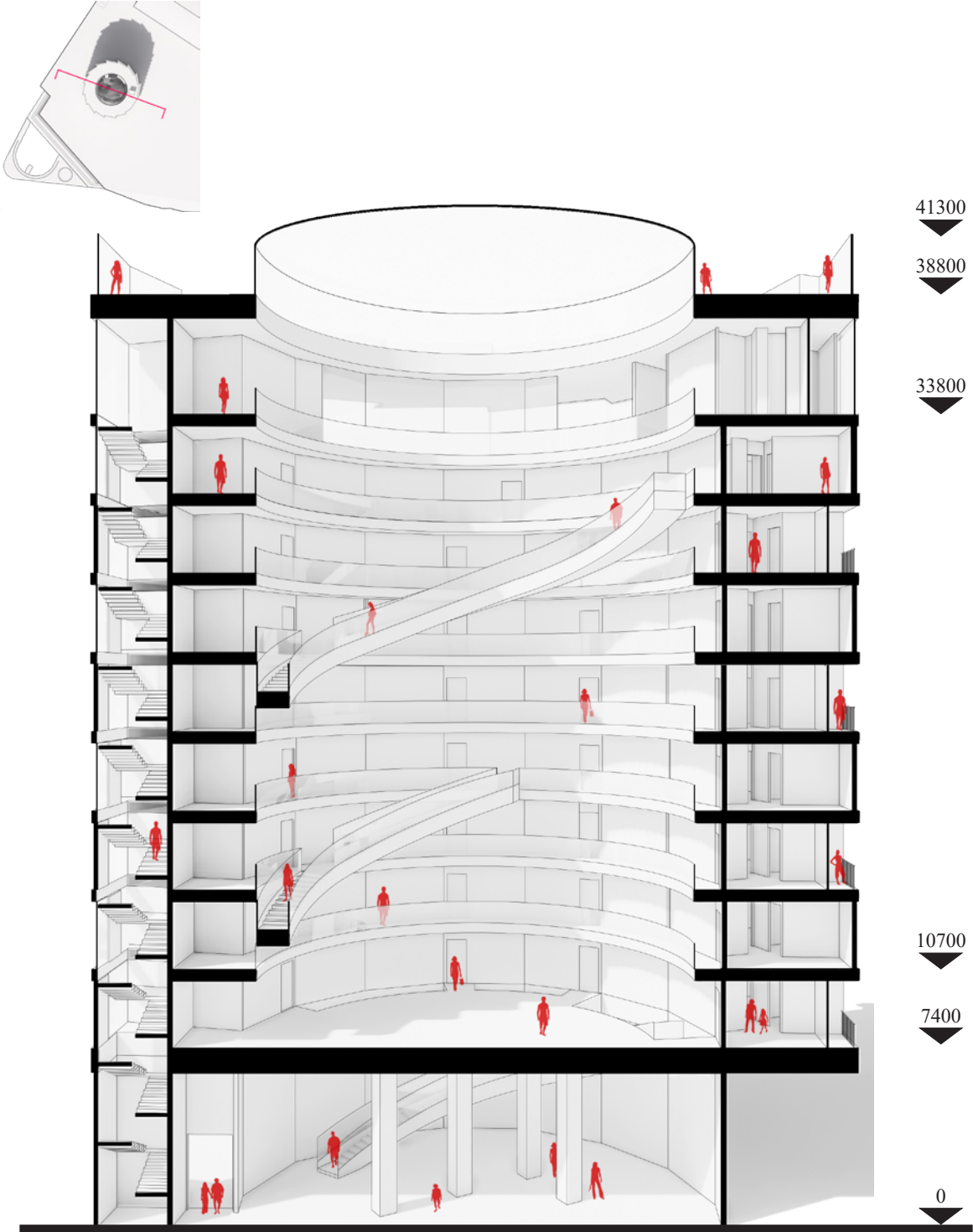
Marieholm Residence is inhabited, but also a destination, an urban focal point for the redeveloped Marieholm area.





SECTION

The core is covered by a transparent roof made with a lightweight air cushion, creating a futuristic atrium in which people move up and down.



The new façade was designed to distinguish it from the original concrete structure with tiles, while the entrance floor exterior wall was preserved from the past, reminding people of Marieholm's history.

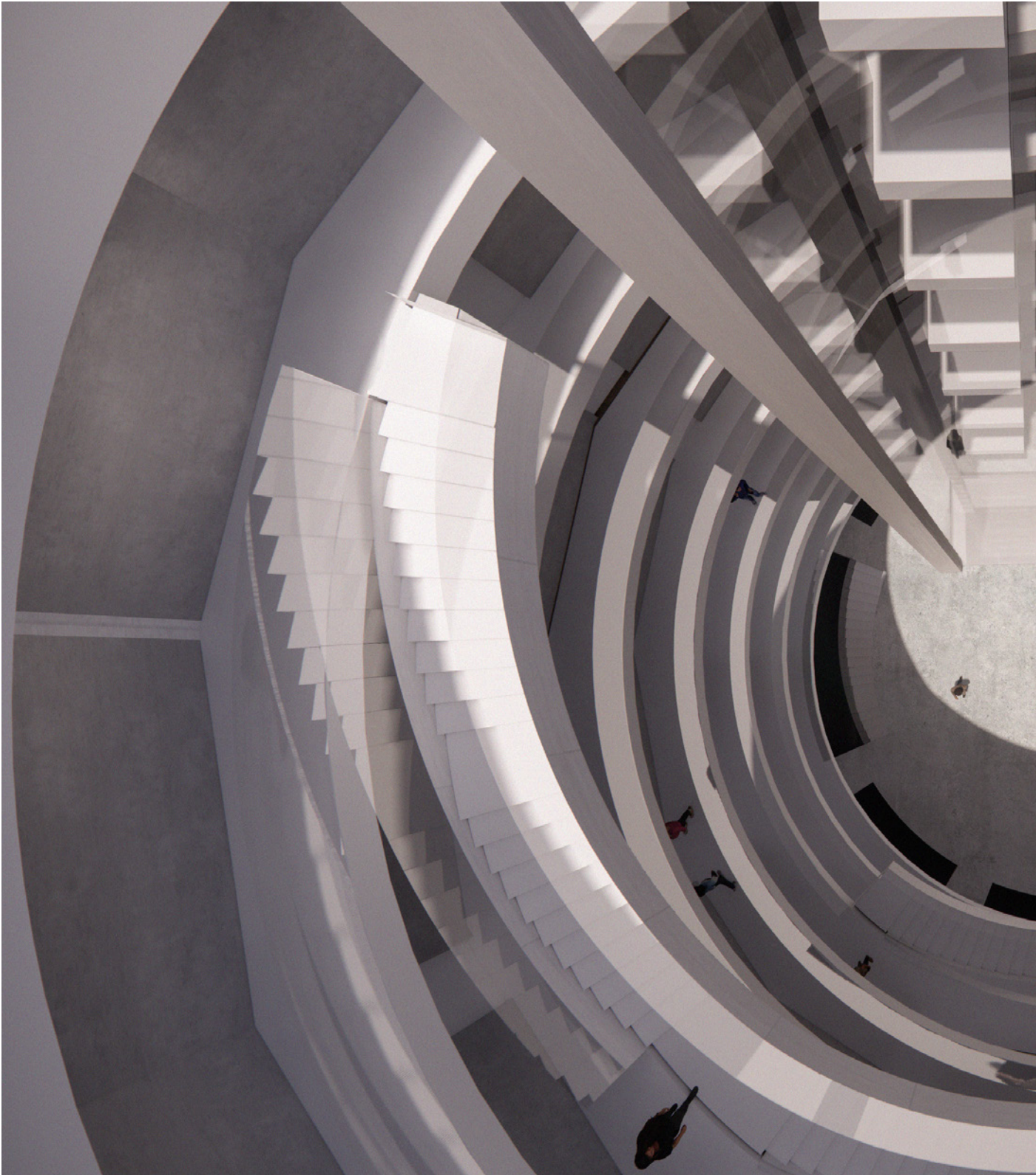


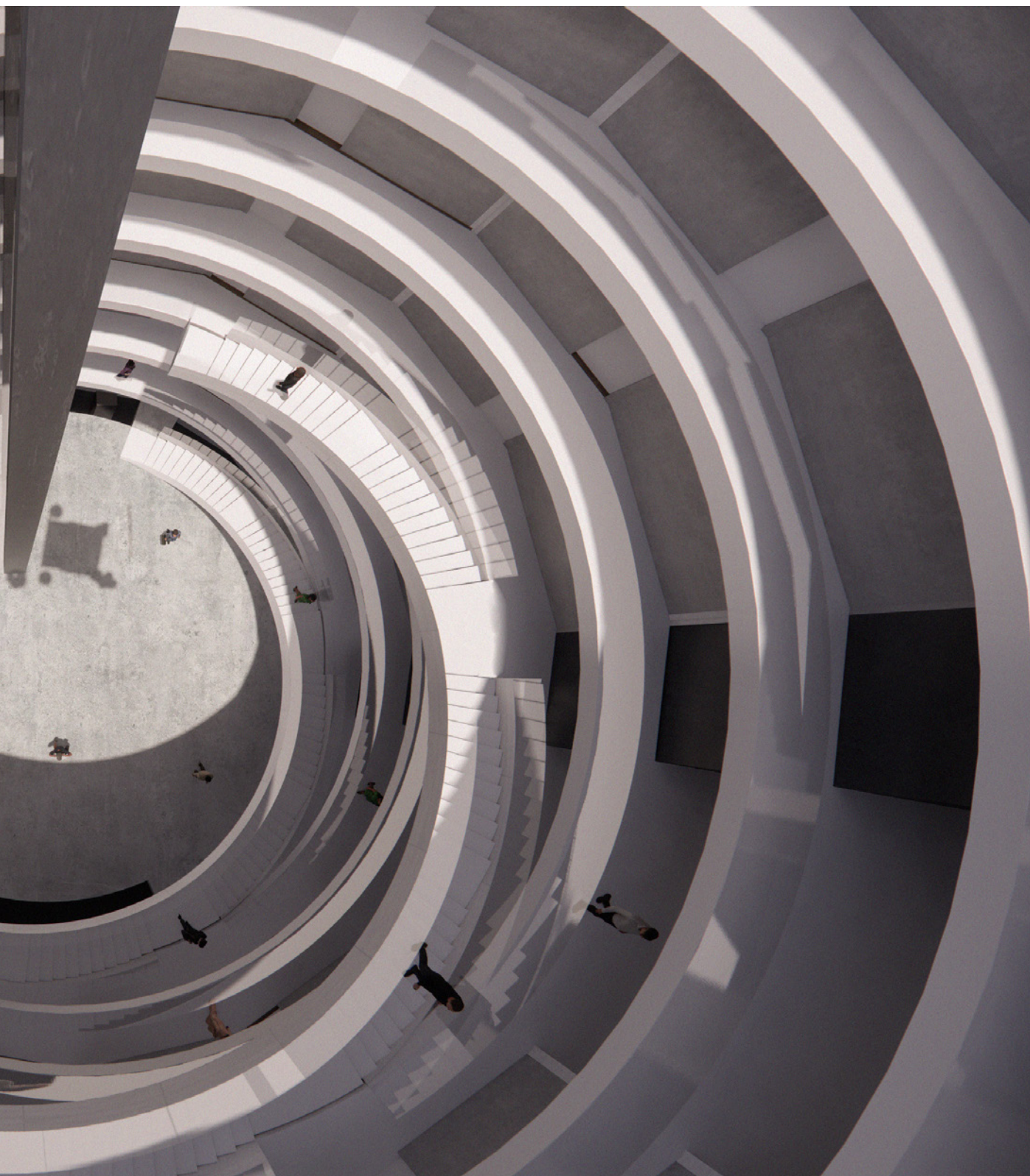
FACADE





ATRIUM





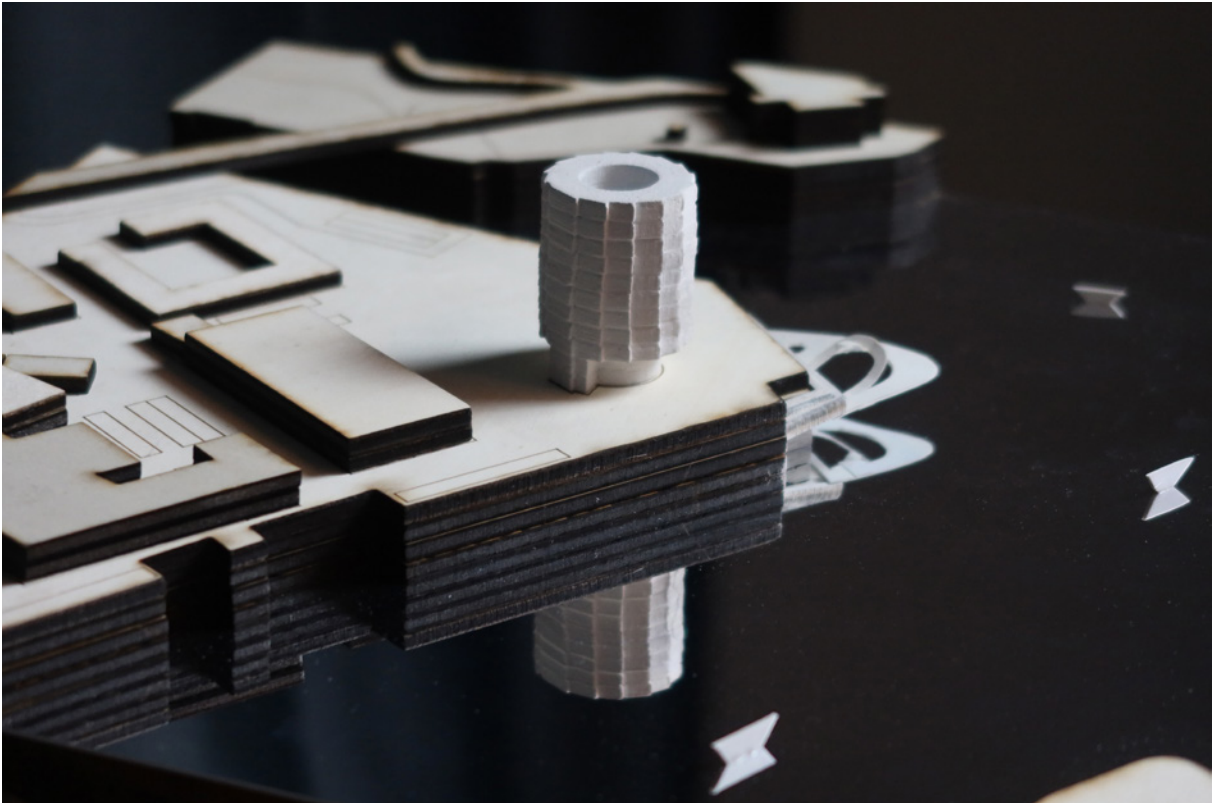
0F LOBBY

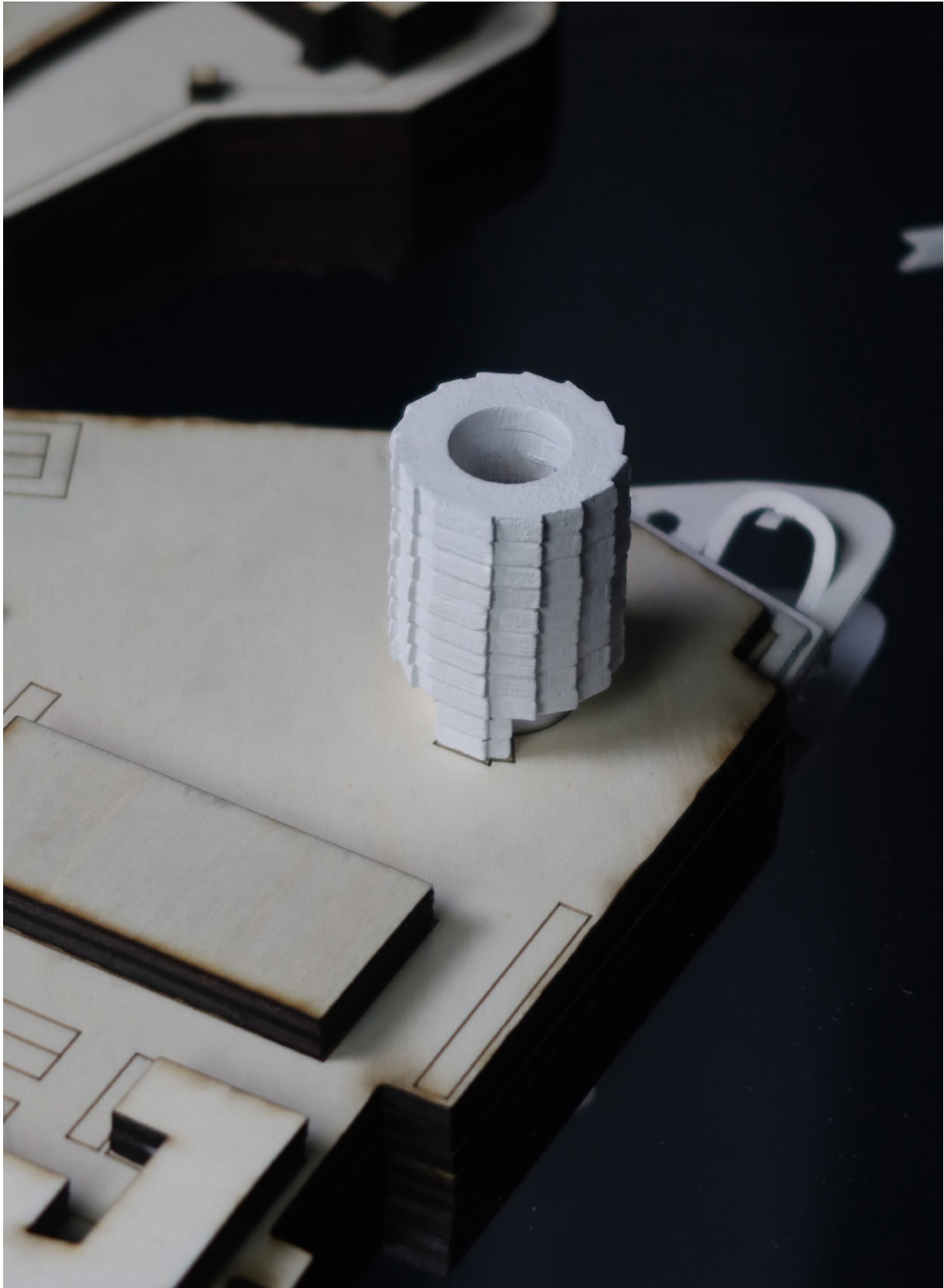


APARTMENT INTERIOR



PHYSICAL MODEL





04 SUMMARY

Silo reuse

Silo reuse is more complicated than it looks like. Every piece of existing elements can be a resource as well as an obstacle. There were a lot of struggling with existing columns in my design process. While preserving its original industrial touch, I also pursue the simplicity and pure aesthetic inside the building. I spent more than a month testing building typologies and their results of different exterior appearance. Eventually, it ended up a balanced solution.

The project as an attraction

Since 2020, high-end residential buildings have continued to emerge in Gothenburg, such as Karlatornet in Lindholmen and Kronjuvelen in Eriksberg. As a result of rising expectations, high-end modern housing has become a trend. They are, of course, pricey, but they have great views and modern facilities. Johan Live, public relations manager at Serneke Group AB, explained that the main motive for Karlatornet is to create an entire district (Karlastaden). He believes that attractive homes and a vibrant neighbourhood will strengthen the conditions for attracting both people and investment.

Like Lindholmen, Marieholm is also a dilapidated and unused industrial area in central Gothenburg. Nevertheless, it is still lacking in urban dwellings and infrastructure. Marieholm Residence together with the riverbank landscape, shops and restaurants, will be a pioneer in the district, drawing visitors and potential businesses, and making a name for itself in Gothenburg.

Not just a building

The process of exploring the thesis is also the exploration and experience of my own life. Looking back on my thesis project, I realized that my perception of the built environment is extremely relevant to my living environment and habits. I have spent my past two years living in Copenhagen, which has influenced me in many ways. Similar to Gothenburg geographically, Copenhagen is a city with close connection to water in the downtown. While living there, my greatest pleasure was going to Amager Beach or Islands Brygge's harbour bath after work to lie down, bathe in the sun, or jump into the water.

When I returned to Gothenburg, I was very upset due to the shortage of well-designed waterfront public space. It is more used for industrial shipping purposes here. Space like public baths and swimming pools is extremely rare. When I noticed the unique location of this silo in Marieholm, I immediately had the idea of activating it, by redesigning the waterfront landscape and introducing potential bars/viewing platform on the top, which for me, is to redefine and reinforce its place identity.

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