

BALANCING HERITAGE AND INNOVATION

ADAPTIVE REUSE AS A PROCESS OF
ARCHITECTURAL CONTINUITY



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2025

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Balancing Heritage and Innovation

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*Master Programm/
Architecture and Urban Design*

*Track/
Building Design and Transformation*

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Master Thesis 2025

*This work was supported by a fellowship of the
German Academic Exchange Service (DAAD)*

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ABSTRACT/

Preserving cultural and architectural heritage requires careful observation and thoughtful strategies to ensure its continuity and relevance for future use. A careful negotiation between heritage and innovation becomes necessary to translate tangible and intangible elements from the past into the future.

This thesis explored the possibilities of adaptive reuse as a strategy of transforming historic industrial buildings into future oriented projects. The Lyckholms Brewery in Gothenburg was used as a case study to investigate how contemporary interventions influence the balance between old and new.

The research incorporated different theoretical frameworks, such as Genius Loci, Aemulatio, industrial heritage, and other adaptive reuse approaches like architectural, programmatic, or interior approaches to apply as design methods. Through a comprehensive inventory, analysis, and an iterative design loop, the thesis de-

veloped into a proposal for a mixed-use cultural house with residential functions. Special attention was given to the significance of feasibility as an essential design factor in both academic and real-world contexts.

The resulting design project showcased how transformation could act as a form of preservation, working towards a spatial and cultural revitalisation that not only preserved the past but also activated it for the present and future. The design project is represented in the form of drawings, images and models to showcase the impact of the transformation. The thesis concluded that adaptive reuse is not a compromise between old and new, but a strategy for architectural continuity, preserving identity while integrating innovative design solutions.

Keywords: industrial heritage; adaptive reuse; transformation

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Student Background

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INTRODUCTION - PURPOSE AIM EXPLORATION/

The architectural building stock is transforming rapidly. Hidden within these structures are architectural and cultural traces, some more obvious, others more hidden, expressed through tangible and intangible characteristics. In this development, the architect becomes a translator. He is not only preserving the memories and values of the past but also engaging with them to reinterpret a future that includes contemporary demands and new functions. A careful negotiation between heritage and innovation is necessary.

Current preservation regulations, particularly those governing listed buildings, often adopt a conservative approach, primarily aimed at maintaining existing structures. While such interventions may succeed in preventing decay, they often forget the embodied potential in these buildings. In some cases, strict regulations may even accelerate decay when buildings remain unused. Old and unused architecture in poor condition is often demolished, mostly due to economic reasons and a lack of knowledge about adaptive reuse. However, the projects offer more than just their physical structures. They embody past narratives that could enrich their future development. Revealing and amplifying these narratives requires innovative and context-sensitive approaches towards transformation.

This thesis investigates various methodologies and strategies for adaptive reuse, emphasising the parameter feasibility. The credibility of adaptive reuse projects is essential, as interventions must be practically reasonable and a good alternative to economically motivated decisions such as demolition and new construction. The thesis aims to showcase how adaptive reuse can serve as a proactive, future-oriented architectural prac-

tice that balances preservation/heritage with transformation and makes the traces from the past accessible to the present.

The methods and concepts are applied to a specific site in Gothenburg. The Lyckholms Brewery, a former industrial complex near Korsvägen. Despite its rich architectural heritage, the site has experienced a challenging development. Over the last decades, the brewery's uninhabited structures have been left to deteriorate. The goal would be to introduce new architectural interventions and functional changes in the area to revitalise its spatial configuration. Part of the goal is to develop strategies that can be applied to other adaptive reuse projects facing similar conditions. The thesis and design project includes a comprehensive analysis of the building and its context, and identifies its qualities, challenges and problems. It involves the application of conceptual frameworks and testing design interventions, all grounded in the theoretical discourse of adaptive reuse, industrial heritage, and reference projects.

The transformation of the Lyckholms brewery should showcase the opportunities that lie in preserving our built heritage and working on innovative approaches that harmoniously balance it. How much change is necessary to make the project successful? Moreover, how much change can the heritage allow?

THESIS QUESTION /

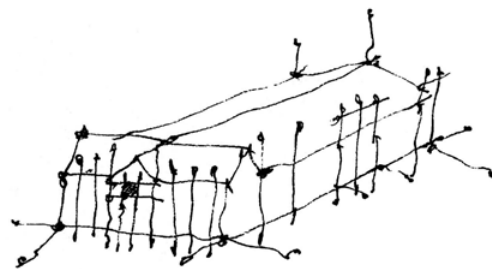
Main Research Question:

How can the adaptive reuse of historic industrial structures balance heritage and innovation to create a mixed-use project that preserves its cultural and architectural identity while integrating contemporary design solutions?

Sub-Questions:

How can spatial and structural characteristics of historic industrial buildings be used to support new functions in adaptive reuse projects?

The results are projected through the design project of the Lyckholms Brewery into a cultural house with integrated residential functions. It is presented in the form of drawings, maps, images, and models.



LYCKHOLMS

Fig 1. Lyckholm Sketch

METHOD AND TOOLS/

The research uses a pragmatic approach to identify the most suitable solutions for the project. A mixed-method strategy will be applied, including qualitative sources. The most significant emphasis will be on Research by Design and Research for and on design as part of the initial analysis. This will primarily involve literature studies, mapping, inventory creation, and analysis of the existing site.

Given the project's practice-oriented nature, the methods and analysis help to create a comprehensive understanding of the building's current state, ensuring that proposed interventions can respond adaptively to future needs. It is essential to begin with a broad theoretical and practical analysis to define suitable strategies and outcomes later in the process.

Throughout the project, interactive model work played a significant role in the design development. A hands-on site visit and meeting with the area's owner and developer, PEAB/Balder, provided valuable insights into the ongoing development plans for Lyckholms and influenced decisions regarding proposed interventions. The design process follows an iterative loop informed by prior analysis and continuous knowledge development. Since feasibility plays a central role in this thesis, it is a driving force behind these iterative cycles, resulting in reasoned and contextually grounded interventions.

Model Making:

Model-making embodies the ideas of the interventions at different scales. It creates a three-dimensional tactile expression, allowing experimental work on the project while expressing a place's physical state and characteristics.

Site and History Analysis:

The site and historical context provide insights into a space's intangible qualities, including narratives and stories beyond physical and spatial analysis.

Site Visit:

Experiencing a place's spatial configuration and evaluating the project's overall condition is essential. It is important to observe both the interior and exterior of the structures.

Photo Documentary:

Creating an inventory of the buildings through atmospheric photographs will support later stages of the project.

Research by Design:

Feedback loop redirecting design decision from evaluation towards an optimised proposal.

Sketching:

Sketching is an early design tool that develops design principles through simple illustrations.

Qualitative sources:

Qualitative sources involves acquiring knowledge about adaptive reuse for industrial buildings like building construction methods.

Project References:

Analysing the qualities of existing buildings and projects will inform my interventions.

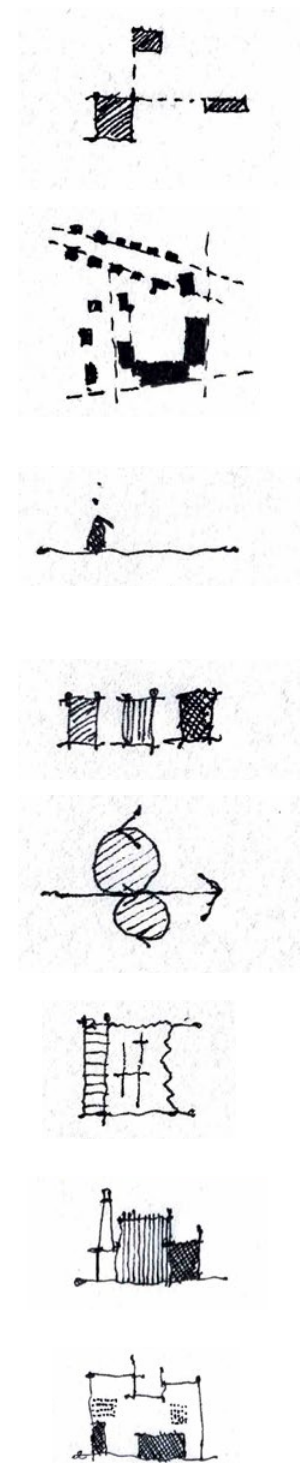


Fig 2. Methods Sketch

DELIMITATION/

The project and thesis is a speculative design, using the Lyckholms Brewery as a case study for exploring the transformative potential of industrial heritage buildings. While the brewery is currently under ongoing development, the thesis responds directly to those events but is restricted to it simultaneously. It sees itself as a parallel investigation to demonstrate how buildings with strong architectural identity and historical significance can be reused through thoughtful and feasible design strategies. Although economic factors are important for feasibility, it is not possible to give economic numbers about the proposed interventions. Nevertheless, the design aims to develop a realistic approach, grounded in feasible architectural decisions.

The project's scope is limited to the old warehouse of the brewery complex. By limiting to only one part, it is possible to examine the building's architectural characteristics and constructive interventions more deeply, for example, the structure's physical fabric, material qualities, and historical layers.

A vision plan with simplified geometry and functional zoning is a conceptual starting point for the building's transformation. However, this plan is not a binding framework or master plan. The plan does not propose a development strategy for the entire area but rather speculates on how the adaptive reuse of this single building might contribute to the future development of its surroundings.

Site visits and archival research were conducted to document the building's existing condition. Due to the structure's deteriorated state and the lack of complete documentation, some assumptions have been made regarding specific architectural and

constructive details and measurements.

Although the Lyckholms Brewery is a listed building with preservation regulations, the thesis will not take that into consideration to allow the project to explore a broader range of adaptive reuse strategies and questions.

READING INSTRUCTIONS/

The Booklet is divided into three major parts. First is the introduction, which gives information about the background, methods, and subjects of the thesis. Then, the theory part connects architectural theory and reference projects with the design proposal. The third and central part is the architectural design proposal, which includes analysis, inventory, process, and architectural plans. This is followed by the discussion debating the impact of the design proposal.





THEORY/



THEORY/

*This chapter elaborates on the theoretical framework of the thesis. It explores the history, significance, and principles of adaptive reuse as a design strategy. In addition, it elaborates on the relevance of *genius loci* (the spirit of place), the concept of emulation, and other methodological tools and approaches relevant to adaptive reuse.*

Furthermore, reference projects focusing on adaptive reuse and innovative housing solutions are analysed to identify the architectural qualities contributing to their success.

ADAPTIVE REUSE/

Adaptive Reuse is not an invention of the modern movement. It already appeared in the time of the Roman Empire. Buildings with intact and functional structural systems undergo a functional change. During the French Revolution, buildings connected to religious uses were transformed into housing, factories, or military buildings. By then, the aim of changing functions mainly relied on economic and practical reasons.

That shifted with John Ruskin (1819-1900) and Eugène Emmanuel Viollet-le-Duc (1814-1879) in the nineteenth century into two different approaches to conserving our building heritage. Le-Duc promoted a reuse strategy to adapt to the project's recent needs, including a function change. Ruskin instead wanted to preserve its historical heritage and maintain the building in its current form. Mostly, medieval and antique buildings /monuments appear to be worth conserving. During the twentieth century, the architectural view on conservation changed again after the First and Second World Wars to include vernacular architecture, such as industrial sites and historic parts of a city, as valuable.

Alois Riegel and Camillo Boito followed the debate about preservation by elaborating on the advantages of both approaches, leading to new methods based on Le Duc's and Ruskin's concepts. It becomes clear that working with built architecture is always a balancing act between heritage/preservation and new interventions/ Innovation.

Transformation projects from the past used a more pragmatic approach, while today, the topic has become highly complex. Van Cleempoel describes multiple different approaches towards adaptive reuse. The Typological approach investigates not the architecture itself

7 Concept of Conversion

Building within

Building over

Building around

Building alongside

Recycling Materials

Adapting new function

Resemble the original

Palimpsest Concept

Writing over

Underlining

Partially erasing

Interstitial writing

in the first place, but rather the existing typology on the site and tries to find other typologies fitting the spatial and structural configuration of the place.

The architectural approach investigates the form relationship between old and new elements and works with interventions in and around the building. It provides multiple tools for design proposals with the old and new architecture.

The Technical approach focuses on building performance, safety, and environmental impact. The goal is to meet modern standards through physical upgrades, such as insulation, heating, and constructive interventions.

The Programmatic approach starts with a specific function that should be implemented in an existing structure. The demand has priority, and the building is more of a vessel for its future function.

The Interior approach focuses more on the immaterial aspects, narratives, and atmospheres, aiming for a more poetic approach. It mostly starts from the inside out and creates atmospheric qualities with the existing structures. **(Van Cleempoel & Plevoets. 2019)**

For a successful transformation of the Lyckholms Brewery, it is essential to consider multiple approaches throughout the design process.

A programmatic approach helps identify functions and contributes to developing a coherent vision/ image for the area. The architectural approach integrates interventions, based on an extensive inventory and analysis of the building and its surroundings. Simultaneously, an interior approach strengthens transformation by

revealing traces and atmosphere from the past into a new design.

Genius Loci

Genius Loci is the spirit of the place, like a feeling, an atmosphere communicated through architecture, space, atmosphere and characteristics. In the theory of adaptive Reuse and architectural heritage, qualities are created through the composition of new designs and restorative interventions. It is like a constant dialogue between the past, the present, and the future. Genius Loci is highly contextual and connected to the site and surroundings. In theory, each site embodies unique, tangible or intangible qualities. Tangible elements include buildings, sites, landscapes, pathways, or objects. Mostly, they are elements in a physical form that are more obvious to address. On the other hand, intangible elements are far more challenging to collect. It could be a memory, a narrative, a written document, a ritual, a festival, traditional knowledge, or values. It demands research and close observation to find these attributes of the place. Van Cleempoel and Plevoets give examples of how adaptive reuse can recreate or persevere the genius loci of a place. First, both the place and the time need to be considered. The "Zeitgeist" relates to the past, present, and future and describes the changes in the place. Moreover, the place changes over time, so it's genius loci. **(Van Cleempoel & Plevoets. 2019)**

"...heritage is, therefore a sense of a place, rather than its physical condition..." **"Smith, (2006, p.56)**

That means that preservation is not only about the building's condition but also about the authenticity to preserve. This authenticity/ spirit could be

established through a meaningful relationship between the old and new, using tangible and intangible qualities. (Van Cleempoel & Plevoets. 2019)

"Men dwells when he can orientate himself within and identify himself with an environment, or, in short, when he experiences the environment as meaningful. " Norberg-Schulz, C. (1979, p.5)

The Lyckholms Brewery and its rich history as an important employer have inherited a place's identity. Addressing this identity in future building designs will be crucial, making its heritage part of the future. It is important to reveal the traces of the past to foster them into the future.

Aemulatio

Aemulatio is a method for adaptive reuse described in Van Cleempoel & Plevoets' books. Besides translatio, which aims for similarity and imitatio, which strives for equality, aemulatio tries to improve the building heritage by not just copying the existing elements. It tries to surpass the original elements aesthetically / functionality by improving them. There should be a clear difference between the old and the new. It appears in a more contemporary way of architecture but almost blends into the existing building stock. (Van Cleempoel & Plevoets. 2019)

Urban Regeneration

Urban Regeneration aims to conserve architectural heritage through a regional and urban planning process. Urban regeneration is not just affected by the restoration of a building. Also, keeping its intangible values like traditions, narratives, and craftsmen supports successful urban development. Adaptive Reuse in Urban

regeneration is a tool to strengthen the local identity of a place and increase the chance of innovation and development in the area. (Van Cleempoel & Plevoets. 2019)

The Lyckholms Brewery was a place where people worked and lived together with a secure future perspective. This narrative could be a driver for its transformation into something new.

Alteration

Alteration describes the work on a transformation project to change the function or appearance. It includes changes in the future use of a building, its aesthetics, and function. These interventions aim to preserve the building. (Van Cleempoel & Plevoets. 2019), Wong, L. (2016)

The change of function in terms of the Lyckholms Brewery is a necessary step to avoid further decay.

Rehabilitation

Rehabilitation is modifying a structure to a contemporary functional standard, which could be adapted to a new use of the building. This is conducted through additions, alterations and repairs while preserving the essential historical elements. The interventions could include significant structural changes. (Van Cleempoel & Plevoets. 2019), Wong, L. (2016)

INDUSTRIAL HERITAGE/

Industrial Heritage has become important in recent years. As old industrial complexes grow into the urban fabric, it becomes necessary to consider their role in the future city.

When working with industrial heritage, there are different layers. The layers create a hierarchy and are of different importance from project to project, depending on several different aspects, like the condition of the structure or the importance of the place in an urban context.

First, heritage conservation mainly aims to protect and preserve the Architecture on the site. The interventions are mostly repairs and the maintenance of the existing structures.

Second, urban development aims to create a qualitative urban life. This concept also connects to urban regeneration.

Third, architectural production mainly aims to transform space and structure into something innovative, introducing a new design language. Here, the interventions could vary from small to large. (Mieg, H. A., & Oevermann, H. 2014)

Build Infrastructure and spatial resource

Many scenarios can be created by shifting the layers in one or another direction. The built infrastructure and spatial resource scenario shifts the layers towards architectural production and urban development, and less heritage conservation. It is essential to ensure long-term reuse of the site through a new concept where the identity acts as a driver for innovation. This framework helps to decide on the impact of the interventions on the transformation process. The focus is more on revitalising and recreating the place using a major or minor architectural approach. (Mieg, H. A., & Oevermann, H. 2014)

Layer	Intervention	Goal	Assumptions	Values
heritage conservation	e.g. minimum reparation	preserve/ protect heritage/ resource	the architecture material is important heritage	e.g. heritage values/ authenticity/ accessibility
urban development	e.g. urban regeneration	livable cities/ use heritage for development	ongoing changing demands through transformation	e.g. economic value/ vision / development
architecture production	e.g. site specific/ iconic architecture	new design/ reuse for new design	the space is transformed into something new	e.g. design/ esthetics/ character

Fig 3. Industrial Heritage layer table

(Mieg, H. A., & Oevermann, H. 2014)

PROJECT REFERENCE - KOLUMBA/

Location: Cologne / Germany
Architects: Peter Zumthor
Year: 2007

The Kolumba Museum, located in the city centre of Cologne, is an important architectural project that combines the history of multiple churches. It is built around the ruins of a Gothic church and an earlier extension by Gottfried Böhm. By revealing the old foundations and interweaving them with the remains of Böhm's structure. Today it is the Cologne Diocesan Museum, which contains diverse artworks. Architect Peter Zumthor has combined the traces of the existing structures with his new proposal, harmoniously linked to the historical remains. The ochre-coloured brickwork forms a seamless connection with old ruin walls. The museum's ground floor features outer walls constructed as permeable filter masonry that allow light and airflow. At the same time, he reveals the excavation of the Gothic church and makes the Chappell from Böhm accessible. **(DETAIL Inspiration, 2007)**

Zumthor approaches the Kolumba Museum with a contemporary, sensible and material expression. The developed Kolumba brick, created exclusively for this

Ruination Aemulatio

project, contrasts with the historic masonry. Employing the principle of aemulatio, Zumthor connects past and present. The material junctions and transitions are intentionally designed. The mortar joints are adapted to the new brick composition, and the modified dimensions of the bricks allow old and new structures to be woven together seamlessly.

By exposing the traces of the site's history, such as the excavated church foundations, Zumthor makes the past accessible to the present. He carefully leads the visitors through planned pathways that reveal the place's history. The new additions on top of the ruins contrast with the existing walls but still blend into the composition.

Zumthor's strong approach to work with the material and exposing the past is a useful method that can be applied to the Lyckhoplms Brewery as well.



Material



Aemulatio



Heritage

Fig 4. Kolumba Museum Cologne / Germany

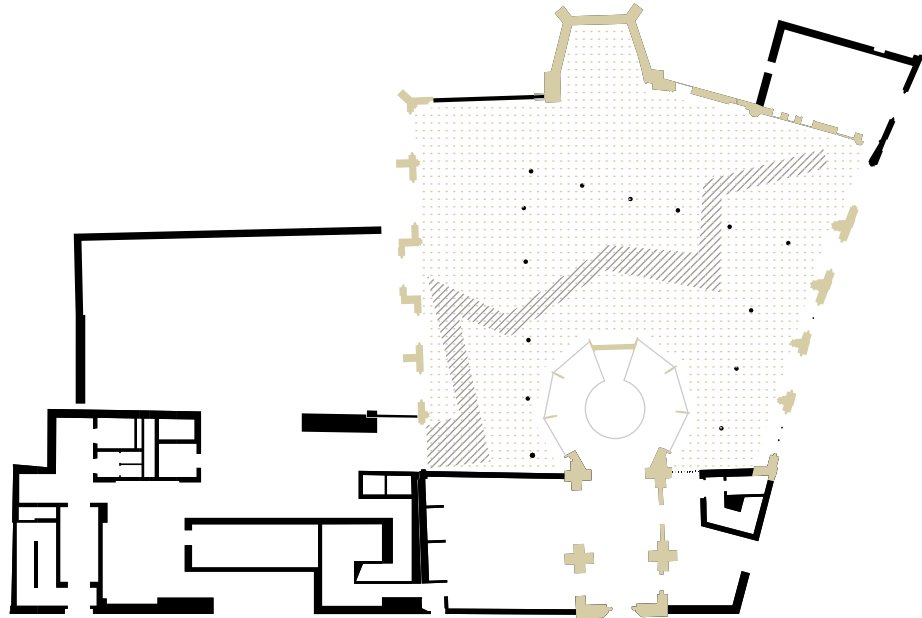
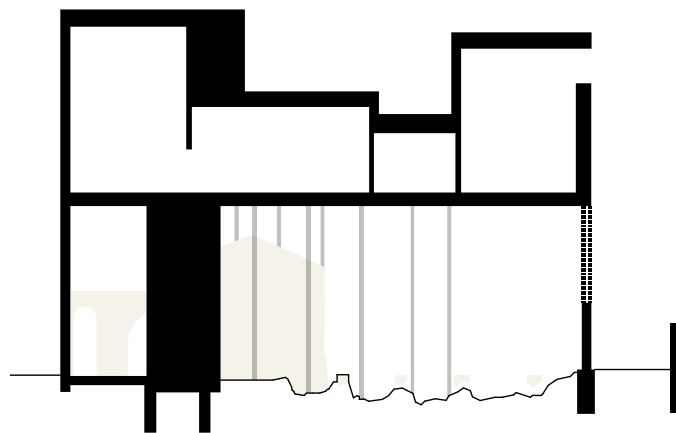


Fig 5. Section Kolumba



PROJECT REFERENCE - KUBAA/

Location: Aalen / Germany
 Architects: a+r ARCHITEKTEN
 Construction costs: 26 Mio. €
 Year: 2020

Ruination
Aemulatio
Imitatio

The Kulturbahnhof Aalen is part of the Stadtoval urban development project in Aalen, which was built on the former Deutsche Bahn railway site. The station, designed by a+r Architekten, opened in autumn 2020 and offers space for a cinema, a theatre, a music school, event halls, and restaurants. It was built on the ruins of the old train station, which burned down in 2014.

The project combines historical structures with contemporary architectural elements. While the roofs of the cross gables were reconstructed based on historical models, a long cuboid volume clad in folded perforated sheet metal introduces a modern counterpoint. Freestanding box structures support the building's load-bearing system and define different programmatic zones. The large performance halls are located at ground floor level, while the upper levels house the music school and theatre workshops. The design concept aims to connect the various cultural programs within the building.

Traces of the past are visibly integrated into the new structure. For example, door lintels made from repurposed railroad tracks are preserved and displayed, and old timber dowels remain embedded in the masonry. These elements create

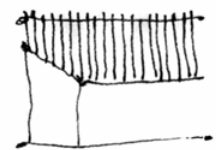
a tangible dialogue between past and present. The new architectural components, such as black MDF surfaces, smooth concrete flooring, and metal-clad columns, are contemporary, yet they do not compete with the preserved historical fragments. (*DETAIL Inspiration, 2022*)

The Kulturbahnhof is a good example of adaptive reuse. Due to the extensively damaged condition of the original buildings, the architects had greater freedom in redesigning the project. Functionality played a significant role in redesigning the train station. The destroyed façade was carefully reconstructed, offering a contemporary reinterpretation of its historic appearance. Structural and constructive traces from the past serve as memory fragments, visible throughout the building. The timber structures provide structural support and define and separate the building's functions.

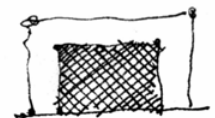
The internal wooden structure and the extensions on the roof are useful methods and interventions and could be applied to the Lyckholms brewery as a element that divides and creates new space.



Aemulatio



Addition



Wodden box

Fig 6. KUBAA Aalen /
Germany

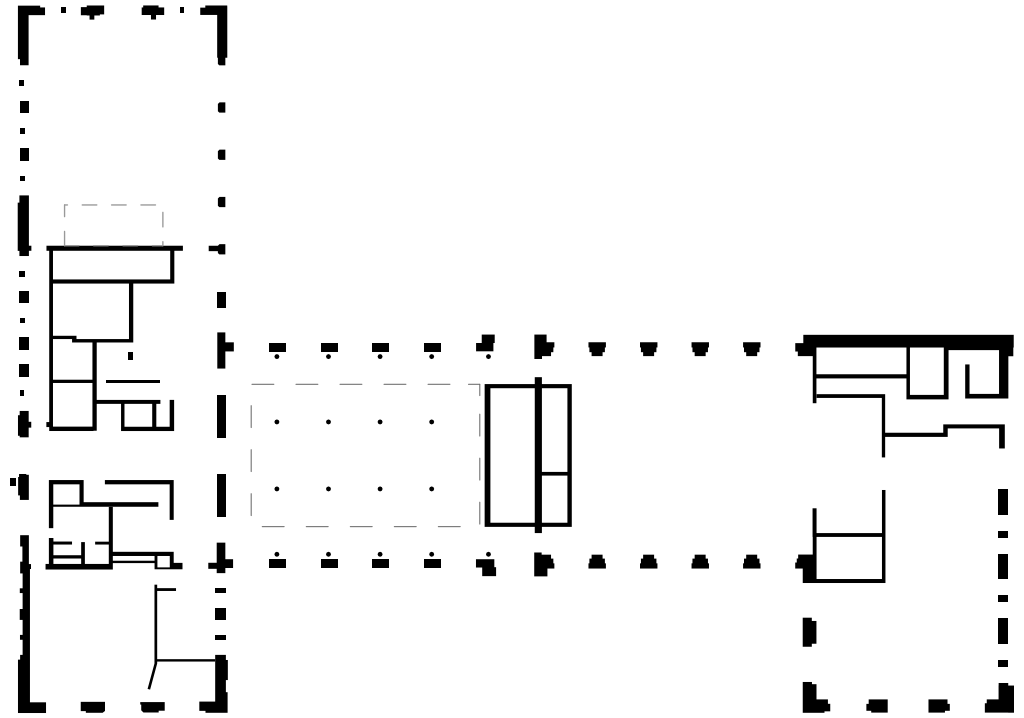
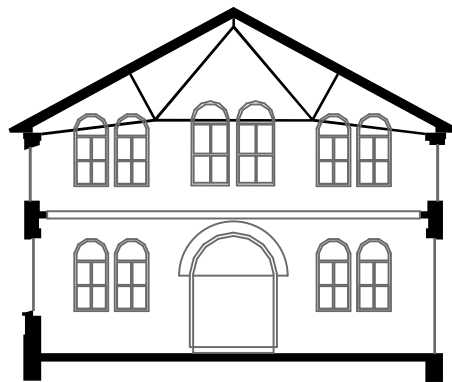


Fig 7. KUBAA Aalen
Section



PROJECT REFERENCE - FABRA & COATS/

Location: Barcelona - Spain
Architects: Roldán + Berengué
Year: 2019

Build Infrastructure & spatial resource Adaptive Reuse

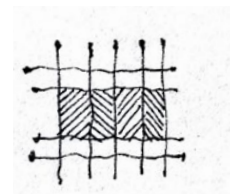
The textile factory has been restored and integrated into the BCN Creation Factories network, providing the neighbourhood with over 28,000 square meters of cultural and community facilities. It includes social housing, which is a first within this initiative. Initially constructed 1905 for thread storage, the building measures 100 by 15 meters and stands 11 meters tall. A concrete mezzanine level divides the space into two floors. The original structure consists of a solid brick masonry, traditional Spanish roof tiles, and an interior steel framework. A repetitive bay module characterises the building's design, with steel trusses supporting the roof. The architectural intervention engages closely with the existing logic of the structure, working within its physical, spatial, and historical parameters to enhance the building's functional efficiency while preserving its original character (Viva, A. 2021).

The project balances preservation and transformation, emphasising the industrial typology. The factory is transformed into a mixed-use site, integrating social housing in the industrial landscape. Residential units are distributed through-

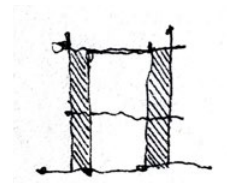
out the building, with dual entrances and natural light access from both façades. This spatial configuration improves daylight quality and creates informal communal spaces that promote social interaction among residents.

A lightweight timber construction system divides the interior space. These prefabricated wooden modules are placed in the middle of the building, creating a buffer zone between the outer walls and the new apartments. This buffer zone regulates indoor temperatures. The transformation shows how industrial heritage as a spatial resource could be used to transform it into a mixed-use building complex.

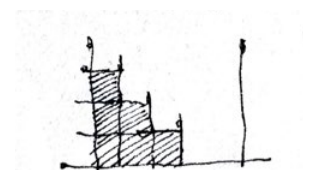
The different thermal buffer zone and the wooden modules are a smart way to work with the existing structure. Since the Lyckholms Brewery faces similar challenges this strategy is useful to apply.



Apartments



Buffer zone



Vertical space

Fig 8. Fabra and coats
- Barcelona

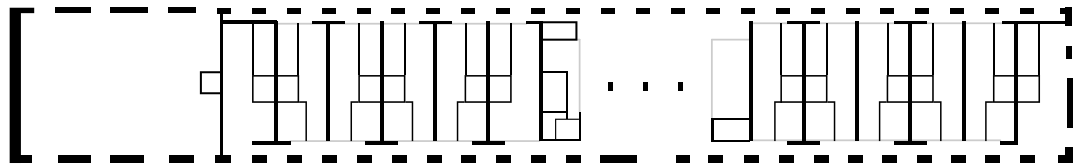
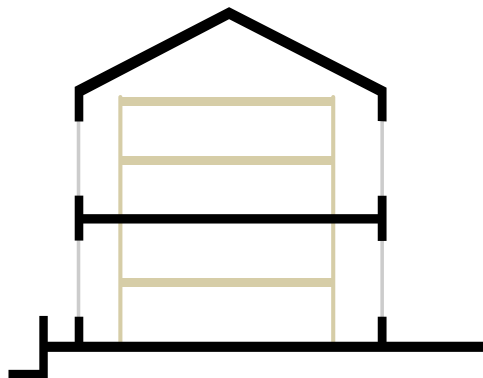


Fig 9. Fabra and coats
- section



PROJECT REFERENCE - HUNZIKER AREAL/

Location: Zürich, Switzerland
Architects: Duplex
Year: 2015

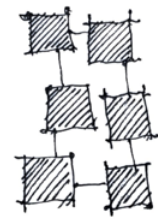
Satellite apartments Innovation

The Hunziker Areal in Zürich-Leutschenbach is a project initiated by a cooperative housing association in Zürich. Situated between industrial and commercial areas, the development responds to rapid demographic shifts by offering high-quality living standards while experimenting with new housing typologies. The area combines residential units with office spaces, shops, and communal amenities, functioning as a small, self-contained urban district.

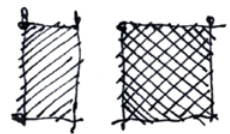
Duplex Architekten, a locally renowned architectural office, designed one of the residential buildings. This building includes both conventional apartments and so-called "satellite apartments." The satellite apartments are organised into five to six smaller private units, each linked to a larger, shared communal space. The typology allows residents to enjoy privacy within their units while experiencing a sense of community through shared living areas. A single cluster apartment can accommodate between seven and twelve individuals. (Hildebrandt, 2022)

The satellite apartments are an innovative approach to multi-generational and mixed-demographic living. Diversity is seen as a driving factor in the success of the concept. The communal spaces are connected to the building's stairwells, creating a transition between public and private zones. The average square meter per person remains comparable to that of a conventional apartment, making it a spatially and economically efficient housing model.

The Lyckholms Brewery could benefit from new housing concepts to create and strengthen the identity through an innovative approach.



Satellite apartment



single and double



private Bathroom

Fig 10. Satelite Apartment Hunziker areal





MAIN MATERIAL ANALYSIS/



PROJECT INTRODUCTION/



Fig 11. Schwarzplan
M1:75000

The site is located in Gothenburg, Sweden's second-largest city. With around 600,000 residents, the city is growing rapidly, and the demand for high-quality living space is increasing, making it both more expensive and harder to secure. Gothenburg's history as an industrial city is still visible, with many former industrial buildings now integrated into the urban centre. The Lyckholms Brewery is part of this evolving fabric and faces major challenges regarding its existence and future development. (*Gothenburgs Stad 2018*)

All kinds of infrastructure surround the site. West of the area is Mölndalsvägen, one of the main streets between Gothen-

burg and Mölndal. Tram lines 2 and 4 are connecting the area. The closest Tram/Bus Stop right at the crossing towards Lyckholms is "Göteborg Almendal." Within five to ten minutes, both Mölndal and Gothenburg centres are reached. A bike path from the north is installed next to the World of Volvo, leading to the Almendal/ Lyckholms site, but it has not been extended further. Towards the east is the motorway E6/E20 and a railway. To enter the E6, it is a five-minute drive down the Mölndalsvägen to reach the highway. The new underground train project, Westlink, in Gothenburg, is building a stop right next to the site. A stop could be integrated into the development of the new

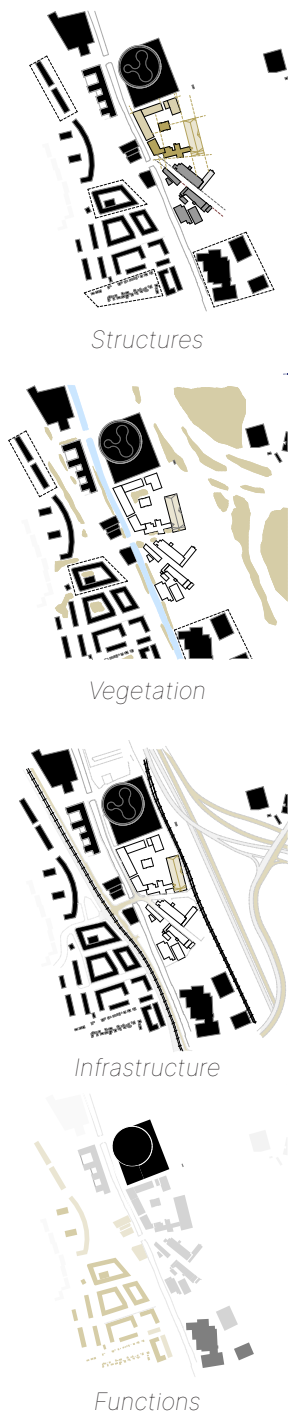


Fig 12. Analysis site

area. To the south, the area is closed off.

The site is well-connected and offers various transportation methods, making the development for residents and companies even more valuable.

The Mölndalsån, a small river located directly at the site, has caused several floodings in recent years. To address this problem, a flood zone with erosion protection will be built along the Mölndalsån. The erosion protection plan is a nature-adapted combination of stone lining and planting vegetation. Multi-layered vegetation, including field layers, shrubs, and trees, will be added in the flood zone. The primary intervention will be added along the Almendal Factory. (Göteborgs Stad (n.d.)

The vegetation and flora are rare. Several trees grow around the Lyckholms Brewery and the Alemndals factory towards the river. A small park area is located around the administration villa. Fields of dense forest are found behind the motorway E6/20.

Introduce some green areas on and around the site to improve the quality of life of future tenants and visitors. Recreating the green buffer area towards the river will deliver a qualitative natural space.

The area is divided into different types of functions. All buildings on the east side of the river serve industrial or commercial purposes. The world of Volvo is marked as a special structure featuring an experience-based program. There is a car mechanic and a parking garage to the south. Mixed-use buildings on the west side of the river are oriented towards Mölndalsvägen. On the ground floor are mostly shops and other service-oriented functions. The Lyckholms areal is mainly used for commercial purposes.

The old structures accommodate rooms for artists, a car mechanic, and an event location. The Almendal area is used by offices, a hotel, shops, and a restaurant.

Proposing residential structures east of the riverside would benefit the whole of Almendal Valley. The Mölndalsvägen could develop into a vibrant promenade connecting the neighbourhoods.

The structures around the areas differ significantly in size and height. We find large industrial structures in the south and multistorey family houses with up to 8-9 floors east of Mölndalsvägen. The Majors House, a typical Gothenburg housing typology, is found at the crossing to the Lyckholms area.

There are more residential typologies to the southwest, like row houses and single-family homes. Today, the Lyckholms brewery consists of seven different building parts. One is the PEAB office tower, the newly built office buildings Hus C and D, the old maltery, the main brewery building with extensions, and the warehouse in the eastern part.

The area has a large structural diversity. This increases the possibilities for future extensions in the area but also demands careful planning to introduce a common typology fitting its surroundings.

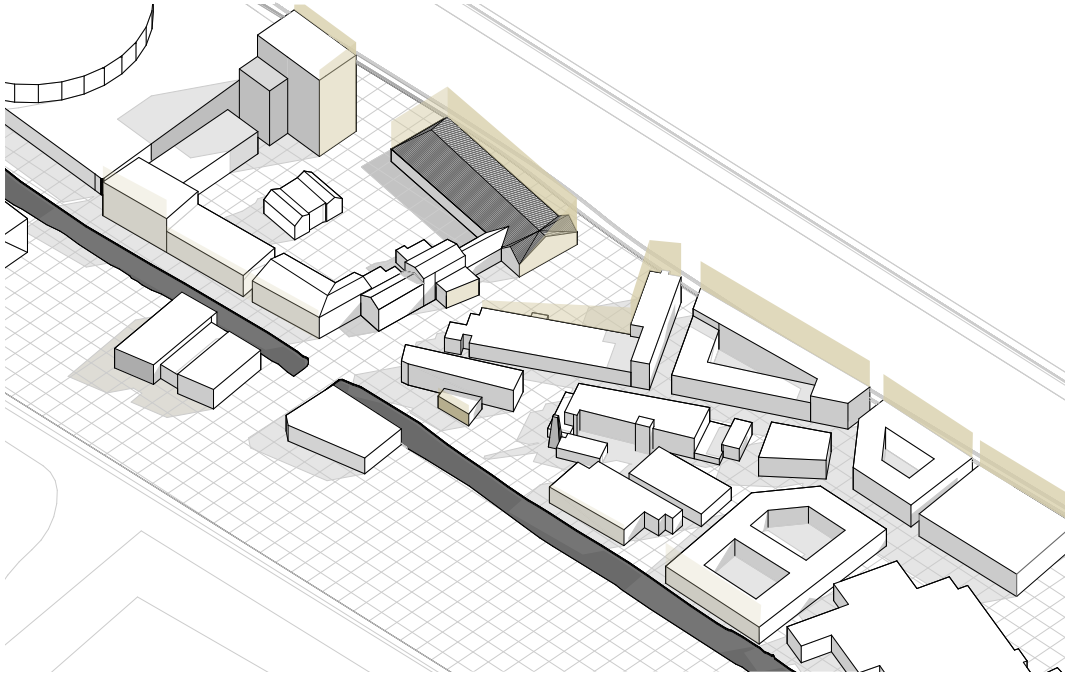


Fig 13. Noise
Exposure

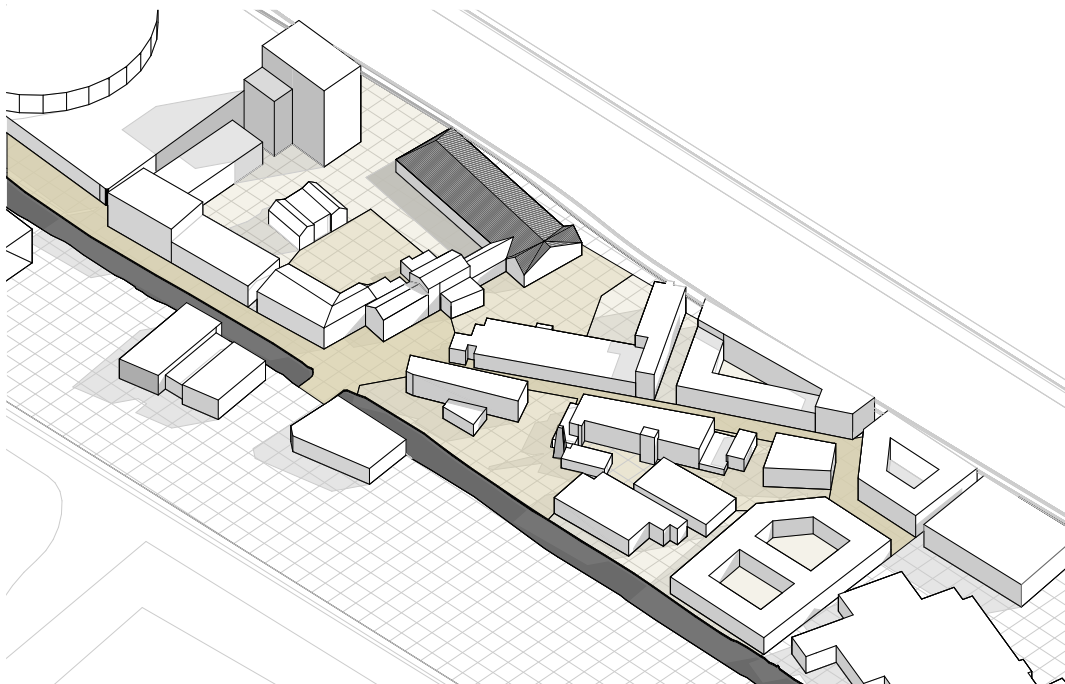


Fig 14. Public
Privat Spaces

1. World of Volvo
2. PEAB Tower
3. House B
4. House C
5. Manager Villa
6. Malt House
7. Brewery
8. Warehouse
9. Almedals Fabriker

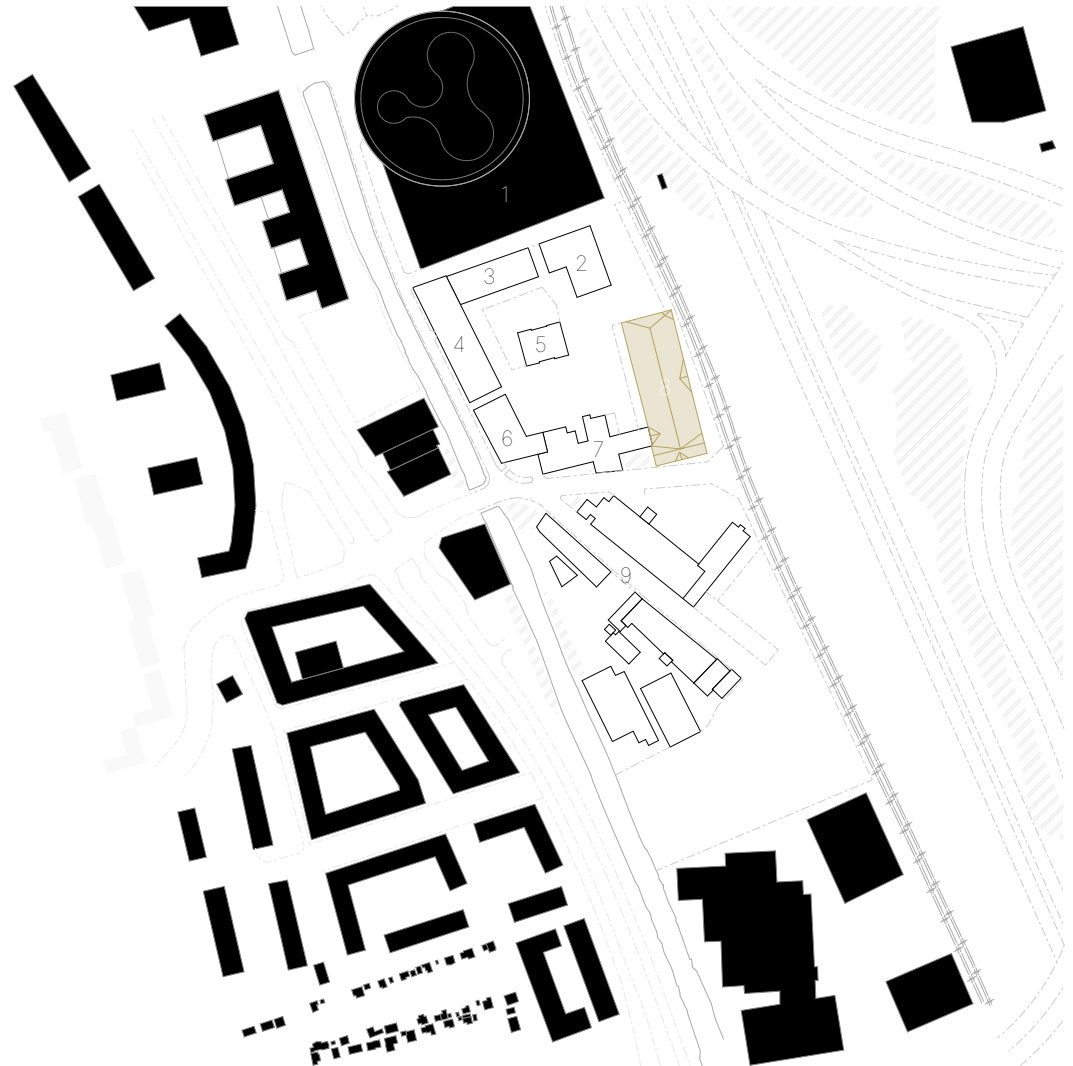


Fig 15.
Siteplan
M1:1000



Fig 16.
Historic
development

INVENTORY/

The historic Lyckholms Brewery is located south of Gothenburg, next to the new World of Volvo Museum and the Almen-dal industrial site. The brewery was built in 1880, and the first beer was brewed in 1881. In 1927, Pripps, another renowned Swedish brewery, acquired Lyckholms, merging it into AB Pripps Bryggerier. Most of the original buildings were constructed between 1881 and 1900, with some additions made until 1950.

Today, only three buildings from the original complex remain: the old warehouse, the brewery, and the maltery. The site was primarily used for beer production, a function still evident through old mounts and gears embedded in the structure. In the late 1900s, car mechanics and storage companies rented out some of the spaces, leading to interior modifications such as the installation of lightweight office partitions and toilet facilities.

Around 2015, the building lost its primary function and has remained nearly vacant for the past ten years. This vacancy has led to rapid structural decay, turning the site into a place for illegal parties and providing shelter for homeless individuals due to its proximity to central Gothenburg.



Structure

The warehouse consists of multiple sections with different structural systems. The exterior walls are constructed of brick, varying in thickness between 0.9 and 1.4 meters depending on the façade.

Due to historical modifications, the interior is divided into various rooms with different structural layouts, though all share concrete ceilings. The ground floor features a sequence of vaulted rooms facing the courtyard. The workshop spaces have ribbed ceiling structures supported by steel beams and columns. The southern part of the building consists of concrete and brick walls/ceilings across multiple levels, with interior wall thicknesses ranging between 50 and 60 cm.

The ground floor functions as a structural base for the first floor, which is primarily supported by wooden columns. Some concrete walls extend to the roof.

Light and Space

The building offers a variety of spatial experiences. The vaulted rooms on the ground floor create an enfilade sequence, complemented by two corridors on either side.

The workshop rooms feel more enclosed, with lightweight internal wooden structures. The southern section is characterised by smaller pathways, lower ceilings, and vertical circulation via staircases.

The current lighting conditions within the building are far from optimal. There are no windows facing the courtyard and only a few on the east and south façades, and many have been closed up with bricks. With a building width of 30 meters and a natural light range of a maximum of 7 meters, programmatic or structural adjust-

Fig 17. Entrance Lyckholms area

Fig 18. East Façade

ments will be necessary. Some skylights in the roof bring additional light into the first floor.

Façade

The façade consists of different historical elements, showing the building's alteration over time.

East façade: This is the main façade, featuring historical elements such as arched and horizontal windows, cornices, ornaments, fonts, and large gates. Black brick stripes structure the composition. The façade is in poor condition and requires extensive restoration. Graffiti is covering the wall and moss is growing between the bricks. The plastered socket is deteriorating. Most windows are either broken or sealed. Technical elements like vents and rainwater pipes are in poor condition, though the bricks are generally in acceptable shape. A plastered section with large cracks, likely from a previous renovation of the beer storage room, also requires attention.

South façade: This is in the best condition, featuring multiple windows and a dormer with a historic wooden door, likely used for loading and unloading goods. The brickwork is well-preserved, but the socket requires significant repairs. The dormer has a distinct brick arrangement and a continuous roof cornice.

West façade: This façade is divided into a historical section and a newer plastered section where the former extensions were previously located. The historical part, similar in condition to the south façade, has mostly broken windows and deteriorated rainwater pipes. It connects directly to the other brewery buildings, with a shared downpipe at the corner preventing direct material contact. The newer plastered section, facing the courtyard, is painted



red and features overhanging eaves. Rainwater pipes are unevenly distributed, and the plaster and paint are in poor condition. Structural elements such as tension anchors are visible, stabilising the façade.

North façade: A mix of old and new elements, this façade features a rusticated corner extending from the west façade but cut off halfway down. A dormer, slightly off-centre to the west, has a wooden door and brick construction. Tension anchors stabilise the façade. Most of the north façade is plastered, similar to the east façade, but with two exceptions: symmetrically placed double windows on either side of the dormer. This façade also requires major repairs to ensure longevity.



Fig 19. North Facade

ble and should be demolished. There is potential for multi-level use with ceiling heights ranging from 5 to 5.2 meters.

Several large passageways have been sealed and replaced with smaller doors. Some original brewery elements, such as pipes and technical installations, remain. Vertical circulation is limited, with only a few stairs in the southern section providing access to the first floor. Overall, the interior requires extensive cleaning and demolition of temporary structures.

Roof

The roof has undergone multiple repairs, which is evident from the various types of metal sheets used. The condition varies significantly across parts. Several chimneys are visible towards the west. The geometric configuration transitions from a hip roof to a saddle roof towards the south. There is a dormer extension at the intersection between the brewery and warehouse, and another dormer is on the south façade. The roof's southern section is in poor condition and requires urgent repair. Some skylights are visible.

Interior

The interior is in severe disrepair due to prolonged vacancy. Various rooms have been occupied and left in a desolate state, with damaged plaster, paint, and tiles. The walls are dirty, covered in graffiti, and littered with trash.

Despite this, the primary structural system, which includes thick walls and concrete ceilings, remains intact and is suitable for future reuse. The walls and ceilings are overdimensioned, allowing for new openings if necessary. However, the lightweight wooden structures are unsta-

Feasibility and Heritage

The feasibility of transforming Lyckholms Brewery depends on utilising its existing space. While the façade, roof, and interior are in poor condition, the structural system remains intact and shows valuable spatial and architectural qualities. A radical revitalisation is necessary to preserve the site's heritage.

The building's location near the city centre, Liseberg, and Korsvägen increases its development potential. However, its proximity to the motorway and railway creates acoustic challenges. The 30-meter building width challenges specific spatial programs and creates opportunities for unique design solutions.

The thermal and insulation properties of the building are unknown, which could present further challenges. A comprehensive technical concept for ventilation and heating is also required. Rather than focusing solely on economic feasibility, this project prioritises the cultural and architectural value of adaptive reuse. The existing structure offers opportunities for large-scale interventions while preserving the site's heritage.

Future Plans

The Lyckholms Brewery industrial site has undergone significant changes in recent years. Many historical buildings have been demolished and replaced with office and commercial developments. The City of Gothenburg and the property owner are currently working on their development plans. Since this process is unfolding simultaneously with this thesis, future decisions remain uncertain. Initial proposals suggest demolishing the old warehouse for additional office and commercial spaces.



Fig 20. Vault room

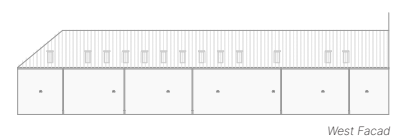
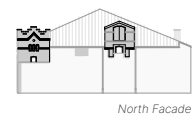
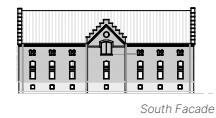


Fig 21. Facade Drawings



South facade



Administration Villa



East facade



Main Brewery building



West facade



Entrance courtyard



House C and D



View canal south



View canal north



Interior tub room



Entrance courtyard



Vault rooms alterations

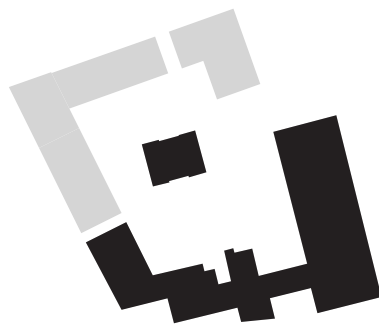
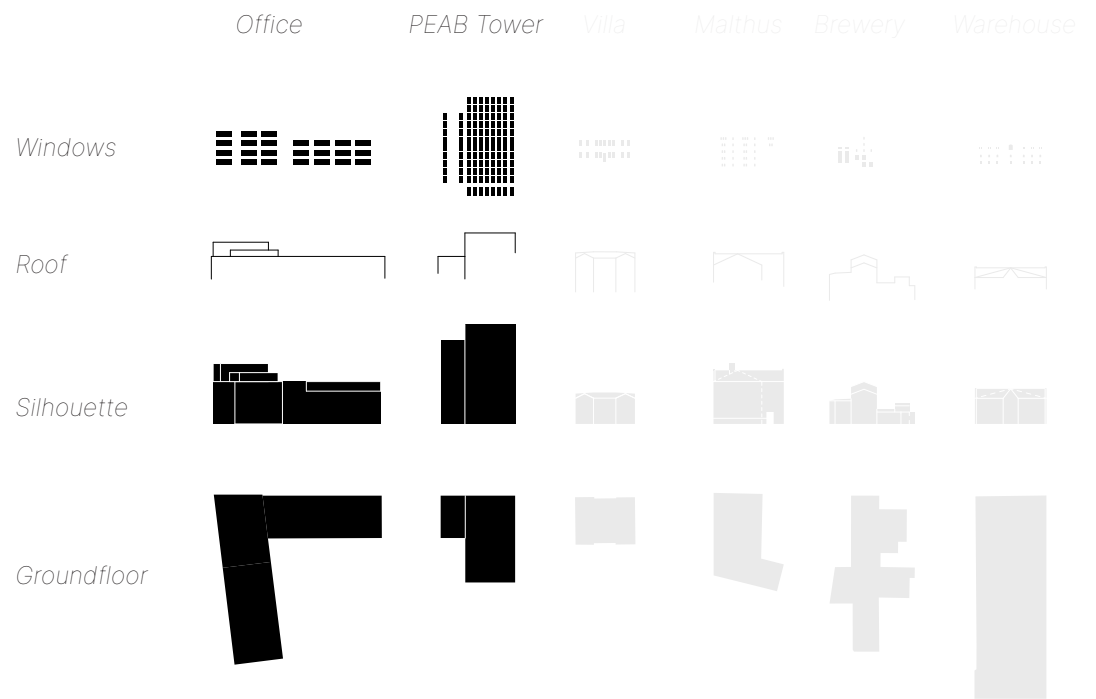


Fig 23. New building stock



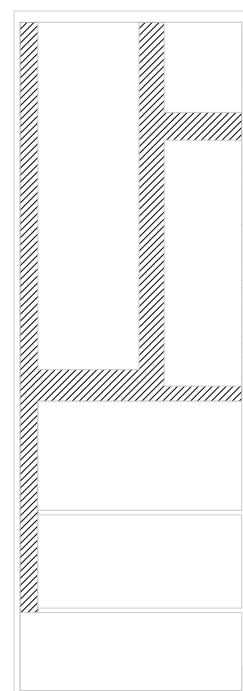
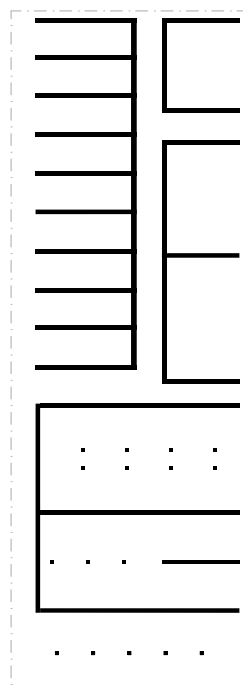
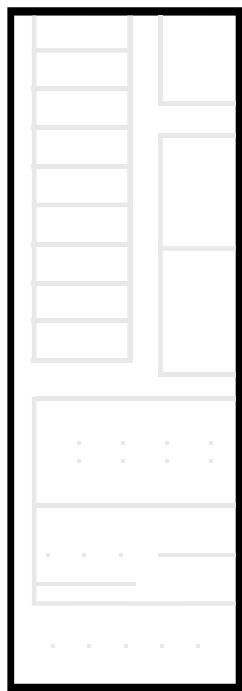
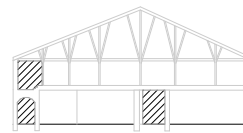
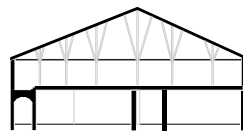


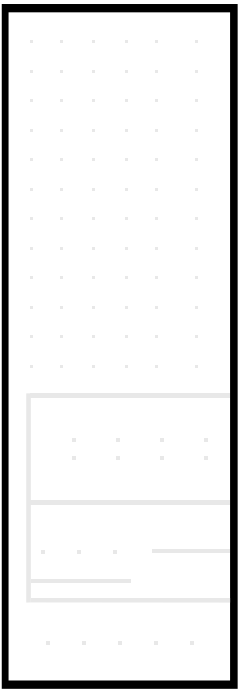
Fig 24. Gf analysis

Ground floor
Interior/Exterior

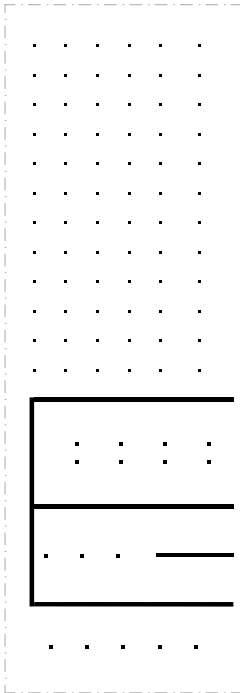
Ground floor
Structural parts

Ground floor
Transfer Area

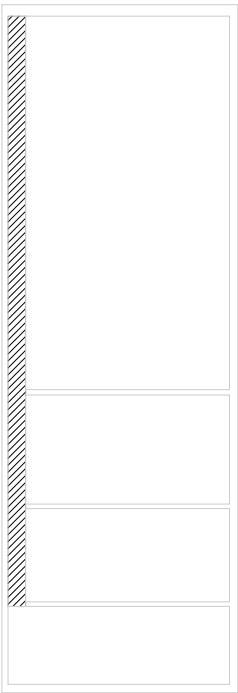
Fig 25. Ff Analysis



First floor
Interior/Exterior



First floor
Structural parts



First floor
Transfer Area

QUALITIES AND PROBLEMS/

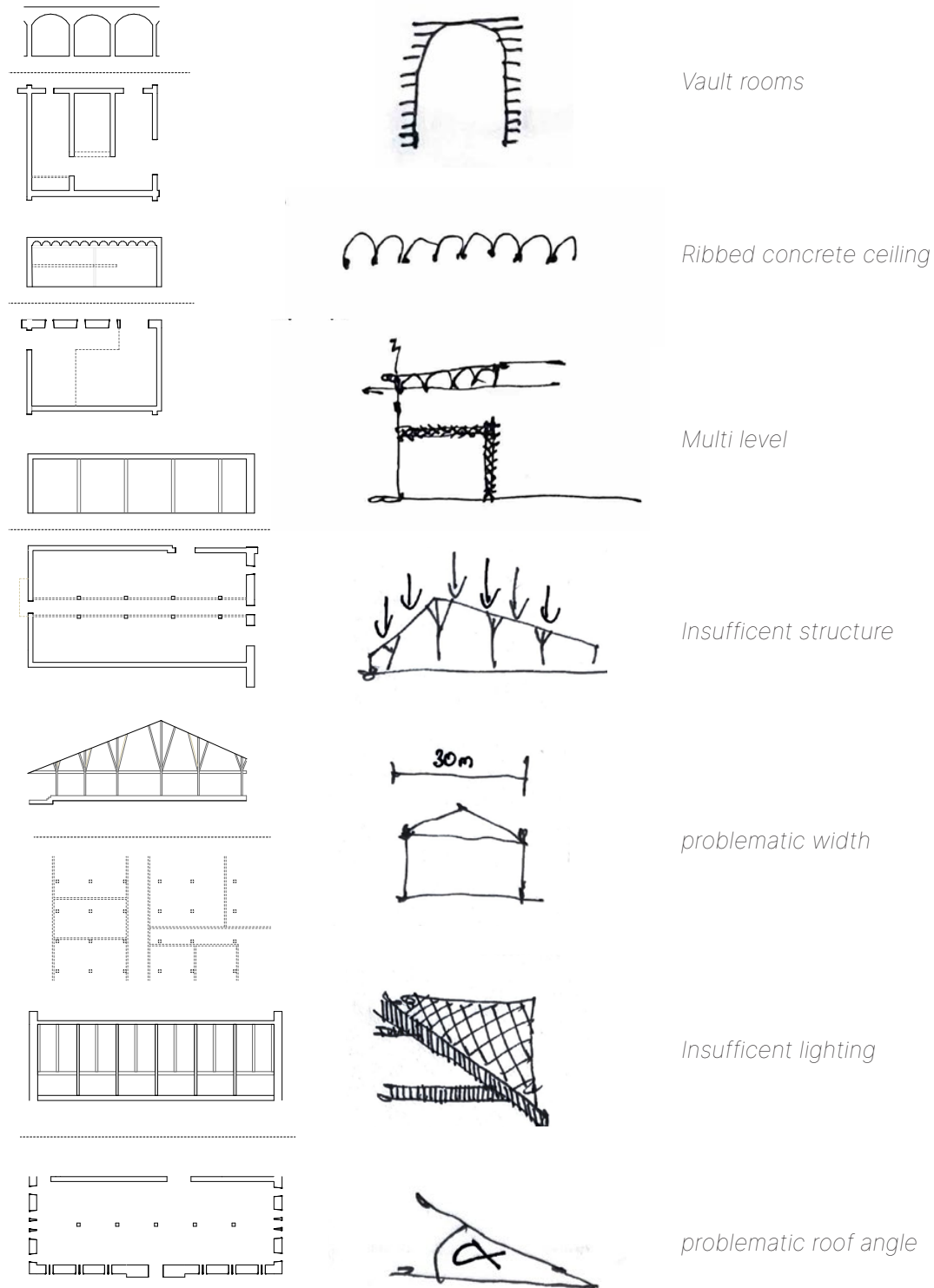


Fig 26. Probelms and Qualities

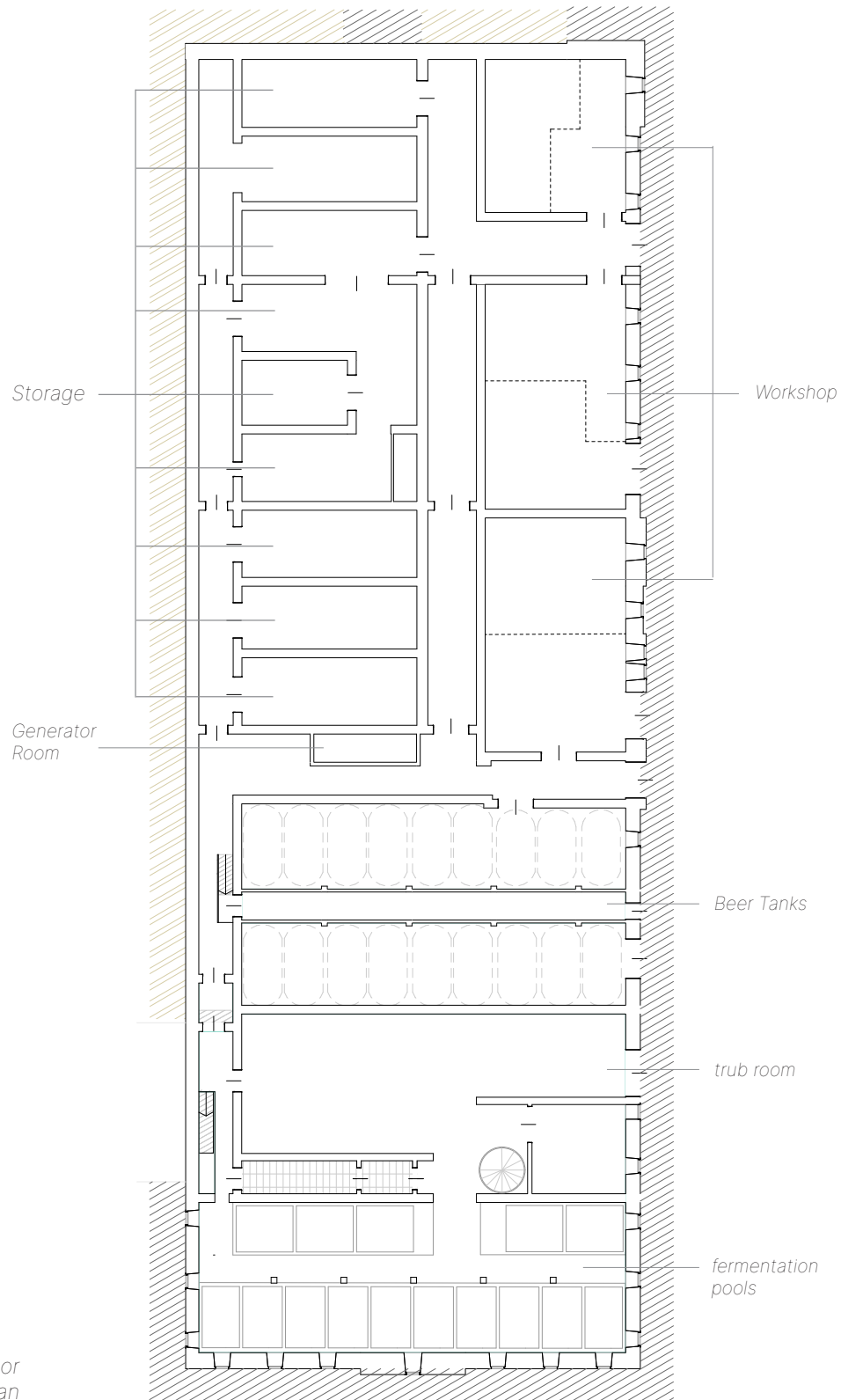


Fig 27. Existing Floor Plan



MAIN MATERIAL DESIGN METHODS/



WORK PROCESS/

The work process evolved into a methodological guide for approaching transformation projects during the building stock analysis. Throughout the design process, it became clear that the inventory of the existing structure holds the highest value in understanding how transformation should proceed.

An extensive analysis of the building, including its history, future potential, and stakeholders, makes it possible to identify specific qualities, problems, and opportunities. In addition, theoretical frameworks offer different scenarios and approaches for transformation. Together, these two tools form a feedback loop incorporating an essential third factor: feasibility.

Feasibility acts as a control system, evaluating proposed interventions against various parameters specific to the project. This evaluation must be adjusted to

each project's context. If the intervention is approved as feasible, it evolves into a Manifesto, a guiding design principle for the project. These manifestos form the foundation for the ongoing design process. If an intervention does not pass the evaluation, the loop returns to the inventory phase to seek new solutions.

The inventory of the Lyckholms Brewery revealed several challenges that required more drastic changes. The roof, for example, was in poor material and structural condition. It was also unsuitable for the new proposed function due to its steep angle, limited width, and outdated structure. This led to the decision to remove the roof entirely, which became Manifest Two in the design process.

General Design Loop

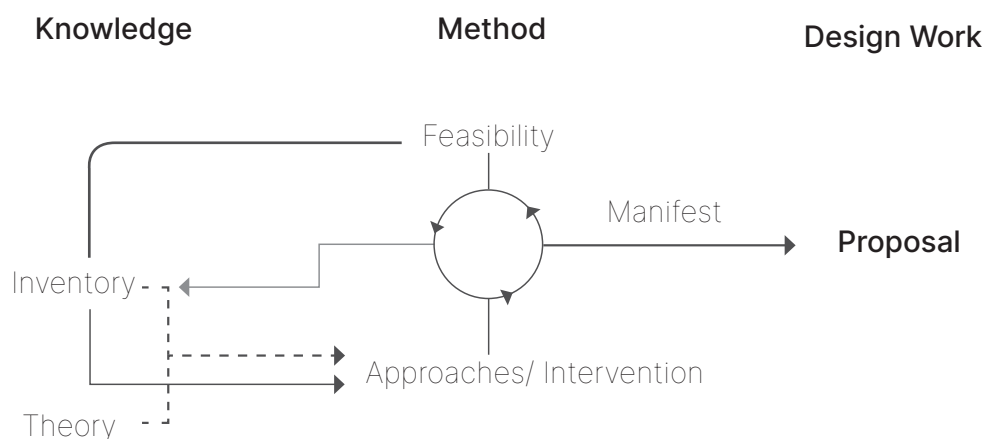


Fig 28. Design Loop

Manifest Development

*Choosing suitable
Methods and Principles*

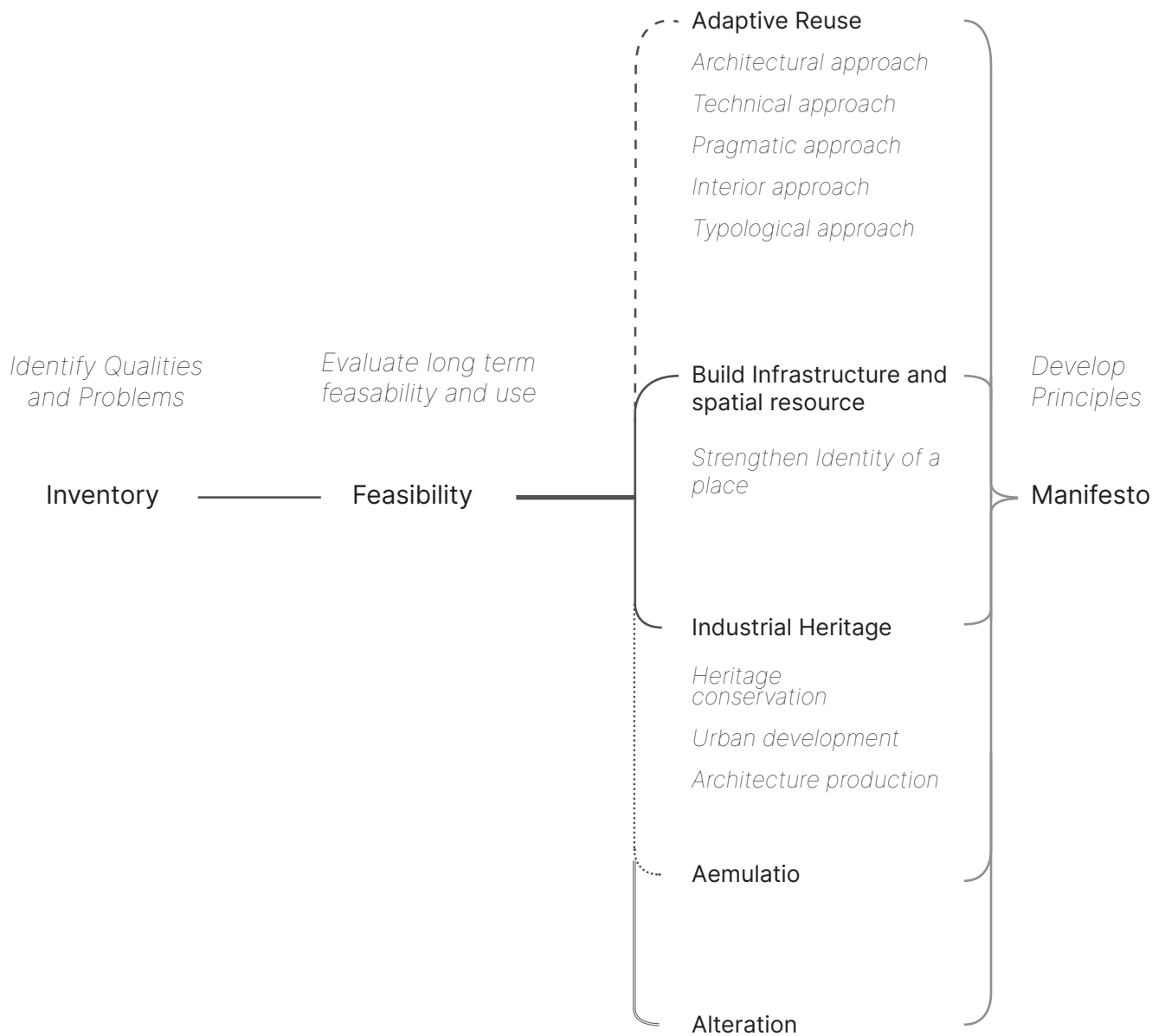


Fig 29. Manifest development

MANIFEST/

I

PRESERVATION THROUGH THE REVITALIZATION OF STRUCTURE

Repurposing the space for a new function will preserve its essential structure, key qualities, and characteristics. The new function will integrate necessary preservation while adapting the space to serve a new purpose.

PRIORITY HIERACHY FOR INTERVENTIONS

FUNCTION

The functionality of the intervention must be the highest priority to ensure long-term use.

GUIDELINE

supporting the function

II

PRESERVATION THROUGH TRANSFORMATION

Transformation drives Innovation, which could also drive preservation. Change is an act of transforming and a necessary step in preserving a place's heritage.

HERITAGE INNOVATION

Heritage and Innovation are both important for the development and success of the transformation. It is a look back and forth to see if the interventions are correctly chosen.

show traces, increase accessibility

creating identity to support the development of innovation

III

PRESERVATION THROUGH IDENTITY

A place's physical transformation often results in a transformation of its identity. Recreation is also a chance to make the past and its traces visible and foster new ideas for its long-term acceptance and development.

FEASIBILITY

Feasibility is important to achieve credibility for the interventions.

evaluation in multiple subjects (effort, economic, benefits, problems)

FEASIBILITY STUDIES/

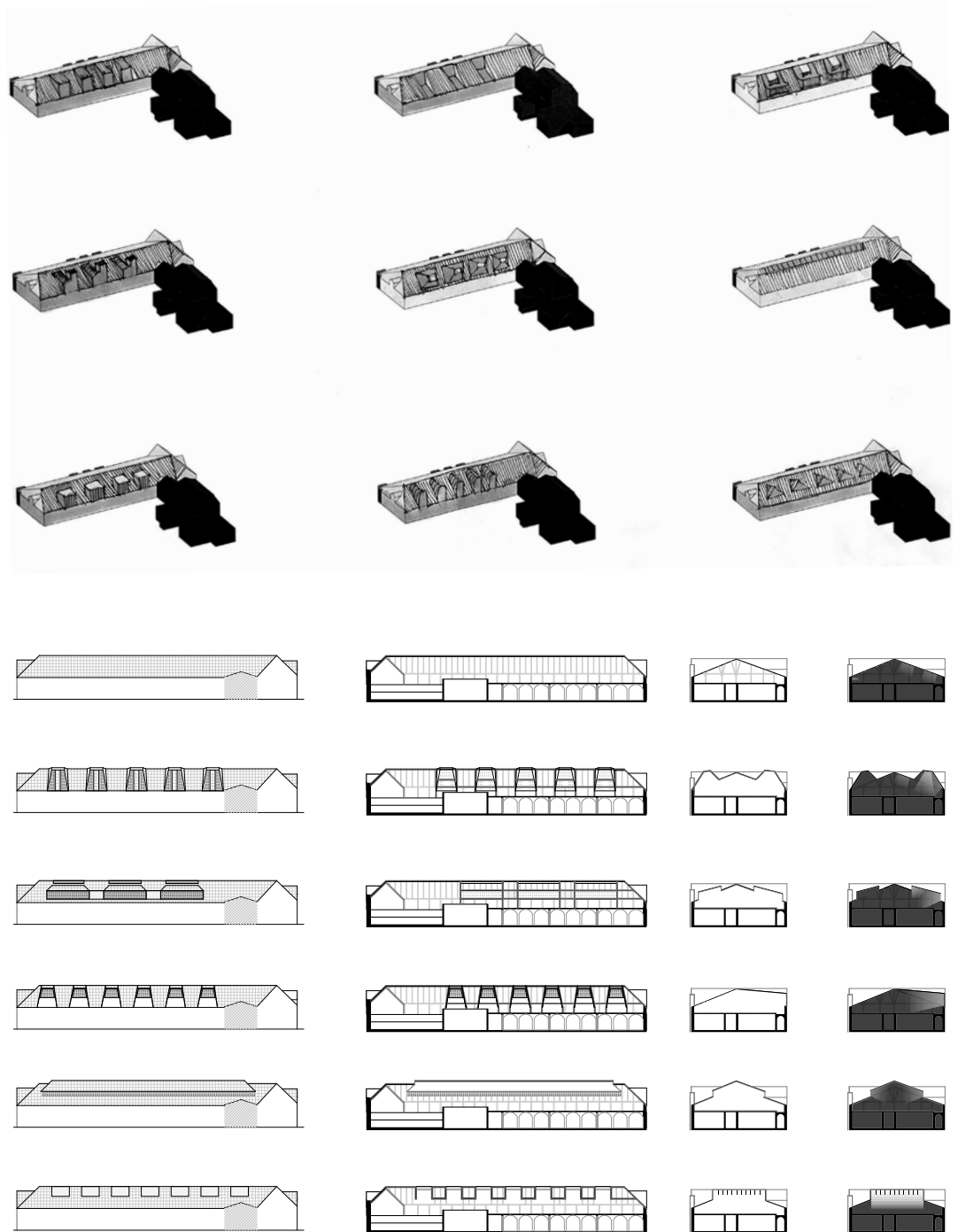


Fig 30. Feasibility studies

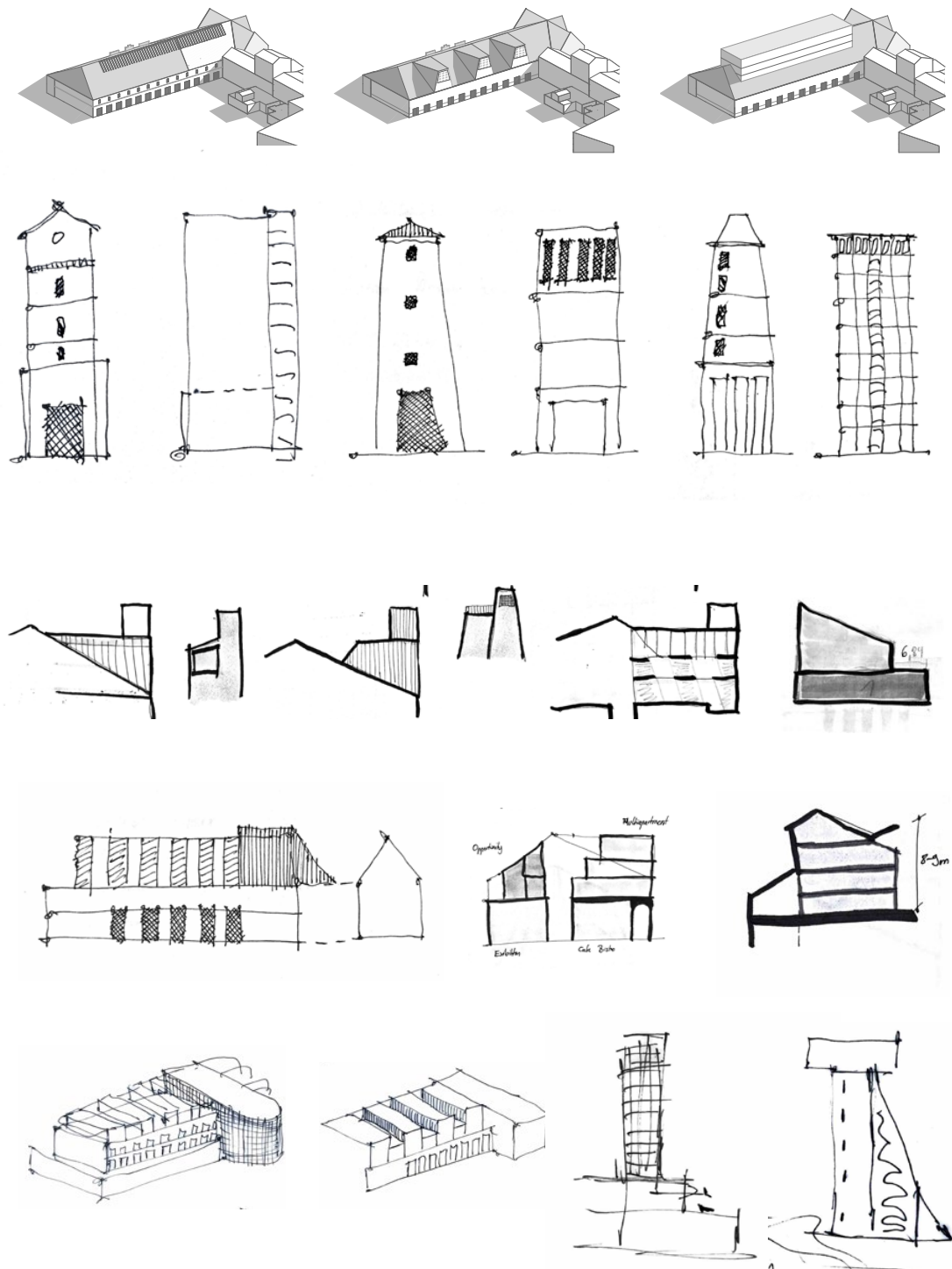
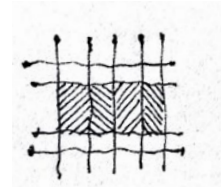


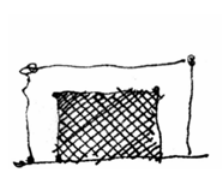
Fig 31. Feasibility Studies 2

REFERENCE METHODS/

Several interventions and methods used in the reference projects will be applied to transform the Lyckolms Warehouse. One of them would be implementing wooden structures in the historical part of the building. The integration of satellite apartments ensures a diverse and versatile housing offer. The separation of newly added structures in a structural and physical way like the 530 Dwellings or Farba an Coats project. The vertical communication connecting old and new. Creating different layers of material usage and design languages to work within the method of Aemulatio. Also making the traces, heritage and qualities accessible to the present.



Apartments



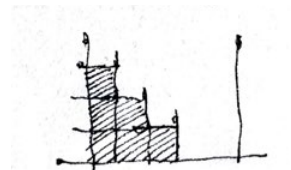
Wodden box



Satelite apartment



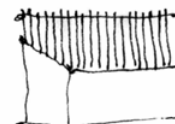
Seperated Structure



Vertical space



Aemulatio



Addition



Heritage

Fig 32. Used method references



MAIN MATERIAL DESIGN PROJECT/



CONCEPT/

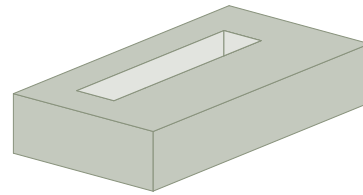
The analysis shows the necessity of changing the function of the building into something that could maintain and even prolong its lifespan. A mixed-use program, will increase the chances to ensure this ongoing maintenance of the existing structure.

The Lykcholms Brewery will transform into the Lykcholms Kulturhus with residential functions. The ground floor is utilised and open up for public use as a restaurant/ cafe/ Atelier and event location. The southern part is used for necessary technical space and the background functionsof connected to the performance hall. The administration and theatre school are also located there.

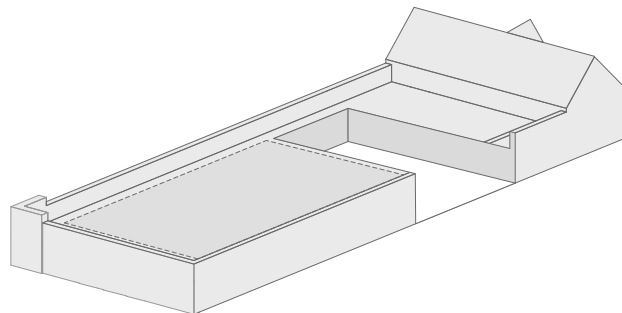
To emphasise its new function as a Kulturhus with a large performance hall for approximately 300 people, will be a new extension towards the courtyard amplified, referring to the old, already demolished brewery extension. The addition will be the new entrance for the Kulturhouse. This entrance is emphasised by a 25-meter-high tower, creating a landmark and identity for the new transformation project.

An new residential extension is placed on top of the existing brewery. Offering three different type of apartments; family apartments for long term user; opportunity apartment for short term user and the satelite apartment that creating a flexible living situation for old and young. The annex extension is vertically connected to the ground floor through an atrium.

RESIDENTIAL



KULTURHUS/ADMINISTRATION



PERFORMANCE HALL / FOYER

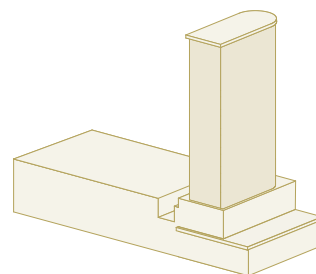
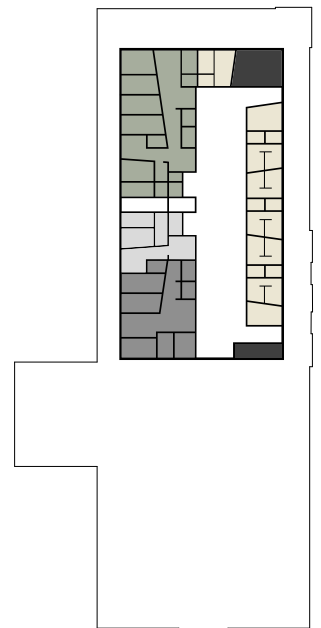


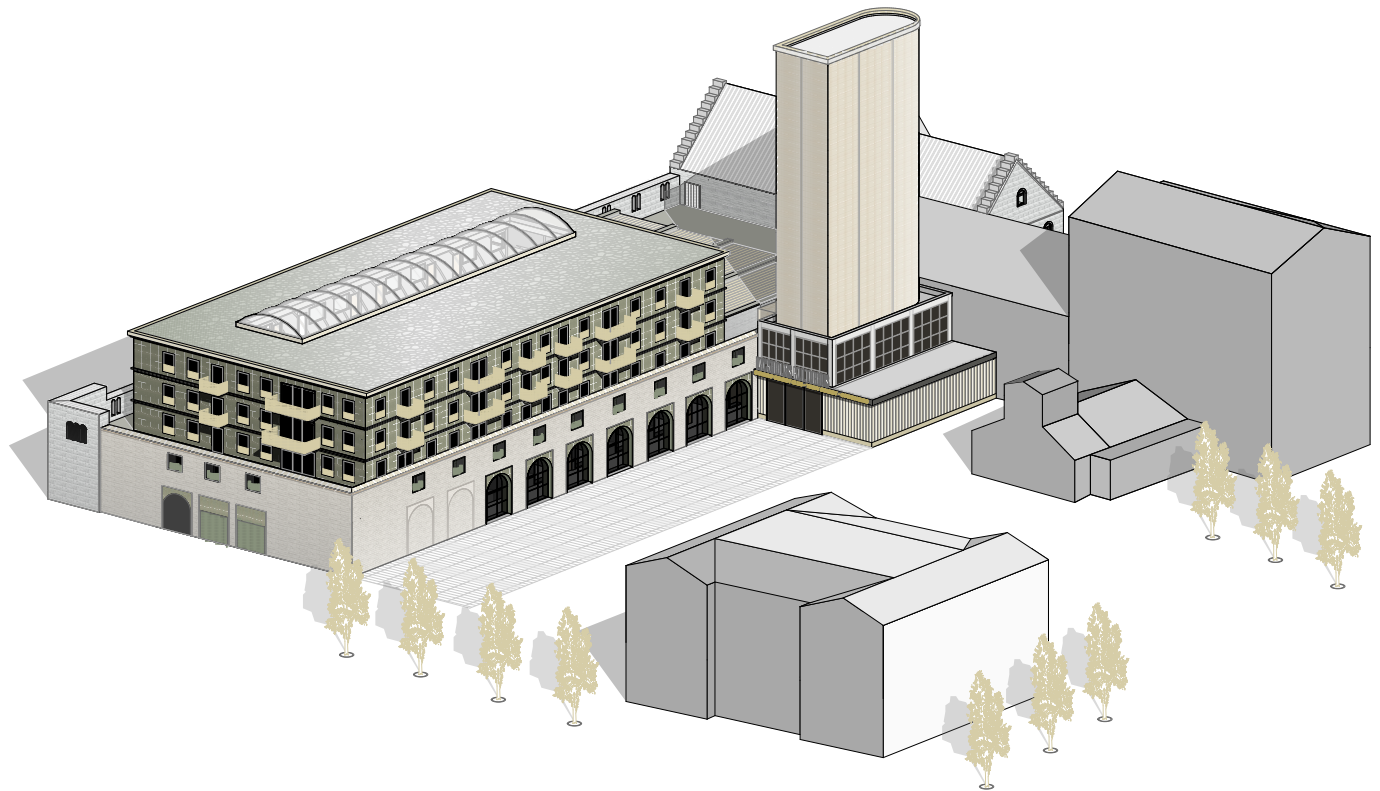
Fig 33. Function
Isometrie

ROOM PROGRAMM/

Lyckholms Kulturhus

Kulturhus	2240m²	1226m²	Residential
Exhibition			Entrance
2x Atelier	2×155m ²	32m ²	Residents Entry
		19m ²	Post room
Restaurant/Cafe		17m ²	Trash
Kitchen	87m ²	20m ²	Staircase I
Staff room	25m ²	20m ²	Staircase II
Cold Storage	12m ²		
Storage	23m ²		
Trash	20m ²	2× 130m ²	Apartments
Delivery	20m ²	2× 71m ²	Family apartment I
Seating area	450m ²	2× 225m ²	Family apartment II
WC	27m ²	19 ×23m ²	Cluster Apartments
			Opportunity Apartment
Event			Community Space
Performance Hall	320m ²	2×18m ²	Communal Kitchen
Lobby	180m ²	1×18m ²	Laundry room
Mainstage	130m ²		
Side Stage	38m ²		
Sotrage	50m ²		
Prep + Lounge	28m ²		
WC	40m ²		
2x Mask	2×18m ²		
Technic/ Regie	28m ²		
Administration/ School			
Office Admin	60m ²		
Workshop	8m ²		
Janitor	18m ²		
Cleaning Storage	9m ²		
Office School	18m ²		
Sound Studio	12m ²		
Record Room	7m ²		
6x WC	6×4m ²		
Theather School	60m ²		
Tea Kitchen/ Breakout	38m ²		
Technic Admin	24m ²		
2x Changeing Room	2×9m ²		
2x Exercise Room	2×80m ²		
Technical			
Ventilation I	50m ²		
Ventiation II	30m ²		
Technical Space	170m ²		





INTERVENTIONS/

The interventions are divided into function and detail scales. A functional intervention would be the introduction of the residential extension by replacing the existing roof. This follows principles from the 7 Concept of Conversion, like building over and around it as an architectural approach. The new foyer instead contrast with the old brewery but simultaneously expose the old brick wall facade of the brewery in the interior. The tower made out of glass brick stands for the new identity of the Lyckholms Brewery by introduction a new architectural Element. The combination between ocker colored concrete walls contrasts the old brewery facade and still fit in to the ensemble of the architectural expression. On a detail scale, the interventions vary between adapting to the new function, using an interior approach, and emphasising the existing. Several

new openings inside and in the façade towards the courtyard are introduced and make the building accessible. For example, the vault rooms directed towards the courtyard are now connected through large wooden gates. The vault rooms are converted into flexible dining and event rooms. Its becoming a place to meet, mingle, and enjoy the spatial qualities of the brewery. In the Atelier, light-weight wooden boxes divide room and create, like the KUBAA, different zones within the room. Newly introduced elements are colored in a greenish tone. Green wood gates, doors, windows, and new green wall tiles, referring to the old tiles from the brewery, emphasizing the newly introduced elements in the interior.

Fig 34. Isometrie

Fig 35. View Corridor
Courtyard

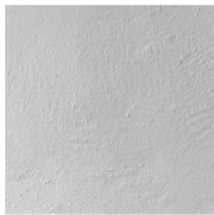




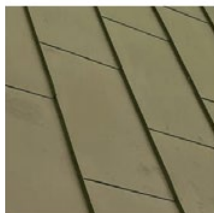
wood



tiles



plaster



metall sheets



concrete



brick

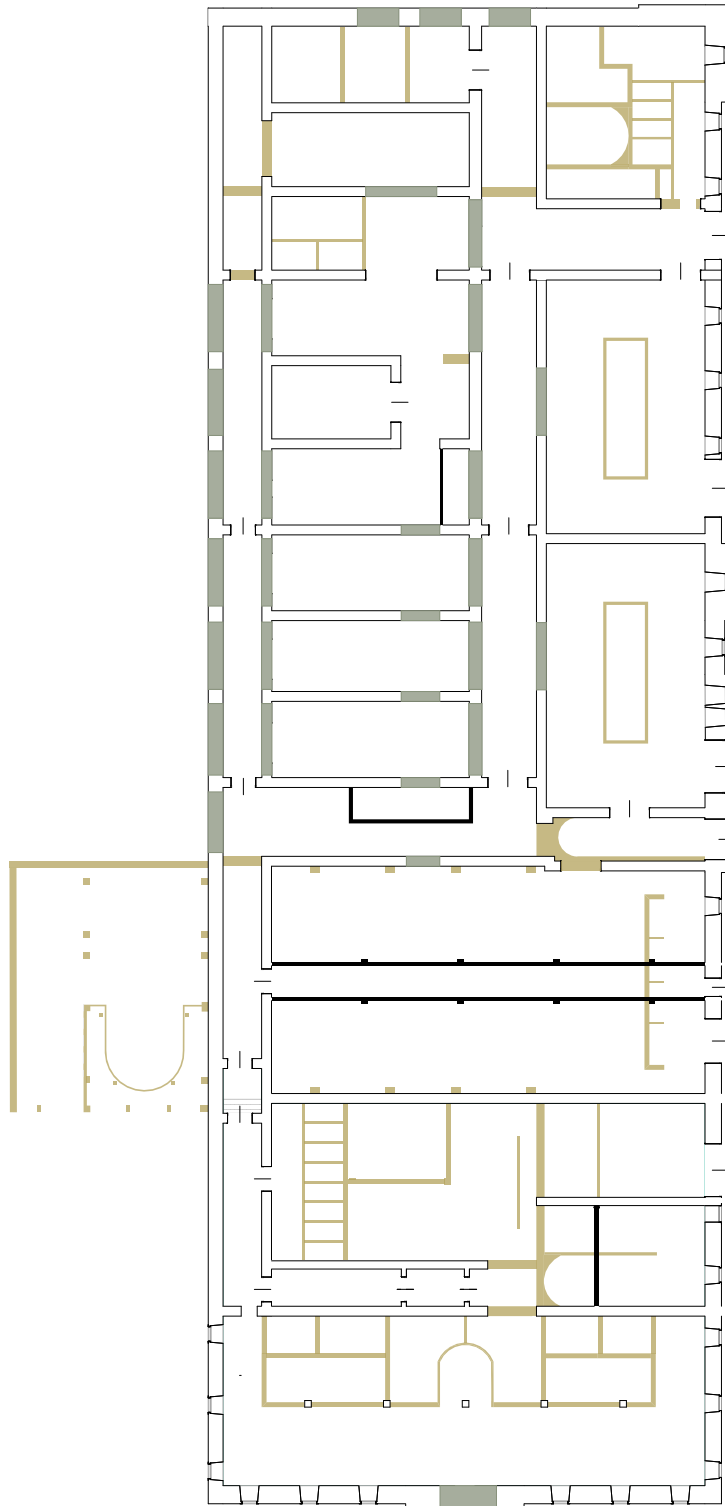


Fig 36. Material Composition

- demolish
- opening
- adding

Fig 37. Interventions

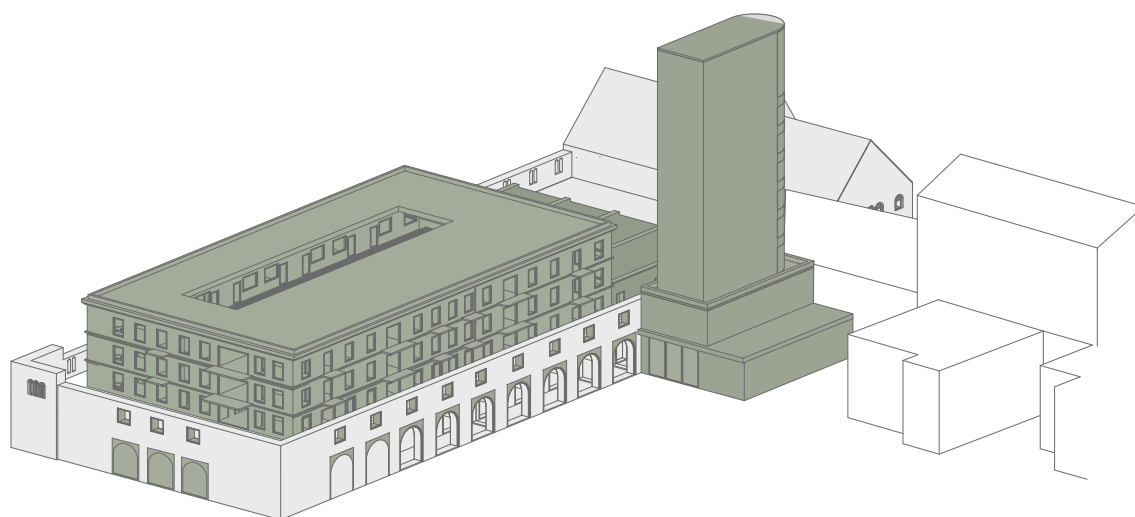


Fig 38. Isometric after interventions

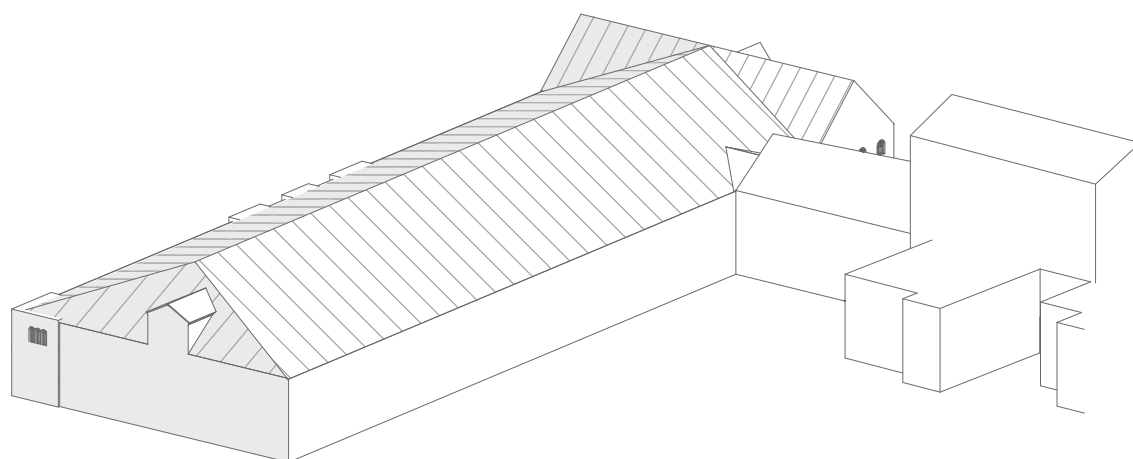


Fig 39. Isometric before interventions

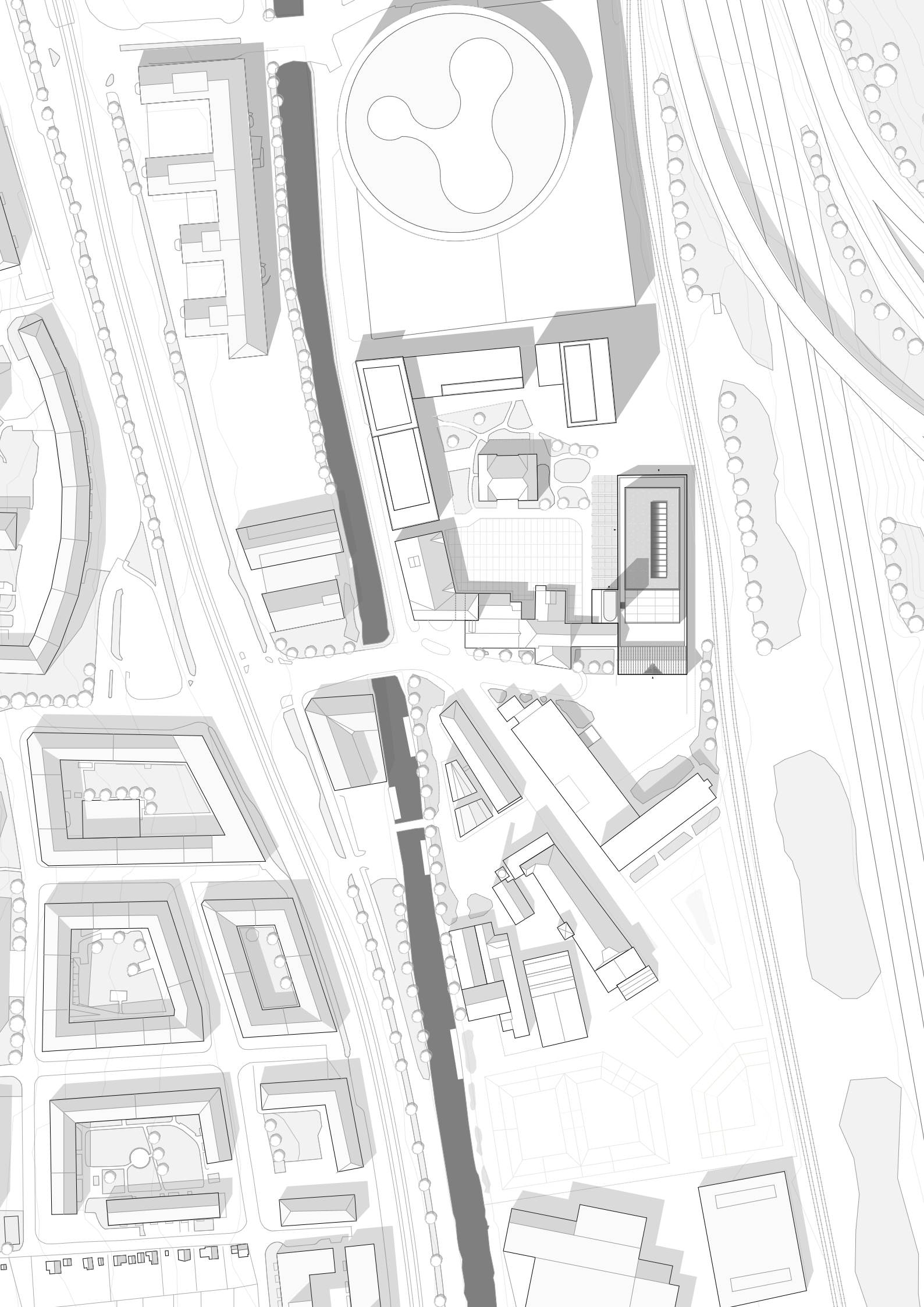


Fig 40. Siteplan
M1:1000

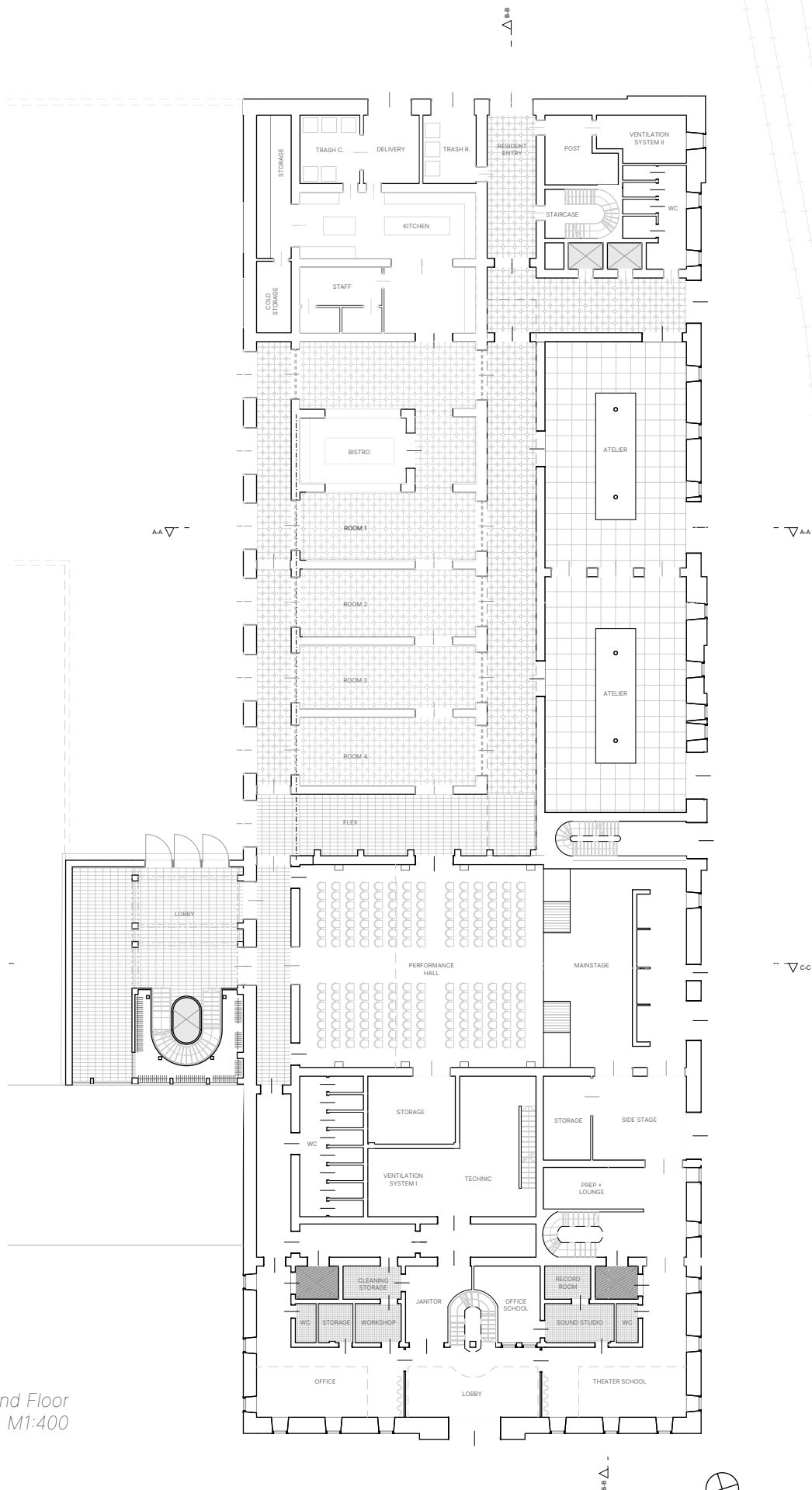


Fig 41. Ground Floor
M1:400

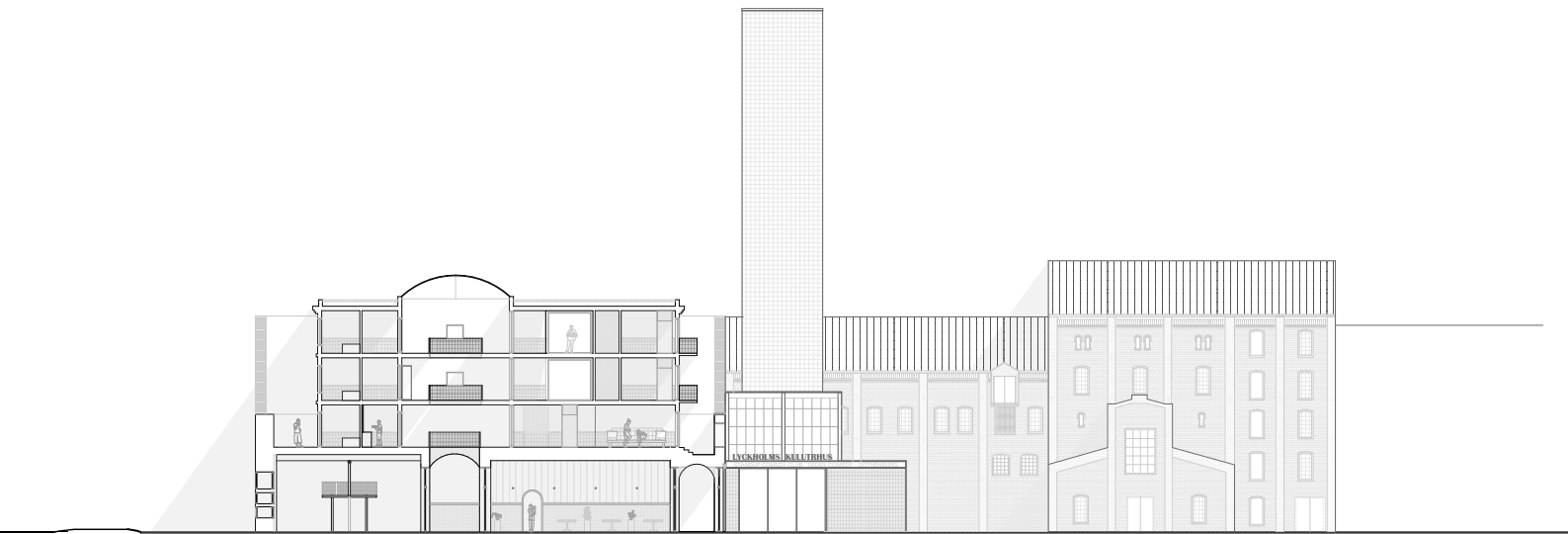


Fig 42. Section A-A
M1:500

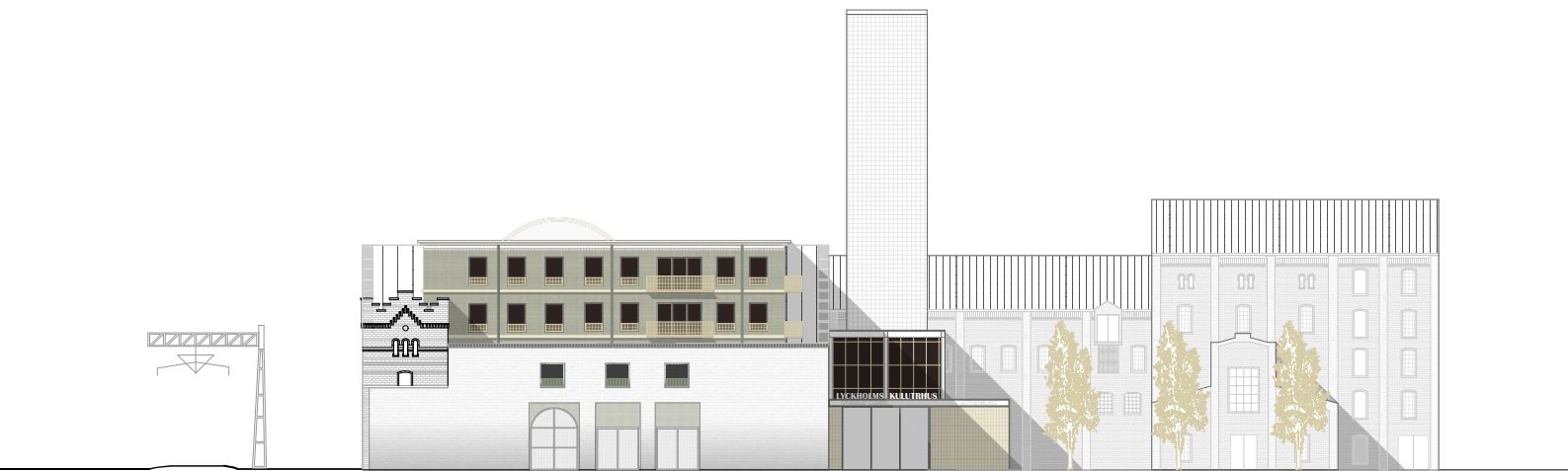


Fig 43. Elevation North
M1:500

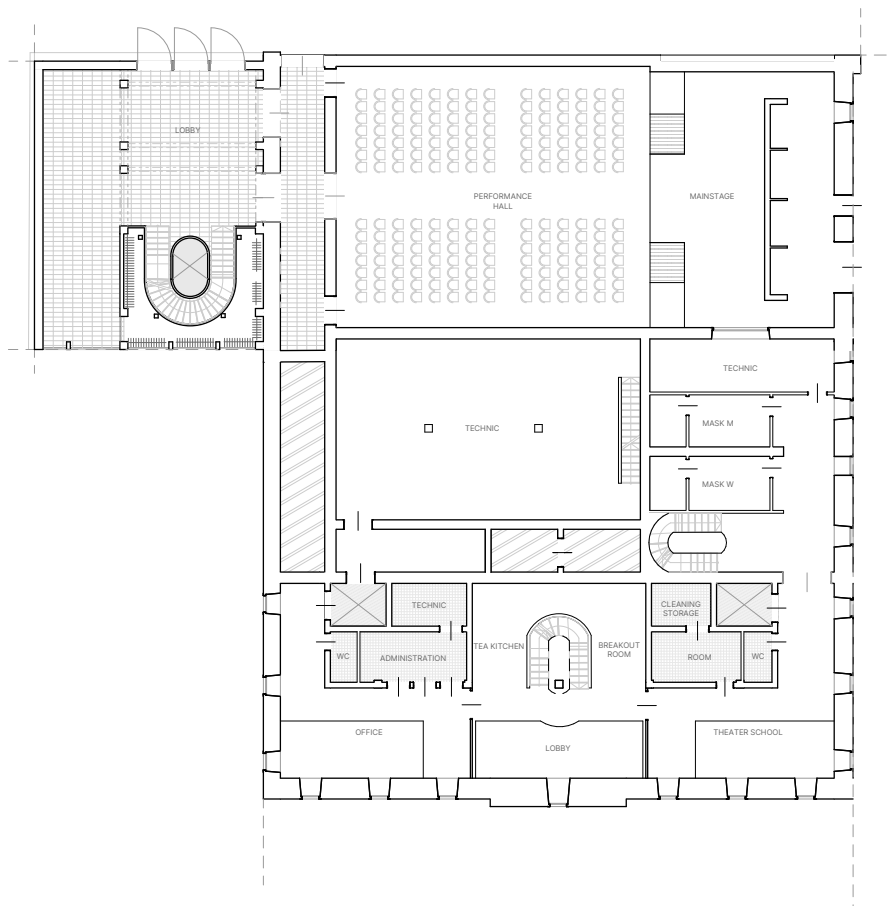
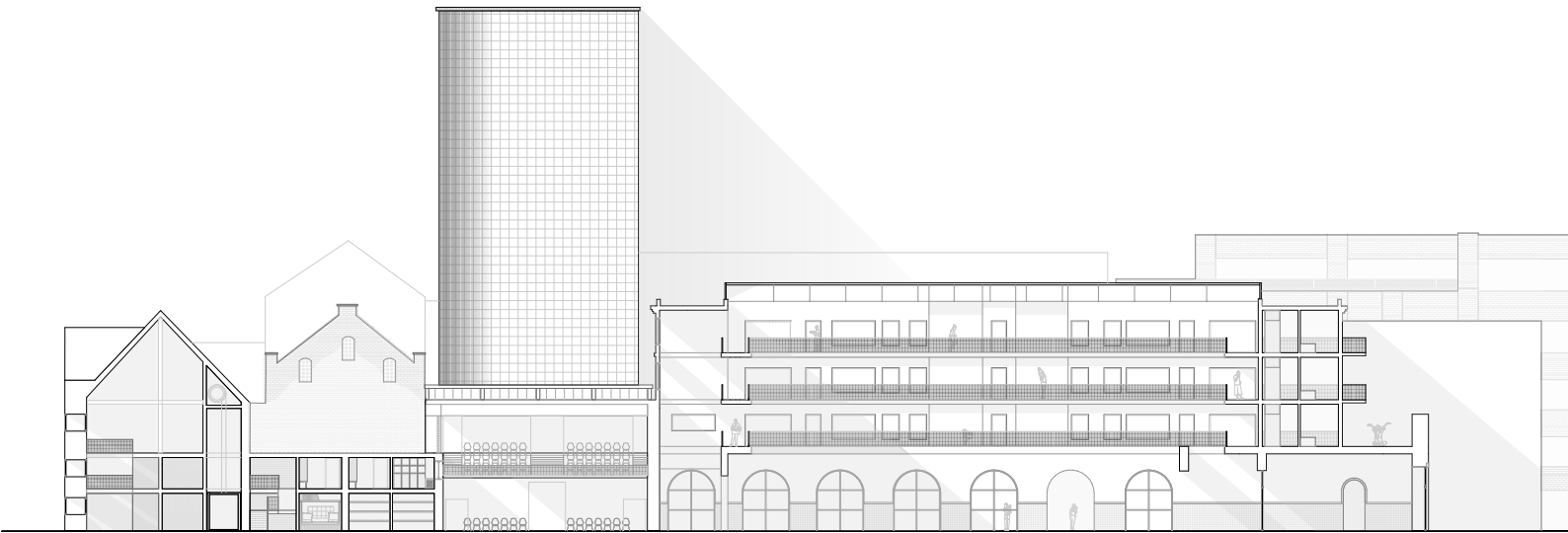
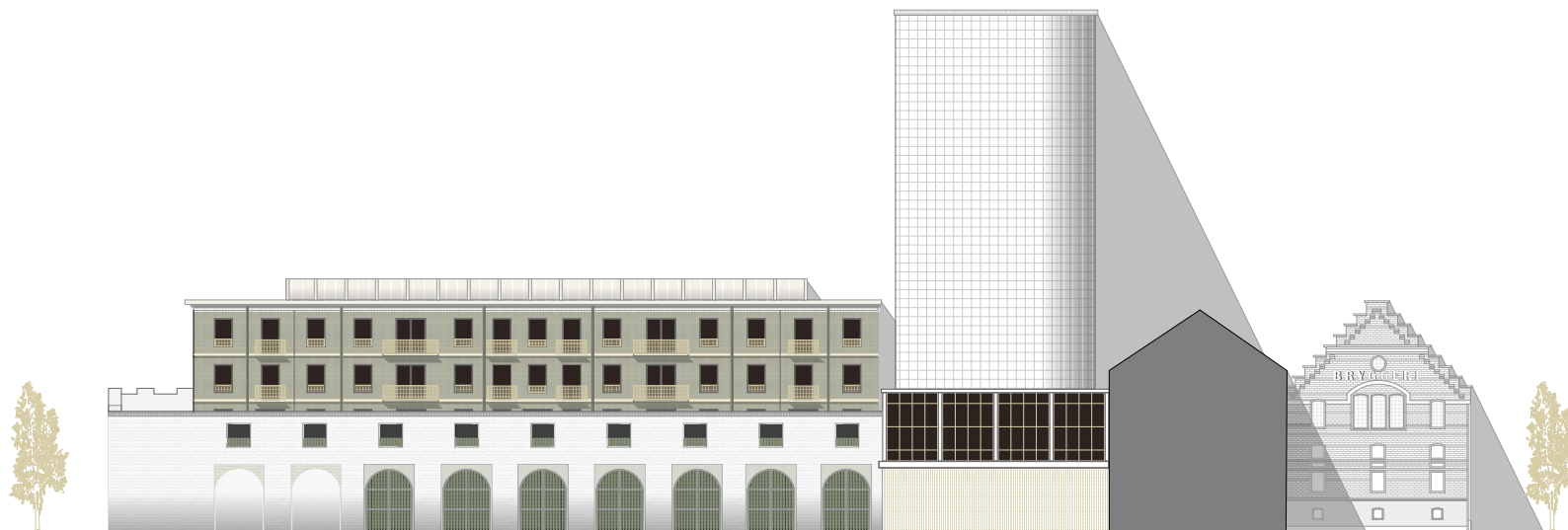


Fig 44. Ground Floor
M1:400



*Fig 45. Section B-B
M1:500*



*Fig 46. Elevation West
M1:500*

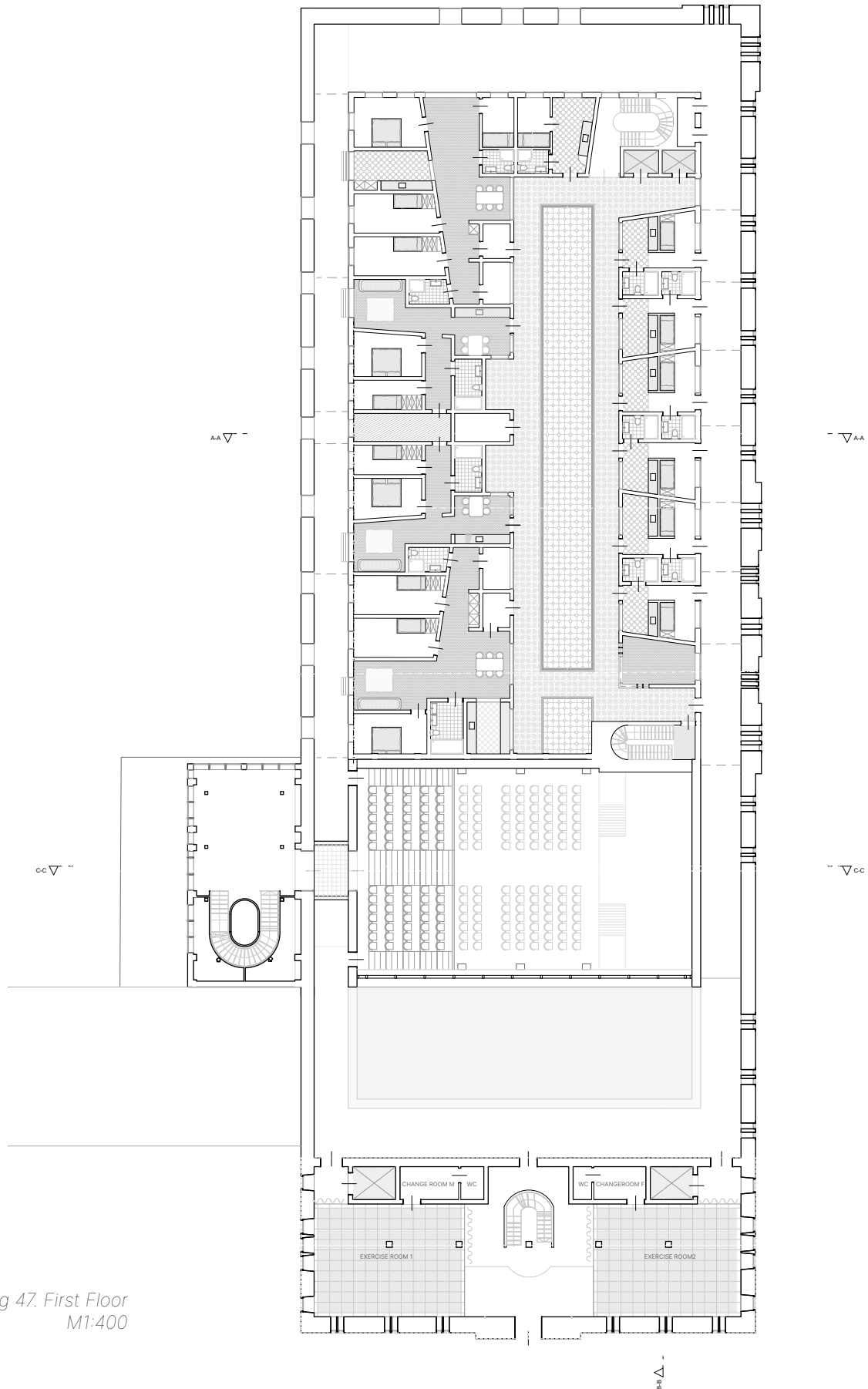
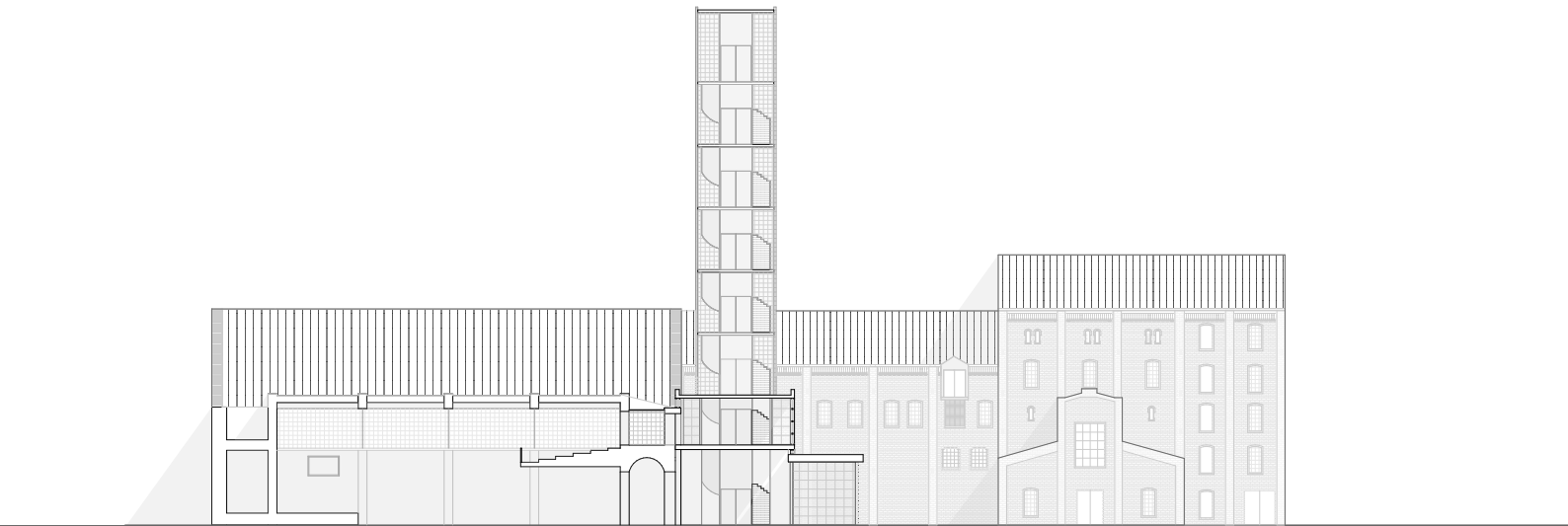
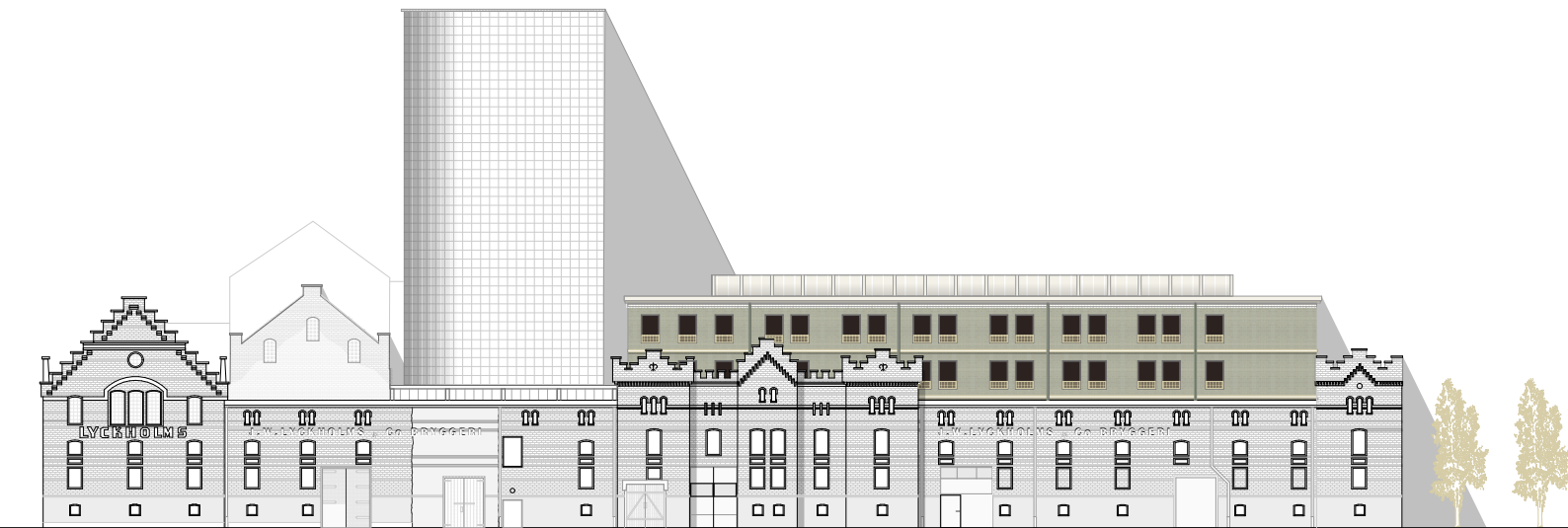


Fig 47. First Floor
M1:400



*Fig 48. Section C-C
M1:500*



*Fig 49. Elevation West
M1:500*

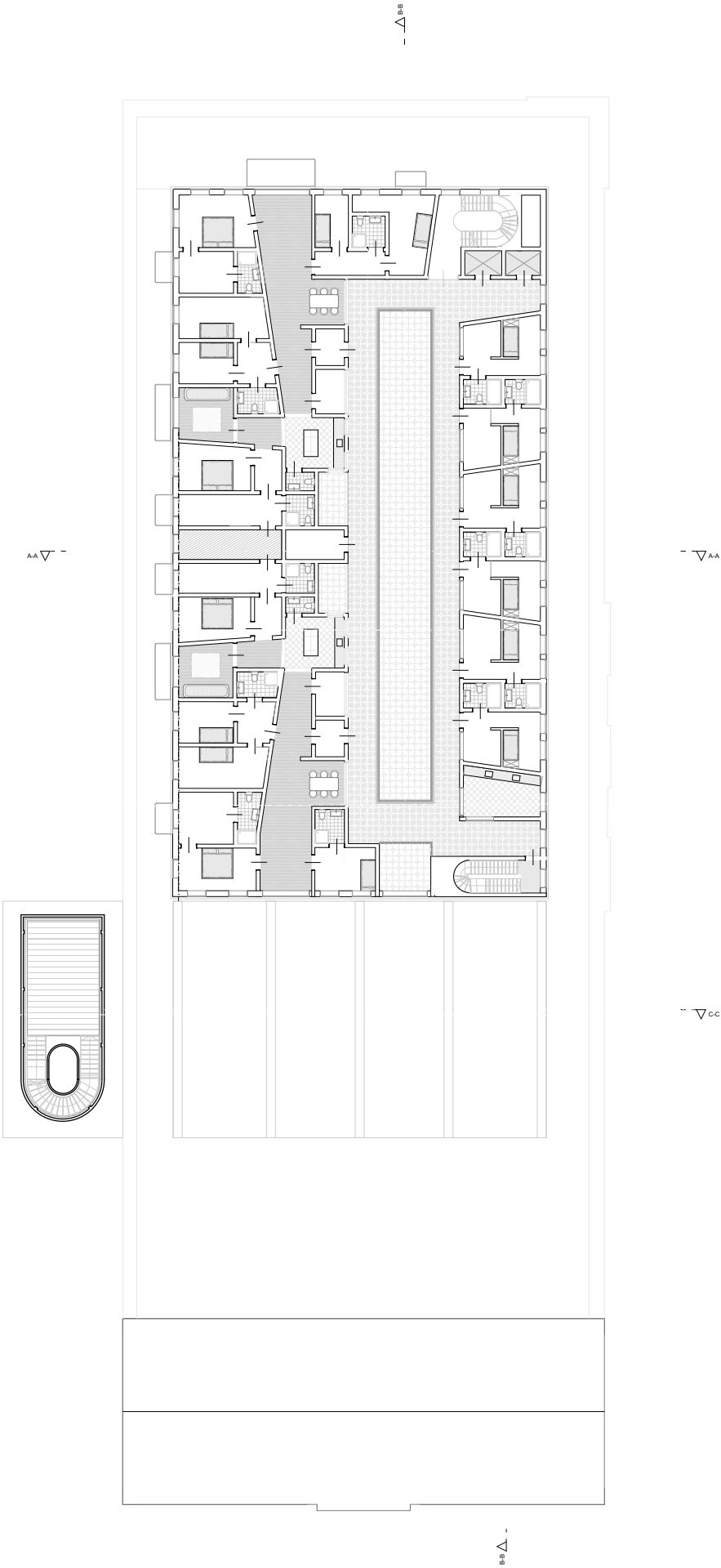


Fig 50. Second/Third
Floor M1:400

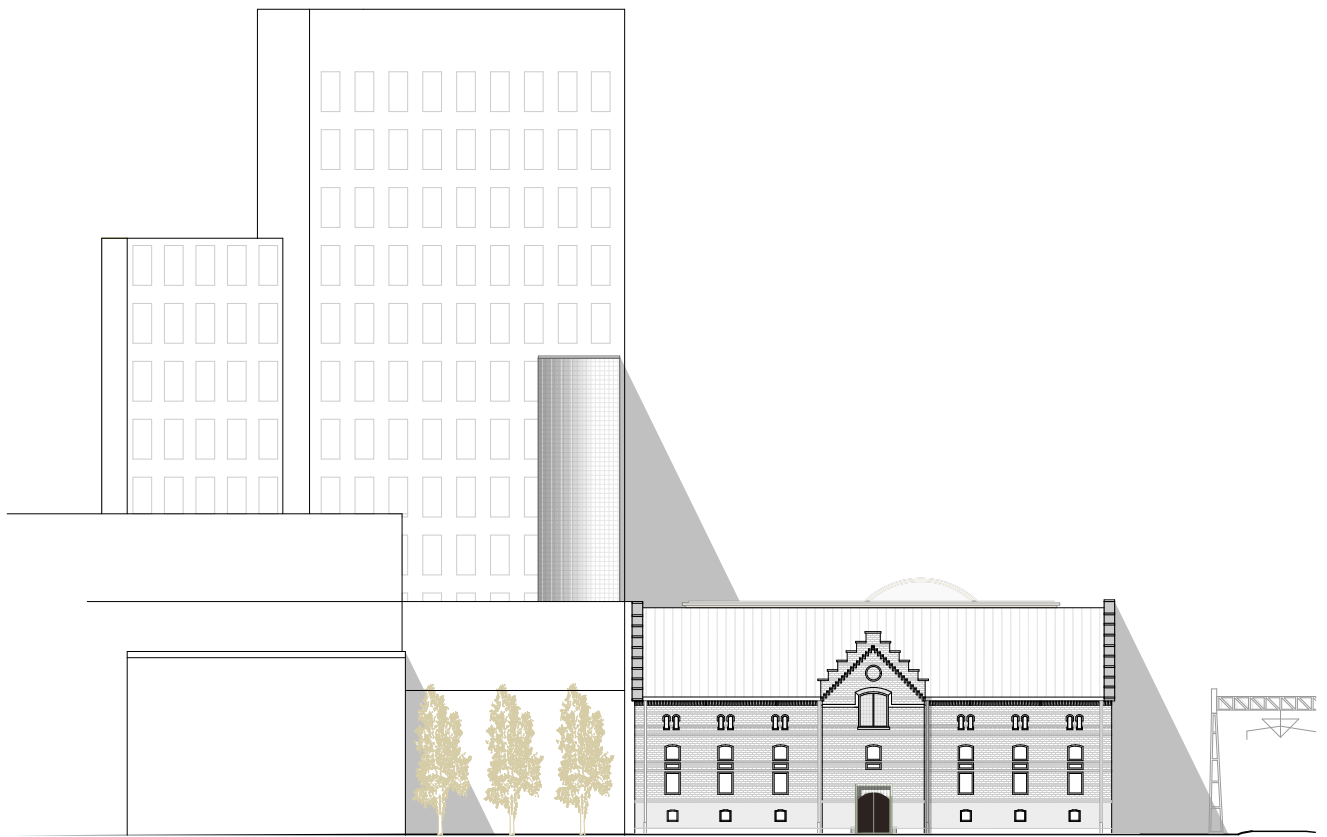


Fig 51. Elevation South
M1:800

MATERIAL AND STRUCTURE/

The building parts have different structural and material compositions. As the original Brewery is primarily made out of brick and concrete, its new residential extension is mainly made of a wooden CLT Structure to reduce the weight. Only the facade walls are designed with a single insulated brick and clad with tiles on the outside. Instead, the foyer uses a prefabricated sandwich element. Concrete columns are taking the force from the glass brick tower on top of them. The glass brick facade mainly carries itself. Only some steel pillars carry the ceilings, which are made of a super lightweight concrete structure, visually similar to the ripped concrete ceiling in the Brewery. The performance hall was extended in its height to install a second seating area for the visitors.

The windows are made out of wood and metal frames in ocker color. Also, the Attica and cornice in the new additions are clad in the same metal sheet as the windows are. The interior space will be renovated, and old tiles, for example, in the vault rooms, will be replaced with new ones. A green reiling characterises the Atrium in the residential extension. That theme also continues into the apartments. The socket area in the community spaces is made out of wood painted green, like the ground floor interventions. The historic building part will be refurbished to stop the ongoing decay. A second layer of windows is introduced to seal the original facade.



Fig 52. Perspective Courtyard



Fig 53. Perspective
Atrium

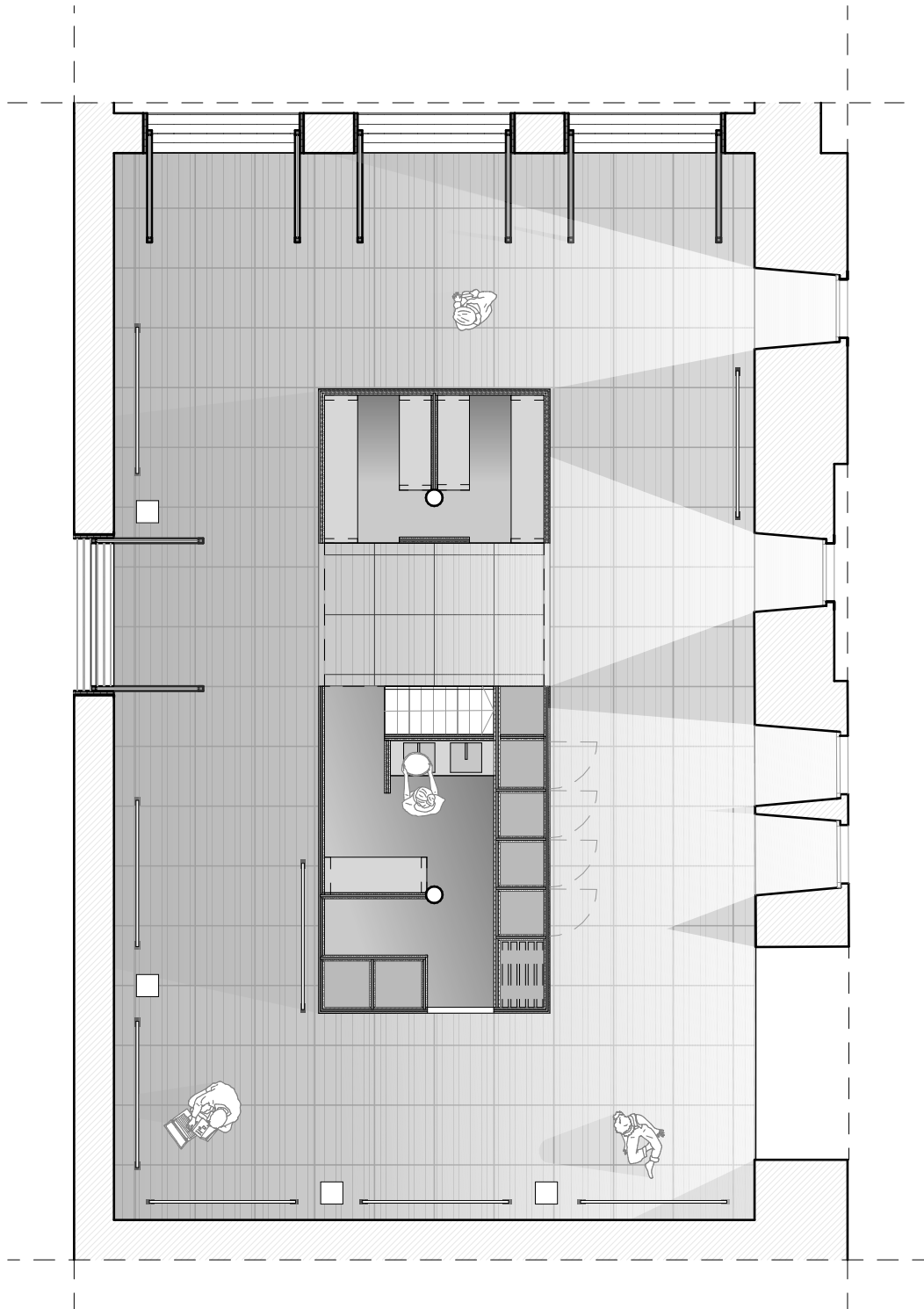


Fig 54. Atelier M1:100

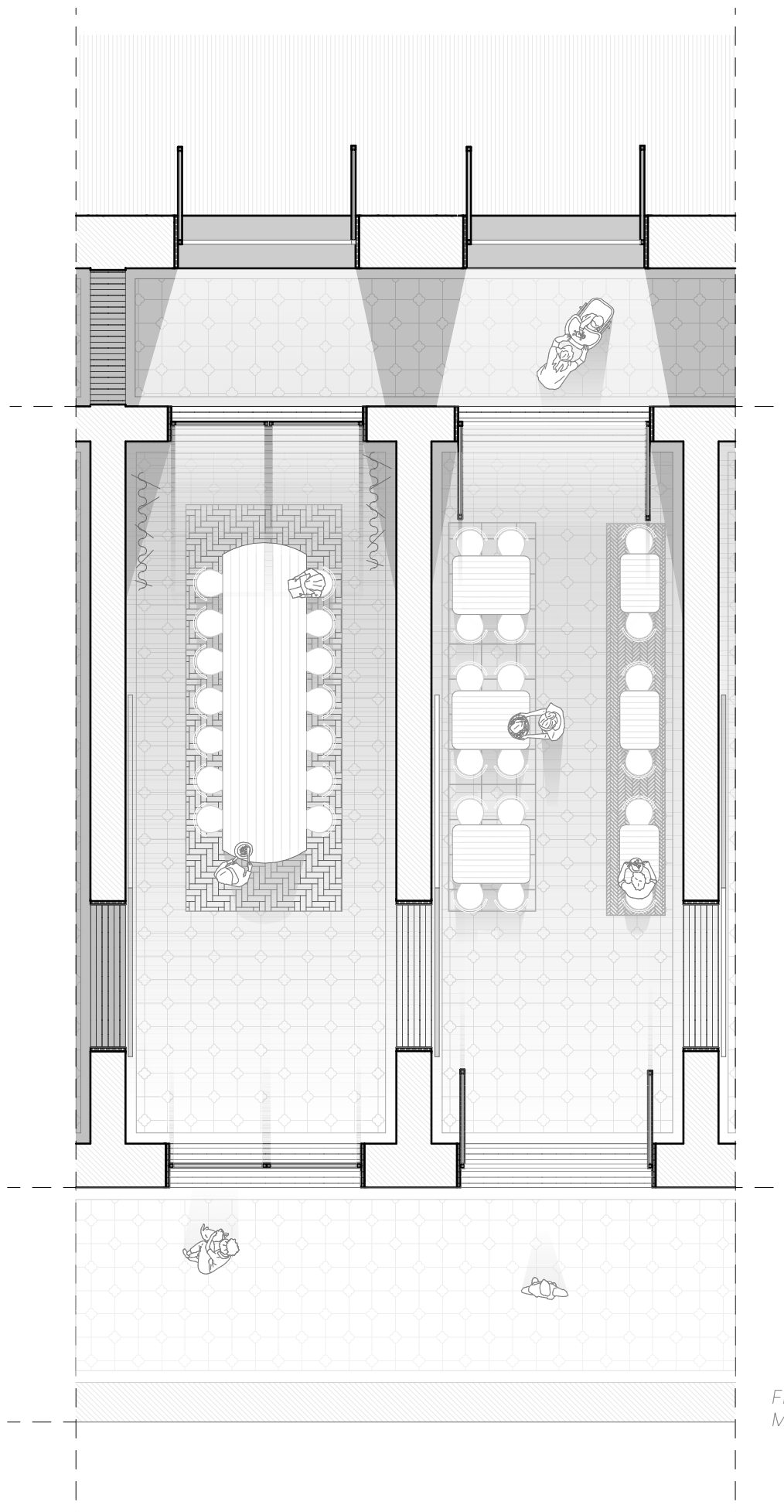


Fig 55.Vault room
M1:100



Fig 56. Perspective Vault room

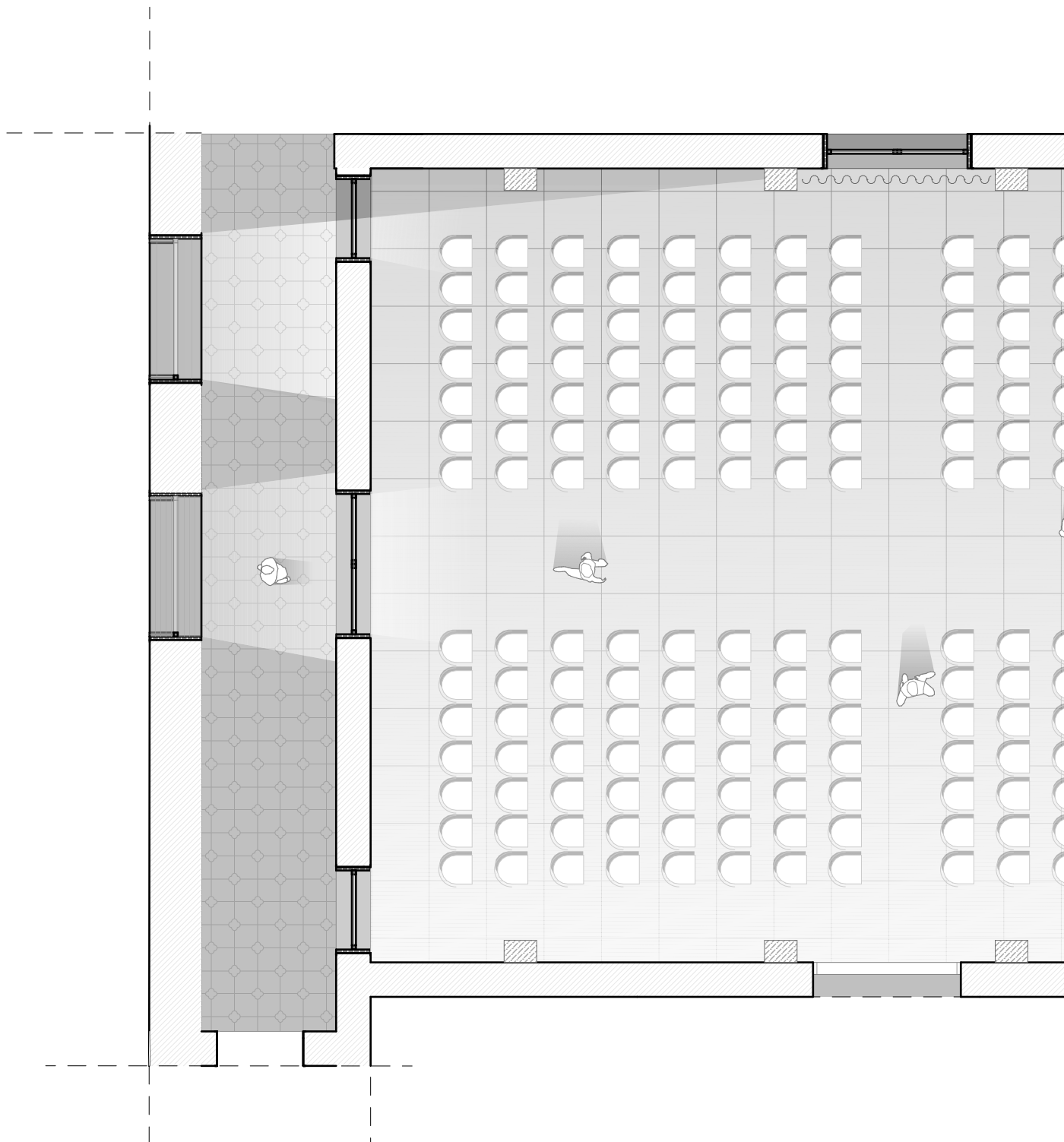
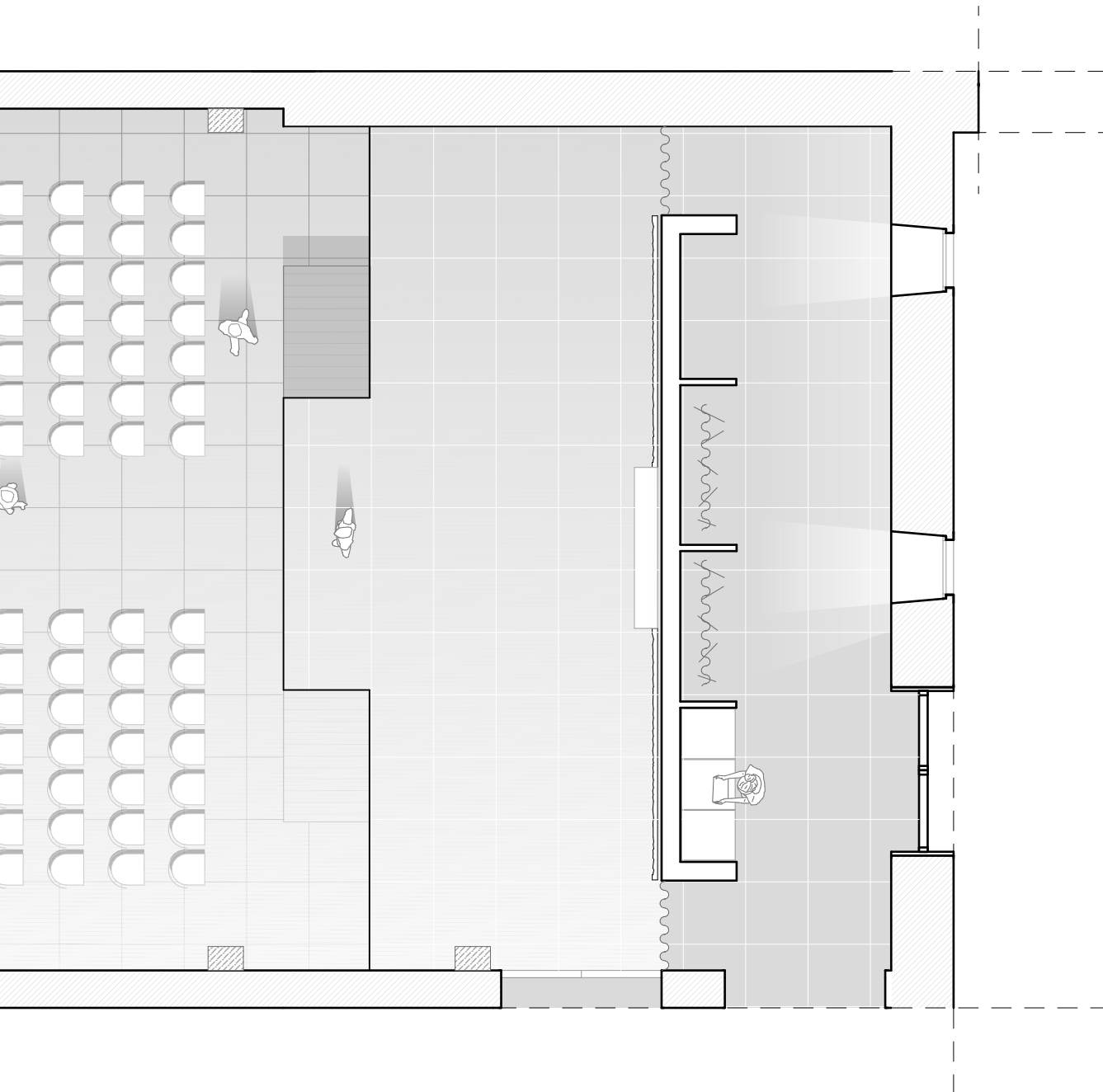


Fig 57. Performance Hall M1:100





*Fig 58. Perspective
Performance hall*

Fig 59. Scheme Heating
Scheme Ventilation

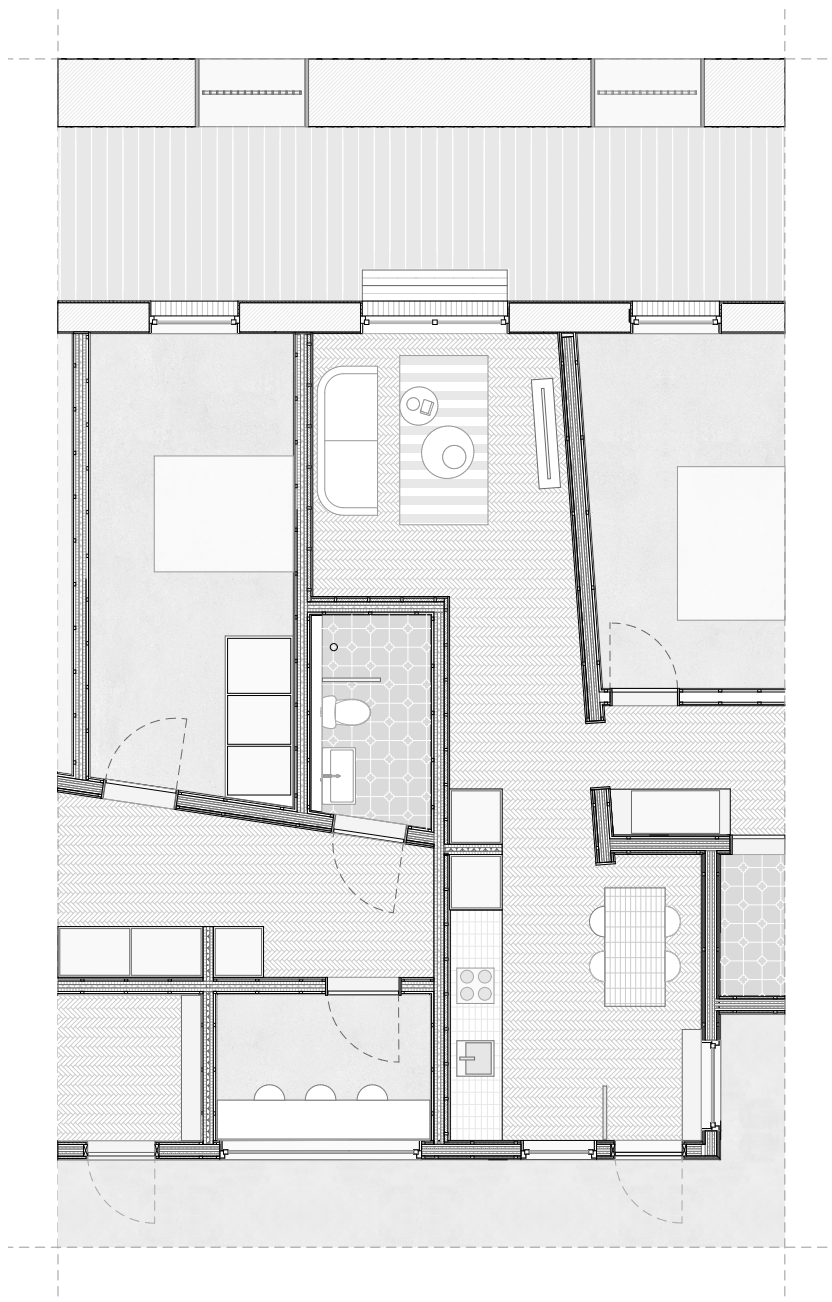


VENTILATION - HEATING/

The building is divided in three different ventilation systems. One for the performance hall, lobby, and administration. One for the dining area and atelier. And a separated one for the kitchen. The ducts are partly visible in the interior.

The heating is organised in different layers like in some reference projects. The ground floor is only heated in rooms used

for dining or event purposes. These rooms are not connected directly to the walls facing outside climate. There is always one room in between acting like a buffer zone and avoiding the condensation of water. The residential annexe extension is thermally separated from the brewery and will be heated by floor heating in each apartment.

**CEILING**

SCREED WITH FH	4,5CM
PE-FOLIE	-
AKKUSTIC INSULATION	3CM
PE-FOLIE	-
WOOD BOARD	2,5CM
CLT RIBBED ELEMENT	12,5CM
- INSTALLATION LAYER	-
-AKKUSTIC INSULATION	-
WOOD BOARD	2,5CM
PINE WOOD FINISH	3,5CM

GROUND FLOOR CEILING

SCREED WITH FH	4,5CM
PE-FOLIE	-
AKKUSTIC INSULATION	3CM
EPS	12,5CM
PE-FOLIE	-
CONCRETE PLATE	60CM
PLASTER/ PAINT	1CM

GROUND PLATE

FLOOR TILES	1CM
LEVELLING SCREED	5CM
XPS INSULATION	4CM
PE-FOLIE	-
CONCRETE PLATE	50CM
EARTH	-

SQAURE

PAVING STONE	5 CM
GRAVEL	25 CM
COMPACTED BALLAST	40CM

FACADE WALL

TILE	1 CM
PLASTER	1 CM
POROTON-T7	36,5CM
PLASTER + PAINT	1 CM
	-

U VALUE	0,18
FIRE SAFETY	F90

WINDOW

WOOD/ ALU WINDOW FRAME; OCKER COLORED;
TRIPLE GLASED

BEARING WALL INTERIOR

GYPSUM BOARD/ WOODEN CLADDING	1,25CM
WOOD UNDER CONSTRUCTION	3X5CM
-AKKUSTIC INSULATION	-
CLT	16CM
WOOD UNDER CONSTRUCTION	3X5CM
-AKKUSTIC INSULATION	-
GYPSUM BOARD/ WOODEN CLADDING	1,25CM

NON-BEARING WALL INTERIOR

GYPSUM BOARD/ WOODEN CLADDING	1,25CM
WOOD UNDER CONSTRUCTION	3X5CM
CLT	12CM
WOOD UNDER CONSTRUCTION	3X5CM
-AKKUSTIC INSULATION	-
GYPSUM BOARD/ WOODEN CLADDING	1,25CM

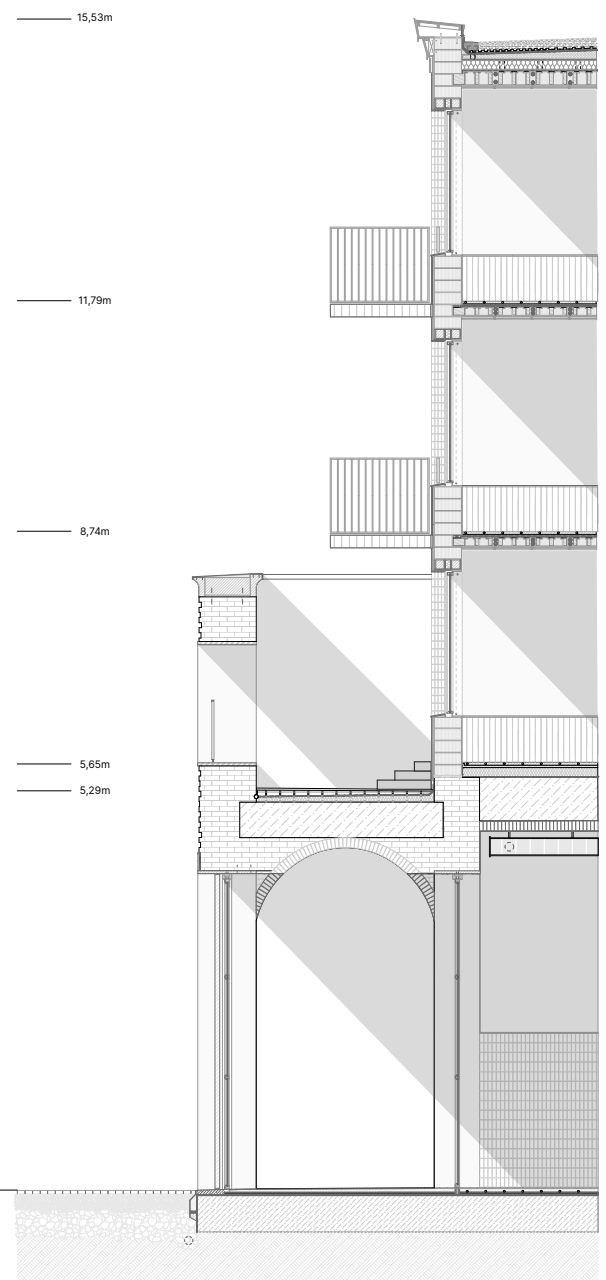
WALL GROUND FLOOR

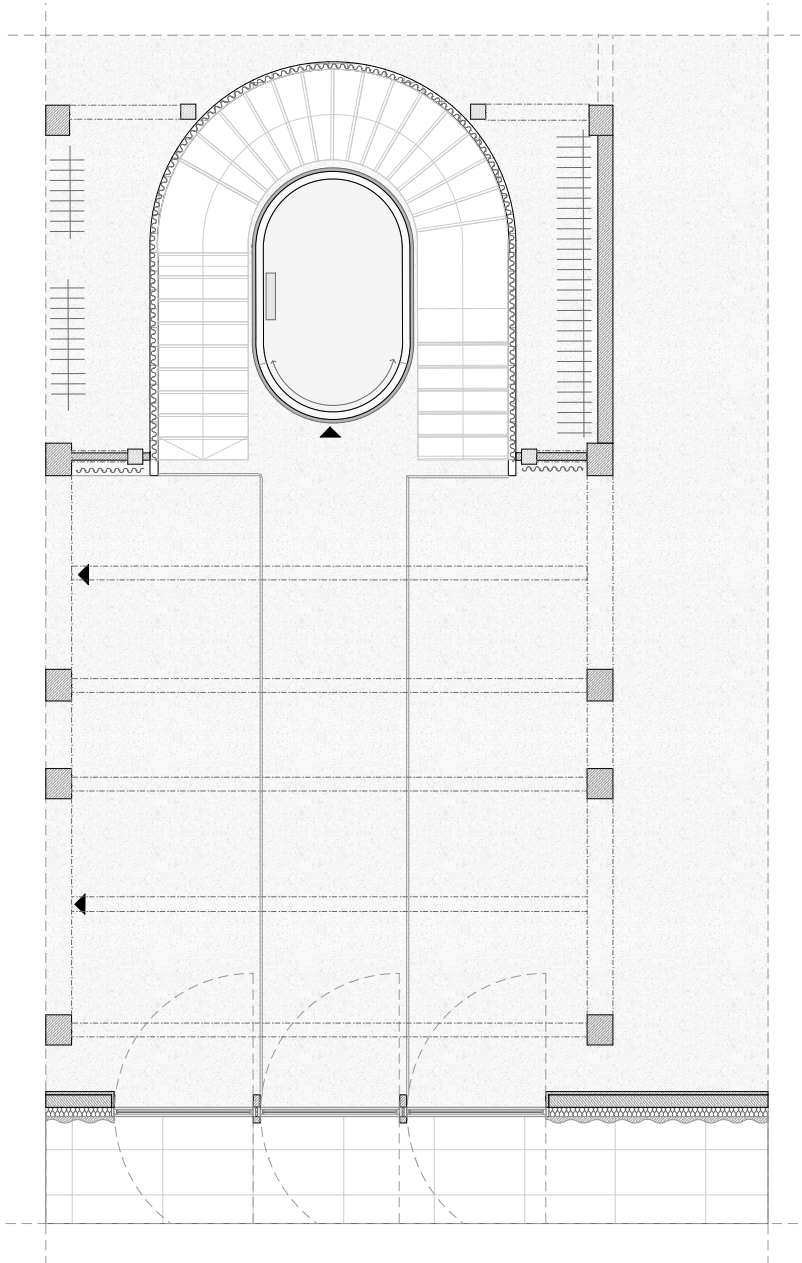
BRICK WALL	60-90CM
WHITEWASHED	-

Fig 60.Facade Section A M1:100

ROOF

SEEDUMMOSS	5 CM
SUBSTRAT	10 CM
DRAINAGE WATER STORAGE LAYER	2,5 CM
PROTECTIVE FLEECE + REPELLENT LAYER	1 CM
2 LAYER BITUMEN	0,5 CM
SLOPING INSULATION	5-20 CM
PE-FOLIE	-
WOOD FIBRE PLATE INSULATION	12CM
VAPOUR BARRIER	-
WOOD BOARD	2,5CM
CLT RIBBED ELEMENT	20CM
- INSTALLATION LAYER	
-AKKUSTIC INSULATION	
WOOD BOARD	2,5CM
PINE WOOD FINISH	3,5CM



**ROOF TOWER**

GRAVEL	5CM
2 LAYER BITUMEN	5-10 CM
SLOPING INSULATION	-
PE-FOLIE	-
WOOD FIBRE PLATE INSULATION	10CM
OSB BOARD	2,5CM
HEP STEEL PROFILE	16CM
- PRE FABR. CONCRETE MODULE	
- INSTALLATION LAYER	

CEILING TOWER

TILES	1,5CM
- TILE GLUE	
OSB BOARD	2,5CM
HEB STEEL PROFILE	16CM
- PRE FABR. CONCRETE MODULE	
- INSTALLATION LAYER	

ROOF FOYER

GRAVEL	5CM
2 LAYER BITUMEN	5-10 CM
SLOPING INSULATION	10CM
WOOD FIBRE PLATE INSULATION	20CM
REINFORCED CONCRETE PLATE	

WALL TOWER

GLAS BRICK PANEL (U VALUE = 0.19)	10CM
REINFORCED MOTAR	-

CEILING

SCREED	4,5CM
PE-FOLIE	-
AKKUSTIC INSULATION	3CM
REINFORCED CONCRETE PLATE	20CM

FACADE WALL FOYER

PRE FABR. CONCRETE WALL	4-9CM
HARDFOAM INSULATION	12 CM
REINFORCED CONCRETE	18CM
PREFAB CONCRETE SHELL	5CM

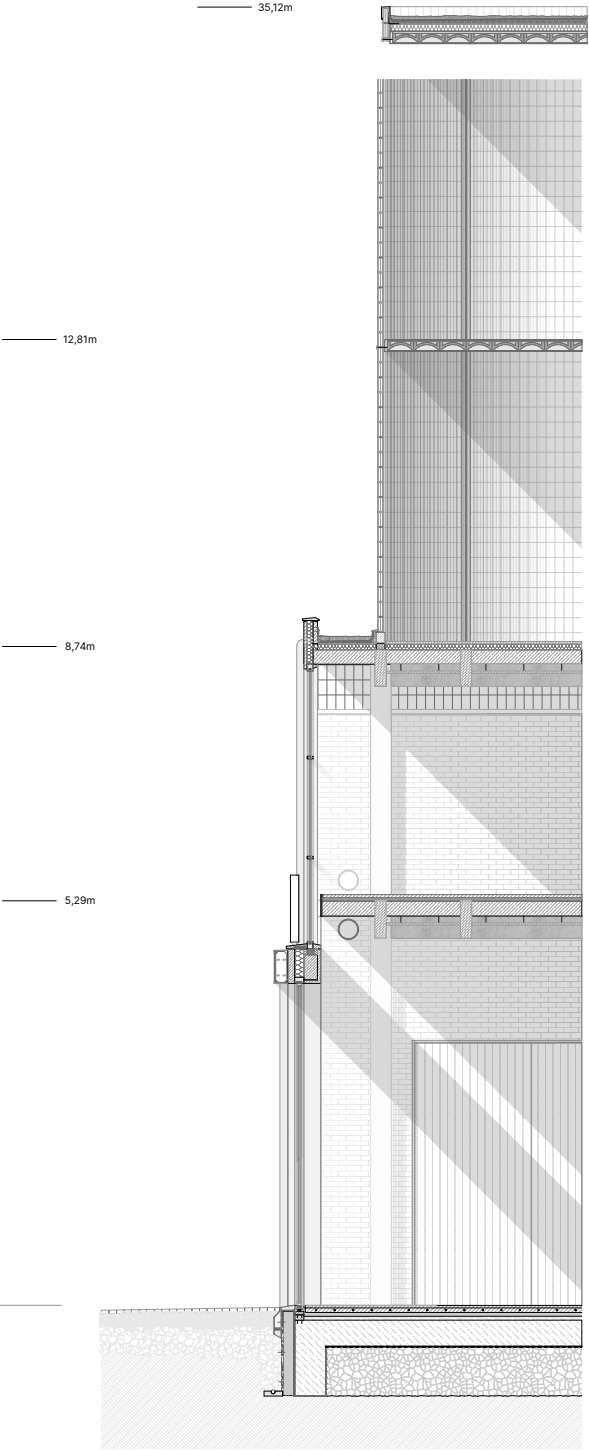
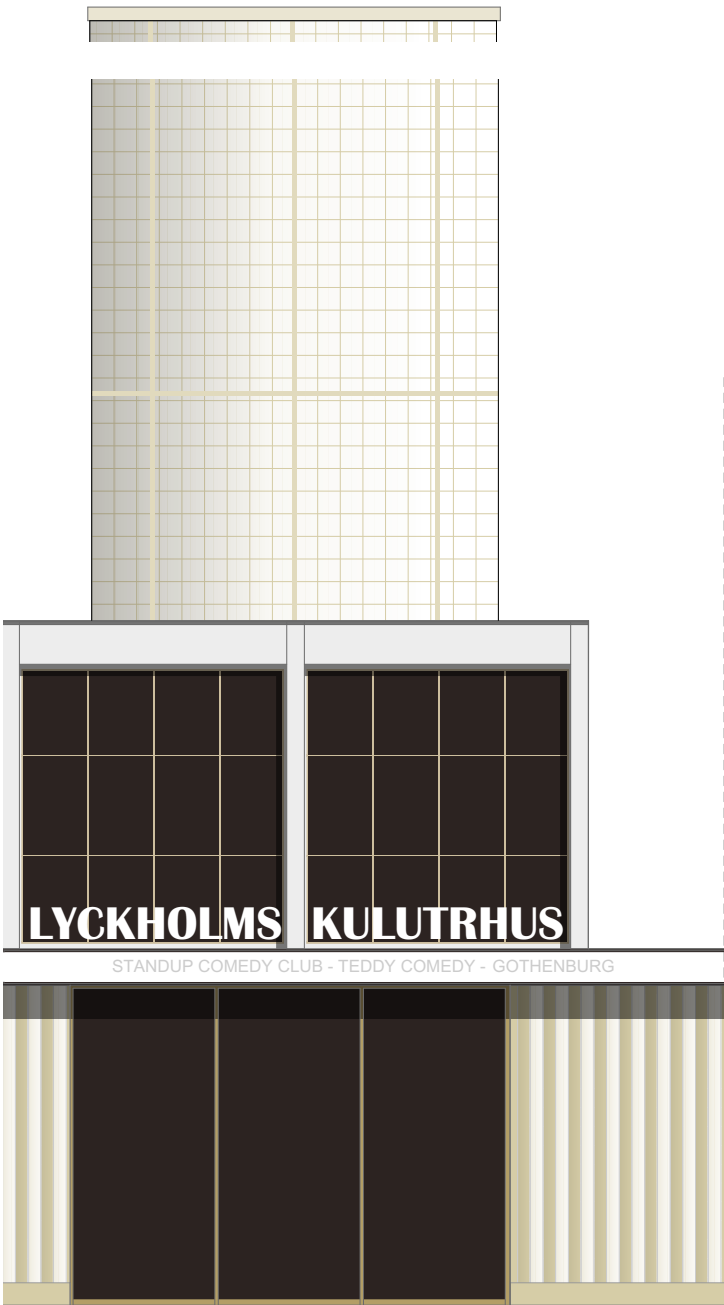
GROUND PLATE

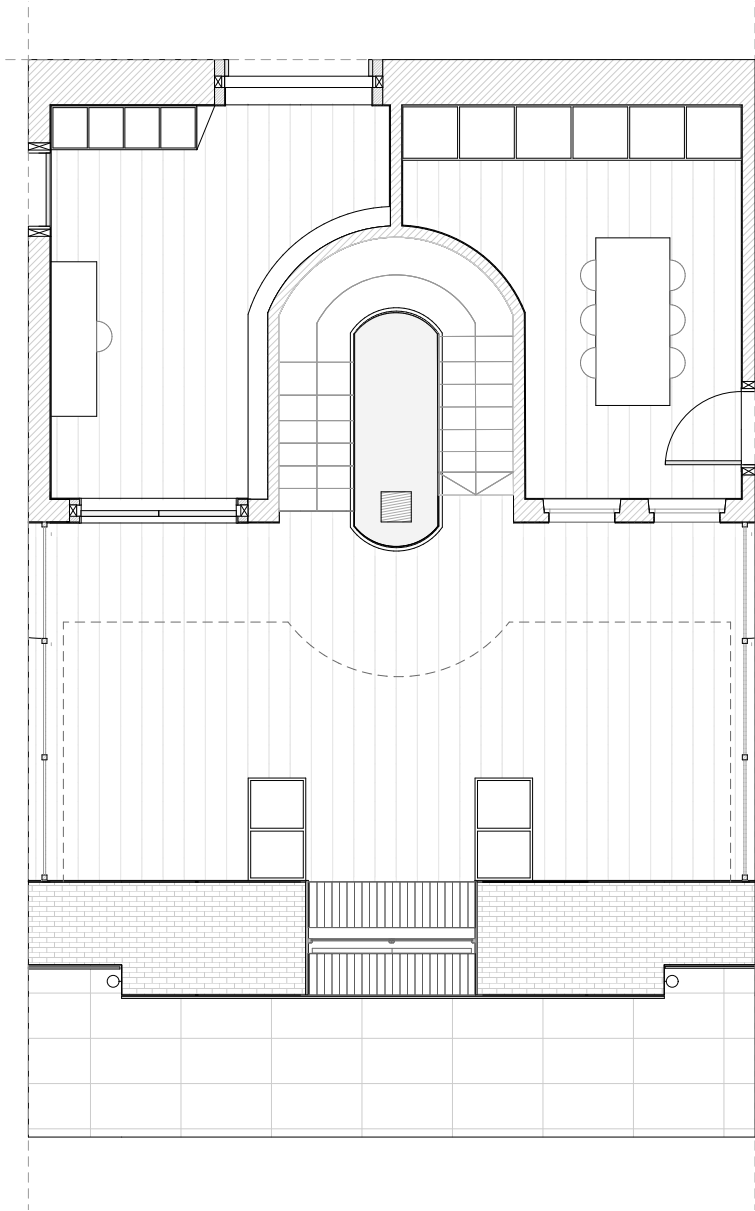
TERAZZO	2CM
SCREED WITH FH	5CM
EPS INSULATION	4CM
PE-FOLIE	-
INSTALLATION LAYER	3CM
CONCRETE PLATE	20CM
BITUMEN LAYER	0,5CM
FOAMGLAS	65CM
EARTH	-

SQUARE

PAVING STONE	5 CM
GRAVEL	25 CM
COMPACTED BALLAST	40CM

Fig 61. Facade Section B M1:100





ROOF	
METALL SHEET	5 CM
WOOD UNDERCONSTRUCTION	3X5 CM
CONTER WOOD UNDERCONSTRUCTION	3X5 CM
PERMEABLE SARKING FELT	-
MINERAL WOOL	15 CM
VAPOUR BARRIER	-
WOOD BOARD	4CM
WOOD RAFTER	35X20CM
FACADE WALL	
BRICK WALL	60-90CM
WHITEWASHED	-
CEILING	
WOOD BAORDS	1CM
WOOD UNDERCONSTRUCTION	3X5 CM
PE-FOLIE	-
CONCRETE PLATE	60CM
PLASTER/ PAINT	1CM
BEARING WALL INTERIOR	
WHITEWASHED	-
BRICKWALL	30CM
WHITEWASHED	-
NON-BEARING WALL INTERIOR	
WHITEWASHED	-
BRICKWALL	15CM
WHITEWASHED	-
GROUND PLATE	
FLOOR TILES	1CM
LEVELLING SCREED	5CM
XPS INSULATION	4CM
PE-FOLIE	-
CONCRETE PLATE	50CM
EARTH	-
SQAURE	
PAVING STONE	5 CM
GRAVEL	25 CM
COMPACTED BALLAST	40CM

Fig 62.Facade Section C M1:100



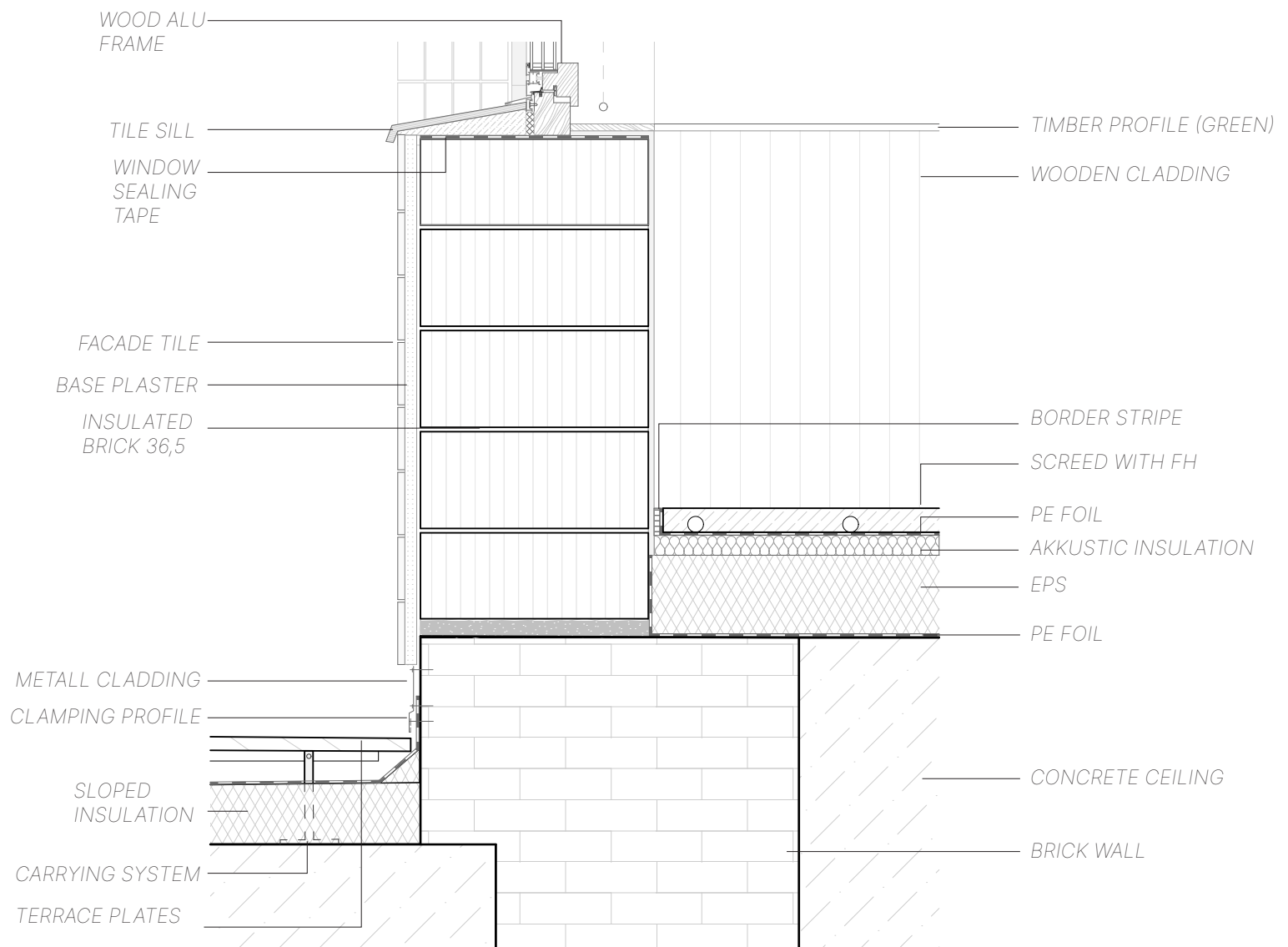


Fig 63.Detail Annex Building M 1:10

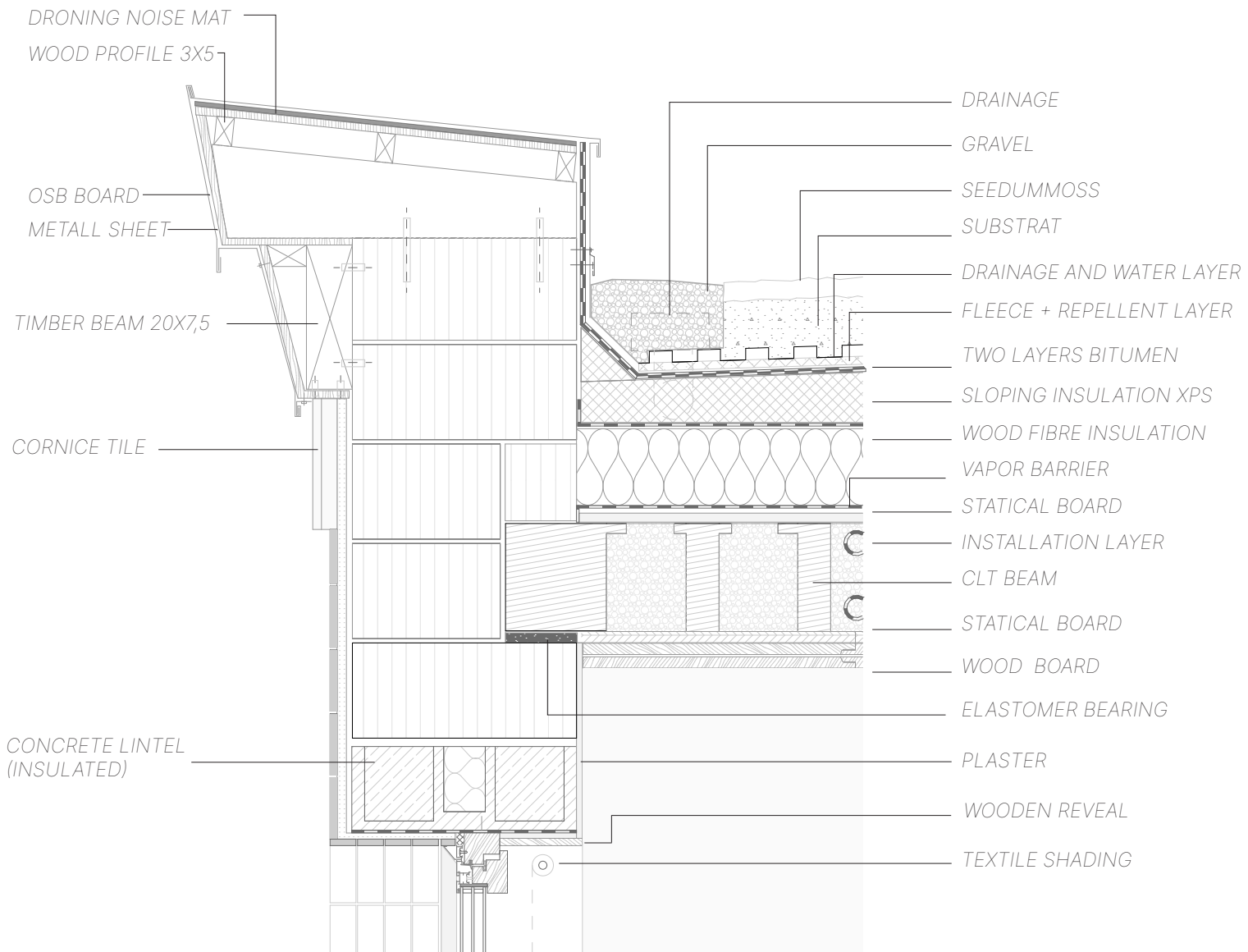


Fig 64. Detail Annex Building Attika M 1:10

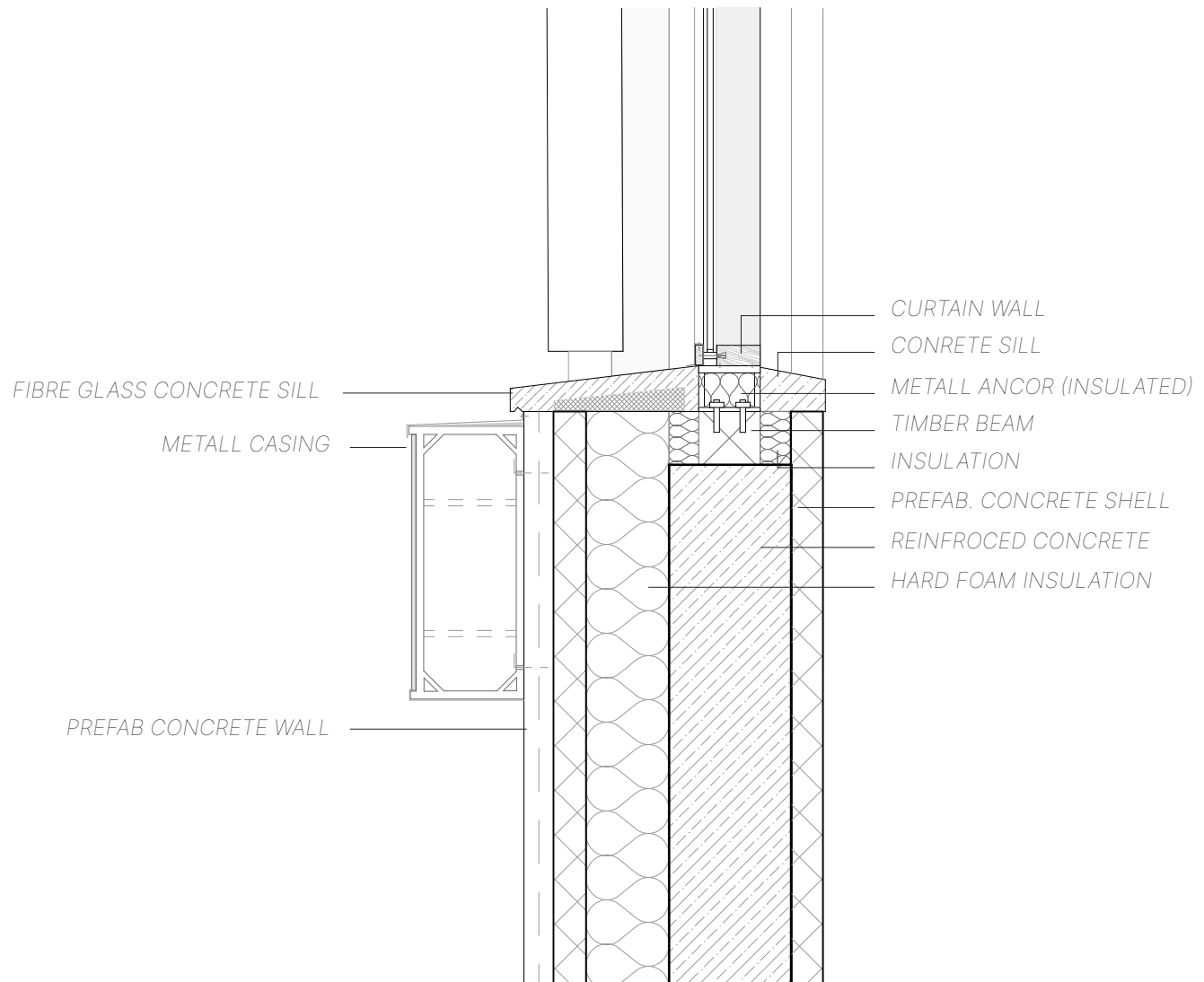


Fig 65.Detail foyer wall M 1:10

DISCUSSION /

Balancing heritage and innovation is a context specific challenge adjusted to each adaptive reuse project. The thesis investigated how historical industrial buildings can be transformed through feasible, future-oriented design strategies that preserve identity while enabling new functions. In the case of the Lyckholms Brewery, it became clear that preservation is not enough, and without a new function, buildings are at risk of decaying over time.

The transformation process has to start with a comprehensive inventory of the building, the site and its history. That reveals the challenges it faces and its potential for its future development. This is the foundation of the further implemented design methods. In addition to that, feasibility used an evaluation tool in structural, spatial and programmatic terms, which acted as a critical parameter for the interventions. The manifestos that guided the transformation process were created through that iterative process.

One of the most radical decisions was the removal of the roof. After long evaluation of the possible outcomes, it was reasonable to remove it due to its poor structural and thermal condition, the bad lighting situation, and the need for spatial extension. This decision is a perfect example of the main idea of the thesis. That transformation can be an act of preservation. The Annex extension ensures a long-term perspective for the building and revitalises the structure.

The interventions are based on theoretical and practical references such as aemulatio and industrial heritage. They are not copying the existing patterns, instead the new interventions are aiming to respectfully contrast and coexist with the existing fabric. The result is a dialogue between the past and the needs for a successful

future development. Interventions like the new foyer and tower, the green tiles and wooden cladding in the apartments, are referencing the brewery's past and simultaneously develop it into something new.

Beyond the physical design, its new role as a Kulturhus with residential functions creates a new identity and reactivates its role as a place where people worked and lived together. In that way, the design supports the broader discussion about tangible and intangible elements embedded in the place and genius loci.

The evaluation of proposed interventions, through feasibility, conceptually and practically, must be seen critically. It requires assessing more than the architectural qualities and structural possibilities, but also economic, technical, and political factors. Without these inputs, the project remains speculative.

The Residential Annex building is an attempt to integrate a housing project into an existing structure. It is not succeeding in every aspect. Especially lighting conditions are still open for evaluation. Another uncertain aspect is cooling and heating which are only conceptual ideas how to deal with this massive brick structures.

The foyer and tower is maybe the most controversial part of the new design that needs further investigation to fit the surrounding needs.

To draw a conclusion, adaptive reuse is not a compromise between old and new, rather its a strategy to prolong existing architecture and its qualities. Balancing turns out to be more the result of close observation, analysis of the needs, and adaptation of the project towards the necessary measures to extend its lifespan in a respectful way.

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Author

AI APPENDIX/

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