Flottningsmuseet i Dyvelsten:

Preserving history through aemulatio

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Master Thesis

Chalmers School of Architecture
Department of Architecture & Civil Engineering
Architecture & Urban Design, MPARC
Architectural Experimentation

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CHALMERS
UNIVERSITY OF TECHNOLOGY

Abstract

For over a century, the timber rafting industry shaped Sweden's river networks, bringing with it a built environment. When the industry ceased in 1991, these buildings, including the Dyvelsten timber rafting museum in Värmland, Sweden, were no longer needed. Initially built in 1950 as a workshop, the building was converted into a museum, but lacked the necessary architectural modifications to suit its new function. This thesis explores how architectural interventions can revitalize the building and reinforce its historical narrative while ensuring its continued role as a cultural and educational space.

Supported by adaptive reuse theories, the thesis applies a method by Cleempoel & Plevoets called aemulatio, which integrates past design principles into contemporary additions to maintain continuity in the architectural fabric. Rather than recreating the past, aemulatio improves upon the original model, enhancing the existing character. This thesis develops a transferable framework for applying aemulatio to adaptive reuse projects involving industrial heritage sites. The framework consists of three phases: analysis, synthesis and design proposal.

The analysis phase examines key objects and structures of the timber rafting industry from historical, technical and functional perspectives. Research documents the building's past and present conditions through site visits, archival materials and visualizations. This provides a comprehensive understanding of the building's context and relationship to the industry. The synthesis phase identifies key characteristics of these objects and structures. These findings reveal the original intent and design language, informing interventions that preserve and enhance the building while adapting it for contemporary use.

The resulting proposal revitalizes the museum, preserving its role as a cultural space while incorporating interventions to meet its functional needs. Through thoughtful additions and subtractions, the outcome balances preservation and transformation. Interventions create a dialogue between the old and new, blurring boundaries between past and present. By safeguarding tangible and intangible heritage, the project ensures that the museum remains a lasting record of the collective memory of timber rafting in the region.

Keywords:
Timber rafting, adaptive reuse, aemulatio

Löved sorting point,
Forshaga, n.d.

Contents

Aim

The aim of this thesis is to explore the method of adaptive reuse and aemulatio as a strategy for preserving and reinterpreting industrial heritage sites. Using the Dyvelsten timber rafting museum in Värmland as a case study, the thesis demonstrates how aemulatio can enhance such sites' historical and cultural significance, offering a transferable framework for applying aemulatio to other heritage and adaptive reuse projects.

This thesis will reveal the building's significance within the broader context of Värmland's industrial heritage, uncovering the layers of history that contribute to its cultural and societal importance. Preserving the museum in its authentic location ensures that the building remains a tangible representation of collective memory while keeping the legacy of the timber rafting era accessible for future generations. This deepens the understanding of its historical and architectural value, reinforcing the museum's role as an important space of collective memory and identity.

Delimitations

The emphasis of this thesis is on architectural and design interventions. While it explores the Dyvelsten timber rafting museum, it does not address project-specific challenges such as accessibility, landslide risk or radon exposure. Although these factors are important to the building's condition, they fall outside the scope of this thesis, which focuses specifically on the spatial and experiential needs of the museum. Similarly, it does not engage with issues related to the handling or logistics of museum objects. By narrowing its focus to these aspects, the thesis maintains a concentrated approach within the established framework.

While the site includes several smaller buildings, the thesis focuses on the main building, which plays a central role in its historical function as both a workshop and museum.

Additionally, the study does not analyze or define a specific target group for the museum, as it prioritizes spatial and design considerations over visitor demographics.

Definitions

Klarälvens flottningsförening
An organization historically responsible for overseeing the timber rafting industry along the Klarälven river.

Löved sorting point
An industrial site along the Klarälven river, historically managed by Klarälvens flottningsförening.

Löved workshop
Initially, this was the central building of the Löved sorting point.

Dyvelsten timber rafting museum
Formerly known as the Löved workshop, the building was repurposed as a museum in 1997.

Forshaga municipality
The primary stakeholder in the Dyvelsten timber rafting museum.

Värmlands museum
Responsible for managing the Dyvelsten timber rafting museum.

Thesis questions

1. How can the transformation of a mothballed industrial heritage site, such as the Dyvelsten timber rafting museum, be reimagined through architectural interventions that honor and preserve its cultural, societal and industrial heritage?

2. How can architectural interventions, in line with the principles of aemulatio, intensify the Dyvelsten timber rafting museum's historic qualities while adapting it for contemporary use?

1. Context

Timber rafting in Sweden

The timber rafting industry in Sweden, spanning from the early 1800s to the late 1900s, played an important role in shaping the country's societal and economic landscape, particularly in regions like Värmland. During the 19th century, technological and economic advancements such as the rise of chemical pulp production and improved sawmill processes drove an increase in demand for timber (Ibsen et al., 2011). Extensive logging operations emerged to meet this growing demand, creating a complex network of rivers and waterways as natural transportation routes. This gave rise to the timber rafting industry, which allowed for transporting large quantities of timber from remote forests to sawmills and pulp industries along rivers. This fueled the timber processing industry, strengthened community ties to their surroundings and embedded timber rafting heritage into Värmland's identity.

Rivers have long served as natural transportation routes, making them especially advantageous for industries reliant on moving large quantities of goods over long distances. Central to the narrative of Sweden's timber rafting industry is the Klarälven river in Värmland. The Klarälven waterway acted as a transportation route for timber, linking forest resources to sawmills and pulp industries downstream.

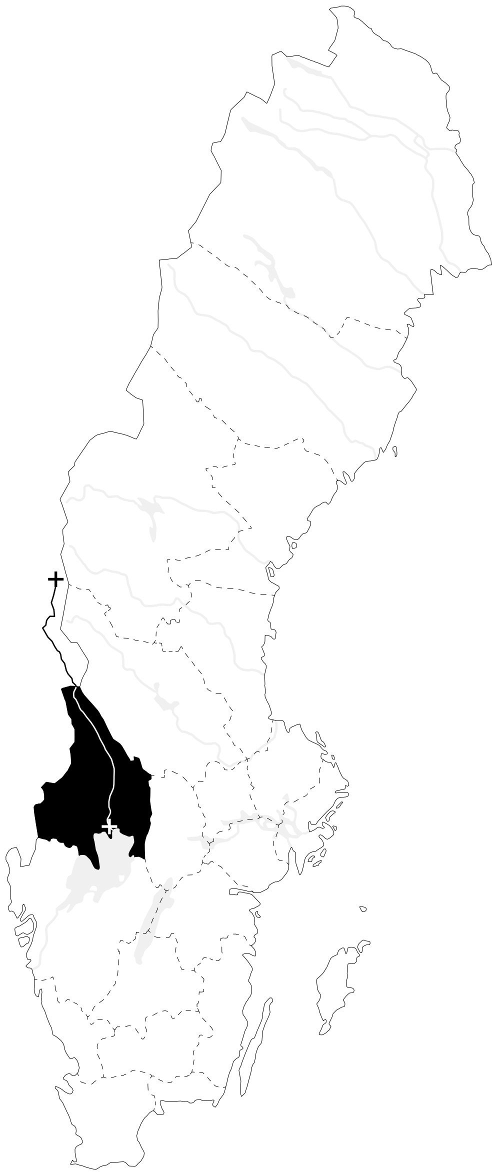
Signs of timber rafting in the lower parts of Klarälven date back as far as the 17th century. By 1832, the association "Herrar Timmerhandlare uti Clara Elf och däri fallande vattendrag," was officially established (Lundén, 1986). This association created an organized system to efficiently manage the flow of logs down the river, ensuring the efficient transport of timber. Various stakeholders, including timber merchants, local authorities and mill operators, collaborated to facilitate log transport, trade and reduce disputes over ownership. In 1893, the association evolved into "Klarälvens flottningsförening" (Lundgren Landin, 2018), setting the foundation for decades of collaboration.

In Sweden, a vast network of rivers – spanning 33,000 kilometers – was once used for timber rafting, far surpassing the current railway network, which spans 16,000 kilometers (Trafikverket, 2024). Klarälven and its tributaries played a central role in this system, stretching a total of 1,000 kilometers, of which 300 kilometers stretch through Norway. At the time, the economic efficiency of using rivers for timber transport was evident, as the costs were only 15% of those associated with rail transport (Lundén, 1986). This natural route facilitated the transportation of immense quantities of logs, shaping the timber industry and the region's economy.

Large forest resources were a primary contributor to transforming Sweden from a poor agrarian society into a prosperous industrial nation (Henriksson, 2011). Timber rafting along Klarälven played a significant role in this development, with transport volumes peaking in 1957 when over 1,000,000 cubic meters of timber were transported – equivalent to approximately 26,700 truckloads of timber (Lundén, 1986). However, the rise of modern transportation methods, such as forest roads, trucks and railways, along with logistical inefficiencies and obstacles like hydropower installations, led to the decline of timber rafting (Ibsen et al., 2011). By the 1960s, smaller tributaries had been abandoned and in 1991, timber rafting on Klarälven ceased entirely. This marked the definitive end of this transport method, not only in Värmland, but throughout Sweden (Lundgren Landin, 2018).

While the forest remains one of Sweden's most valuable resources, the role of the river has changed. The timber rafting industry was essential to Sweden's economy and a key source of employment in rural communities. Generations of men worked in harsh and dangerous conditions along rivers, enduring long hours and physical demands to ensure the timber's journey from the forest to the mill. Timber rafting was more than work – it was a way of life that shaped Sweden's history, still present in local traditions and the nation's collective memory.

Värmland, Sweden
1:10 000 000



Timber rafting in Värmland

During the winter season, timber was felled, debarked and marked with a unique ownership stamp using a marking hammer (Henriksson, 2011). Once marked, the logs were transported to logging route deposit sites. In earlier times, horses were used for this task, but tractors and trucks replaced them over time. The timber was then placed either directly on the ice or along the shorelines, where it remained until the ice melted, allowing the logs to float into the river. This marking system allowed for efficient sorting at the sorting points in Löved and Lusten, Forshaga.

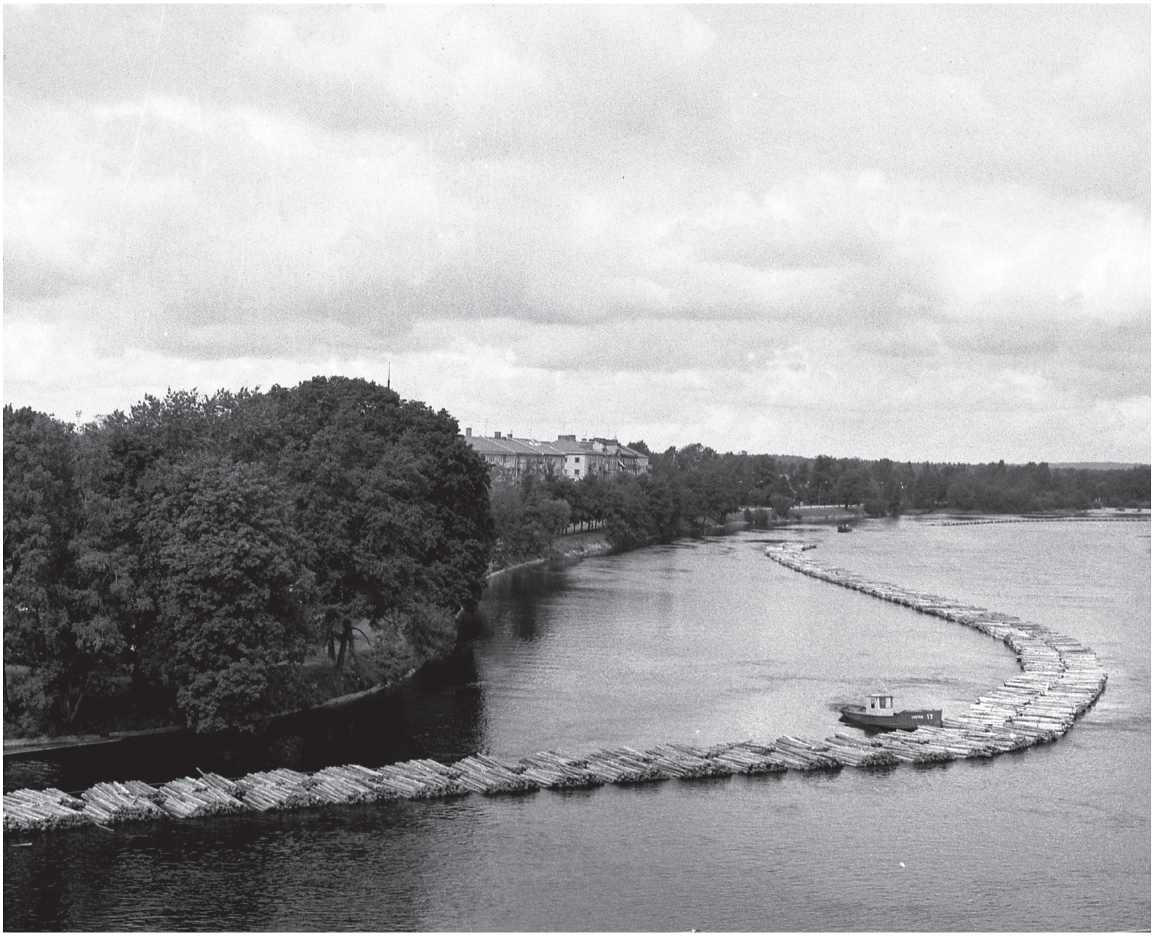
Timber rafting was a seasonal operation spanning from early spring through late autumn. As the ice melted, the river naturally carried the timber downstream, where it was sorted at sorting points. These points, typically situated at river bends and wider sections, were ideal for the organized separation of timber.

The architecture of these sorting points was functional, designed as one extensive system. Thousands of logs were funneled into a long channel, branching into smaller sections where workers on floating bridges distributed them. The points featured wooden platforms, ramps and bridges built to withstand the rugged, ever-changing river conditions. Given the river's constant motion in multiple directions caused by the river current, the structures were designed as a cohesive system with movable joints for flexibility. Durability and practicality were prioritized, with aesthetics secondary to operational efficiency.

The project site for this thesis is located where one of these sorting points once operated in Forshaga, specifically at Löved. The sorting point employed approximately 120 workers who sorted timber into the correct bundles (Lundgren Landin, 2018). In 1961, the sorting point at Löved was closed and merged with the Lusten sorting point, located a few kilometers upstream. Despite the sorting operations moving to Lusten, the Löved workshop remained operational, continuing to serve the timber industry (Lundén, 1986).

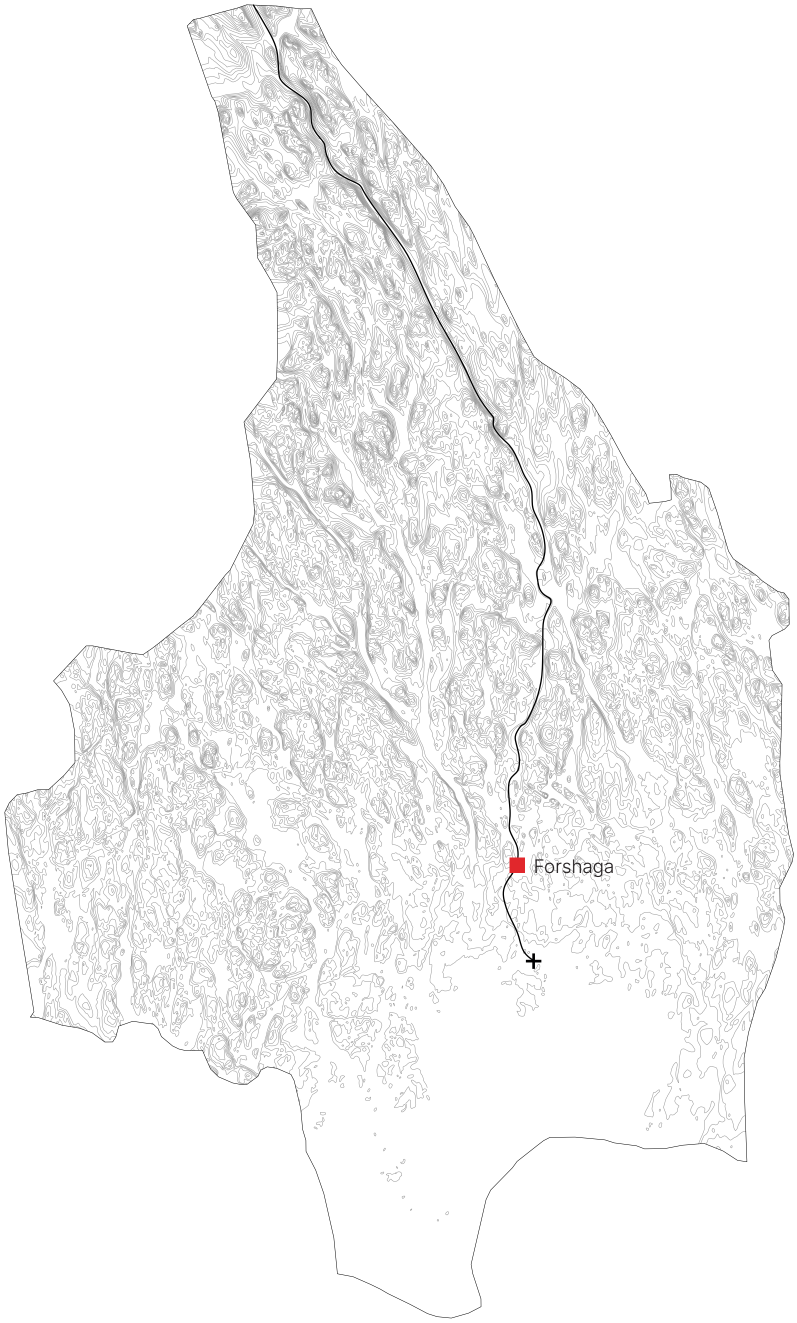
Once sorted and marked, the timber was bundled and towed by Lustenboats to its recipients (Henriksson, 2011). Lustenboats were a common sight for over a hundred years along the lower Klarälven during the summer months when timber rafting was fully operation. For many locals, the sight and sound of the Lustenboats were the first signs of spring, as the melting ice allowed the boats to navigate the river once again. From the 1800s until 1991, Lustenboats became synonymous with timber rafting in Värmland (Lundgren Landin, 2018).

The boats' primary function was to tow timber bundles from Forshaga to sawmills and the pulp industry in Karlstad and Skoghall. These boats were specifically designed to navigate the shifting sandbanks of the river, giving them a unique appearance. Each Swedish timber rafting association had its own distinct boat design, with the Lustenboats easily recognized by their dark green hulls, red bottoms and grey-white cabins.



Timber rafting, Klarälven, n.d.

Forshaga, Värmland
1:1 500 000



Lustenboats,
Klarälven, 1986

Aerial photo,
Forshaga, 2009

Forshaga municipality
1:25 000

Site

The workshop: 1950 – 1991

As the timber rafting industry expanded in the mid-20th century, the need for specialized infrastructure became essential to meet the growing demands of timber transportation. In response, civil engineer Bernt Wennquist designed a workshop in 1950 at the Löved sorting point to serve as a facility for forging tools, boat-making and repairing equipment for Klarälvens Flottningsförening (Värmlands Arkiv, 2024). The workshop not only supported operations at Löved, but also served the nearby sorting point of Lusten. As the timber rafting industry developed across Värmland, this facility became a key station for timber rafting workers (Lundgren Landin, 2018).

The workshop at Löved was involved at every stage of the timbers' journey, from the forest to the river and ultimately to the pulp mills or sawmills. The workshop's primary functions included forging new tools such as rafting hooks, marking hammers and rafting chains. Additionally, repairing existing equipment, boat-making and maintaining the Lustenboats used in timber transport.

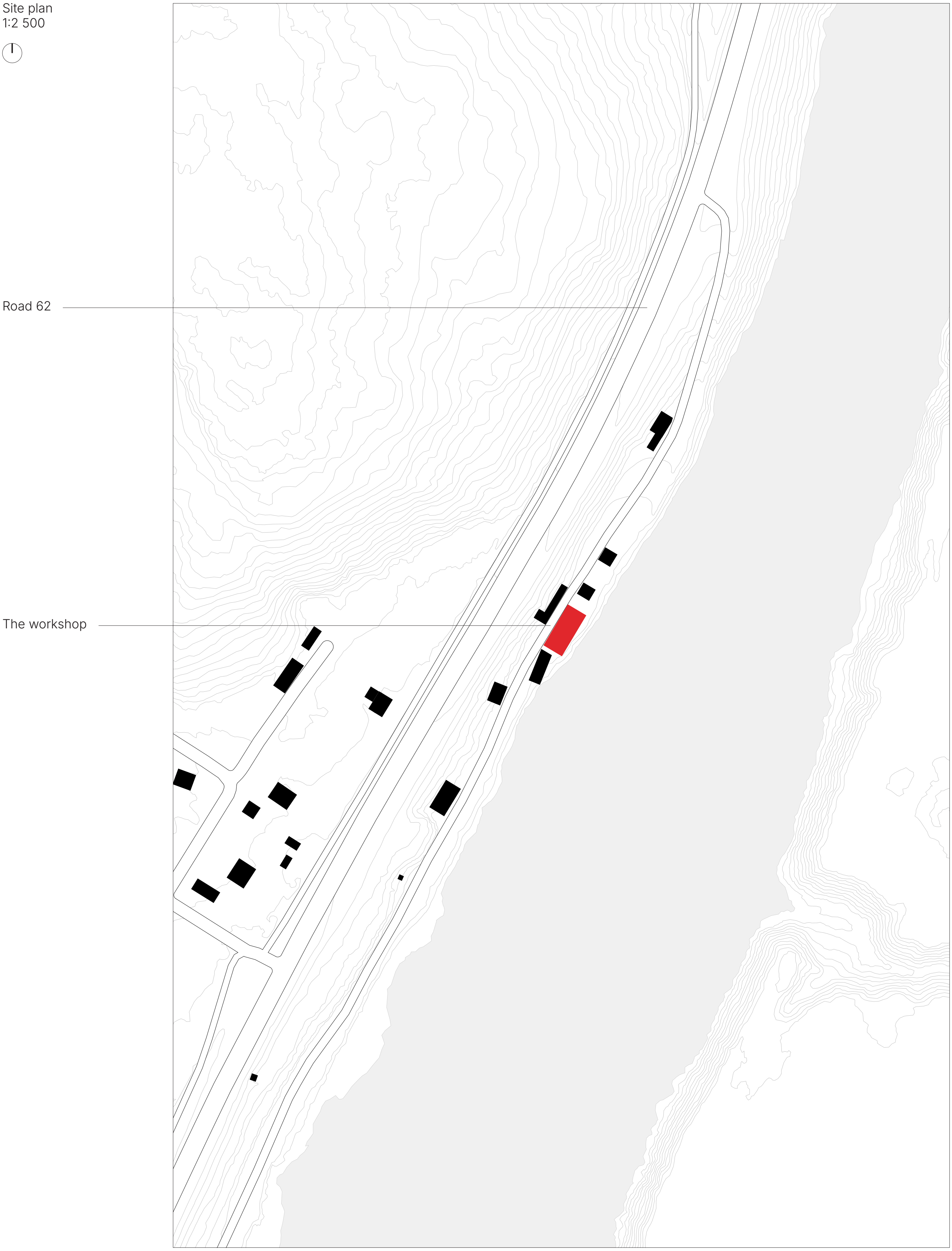
The Lustenboats were a key feature at the sorting point, with the workshop serving as their main station. Whether stationed at the sorting point or transporting the timber downstream to the pulp industry in Skoghall, the boats always returned to Dyvelsten for regular maintenance and repairs. The workshop serviced the boats, including their diesel hot bulb ignition engines, ensuring they remained operational and reliable for the demanding tasks of timber rafting.

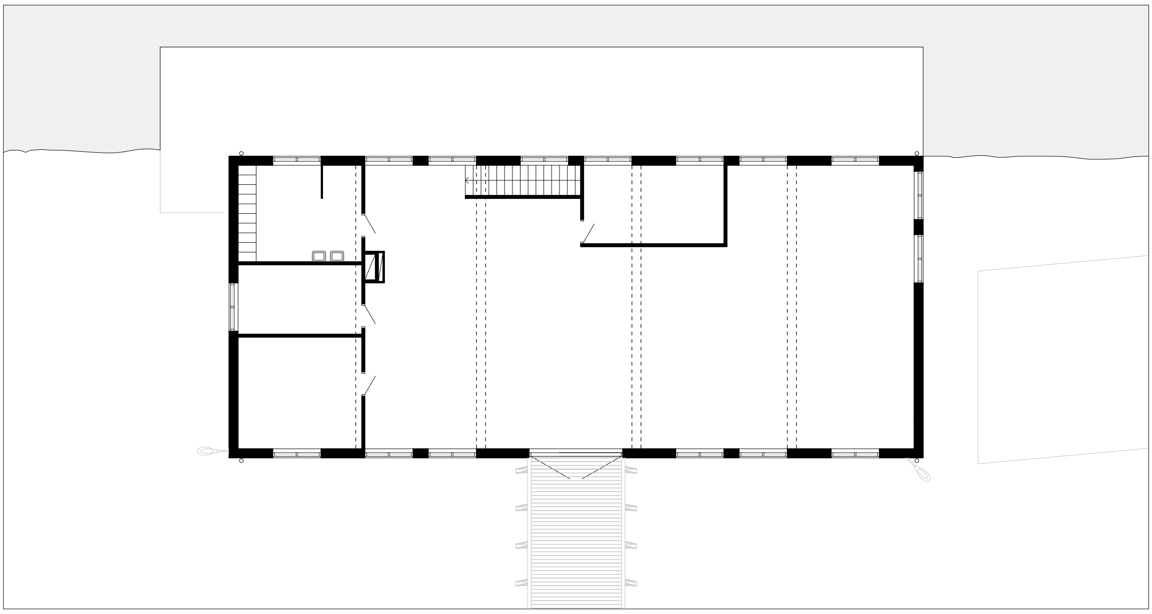
Architecturally, the former workshop consists of a two-story cast-in-place concrete structure, essentially a concrete shell without insulation. The over-dimensioned concrete structure features ceiling beams designed to support lifting and transporting heavy objects. Its rectangular form is defined by a utilitarian design intended to accommodate heavy industrial activities. The exterior features a roughcast stucco facade in a reddish-pink hue and a black bitumen roof. Symmetrical openings and large, green double doors enable the transportation of heavy machinery and boats for repair. This utilitarian aesthetic reflects the workshop's purpose and distinguishes it within the landscape, where it stands as a testament to the area's industrial heritage.

The interior was divided into distinct functional zones across its two floors. The groundfloor included a forge for tool-making, connected to a boiler room and workshop machinery for equipment repairs. The second floor featured a large open space dedicated to office space for administrative work and boat repairs. The boats could be transported in and out via a connecting bridge.

Several auxiliary structures surround the main building, including a boat slip, warehouses and two cabins. A heavy-duty crane, still on site today, was capable of lifting the heavy-hulled Lustenboats into the river. Despite the various surrounding structures, this thesis will primarily focus on the 1950 workshop, which was the main building at Löved sorting point.

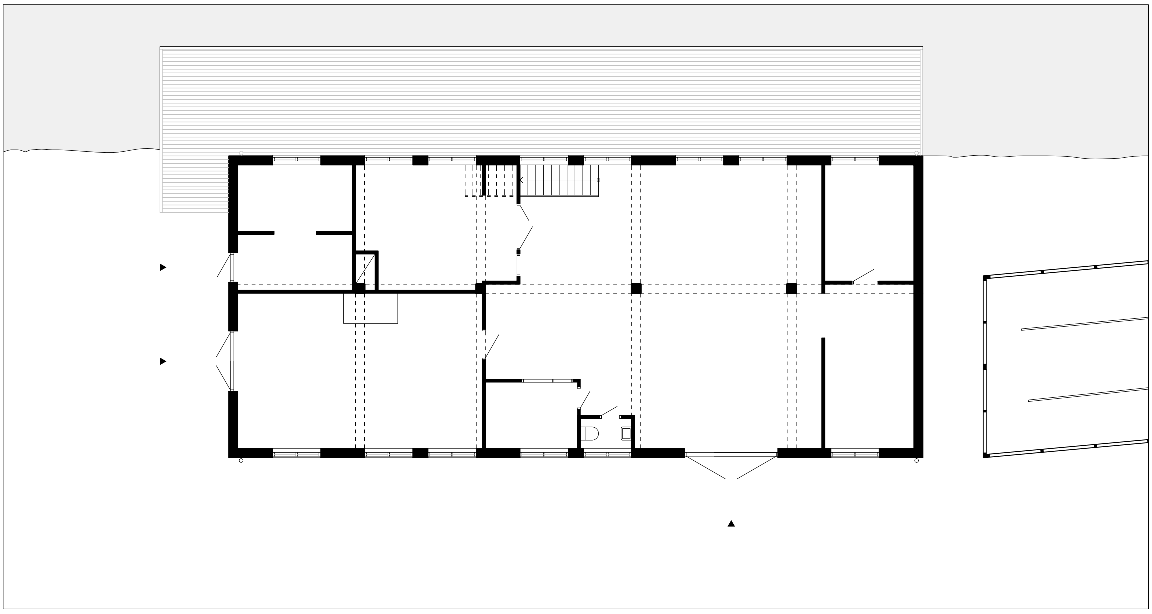
Site plan
1:2 500





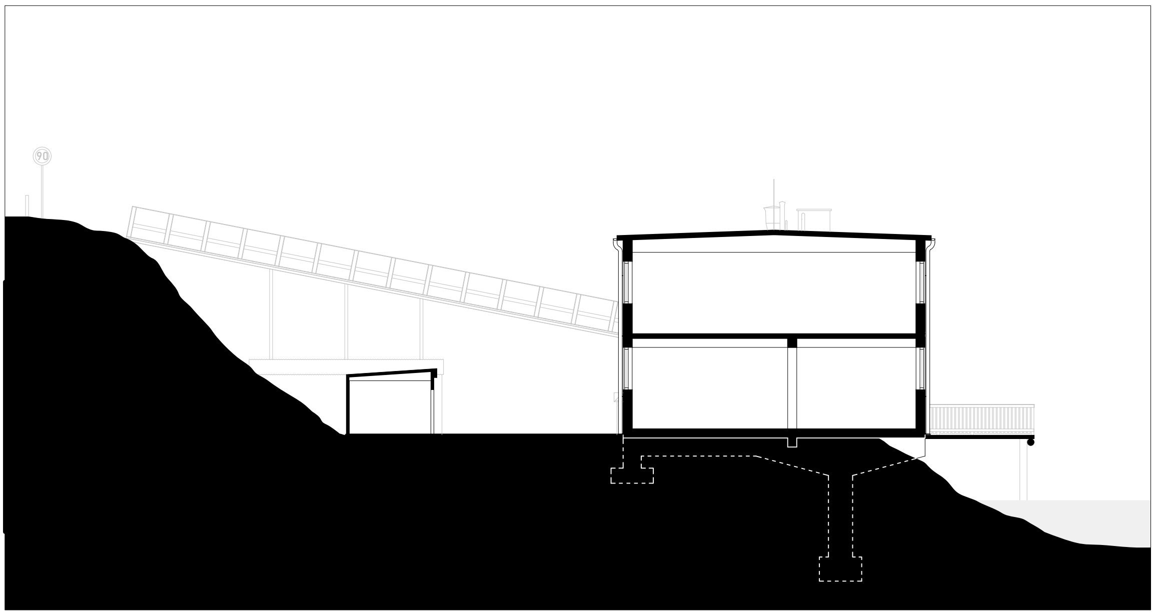
Plan drawing,
Floor 1

1:250



Plan drawing,
Groundfloor

1:250



Section drawing,
Section A–A

1:250

The current state of the building, re-constructed through original drawings, photographs and site observations.

Elevation drawing,
East

1:250

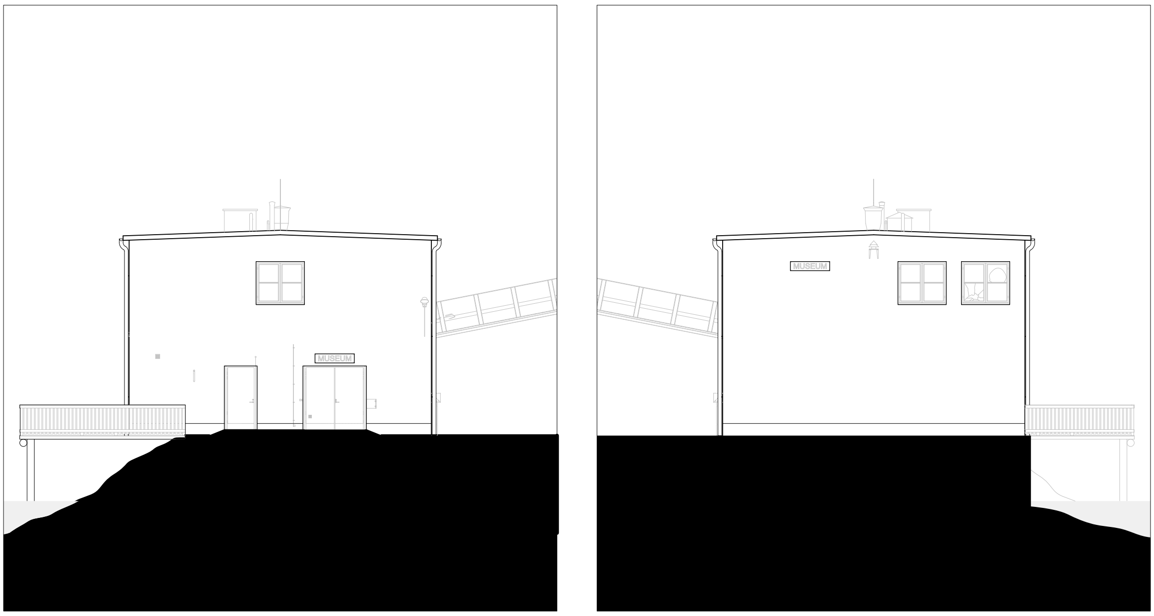
Elevation drawing,
West

1:250

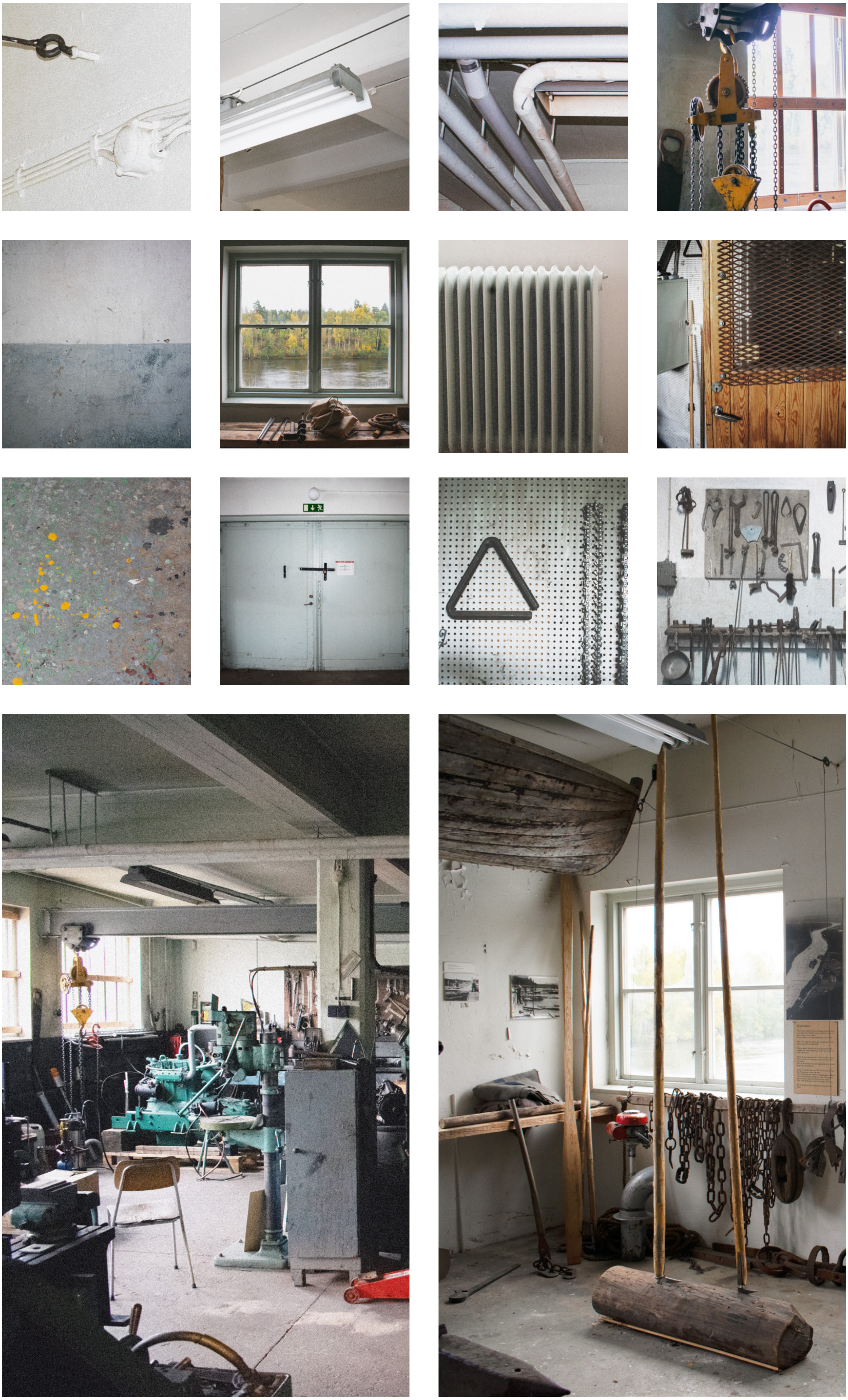
Elevation drawing,
Left:
North

Right:
South

1:250



Photographs,
Current state of interior



Photographs,
Current state of exterior

Problem description

In 1991, the timber rafting industry along Klarälven officially ended, leaving behind an industrial legacy and an abundance of unused infrastructure, including the workshop at Löved. In 1996, just a few years after operations ceased, the workshop was transformed into a museum – an initiative by the former head of Klarälvens Flottningsförening, Bo Lundén. This transformation was made possible through a collaboration between Värmlands Museum and Forshaga municipality, with Forshaga assuming ownership and providing annual operational support.

The transformation into a museum was performed with minimal architectural modification, maintaining much of the workshop's original structure and layout as if the workers had just left the day before. As a result, although the building retains its historical character, it has not been adapted to meet the needs of a modern museum.

The building's new role as a public museum has been severely undermined by the overly conservative approach taken during its transformation from workshop to museum, which left much of the original workshop layout intact. The lack of basic visitor facilities such as a reception, restrooms and a cloakroom fails to meet visitors' expectations. Furthermore, without insulation, the museum is only operable during summer.

These six project-specific challenges threaten its future:

1. Limited exhibition space
Insufficient space limits the display of the collection.

2. Poor insulation
Lack of insulation limits operation to summer months.

3. Lack of visitor facilities
No reception, cloakroom or restrooms are available.

4. Risk of landslide
Road 62 restructuring increases landslide risk.

5. Limited accessibility
The building does not meet accessibility regulations.

6. High radon levels
Elevated radon levels pose a health risk.

Despite these challenges, the museum operated seasonally from 1997 to 2015, attracting around 2,000 visitors annually. However, meeting contemporary museum standards with a seasonal schedule, inadequate exhibition space and a lack of visitor facilities was challenging. While it remained an important educational resource, its limitations contributed to its decline. Recognizing the challenges that the building faces, a new vision for the museum was introduced in 2014, envisioning it as a key cultural meeting point within Värmland's forest and pulp industries.

> "I ett framgångsrikt Värmland är Flottningsmuseet den kulturella mötesplatsen inom det viktiga värmländska skogs- och pappersmassaklustret. Vi stärker industrins identitet och invånarnas livskvalitet genom att levandegöra berättelsen om flottningens betydelse för Värmland i allmänhet och pappersmassaindustrin i synnerhet." (Feasibility Study, Värmlands Museum, 2023).

Despite this renewed vision, the museum faced growing challenges. At the end of the 2015 summer season, Forshaga municipality discontinued funding due to financial constraints, forcing the museum to close. Subsequently, the site was mothballed indefinitely, with no plans for re-opening. Restoring operations would require significant investments to bring the facility up to modern standards for visitors and staff. Since then, the museum has remained dormant, with an uncertain future. By 2023, Värmlands Museum was tasked with conducting a feasibility study to determine the site's future and assess restoration and relocation. The study explored three scenarios and concluded that the most suitable solution would be to relocate the museum to Klarälvsrummet to create conditions for a successful re-opening.

However, these plans were abruptly halted when Klarälvsrummet tragically burned down in 2023. This unforeseen and devastating event has reignited the debate about the museum's future, raising critical questions about preservation and the role of cultural heritage in contemporary society. Leaving the question: what will become of the museum?

Flottningsmuseet,
Forshaga, 2024

2. Theory

Aemulatio in adaptive reuse

Adaptive reuse is an architectural approach that allows existing buildings to evolve in order to support new uses, keeping them relevant in a changing world. This process anticipates future needs, ensuring buildings can accommodate new purposes while retaining their historical and architectural significance. By fostering an ongoing dialogue between past and present, adaptive reuse enables spaces and structures to adapt while preserving their identity (Stone, 2019).

Within adaptive reuse, aemulatio offers a distinct approach. It seeks to elevate the original model rather than preserving or contrasting the old with the new. As defined by Plevoets & Cleempoel in Adaptive Reuse of the Built Heritage, aemulatio means to copy and improve upon the model (Plevoets & Cleempoel, 2019).

This approach challenges conventional adaptive reuse strategies, which often insist on a clear division between past and present to maintain historical authenticity. Instead, aemulatio acknowledges that history itself is iterative, allowing architectural interventions to engage in an ongoing process of refinement rather than simple preservation (Plevoets & Cleempoel, 2019).

Interventions honor past narratives while addressing modern demands by adopting aemulatio. This approach promotes an architectural language that respects historical significance and facilitates meaningful exchange between the past and present within the built environment.

For the Dyvelsten timber rafting museum, aemulatio aligns most closely with the thesis aim. Dyvelsten is more than just a historical site. The museum keeps the memory and identity of the timber rafting industry alive. A preservationist approach risks freezing the building in time, limiting its potential as a living space. On the other hand, an approach that emphasizes contrast could weaken its historical coherence. Aemulatio allows for a sensitive intervention that respects the original architectural language while refining and reinforcing its inherent qualities. By reworking materiality, spatial organization and tectonics in a way that builds upon the building's logic rather than departing from it, aemulatio ensures that the museum remains experientially engaging and connected to its history.

To copy
To implement aemulatio, the architect begins by deeply understanding the building's physical characteristics, materials, function and the architect's original intent. This is not about direct replication, but about copying the essence of the model – its form, function and architectural language. The architect seeks to realize the "ideal" version of what the building could have been, approaching the original architect's intent with empathy. The building's genius loci – the spirit of the place must be understood and respected.

To Improve
Once the original intent is fully understood, the process shifts to improvement through iterative exploration. The building is reinterpreted to enhance its inherent qualities, introducing new elements or materials that blend with the original space or structure. This reinterpretation ensures that the new elements align with the original building's existing logic, language and intent.

The Model
The model in aemulatio extends beyond just the building, structure or space itself. It encompasses characteristics of the building's history, function, materials and contextual elements. What is copied is not simply the form or style, but the underlying principles and intentions that shaped the original design. The intervention, therefore, is about the physical structure and preserving the narrative and spirit that the model represents (Plevoets & Cleempoel, 2019).

The following spread presents project references exemplifying adaptive reuse.

Genius loci

The concept of genius loci, or the "spirit of place," refers to the unique character of a location shaped by its history, landscape and the lives that have unfolded within it. It is an essential consideration in architecture, especially in projects connected to their location and context. As Plevoets & Cleempoel observe, "every building is rooted in its own context, has a direct connection with the place that it inhabits and therefore has a definite narrative to be revealed; every building has its own story to tell" (Plevoets & Cleempoel, p. xviii).

Projects tied to a location cannot be fully understood without recognizing their genius loci. The term encompasses tangible elements such as buildings, landscapes and objects as well as intangible ones, like memory, narrative and social practice (Plevoets & Cleempoel, 2019). In Genius Loci: Towards a Phenomenology of Architecture, Norberg-Schulz emphasizes that the architect's role is to visualize genius loci by creating meaningful places that reflect the distinct character of their environment. This connection between people and place gives architecture its purpose (Norberg-Schulz, 1996).

In adaptive reuse, the layered history becomes more pronounced. As Stone notes, "the reuse of an architectural site creates a direct connection with the past" (Stone, p.36). This connection extends beyond the physical form to the social, cultural and historical values embedded in the building's design and use. The importance of genius loci is especially evident in smaller communities, where architecture carries history and collective memory. These memories, whether associated with traditions or even the simple routines of daily life, form an essential part of a place's identity. The genius loci is more than just context for architecture. It is an important factor in shaping the design process.

Recognizing the stories embedded in places ensures that design interventions contribute to these narratives. By respecting the spirit of place, architecture remains connected to its physical and cultural context.

Collective memory

Collective memory is the intangible trace of shared experiences, narratives and social practices that evolve within a specific place or region. It shapes a community's identity, reflecting its values, traditions and historical narratives.

The relationship between place and time is fundamental to memory. As Plevoets and Cleempoel observe: "The product of the overlap between place and time is memory. Memory is impossible without forgetting, just as buildings cannot be preserved without decline" (p. 91). In adaptive reuse, interventions affect the built structures that serve as the tangible form of collective memory. Deciding what to preserve and let go of needs careful judgment, as genius loci can be easily disrupted (Plevoets & Cleempoel, 2019).

In the book Architecture of the City (1984), Rossi points out that "the city itself is the collective memory of its people and like memory, it is associated with objects and places" (p. 130). This association reinforces the idea that architecture embodies the collective identity of a community. Evidence of collective memory aids in grasping the significance of a place and the value of history, establishing a connection to built structures and the historical context that shapes them (Rossi, 1984).

The memory of the timber rafting industry in Värmland extends beyond those who worked in it. The Lustenboats became a constant presence in the landscape, passing nearly a thousand times each year from spring to autumn. For many, it became tradition. Over time, it attracted tourists, further embedding it into the region's identity and collective memory. The collective memory and interest in timber rafting persists today, especially for the Lustenboats. It is expressed as nostalgia in various forms, even though the museum remains closed. Traces of this heritage are found in songs, poems, children's books, magazines, interviews, social media groups, artwork and toys. The evidence of collective memory highlights the importance of architectural heritage preservation and supports the revival of the timber rafting museum in Dyvelsten.




← Tate Britain,

Left:
Rotunda with fountain
1927

Right:
Rotunda with staircase

Caruso St. John.
London, England.
2013

Tate Britain

by Caruso St. John.
London, England. 2013.

In 2007, Tate Britain commissioned Caruso St John to develop a master plan for the Tate Millbank site. The architects faced the challenge of a building that showcased diverse architectural styles, from edwardian baroque to stripped 1930s neo-classicism and 1970s functionalism. Their interventions unify these layers, addressing previous alterations while respecting historical integrity.

The central spiral staircase and bespoke furniture exemplify this approach. These additions integrate contemporary elements with the existing architecture, reinforcing the building's overall character. The interventions demonstrate aemulatio by enhancing the site and preserving its original architecture.

(Caruso St John, 2013).

← Maison Chèvre,

Left:
Before

Right:
After

Kosmos Architects.
Mettembert, Switzerland.
2021

Maison Chèvre

by Kosmos Architects
Mettembert, Switzerland. 2021.

Maison Chevre transforms a 100-year-old farmhouse in the village of Mettembert into a home for a large family. The project consists of two volumes – one closed and the other open. The existing structure undergoes a series of subtle interventions, preserving its rural character while adapting it for contemporary living.

A key aspect of this transformation is the approach to insulation. The interior receives a new insulated layer, while the exterior is carefully refurbished, maintaining its historical presence. This strategy of layering and renewal demonstrates how material decisions – whether insulating from within or restoring from the outside – fundamentally alter the building's spatial and atmospheric qualities.

(Kosmos Architects, 2021).

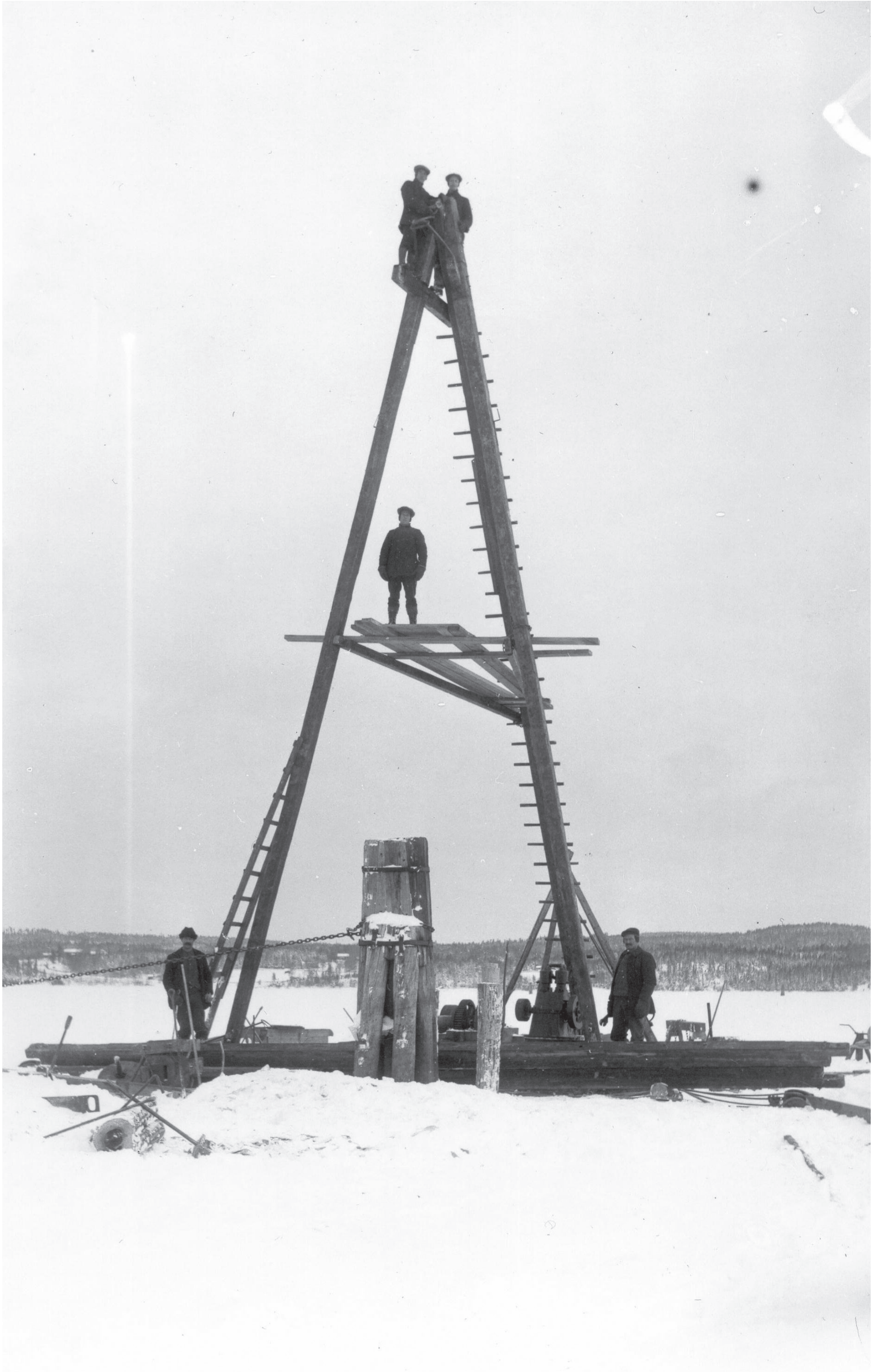
3. Method

Framework for aemulatio

Every project is unique, but the adaptive reuse of industrial heritage buildings requires a thoughtful approach. This framework outlines a process of reinterpretation, aiming to preserve the building's character. It involves studying the project's context, history and project-specific challenges, followed by the exploration of aemulatio through the steps of analysis, synthesis and result.

Project	*The museum* →	Project specific challenges: *1. Limited exhibition space* *2. Poor insulation* *3. Lack of visitor facilities* ~~4. Risk of landslide~~ ~~5. Limited accessibility~~ ~~6. High radon levels~~
↓ **Theory**	*Aemulatio* →	to *copy* and *improve* upon the *model*
↓ **1. Analysis**	*To copy* →	*Understanding the model through a reconstruction of the timber rafting industry to identify key characteristics*
↓ **2. Synthesis**	*To improve* →	*Extracting findings from the analysis to define design strategies for adaptation and reinterpretation of the model*
↓ **3. Result**	*The model* →	*Translating strategies into design interventions that address project-specific issues while improving the model*

Construction of dolphins,
Varpen, n.d.



Analysis

The analysis consists of an atlas that reconstructs and visualizes the former timber rafting industry in Löved, studying four different objects in different scales.

The Löved sorting point, the Lustenboats, the workshop and a selection of timber rafting tools form the focus of this reconstruction. These objects were chosen for their representative value. Together they illustrate the historical, functional and technical complexity of the timber rafting system in Värmland. Each object plays a distinct role, from infrastructure to craftsmanship. This offers multiple entry points for understanding the site's history.

Based on historical photographs, archive drawings and site observations, the objects are represented through axonometric drawings and renders that reveal their function, construction and relationship within the timber rafting industry. The analysis informs the synthesis phase by examining their historical, functional and technical characteristics, establishing a foundation for interventions.

This phase embodies the principle of aemulatio – copying as a means of understanding. Reconstruction does not claim to recover an absolute truth, but rather interprets original intent as embedded in function, material choices and contextual use. Through this lens, the design language of these objects is uncovered and becomes a guiding framework for the proposal.

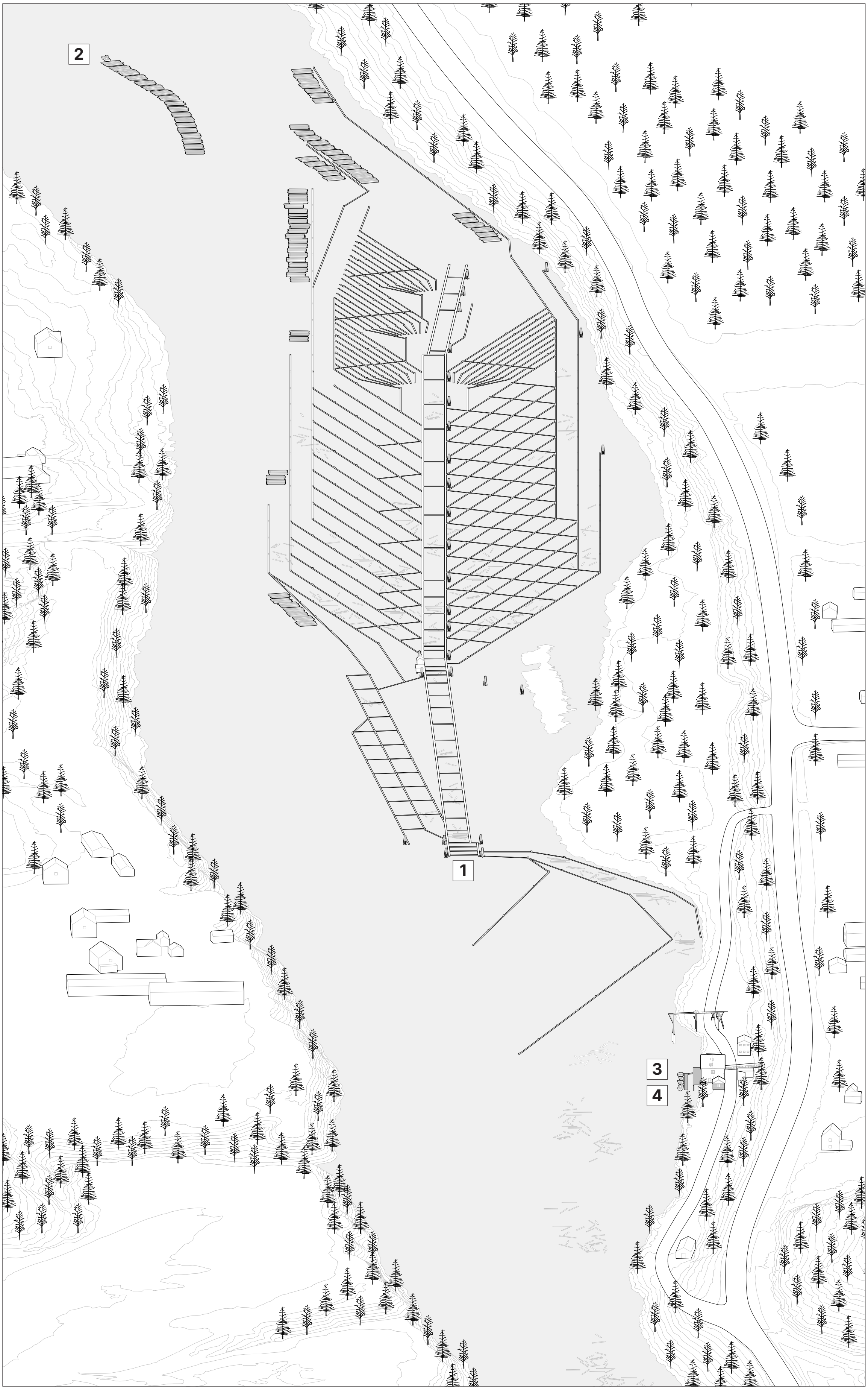
Historical
Positioning the objects within their historical context uncovers how and why they were designed for timber rafting.

Functional
Examining the relationship between objects and their physical or operational context, focusing on how they functioned within the timber rafting system – including their specific roles and how those evolved over time.

Technical
Understanding the objects' construction, materials, structural logic and methods of assembly. This includes examining the construction of Lustenboats, how sorting points operated and the craftsmanship of timber rafting tools.

Drawing,
Reconstruction of the timber rafting industry at Löved sorting point

1. *Löved sorting point*
2. *Lustenboats*
3. *Workshop*
4. *Timber rafting tools*



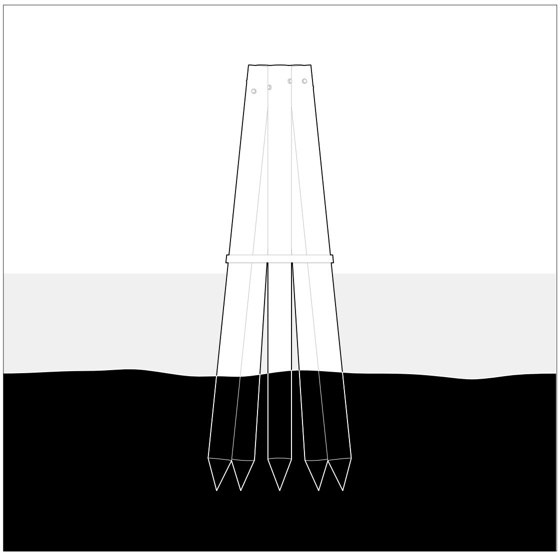
1. Löved sorting point

The Löved sorting point was a node in the rafting system, part of a larger industrial machine in the supply chain.

Historical
It was established at a key point along Klarälven to ensure timber from various sources reached the appropriate sawmills and pulp industries. A site where timber was handled, sorted and transported further along the chain.

Functional
The sorting point was a flexible, shifting landscape where bridges and channels were continuously adjusted. Logs were sorted by size and recipient, then guided before being bundled and towed by Lustenboats.

Technical
Löved's repetitive and modular infrastructure embodied raw industrial functionality. Its structure followed a tectonic logic in which function dictates form.



Section drawing,
Dolphin

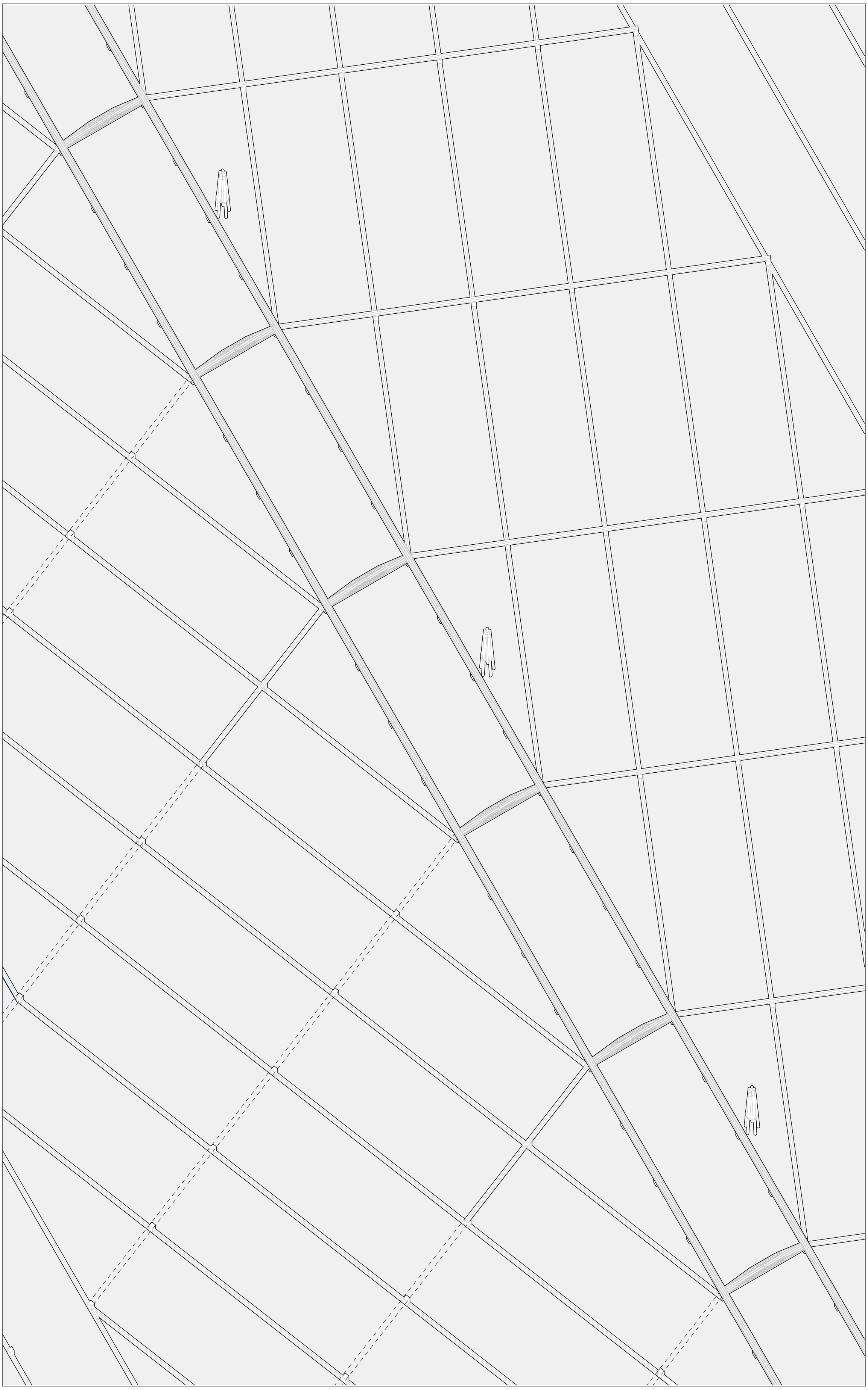
Dolphins are fixed timber structures placed in the river to guide floating logs.

Render,
Sorting process

At the sorting point, raftsmen stand on bridges and use rafting hooks to separate the logs.

Axonometric drawing,
Löved sorting point

The sorting point with adjustable bridges and channels for sorting the logs.



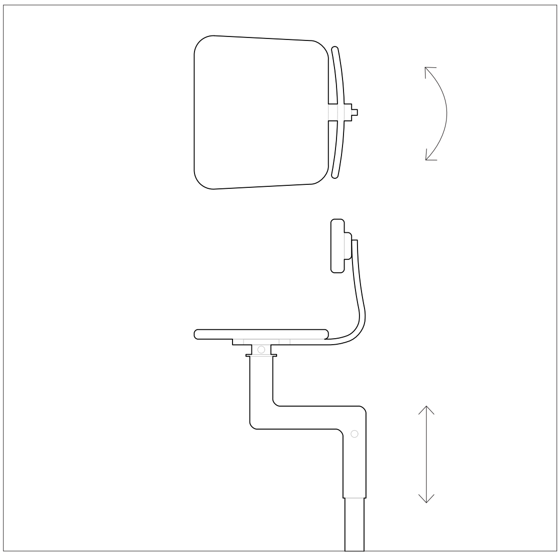
2. Lustenboats

The Lustenboats were designed by several mechanical workshops across Sweden. The Dyvelsten timber rafting museum currently holds eight examples in its collection.

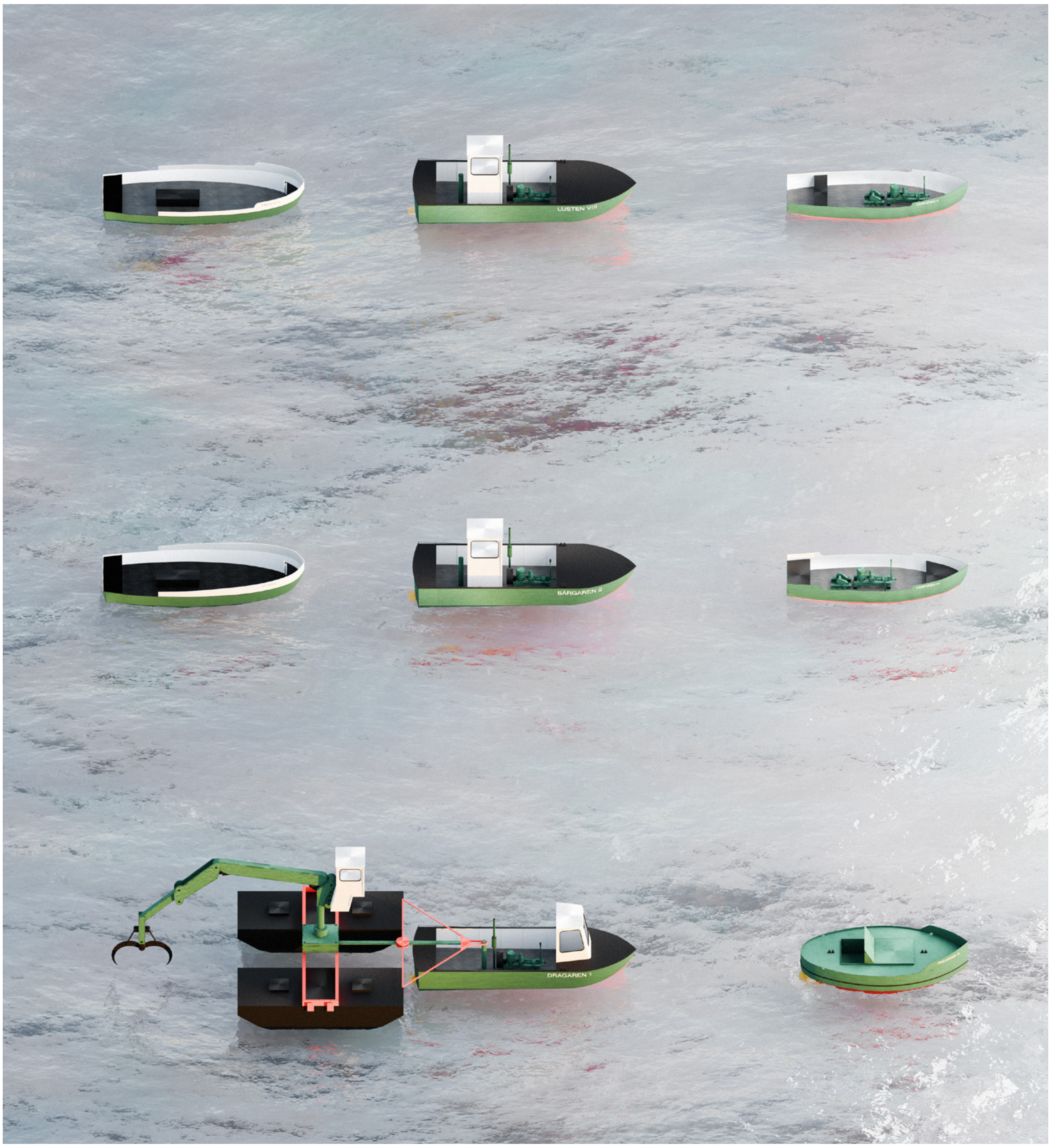
Historical
In the beginning, rafting boats were made out of wood. However, the harsh rafting conditions, hard wear and Klarälven's shallow waters demanded more durable boats, which led to the creation of thick steel hulled Lustenboats.

Functional
Each boat is unique in expression and was crafted to fulfill specific roles within the timber rafting industry.

Technical
The boats feature metal hulls and are painted with a distinctive color scheme of light grey, green, red and yellow. Exposed ignition ball engines and mechanical steering components reflect their utilitarian design.

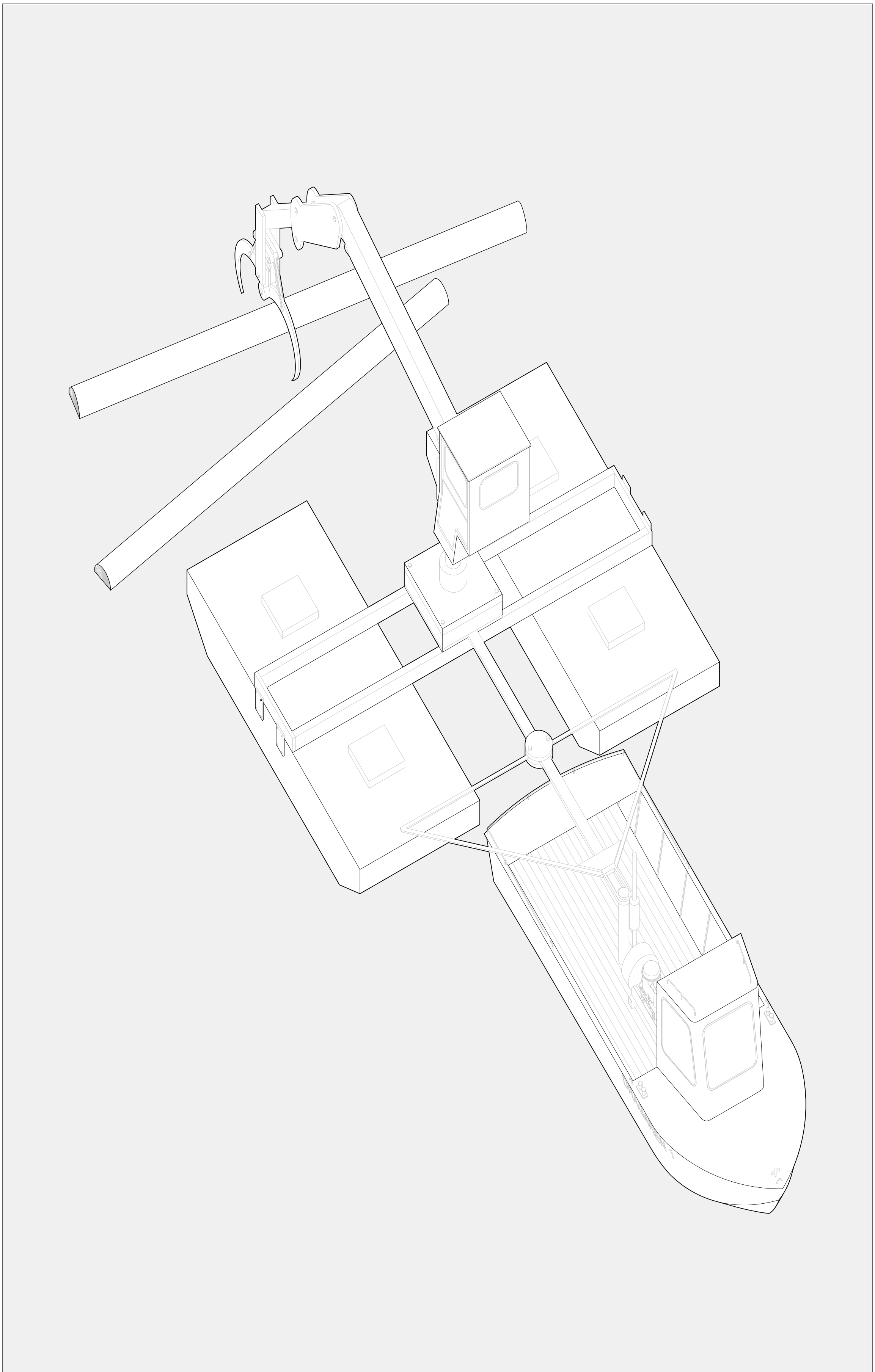


Plan and elevation,
Typical chair used in the helm of the Lustenboats



Render,
The eight Lustenboats that the museum currently holds in its collection

Axonometric drawing,
Dragaren 1



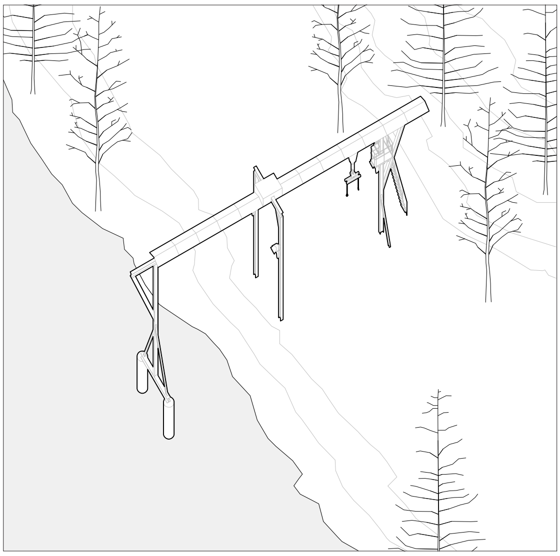
3. Workshop

The workshop at Dyvelsten served as a supporting structure in the sorting point of the timber rafting supply chain.

Historical
The workshop was central to the timber rafting process. Workers crafted and repaired equipment for nearby sorting points. It was the main building among several, including storages, a boat slip and a crane.

Functional
The workshop served three main functions: forging and repairing timber rafting tools, maintaining the Lustenboats and handling administrative tasks.

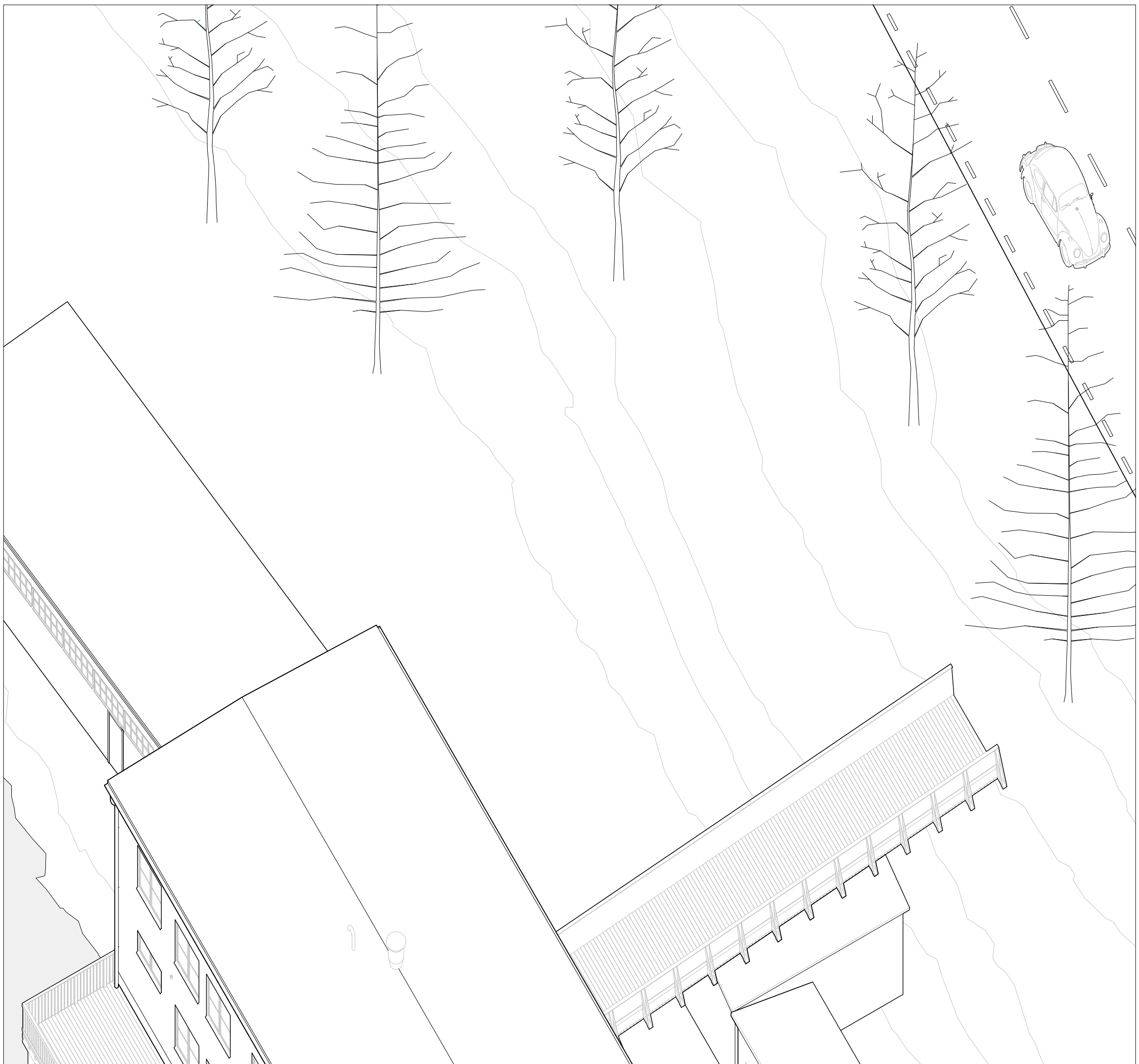
Technical
Architecturally, the building is a two-story, cast-in-place concrete shell without insulation. The building's industrial character is defined by its forge, machines, exposed structure and heavy-duty equipment.



Axonometric drawing,
The boat crane at Löved sorting point

Render,
The forge

Axonometric drawing,
The workshop at Löved sorting point



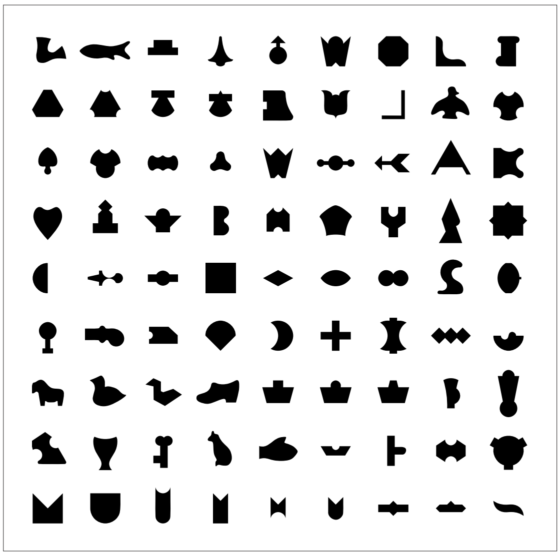
4. Timber rafting tools

Timber rafting tools were important for managing logs in the river and forest, from marking and debarking timber in the forest to guiding it at sorting points.

Historical
These tools were crafted and maintained at the Dyvelsten workshop and used by raftsmen at the sorting point.

Functional
Rafting hooks were used to grab and pull logs during sorting. Rafting chains connected logs with dolphins which served as guides. Marking hammers identified ownership or destination and bark shovels debarked logs to enhance buoyancy and prevent jams.

Technical
Made from steel and wood, the tools had exposed joints and practical designs, requiring frequent maintenance and replacement of steel components.



Drawing,
Timber markings used by Klarälvens Flottningsförening

1917 – 1918.

Render,
A man using a rafting hook to sort logs

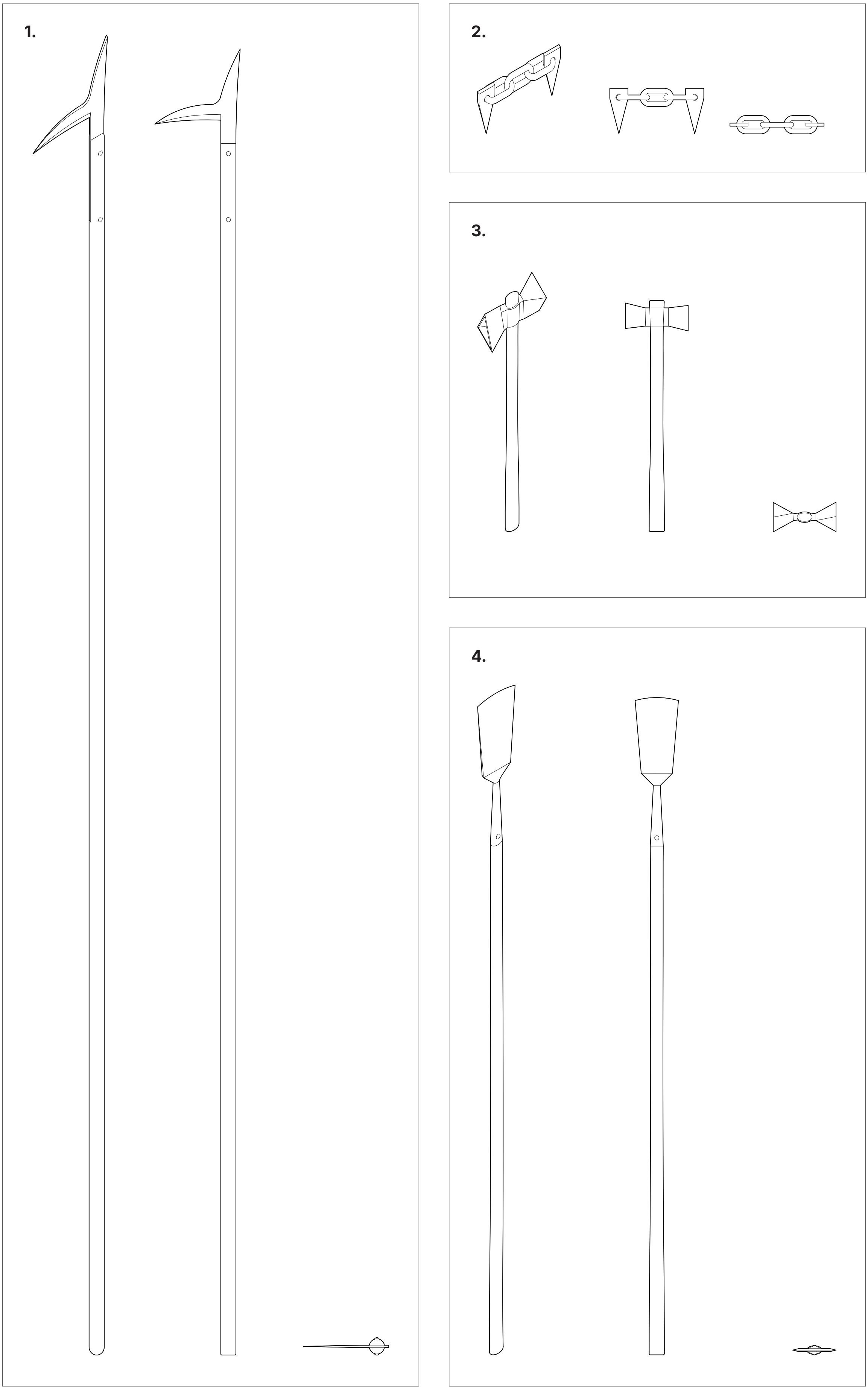
Drawing,
Timber rafting tools

1. Rafting hook

2. Rafting chain

3. Marking hammer

4. Bark shovel



Synthesis

Following the analysis and reconstruction of the timber rafting industry in Löved, six key qualities have been identified that shape the design language and underlying logic of the objects within this system. This synthesis reflects on these qualities and their influence on potential design interventions, ensuring that the original intent is preserved and enhanced.

To the right is a visual representation of how each quality from the synthesis translates into physical, spatial or material interventions in the museum's design.

These renders directly connect the findings from the synthesis to design decisions, ensuring that each intervention aligns with the insights uncovered through analysis, maintaining a clear link between theory and the proposal.

1. A system of modular parts
The timber rafting industry in Löved can be understood as an interconnected system where each element plays a role in a larger industrial process. The sorting point, boats, tools and workshop form part of this machine, operating in unison to ensure the transportation of logs. Modularity, repetition and layering of functions defined this system. Modular objects were repeated across different scales, from the individual tools used by raftsmen to the bridges at the sorting point.

2. Tectonic approach
The timber rafting industry's structures and tools featured visible construction and exposed joints. Interventions should reflect this, articulating the relationship between load, movement and structure. By following the logic of assembly, the design should make materiality and the act of construction legible. It should embrace a tectonic approach that highlights the craftsmanship, the process of assembly and the connection between form, material and structure.

3. Material & color
The materials used within the timber rafting industry were left natural or minimally processed. Timber and metal were selected for their durability, enduring weathering and patination over time. In contrast, the Lustenboats' distinct green, red, light grey and yellow added a vibrant feature. Design interventions should therefore honor these raw qualities, textures and color schemes, from the building's exterior and interior to the boats, preserving the character of the materials.

4. Craftsmanship
Objects within the timber rafting industry were handmade and often imperfect. These imperfections are not flaws, but evidence of individual care and attention. The absence of automation highlights the importance of craftsmanship and physical labor. Raw materials were shaped by skilled hands and tools in the workshop and forge, transforming into equipment, boats and other tools. This quality calls for interventions that preserve and celebrate craftsmanship.

5. Mechanic qualities
The system's utilitarian design is structured around in mechanical functionality. Objects respond to forces like water flow while allowing for flexibility by the logic of their joints. Operating on a manually driven logic, the system relied heavily on human force and mechanical components like pivots and pulleys. Interventions should emphasize this engineered quality, focusing on movement and material interaction, creating spaces that actively perform, not just reference the past.

6. Tangible heritage
Objects from the analysis, such as the Lustenboats, tools and dolphins exist in the museum's collection. These serve as tangible evidence of the timber rafting industry's collective memory and cultural significance.

By respectfully preserving and displaying these items, they are given the proper space to be experienced, ensuring the history of timber rafting remains accessible to future generations in an authentic context.

Render,
Left:
1. *A system of modular parts*

Right:
2. *Tectonic approach*

Render,
Left:
3. *Material & color*

Right:
4. *Craftmanship*

Render,
Left:
5. *Mechanic qualities*

Right:
6. *Tangible heritage*

Design process

To involve, preserve and extend the existing logic and character of the museum and its timber rafting heritage, a design process was developed to guide the synthesis of new interventions. This process was divided into four focus areas: object, material, proportion and volume. Each category ensured that all aspects of the museum such as the exterior, interior, standalone objects and the overall perception of the building were addressed. This allowed interventions and additions to align holistically and with clear intent.

Objects
Standalone objects such as furniture, lighting and exhibition displays are derived from objects tied to the timber rafting industry. The exhibition display derives its structure, form and joints from the dolphins. The display's vertical supports are multiplied creating four rows connected by a grid of tensioned wires, building upon the existing wires that support the light fixtures. The result is a modular and flexible display system that echoes the logic of timber sorting.

Materials
Material additions in the project intend to preserve and subtly extend the character of the existing building. Rather than replacing aged surfaces, the design keeps the original painted concrete in its current, weathered state. The converted boiler room to restrooms, exemplifies the approach by reintroducing the same color scheme, but now as newly applied paint that stands in contrast to the original. Time is marked through subtle contrasts, while maintaining material consistency.

Proportion
The suggested proposals are made to both challenge and respect the proportions of the existing building. They are made to continue the building's original character, while adding new visual design expressions and features to enhance visitor experience. This is exemplified through the new wider windows on the added floor, which follow the horizontal and vertical structure of the existing openings. These windows align with the original facade rhythm, but are increased in size to enhance the view.

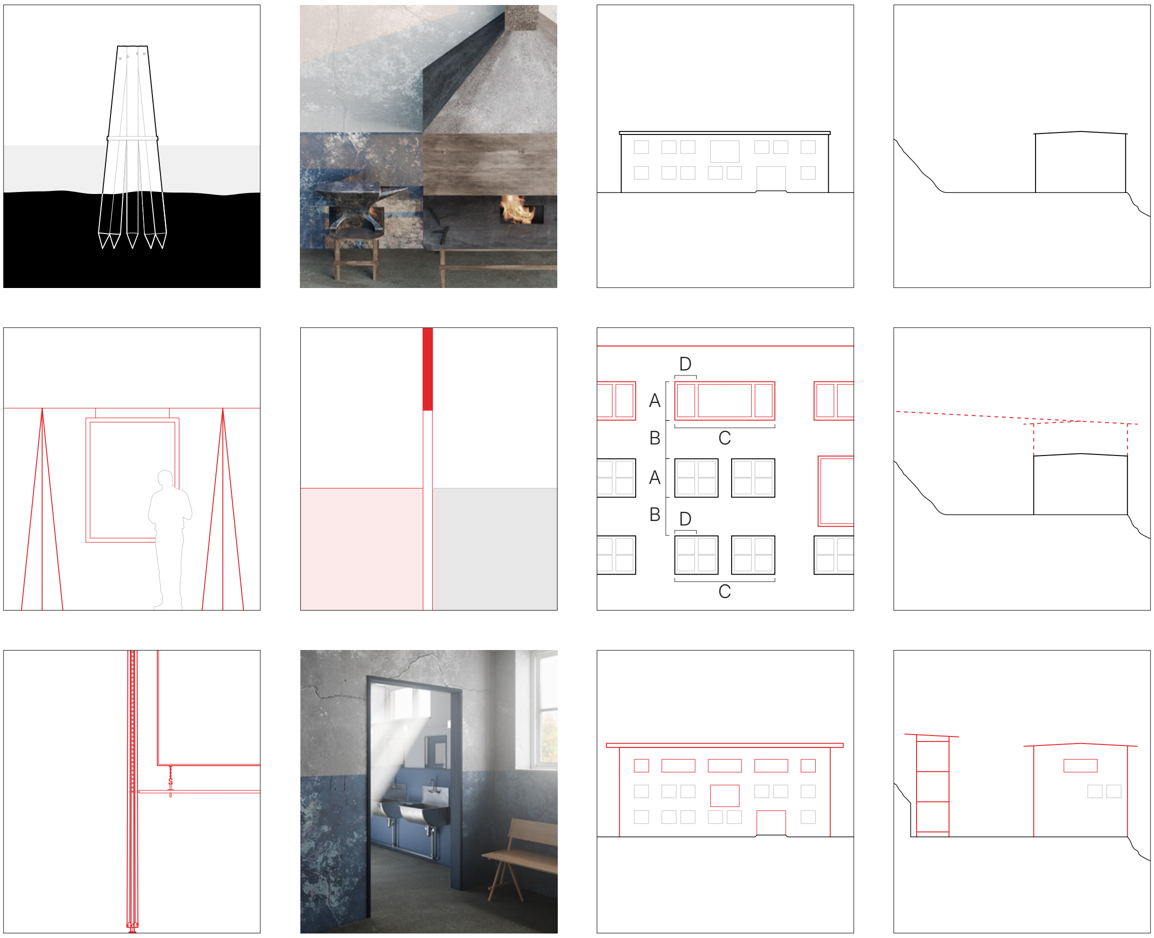
Volume
Additions to the museum intend to preserve the existing form and massing. A new floor increases the overall volume, but maintains the original low-pitched roof angle to retain the building's low profile. This same angle is extended to the added boat storage, which projects from the museum volume. The new boat storage is embedded in the sloping landscape, forming a visual connection to the road and aligning with the existing building in length and height.

Objects | *Materials* | *Proportion* | *Volume*

1. Analysis
To copy

2. Synthesis
To improve

3. Result
The model



4. Result

Design proposals

To implement the findings developed in earlier phases, this thesis proposes solutions to three project-specific challenges: limited exhibition space, poor insulation and a lack of visitor facilities. These challenges are addressed through proposals structured into four key areas:
A. Visitor facilities
B. Interior exhibition space
C. Exterior exhibition space
D. Insulation

These design proposals aim to explore how aemulatio can serve as a design strategy in adaptive reuse projects by enhancing and improving industrial heritage buildings. Rather than introducing a contrasting intervention, the approach embraces continuity – drawing from the existing architectural language and original intent of the timber rafting industry. By working within the established material and structural logic of the past rafting industry, the proposal creates interventions that feel like a natural continuation of the building's architectural identity rather than an imposed transformation. Each proposal aims to integrate the six key characteristics identified through analysis and synthesis, embedding them into the design decisions and using these characteristics as a guide for every intervention and addition.

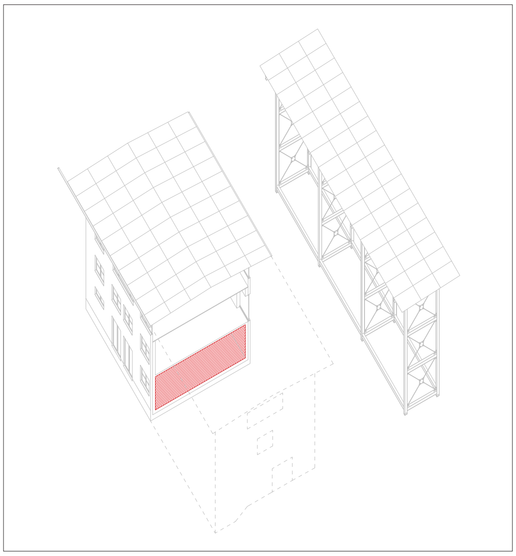
The result is an investigation into how aemulatio operates in practice, examining the interaction between the existing and the new. It explores how space can be improved through a process of copying and improving.

By adopting this approach, the proposal shifts away from conventional adaptive reuse strategies that rely on creating a stark contrast. Instead, it embraces a layered approach in which new interventions enhance the site's identity while subtly signaling their contemporary presence. This strategy transforms the museum into a more coherent environment, allowing visitors to experience the history of the timber rafting industry through a dialogue between past and present.

Legend
Existing
Addition
Subtraction

Axonometric drawing,
Overview of proposal

← Render,
Entrance



↑ Diagram,
Overview of proposal

A. Visitor facilities

The museum's arrival sequence is currently undefined. The experience begins fragmented without an entrance that signals arrival or spaces that support visitors – such as a reception, cloakroom or restrooms. This proposal introduces the missing visitor facilities, framing a clear and more generous point of arrival.

The intent is not to overwrite history, but to embed new functions within it – allowing the building to support contemporary use while amplifying its industrial character. Through minimal subtraction and careful material choices, the intervention creates a welcoming environment that enhances the overall visitor experience.

The transformation begins at the large industrial doors, once used as loading bays for the workshop. These are replaced with pivoting glazed doors that let light in, signal a new entrance and connect the arrival space to the riverside terrace.

The transformation of the space is derived and aligns with key characteristics from the synthesis. The material and color choices honor the existing workshop's color scheme. The old boiler room is adapted into restrooms, finished in new white and blue paint, echoing the painted concrete already present. The walls and floor of the workshop reveal decades of use in weathered concrete, scuffed edges and uneven textures. These raw imperfections aren't erased, but highlighted. The material language is not about restoring the building to a former state, but about revealing what is already there – allowing age, repair and transformation to coexist visibly.

Craftsmanship is emphasized through the design of the reception desk, which incorporates subtle references to objects studied from the atlas. The desk, made of steel sheets perforated with markings from timber rafting axes anchors the entrance and provides orientation.

The forge is preserved, but adapted to function as a modern learning space to support both theoretical and practical education. In that way its original purpose to serve as a site for creation is continued and extends the usability of the building beyond a traditional museum. This is done to maintain the site's tangible heritage and enable a wider visitor demographic.

The design proposal addresses the following:

- The lack of a clear entrance
  Creating an entrance that is easily identifiable and welcoming to visitors.

- The lack of a reception
  Introducing a reception near the entrance to guide and orient visitors.

- The lack of WC facilities
  Installing restrooms that meet modern standards.

- The lack of a cloakroom
  Providing a space for visitors to store their belongings.

- The underutilized workshop and forge
  Reworking these spaces to serve as a functional workshop.

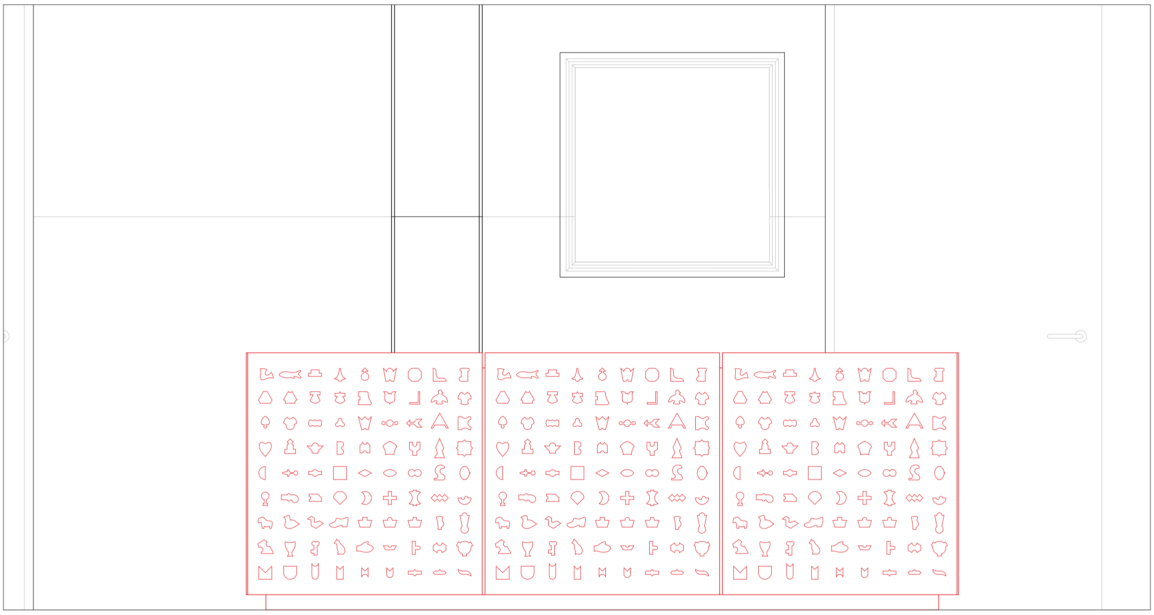
- Spatial disconnection between interior and exterior
  Connects reception to the riverside terrace.

Axonometric drawing,
Groundfloor

(Subtractions excluded)

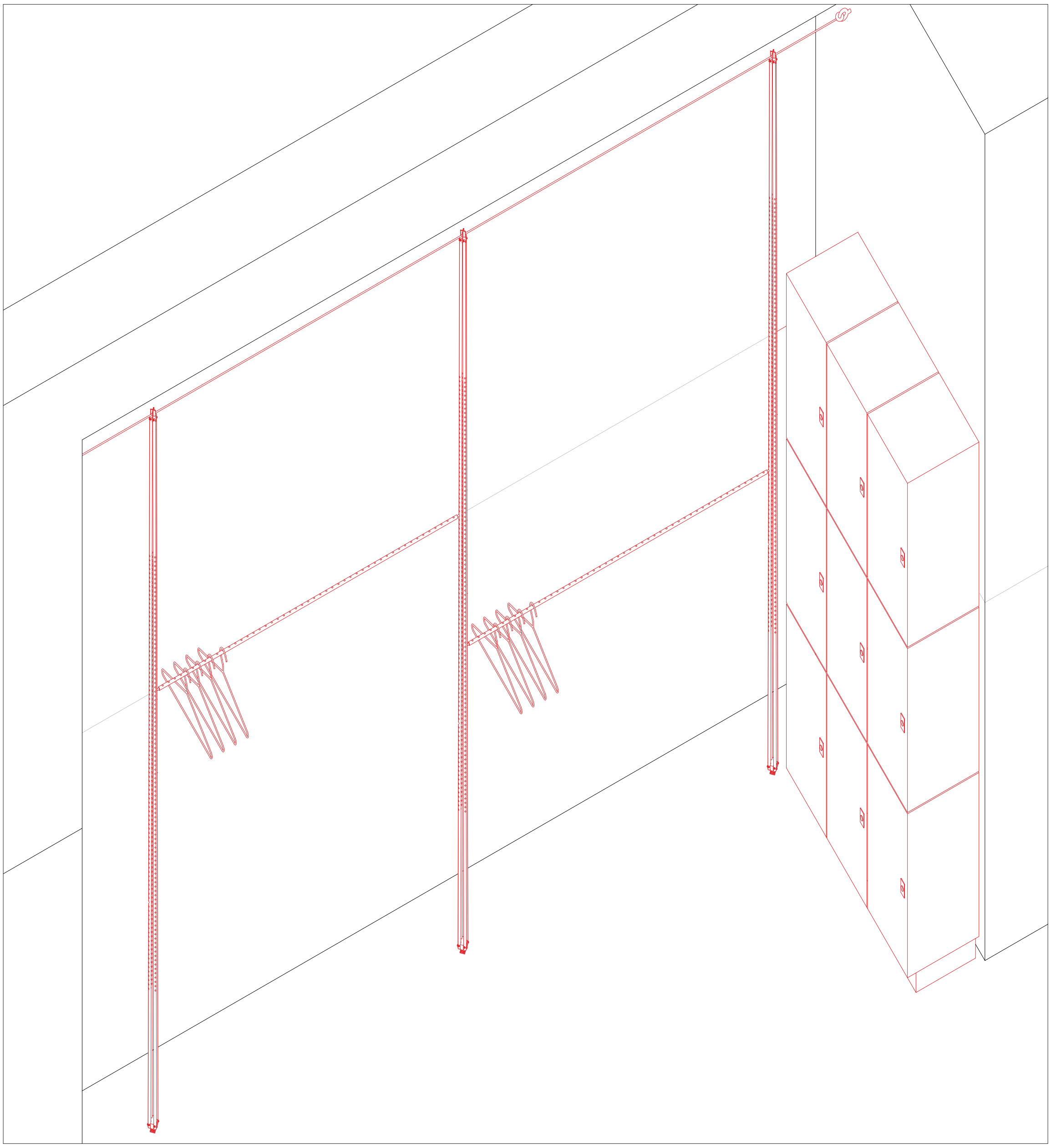
1:200

Render,
Restroom



Elevation drawing,
Reception desk

1:25

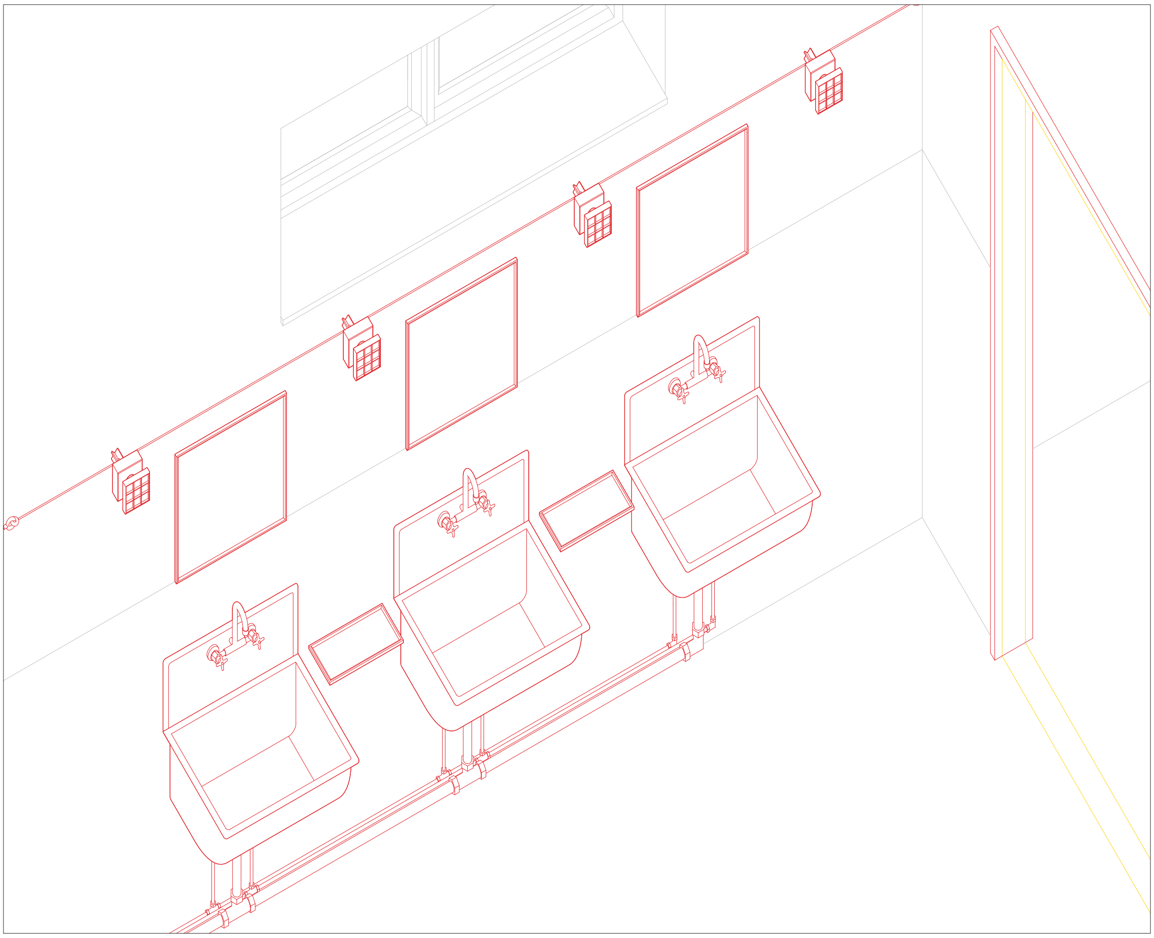


Axonometric drawing,
Cloakroom

1:25

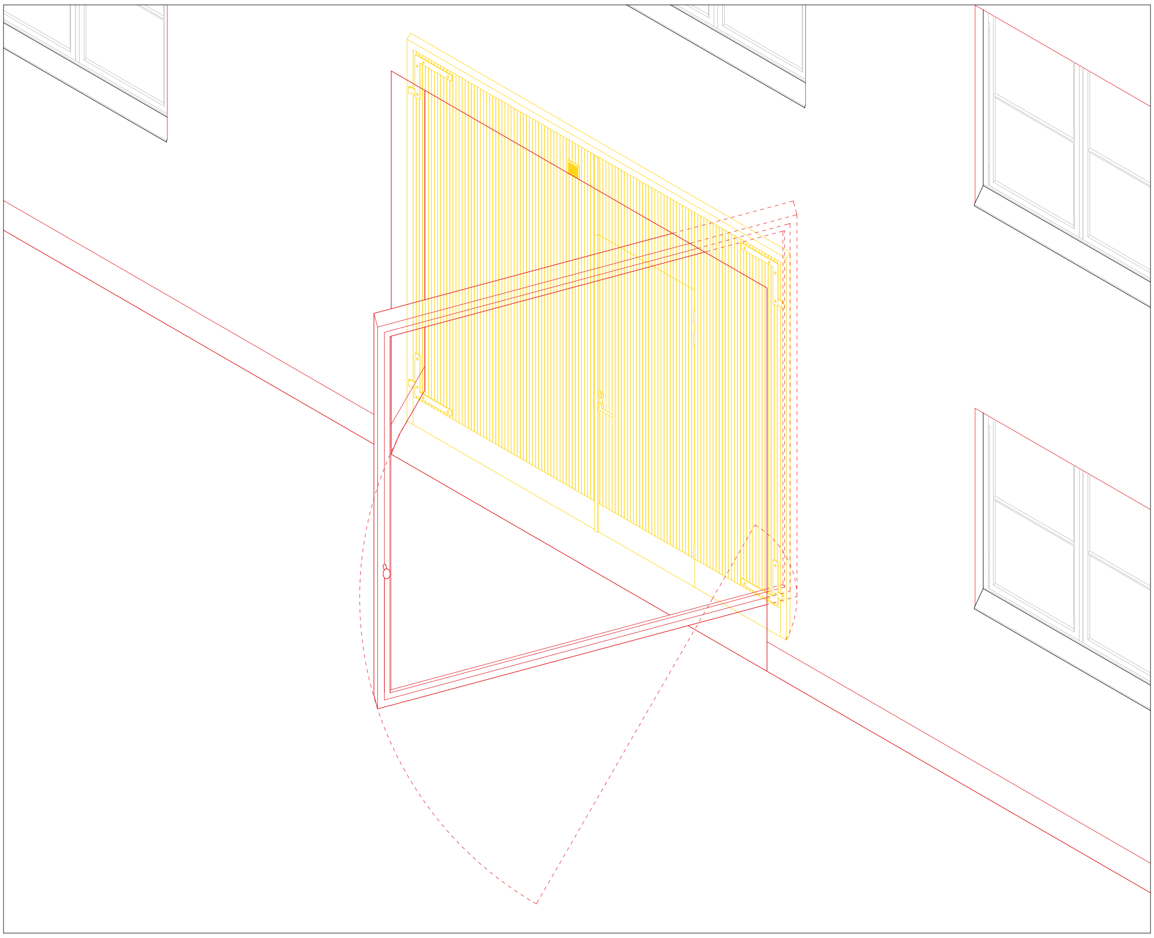
Axonometric drawing,
Restroom

1:25

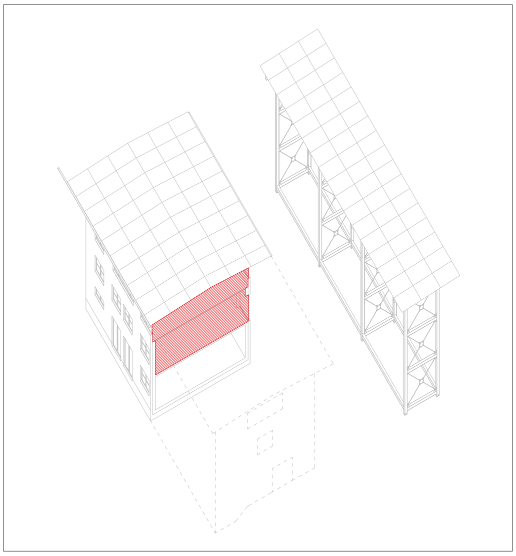


Axonometric drawing,
Pivot door

1:50



← Render,
Exhibition space, first floor



↑ Diagram,
Overview of proposal

B. Interior exhibition space

The interior exhibition space is reimagined to address the limitations of the current display. The existing exhibition, located on the first floor, is overcrowded, fragmented and lacks room to display larger objects. This proposal restructures the existing floor and introduces an additional one above, both designed with flexibility and spatial clarity in mind. Displays are modular and reconfigurable, accommodating different exhibition types and curatorial approaches.

The aim is to create an adaptive setting where the museum's collection can be experienced at various scales – from suspended boats to small crafted objects. The design also provides space for rest, engagement and education.

The transformation begins by opening the existing exhibition floor. Non-load-bearing walls are removed to create a continuous space where the gables form generous double-height zones. These allow larger objects such as boats to be suspended, emphasizing their scale and presence.

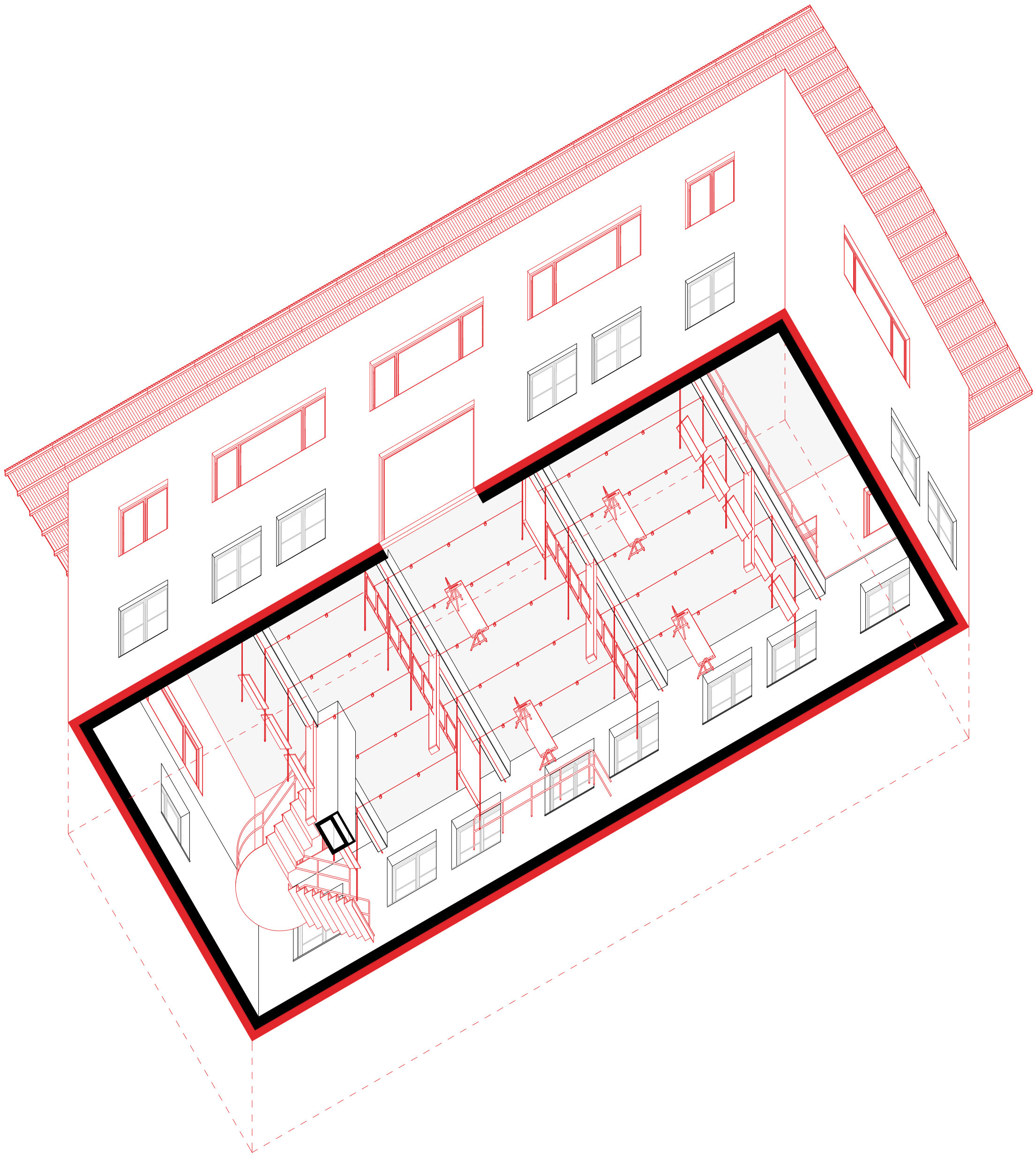
A new modular grid system is introduced, suspended just below the existing beams. It draws from the original lighting structure, expanding it with additional wires to hold exhibition displays and new light fixtures. This system supports flexibility and enables variation in how the collection can be curated.

Craftsmanship is emphasized throughout – from bespoke light switches inspired by the ignition engine levers to exhibition displays and benches inspired by the construction of dolphins. Mechanical movement becomes a recurring theme, as benches include backrests that can flip direction, light fixtures that rotate via ball joints and the exhibition displays that support multiple configurations.

Above, a new floor is added as a dual-purpose space. Through a pulley system, this space can shift between a storytelling exhibition and a large open area for lectures, workshops or larger gatherings. Its exposed structure allows beams to become part of the space and the exhibition itself. Panoramic windows are introduced to provide views toward the river and boat storage, connecting the exhibition space to its immediate surroundings and reminding visitors of the collection's origins in the timber rafting landscape.

The design proposal addresses the following:

- The overcrowded exhibition space
  The current exhibition floor is cramped, limiting the display of the collection.
- Space for larger objects
  The redesign opens up the floor plan, allowing larger objects to be displayed.
- The lack of WC facilities
  Installing restrooms that meet modern standards.
- The educational aspect
  A flexible space is created that can transition to an open hall.
- Lack of spaces to rest
  Bespoke benches are introduced.
- Lack of lighting
  A new modular grid system with new light fixtures is added to improve lighting.

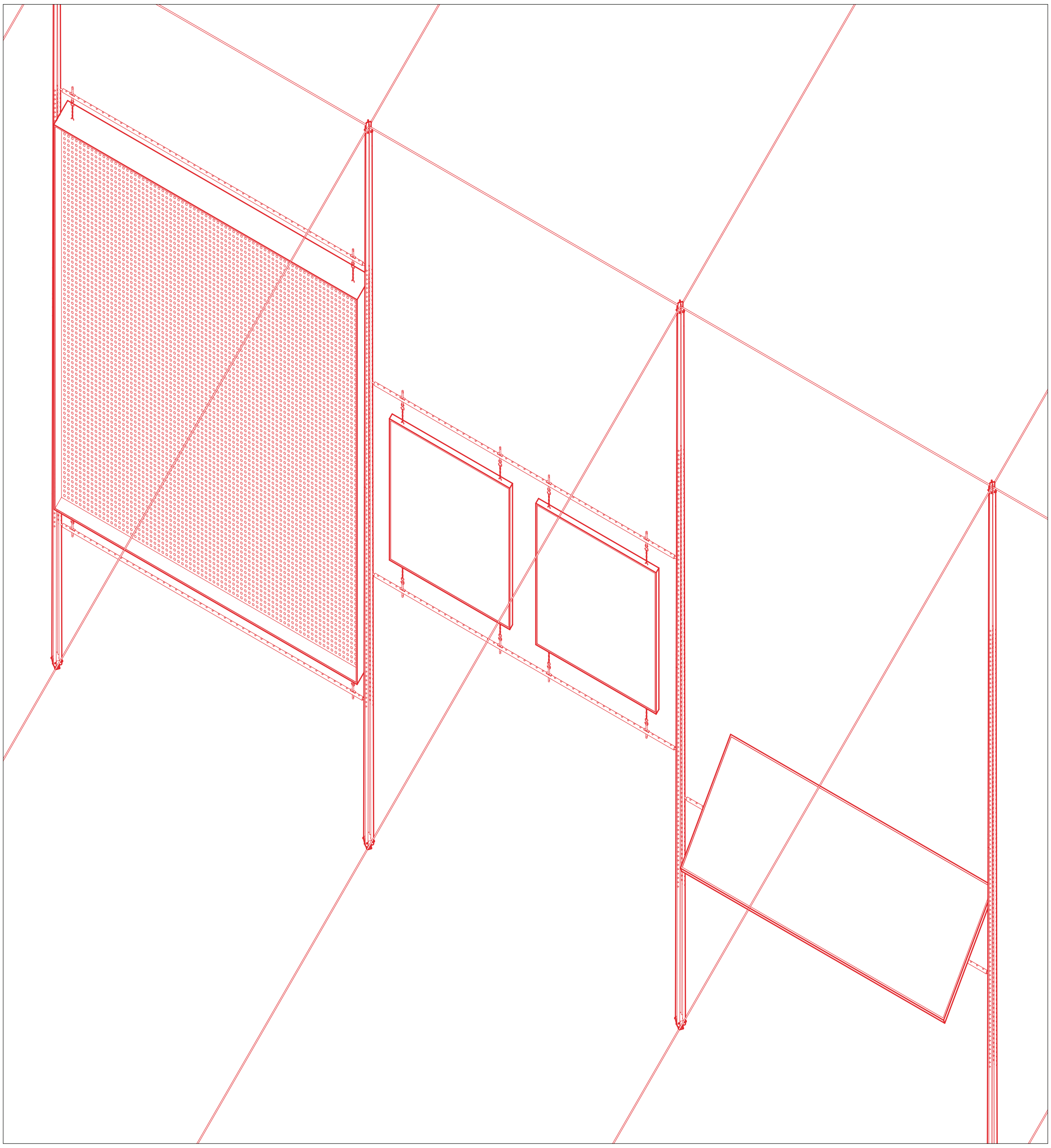


Axonometric drawing,
First floor

(Subtractions excluded)

1:200

Render,
New stair



Axonometric drawing,
Exhibition displays

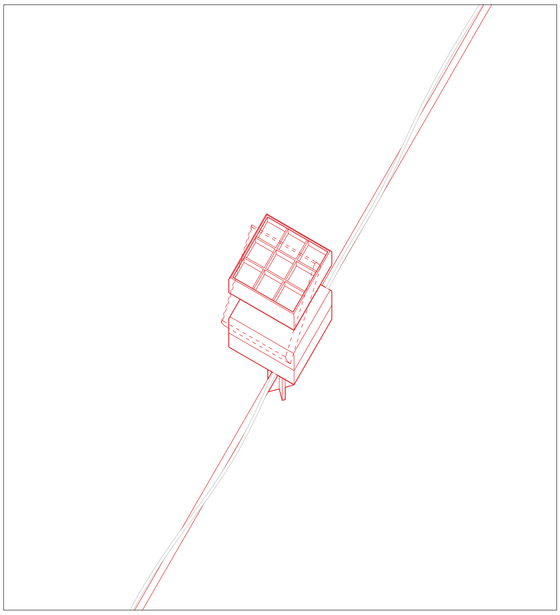
1:25

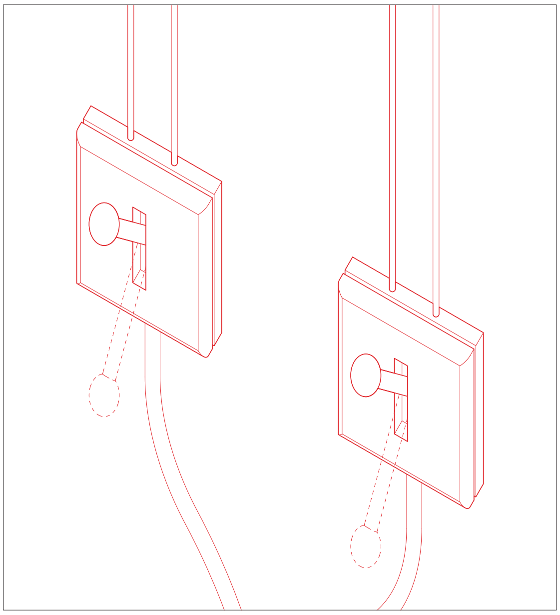
Axonometric drawing,
Left:
Spotlight

1:5

Right:
Light switch

1:5



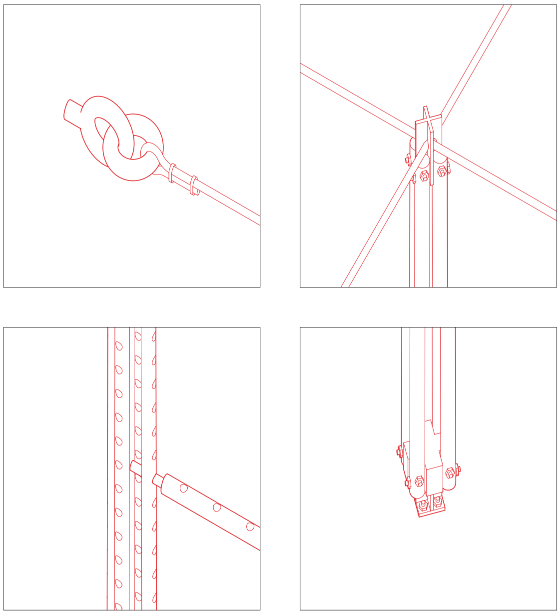


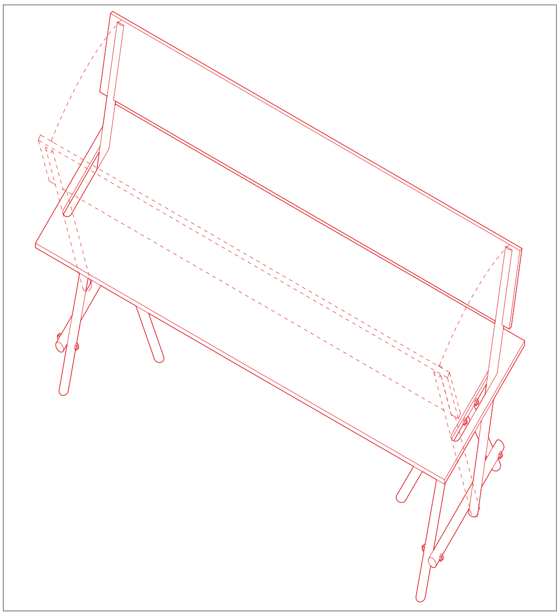
Axonometric drawing,
Left:
Exhibition display connections

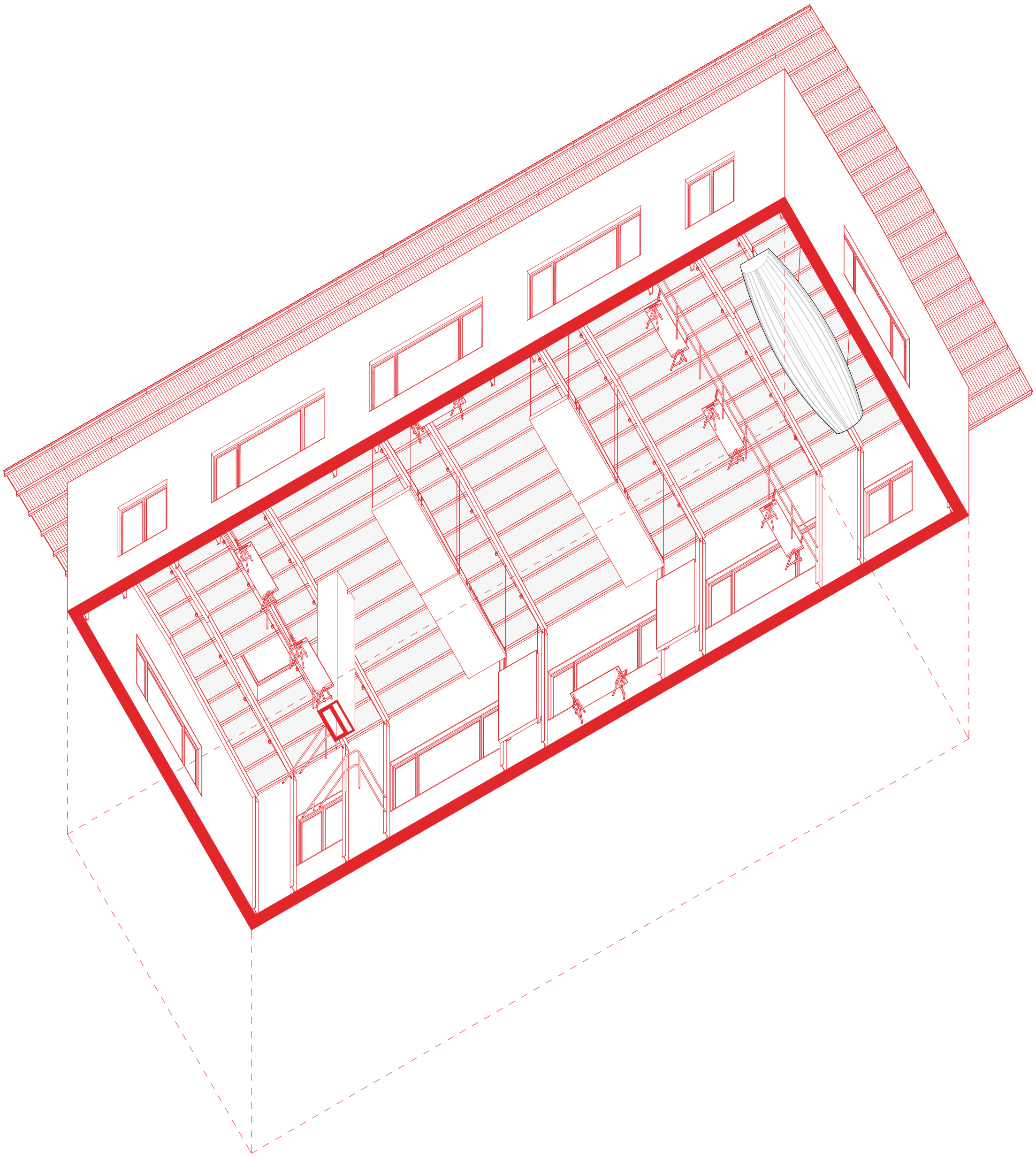
1:5

Right:
Bench

1:25







Axonometric drawing,
Second floor

(Subtractions excluded)

1:200

Render,
Exhibition space, second floor

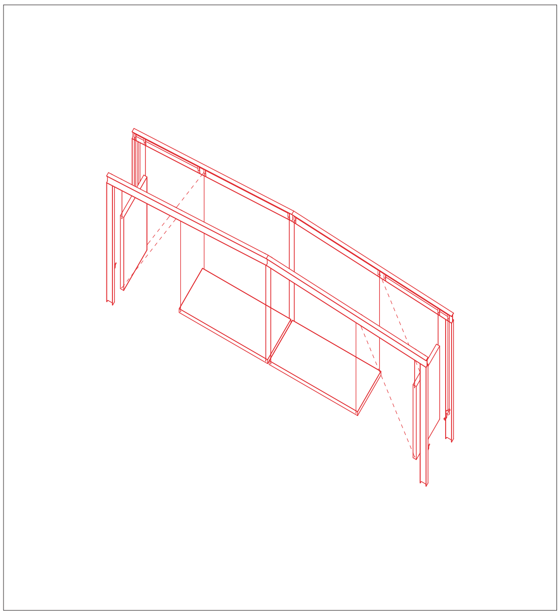
Scenario 1

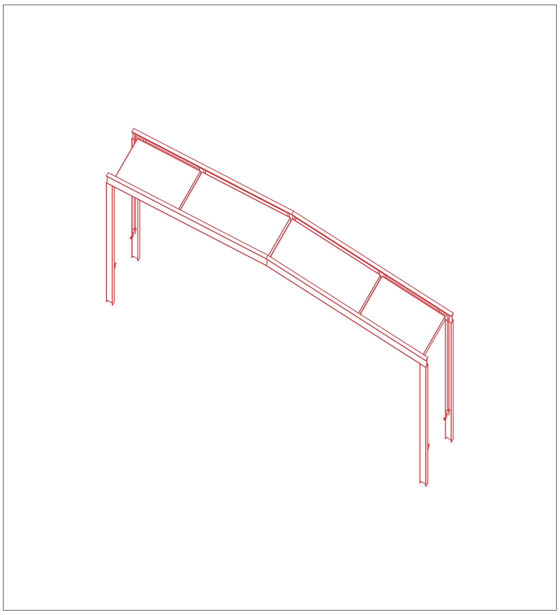
Axonometric drawing,
Pulley system

Left:
Scenario 1

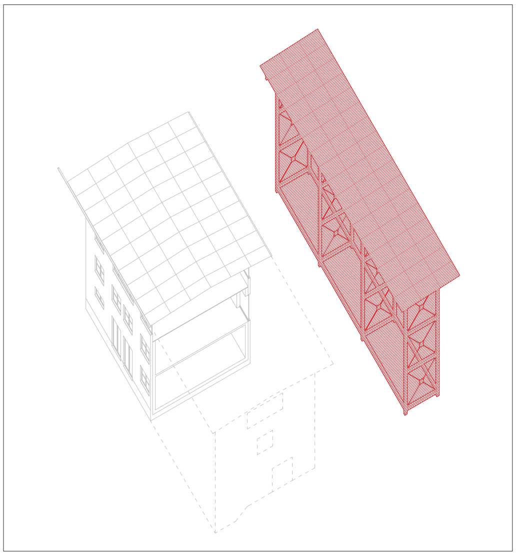
Right:
Scenario 2

1:200





← Render,
Boat storage



↑ Diagram,
Overview of proposal

C. Exterior exhibition space

The current condition of the Lustenboats is unsustainable. Today, the boats are left outdoors under a loosely fitted tarp, exposed to weather and deterioration. This proposal introduces a dedicated boat storage situated between the museum and Road 62. The new structure offers proper protection and acts as an exterior exhibition space, creating a visual connection between the road and the museum.

The boat storage serves a dual purpose: it safeguards the Lustenboats while allowing them to remain accessible and visible. The structure invites public attention, frames the boats and transforms overlooked objects into celebrated symbols of industrial heritage.

The boat storage is constructed as a system of modular parts. It consists of a 3×3 grid made from grey-painted steel beams, echoing the color and structure of the on-site crane. This open-air structure creates three bays where boats are stored visibly supported by steel beams spanning across the bay. The boats are accessible and can be lifted and repositioned with a forklift.

Weather protection is handled through a semi-transparent tarp attached to a pulley system. This allows the tarp to be lifted or lowered depending on weather conditions. The boats remain partially visible even when covered, offering a constant presence that hints at what lies beneath.

The construction references traditional piling methods, such as those used in dolphin structures from the timber rafting industry, like the method of Venetian timber piling, grounding the design in both local and historical techniques.

The structure's design is defined by its visible construction. Rather than concealing the framework, the design makes it a key feature and becomes the museum's public face. The structure becomes a landmark facing the road – a billboard announcing the museum's presence.

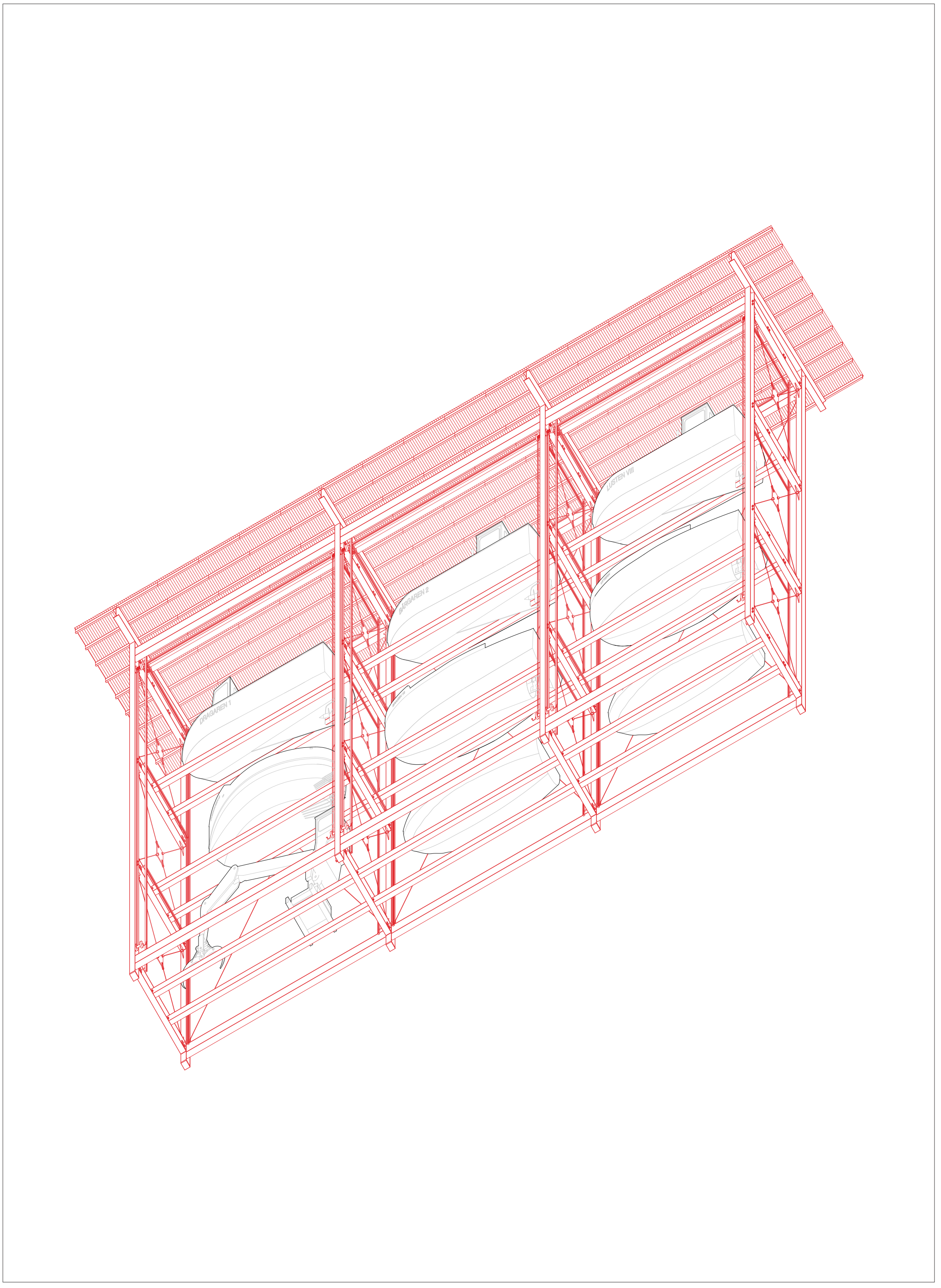
Moreover, the boat storage directly relates to the main building as it matches its width and is placed opposite the museum entrance. The boat storage becomes the first element visitors encounter. As visitors move through the site and building, the visual relationship between the two volumes remains intact.

The design proposal addresses the following:

- The lack of storage for the Lustenboats
  A new structure offers long-term, weather-protected storage for the boats.

- The lack of an exhibition space for the Lustenboats
  The boats are presented as an open-air exhibition accessible to the public.

- The lack of relation between road and museum
  The new volume creates a direct visual link between Road 62 and the museum.

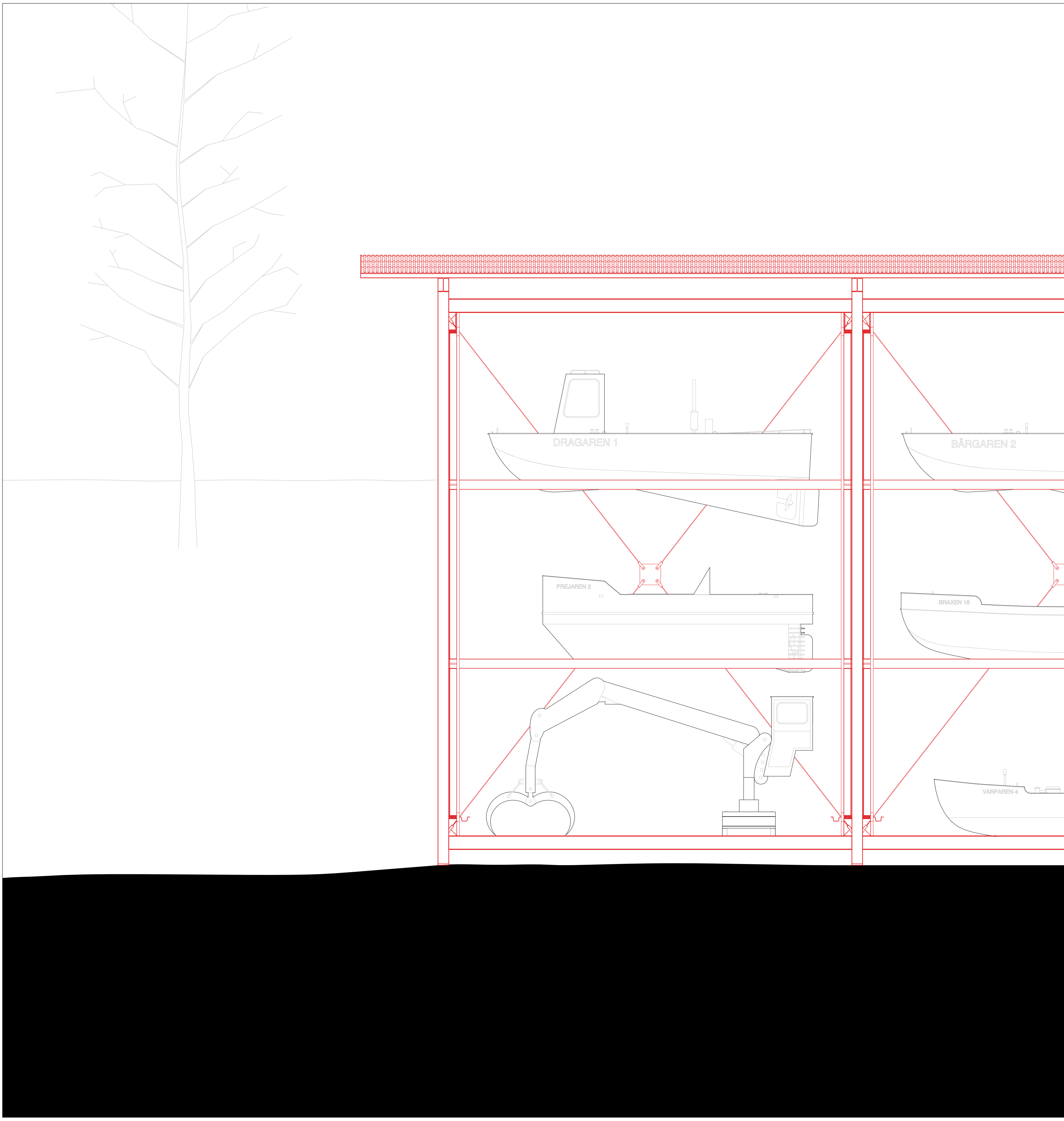


Axonometric drawing,
Boat storage

(Subtractions excluded)

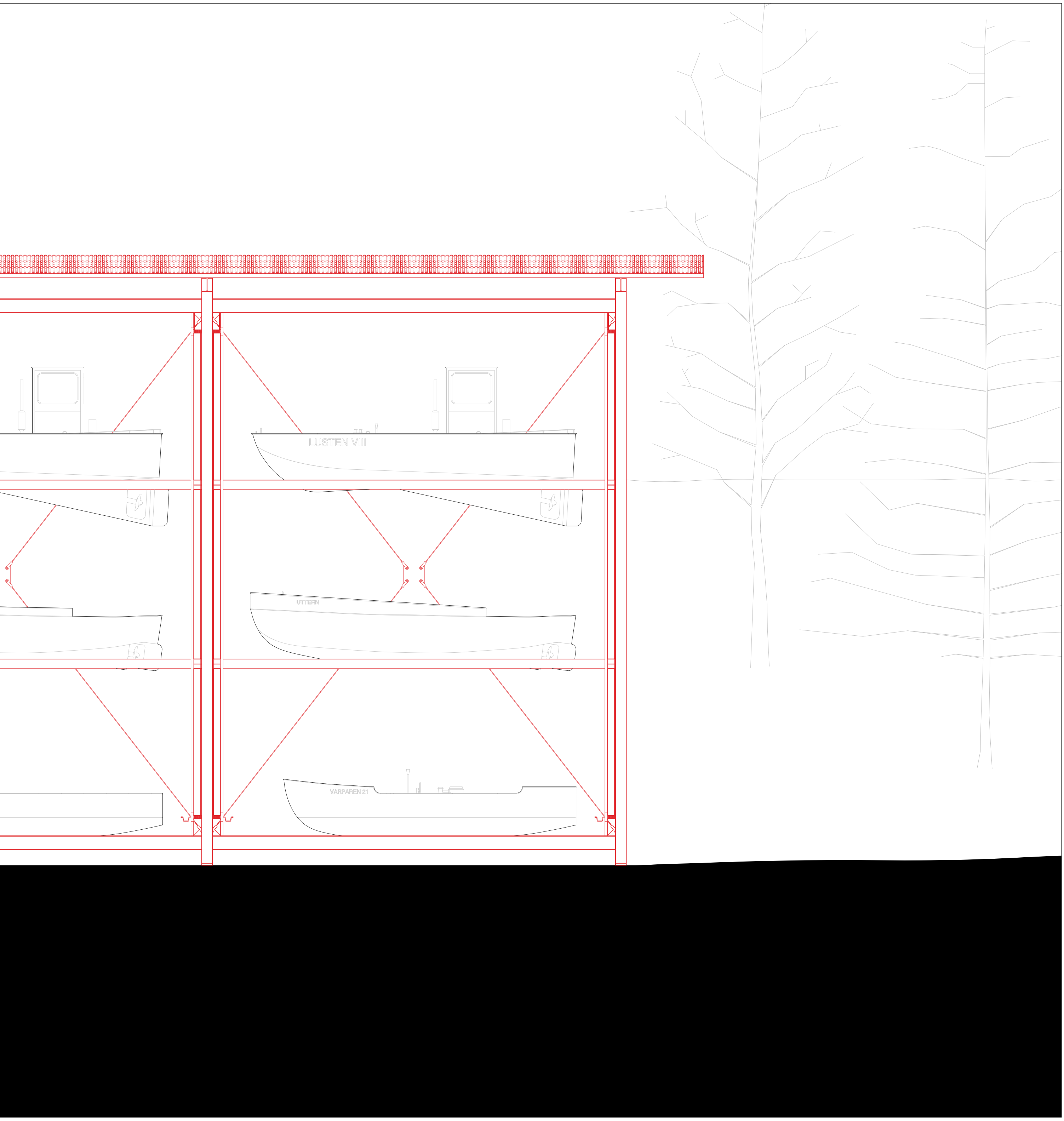
1:200

Render,
Boat storage

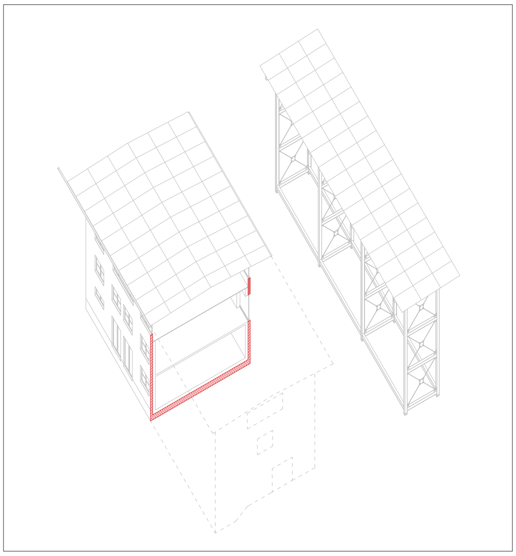


Elevation drawing,
East

1:100


LUSTEN VIII
UTTERN
VARPAREN 21

← Render,
Exterior view



↑ Diagram,
Overview of proposal

D. Insulation

Currently, the building lacks insulation, making it usable only during the summer months from June to August. This seasonal limitation affects visitor numbers and restricts the museum's operational potential.

The proposed solution introduces an insulating layer added to the building's exterior. This approach preserves the rich interior patina and spatial atmosphere shaped by decades of use as a workshop while unifying the building's appearance and enabling year-round use. The intervention is both technical and respectful, allowing the museum to operate in a more economically viable and comfortable way without compromising its character.

The design introduces an exterior insulation layer to improve the building's thermal performance, offering both practical and architectural benefits. Exterior insulation preserves the untouched interior, maintaining the patina and wear that define the building's identity and atmosphere.

Adding insulation externally avoids disrupting this interior character. It also enables visual and material continuity in the building's form, as both the new insulation layer and the added upper floor can be unified through surface treatment and detailing. The result is a coherent volume where additions do not read as fragments, but instead enhance the building as a whole.

Existing windows are retained and shifted outward to avoid cold bridges. Newly introduced windows are placed in relation to the original rhythm. Above, where the older windows appear in pairs, the new windows are combined horizontally, creating panoramic views of the surroundings.

A new roof is added, maintaining the same gently sloped profile as the existing structure, but now clad in corrugated aluminium panels echoing surrounding building's industrial roofs. Instead of traditional drainage pipes, rain chains are introduced – referencing the use of chains in the timber rafting industry.

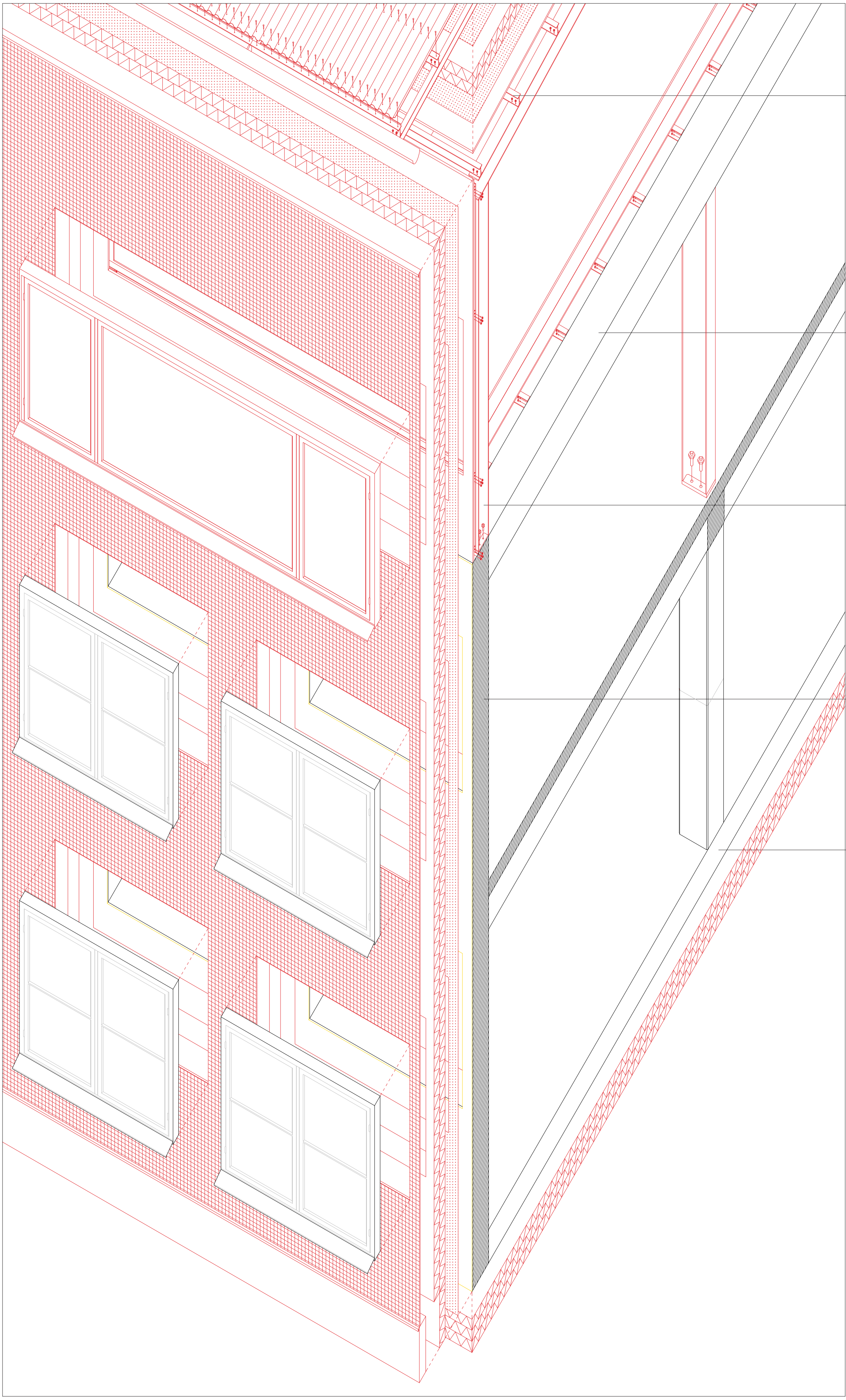
This addition significantly improves the indoor climate, extending the museum's use beyond the summer months. It enhances comfort for visitors and staff while supporting the long-term care of the building and its collection.

The design proposal addresses the following:

- The lack of insulation
  Exterior insulation boosts thermal performance for year-round use.

- Poor indoor climate
  A new thermal envelope ensures stable, comfortable temperatures.

- Exterior appearance
  The new insulation and added floor are unified by one continuous layer.



Axonometric drawing,
Proposed structure

1:50

Roof:
HEA 200 beam
IPE 80 beam
15 mm plywood board
Vapor barrier
100 mm insulation
100 mm insulation
Roofing felt
IPE 80 Batten
Corrugated metal panel

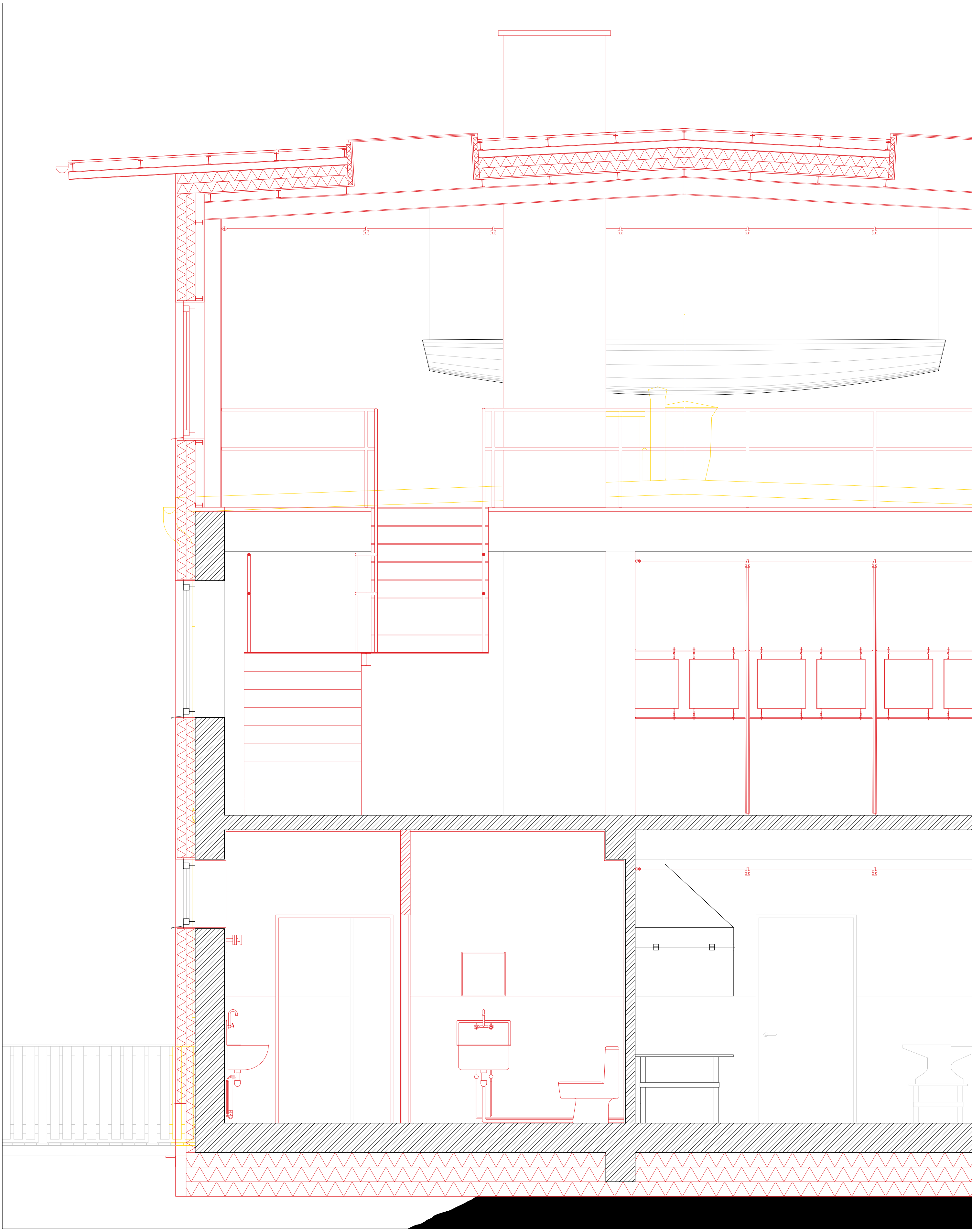
Floor:
300mm concrete beam
15mm plywood board
IPE 80 beam
15mm plywood board
Sound proofing mat
Microcement

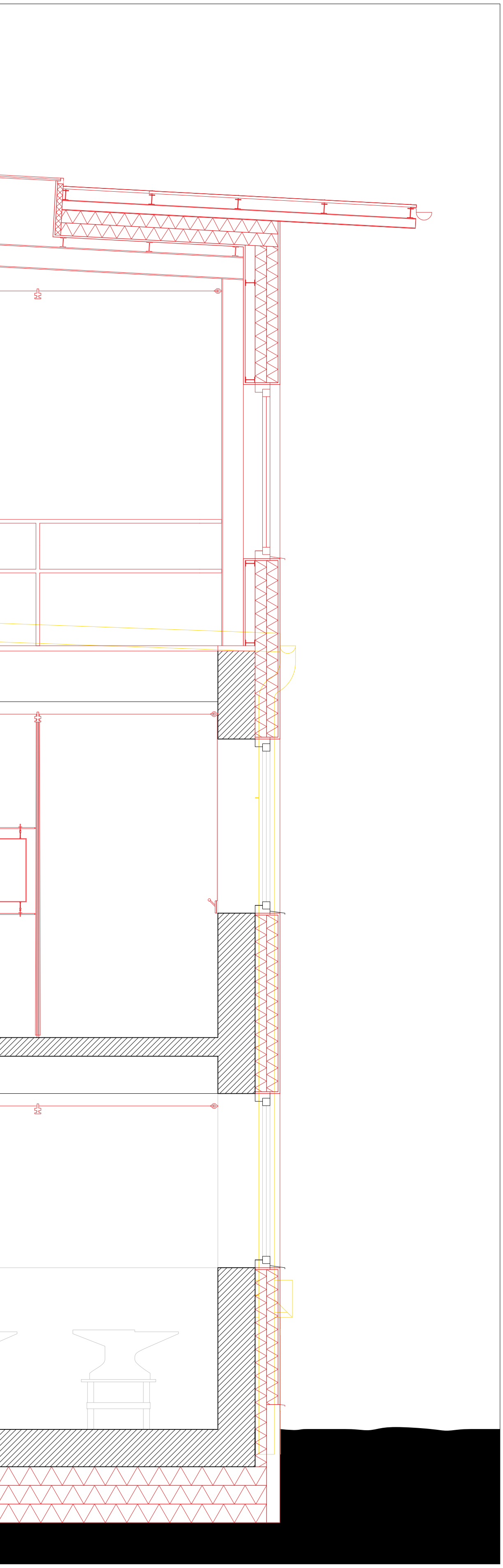
Wall:
HEA 200 beam
IPE 80 beam
15 mm plywood board
Wind barrier
100 mm insulation
100 mm insulation
15 mm plaster

Wall:
300 mm concrete
Wind barrier
100 mm insulation
100 mm insulation
15 mm plaster

Floor:
300 mm concrete
100 mm insulation
100 mm insulation
100 mm insulation

Render,
Close-up of facade





← Section drawing,
C–C

1:50

Proposed wall

R_1	= 0.176	300 mm concrete
R_2	= 2.703	100 mm insulation
R_3	= 2.703	100 mm insulation
R_4	= 0.015	15 mm plaster
R_{si}	= 0.13	
R_{se}	= 0.04	

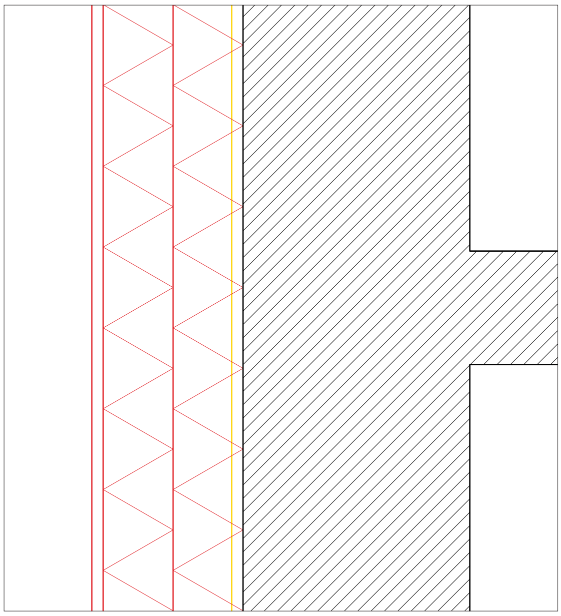
$R_1 + R_2 + R_3 + R_4 + R_{si} + R_{se} = R_{tot}$
$R_{tot} = 5.767$

$1 / R_{tot} = U$
$1 / 5.767 = 0.17$

U = 0.17 W/m²K

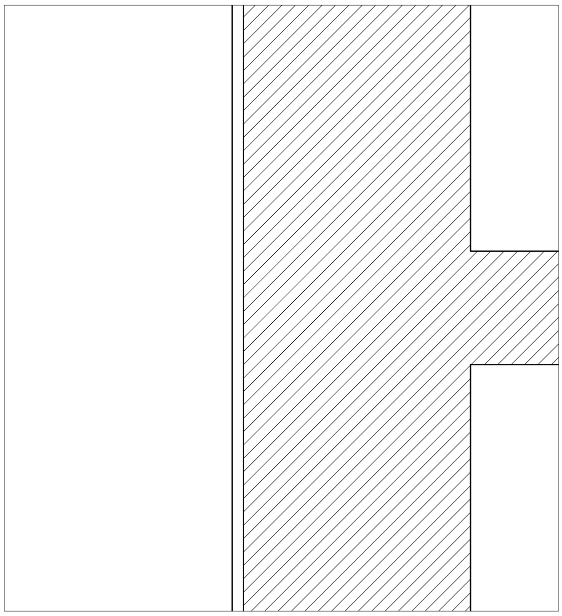
→ Section drawing,
Proposed wall

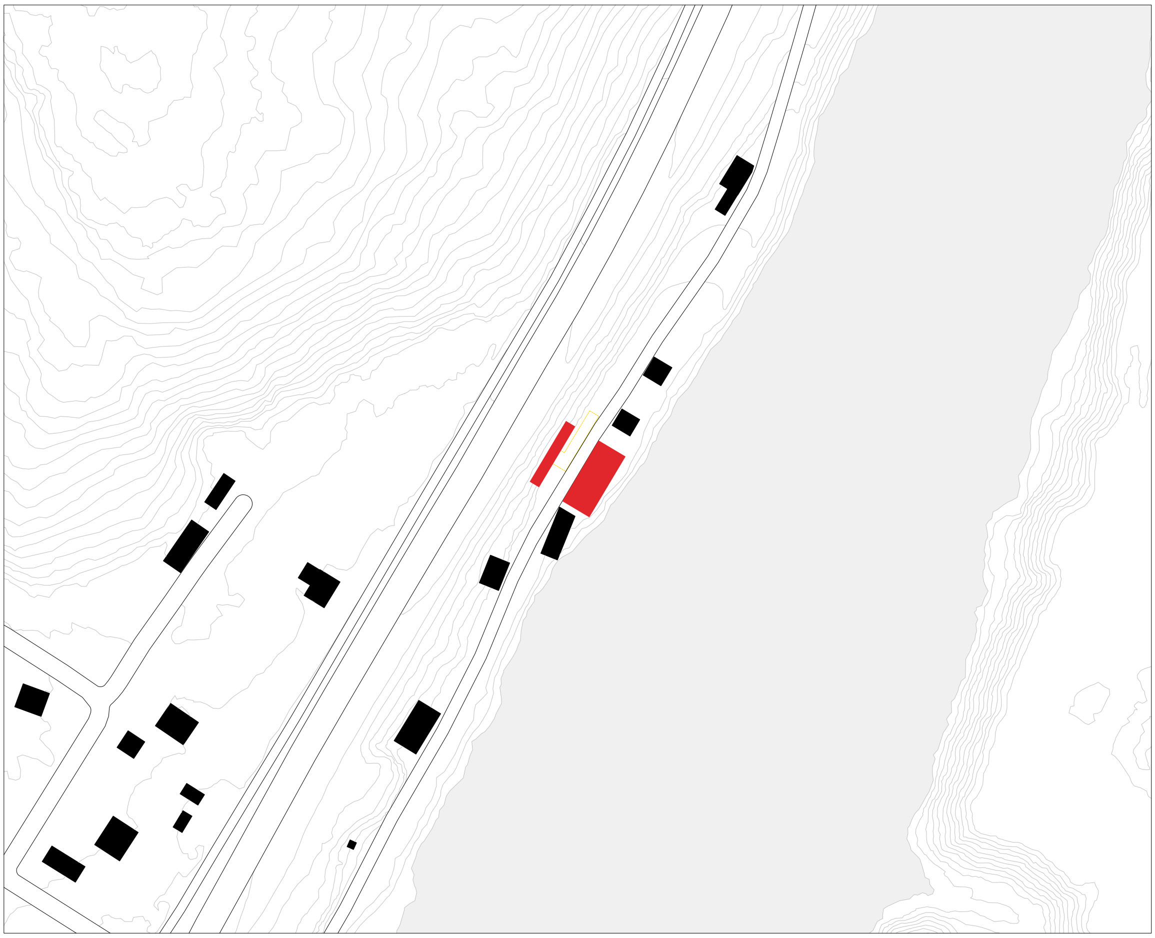
1:10



→ Section drawing,
Current wall

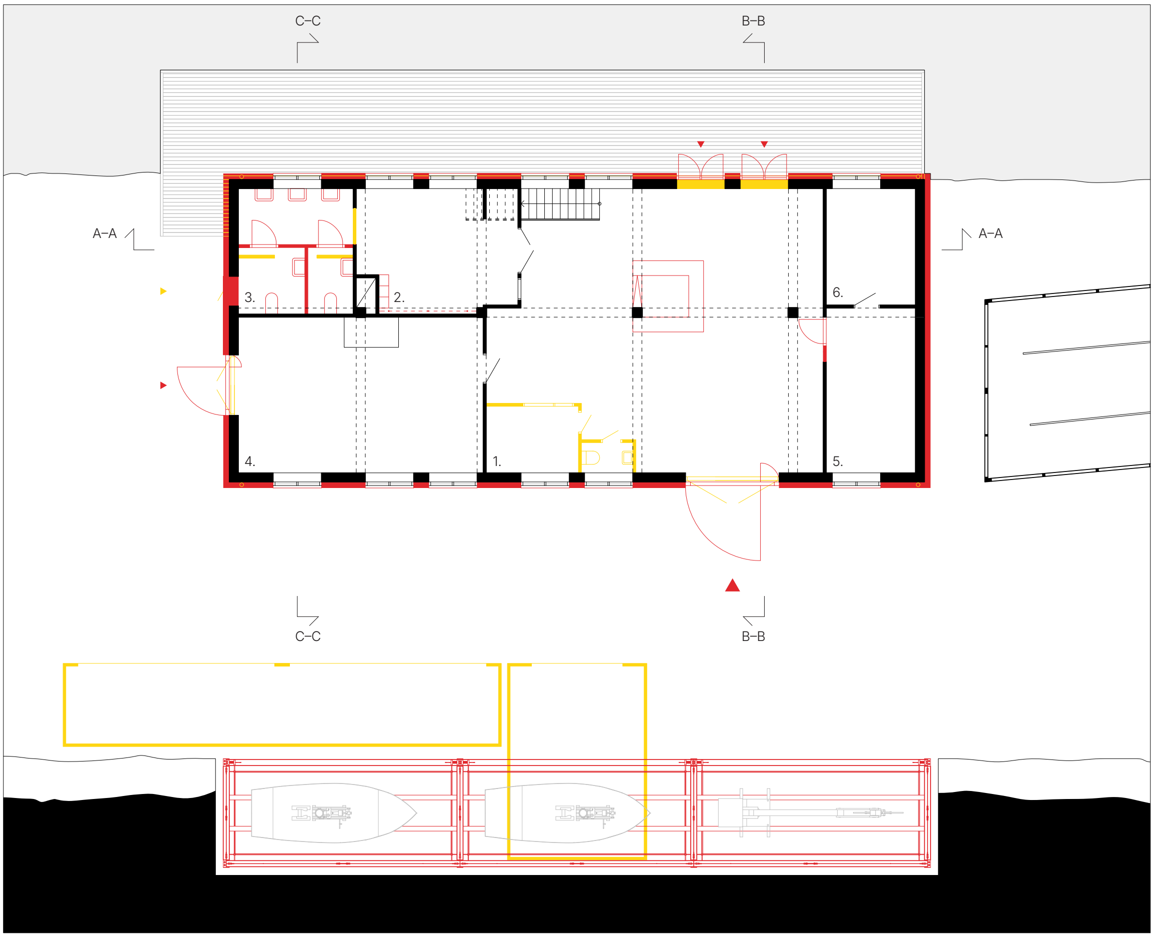
1:10





Site plan,
Overview

1:2 500



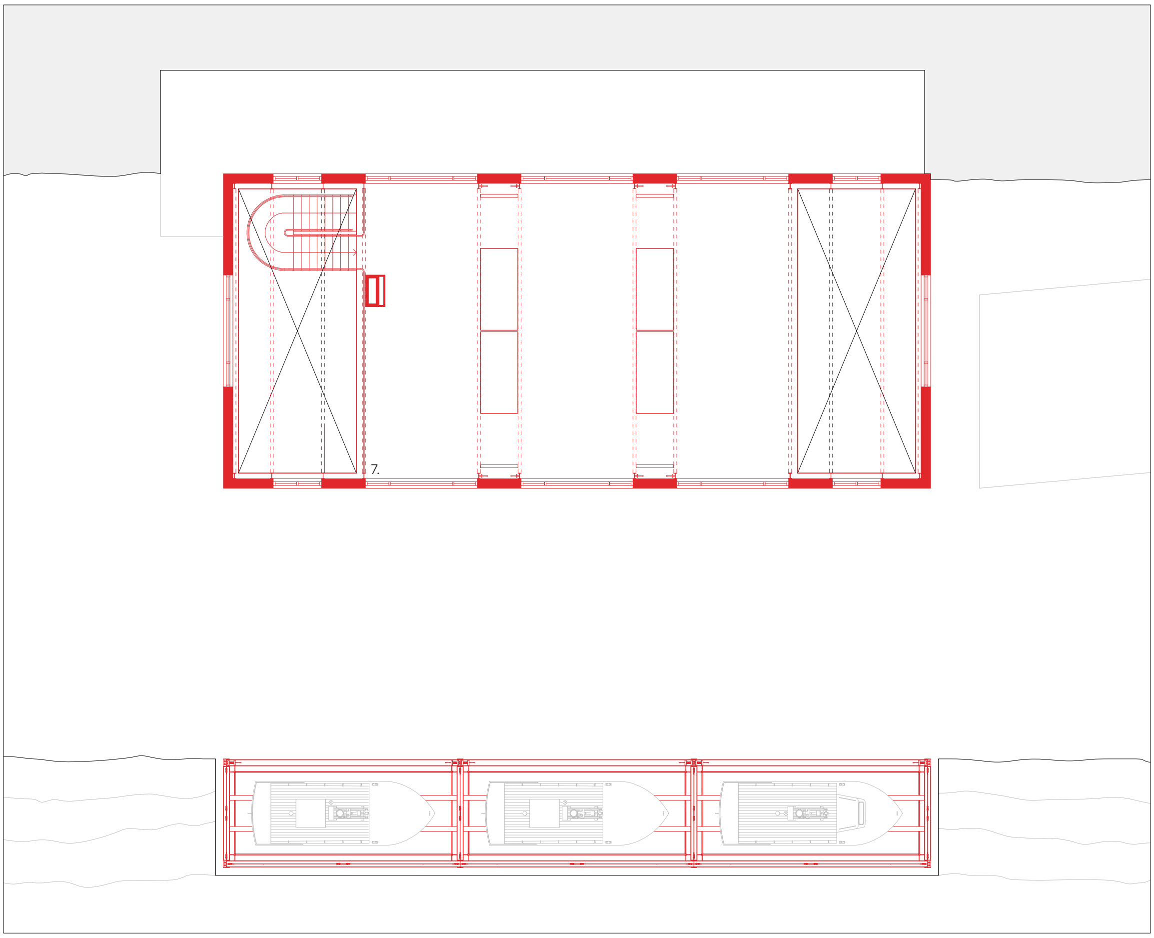
Plan drawing,
Groundfloor

1:250

Index,
1. *Reception*
2. *Cloakroom*
3. *Restrooms*
4. *Workshop*
5. *Staff*
6. *Storage*
7. *Exhibition space*
8. *Children's area*

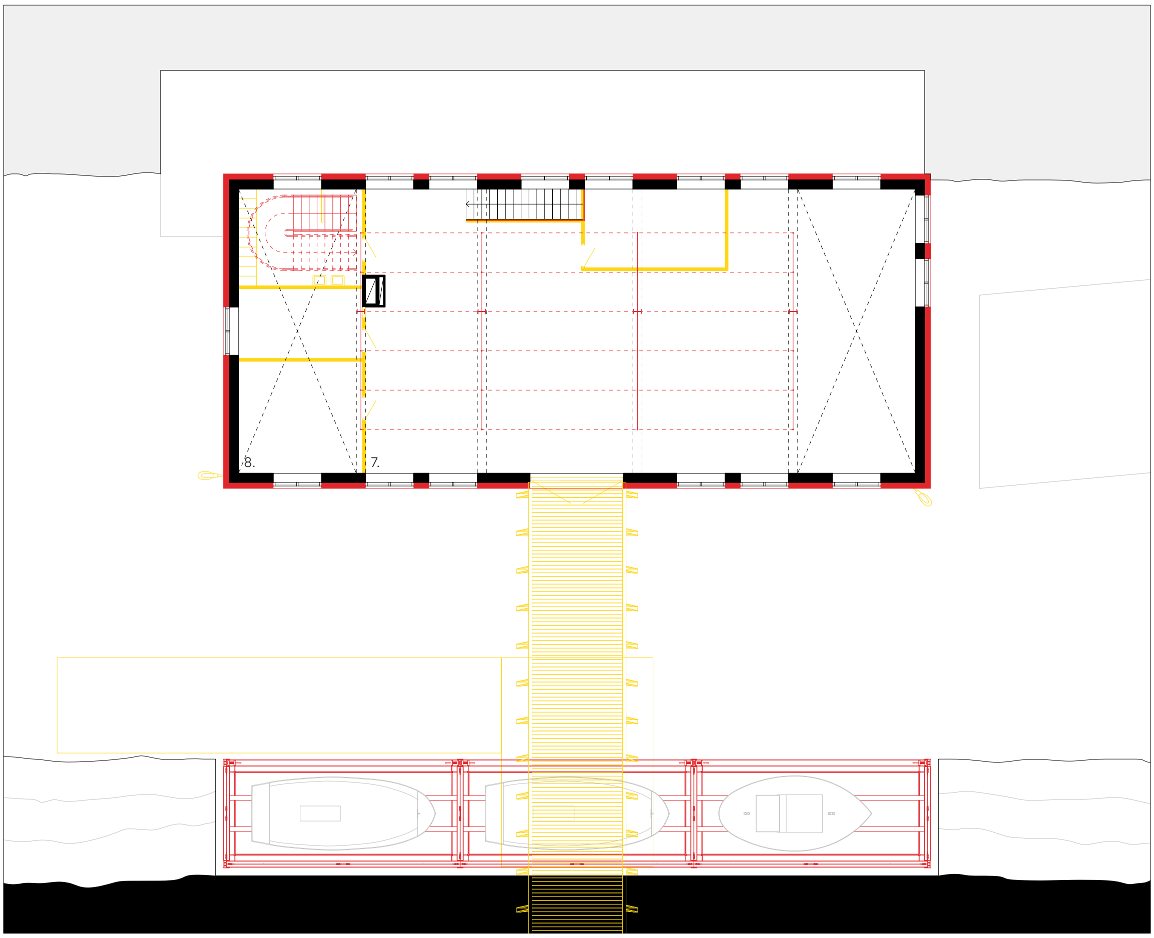
Plan drawing,
Second floor

1:250



Plan drawing,
First floor

1:250



Elevation drawing,
East

1:250

Elevation drawing,
West

1:250

Section drawing,
A-A

1:250

Elevation drawing,
North

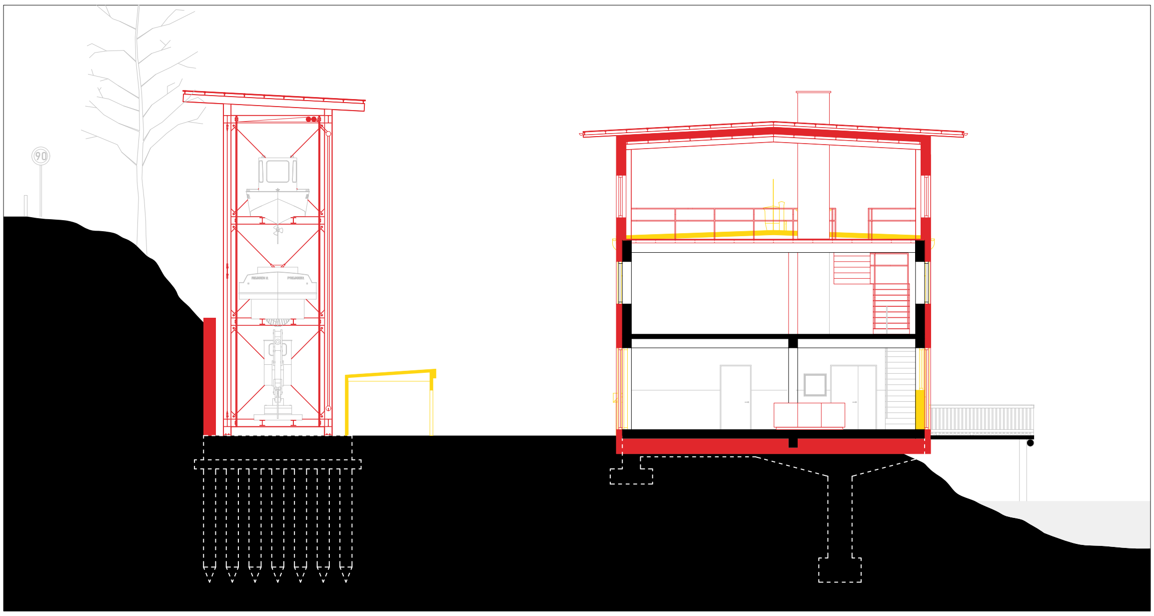
1:250

Elevation drawing,
South

1:250

Section drawing,
B-B

1:250



Physical model,
1:2500

Physical model,
1:100

5. Discussion

Discussion

The transformation of the Dyvelsten timber rafting museum, a mothballed industrial heritage site, is explored through proposed architectural interventions that both preserve and intensify its past cultural, societal and industrial significance. Central to the thesis is aemulatio, a design method that guides adaptive reuse through preservation and reinterpretation. The project follows a three-part structure of analysis, synthesis and result. Together, these parts demonstrate how adaptive reuse can strengthen an abandoned building's identity by refining and extending its existing character.

The project suggests that architectural interventions, informed by a thorough understanding of the past timber rafting industry's historical, technical and functional aspects, can revitalize dormant buildings while maintaining their connection to the past. Aemulatio, as an approach, provides a continuation of a layered history. This is exemplified by how aemulatio informed the decision to place the additional insulation layer on the building's exterior. This preserves the interior patina and authenticity of the original materials while introducing new elements that respond to and reinterpret the building's existing fabric. In terms of interior design, new additions such as furniture and exhibition strategies are derived from the past design language of the studied timber rafting structures and tools. A dialogue is created between existing and proposed objects where new additions complement the old.

Research within this master thesis contributes to the discourse on adaptive reuse practices by presenting aemulatio as an alternative to contrast or imitation. It allows architects to engage with the existing structure, not as an obstacle, but as something to be understood and improved upon. As sustainability and the reuse of existing buildings become increasingly central to architectural practice, aemulatio provides a relevant approach that supports environmental goals and cultural preservation.

Caruso St. John's work at Tate Britain exemplifies aemulatio, where the design of the new rotunda and staircase are based upon existing floor patterns, unifying the new and old architectural elements. The Tate Britain project adopts the traditional way of aemulatio as an adaptive reuse method to new building designs, drawing inspiration from existing buildings or their specific built parts. In contrast, this thesis extends that approach by broadening the definition of the model beyond the building itself to incorporate past objects tied to the timber rafting industry.

Whether or not aemulatio is the chosen design strategy, understanding the building's spatial organization and historical context enhances the design process. This knowledge helps architects make more informed decisions, increasing the likelihood of successful, meaningful and contextually sensitive interventions.

A limitation of aemulatio is its inherent subjectivity. The process of improving upon a model involves subjective decisions, such as determining how closely a result must resemble the original to still be considered a "copy" or what qualifies as an "improvement." These subjective choices make the method challenging to apply universally, despite its general framework of analysis, synthesis and result. Additionally, while aemulatio offers structure, the creative process is not linear. The gap between analysis and design is not a flaw, but a necessary aspect of the architectural process. This highlights that adaptive reuse is iterative and requires careful decision-making, guided by each project's specific context and conditions, rather than a rigid approach or one single method within adaptive reuse.

The limitations encountered with using aemulatio as a design strategy suggest areas for further research, especially in its application to other industrial heritage sites. Comparative studies between adaptive reuse strategies prioritizing contrast, imitation or continuity could help define when aemulatio is the most appropriate method. Additionally, exploring how aemulatio can work alongside other design methods could provide insights into how these approaches might complement each other in different contexts.

By reinterpreting both the architectural language and the objects tied to the Dyvelsten timber rafting museum, this thesis demonstrates how aemulatio can guide interventions that preserve historical significance while addressing contemporary needs. In doing so, it shows how industrial heritage sites can be preserved and reimagined – bridging past and present through thoughtful, context-driven design.

Raftsmen,
1968, Uppland

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Thank you,

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The Swedish timber rafting community

Flottningsmuseet i Dyvelsten:
Preserving history through aemulatio

Chalmers School of Architecture
Department of Architecture & Civil Engineering