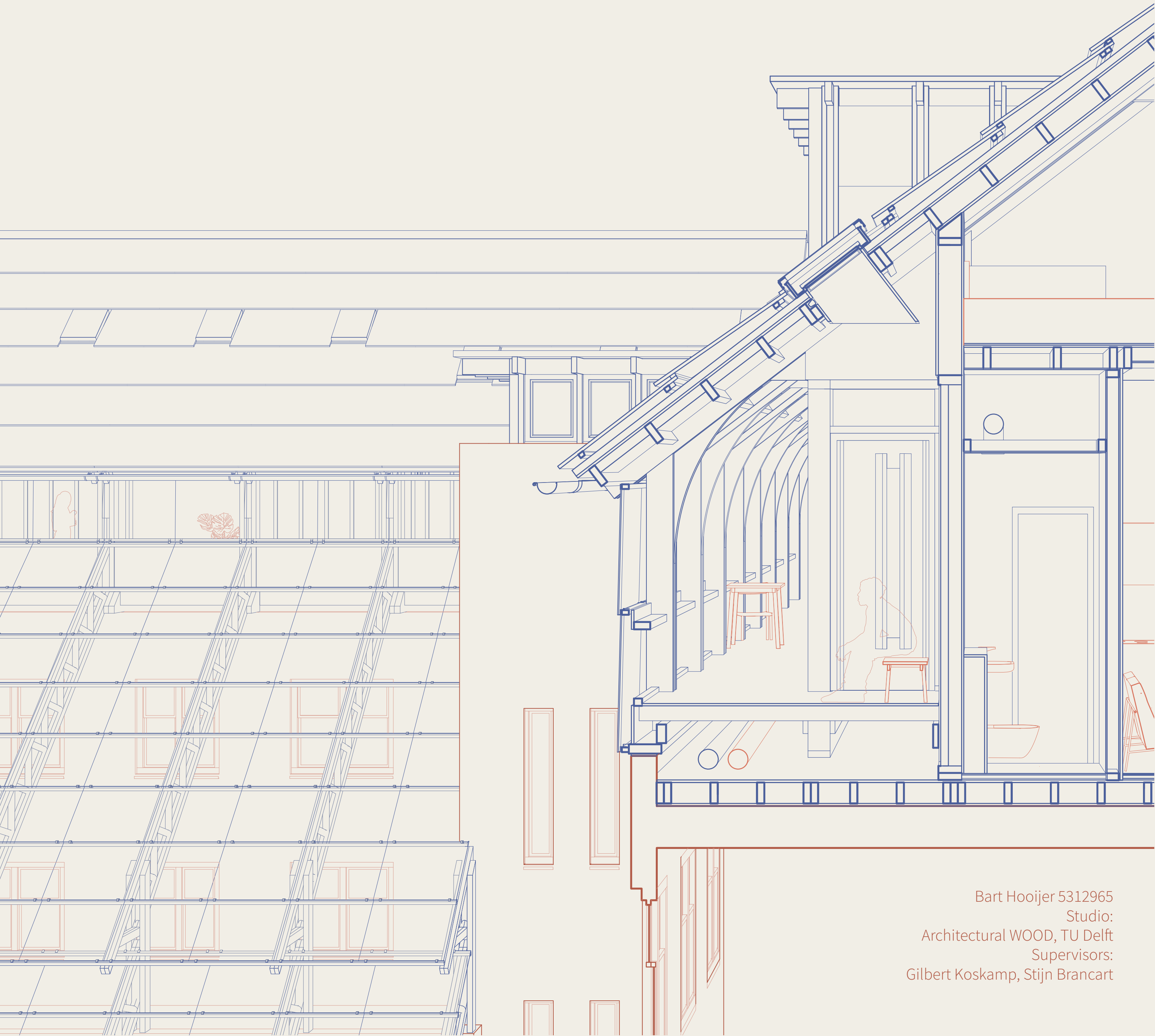
# ZEEMANSHUIS THE THIRD LAYER

Lightweight co-living informed by Amsterdam's historic timber joinery principles



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*Architectural Wood - Timber for Urban Density*
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Preface

“Yes, this is the one!” That is how this project started. Cycling through Amsterdam with my group mates in search of a site, the Zeemanshuis appeared: a prominent location, a flat but interesting roofscape, a rich history. The perfect candidate for reading Amsterdam as an incremental city, and for contributing a next, lightweight layer to it.

The project departs from a personal observation: as system-based timber construction globalises, newly built timber architecture increasingly lacks a sense of belonging and locality. This is not an argument against system-driven architecture, but a call to let it be informed by what came before. Architecture never stands still, yet it would be a loss if the language in which its story is written became unreadable.

I would like to thank Gilbert for the architectural sparring and ideas, and Stijn for his rigorous analytical insight. Both have helped me get as much out of this project as possible.

# Abstract

Contemporary timber architecture is increasingly driven by standardised products and prefabricated systems. Timber is widely adopted as a material, but its architectural role often remains limited: it is present without being locally grounded. The current situation of Amsterdam amplifies this condition. The city has to densify within its protected historic fabric, for which rooftop extensions are an established municipal strategy. eventhoug Amsterdam has a well documented historic timber culture it often remains largely outside the working vocabulary of contemporary lightweight construction. This project proposes that historic timber joinery logic, extracted as transferable principles at the scale of the joint, can reintroduce legibility into contemporary timber architecture, grounding a new lightweight layer in the specific material memory of its city.

This project asks whether Amsterdam's historic timber joinery logic can inform an architectural language for new lightweight timber layers. It develops a tectonic framework through a three-step research-by-design procedure. Historic Amsterdam joints are analysed through literature and analytical redrawing, yielding three operative principles: curvature, tolerance, and node articulation. The principles are then repositioned within a contemporary frame of material sourcing, fabrication and regulation, organised through a tiered material system that combines European graded softwood, slope-grown spruce and urban hardwood. They are finally operationalised in the design of a lightweight transitional co-living top-up for the Zeemanshuis at Kadijksplein, Amsterdam. The framework is tested against a readability criterion: whether the principles remain traceable from the historic joint through the contemporary joint to the building.

The project contributes the first terms of a locally grounded contemporary timber language for Amsterdam, and a replicable method for extending it. The procedure is transferable to other principles, other cities, and other timber cultures.

Working definition — architectural language

In this project, architectural language is understood as the relationship between structure, material, and spatial organisation through which a building communicates how it is made and how it is used. It is not a visual style, but a readable construction logic in which material behaviour, structural decisions, and spatial organisation are related to one another.

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# Part 1
# Introduction

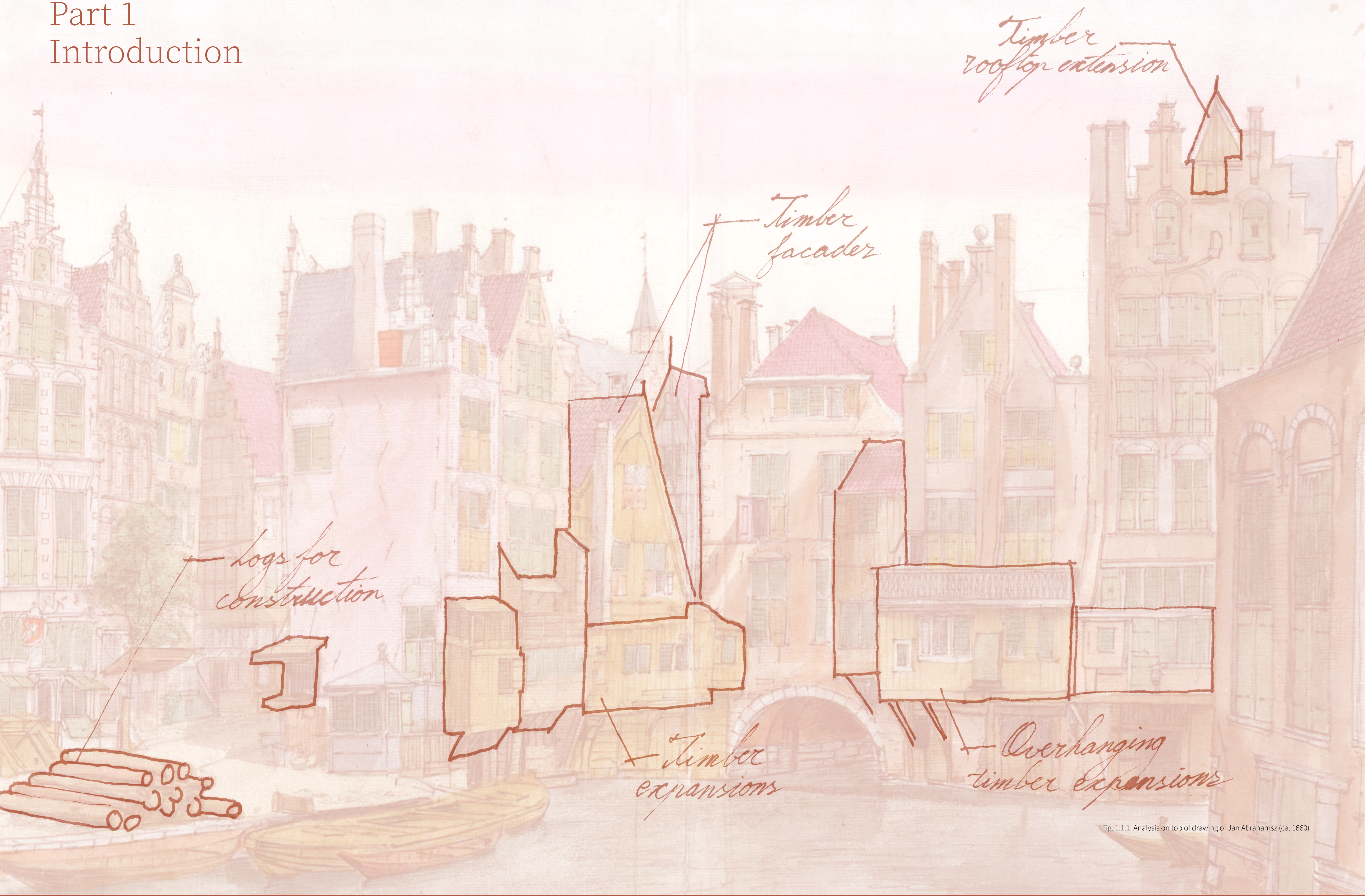



Fig. 1.1.1. Analysis on top of drawing of Jan Abrahamsz (ca. 1660)

# 1.1 Position

Within the WOOD studio, this project asks how material research can inform architectural design. Timber construction is increasingly used as a substitute for mineral-based building systems. In this global material transition, timber architecture is largely driven by standardised products and prefabricated systems, and timber is often treated as a technical answer rather than an architectural driver (Larsen et al., 2018).

At the same time, cities have to densify within existing and often protected building stock. In Amsterdam this is not a new condition. The city has developed through incremental growth, reuse and adaptation; rooftop extensions and additions are part of a long-standing urban logic (Abrahamse, 2010).
The project positions itself at the intersection of these two conditions. It asks how timber can contribute architecturally to incremental densification, and how historic material logic can inform contemporary architectural decisions without becoming stylistic.

# 1.2 Problem statement and design assignment

Timber construction is increasingly used due to its environmental performance. This has led to technical innovation, but also to a strong emphasis on efficiency, prefabrication and system-based construction. As a result, contemporary timber architecture often risks becoming generic: timber is present as a material, while its architectural role remains limited (Larsen et al., 2018).
In Amsterdam, the pressure to densify amplifies this risk. Lightweight rooftop extensions are an established municipal strategy (Gemeente Amsterdam, 2024). They offer clear spatial and environmental advantages and fit naturally within a city whose growth has always been incremental. The city also has a documented historic timber culture (van Tussenbroek, 2012a, 2012b), which contemporary lightweight construction has no developed way to draw on. The project takes the position that such extensions should be informed by the city's specific material culture, not only by the technical demands of lightweight construction.
The design assignment is therefore to develop a lightweight timber top-up that does more than add volume. The project investigates how timber, used through principles drawn from Amsterdam's historic joinery, can produce an architectural language in which construction logic, material behaviour and spatial organisation are aligned.

# 1.3 Relevance

The project is relevant on two levels.
Architecturally, it addresses contemporary timber architecture's movement toward a loss of locality under global standardisation. As the construction sector transitions away from mineral-based materials, timber is widely adopted but often deployed as a technical system rather than as an architectural driver. The result is a movement in which timber is materially present but architecturally placeless. The project addresses how locality and material identity can re-enter timber design without reverting to mimicry of historic forms, by treating historic timber construction as a source of operative logic.
On a social level, Amsterdam needs to add more housing within its mostly protected historic areas, while also facing a shortage of homes for people in transitional life stages, like young professionals, teachers, and cultural workers (MVRDV, 2024). Transitional co-living, combining private units with shared domestic spaces, is taken as the programme through which lightweight densification is investigated. The Zeemanshuis is selected as a site where these conditions converge: it occupies a prominent position in Amsterdam's incremental city and has a continuous history of providing temporary accommodation. The project extends this lineage rather than overwriting it.
The combined relevance is the proposition that the way lightweight densification is built can carry architectural meaning, and that this meaning can be derived from the specific material culture of the city in which it occurs.

# 1.4 Objective and motivation

The objective of this graduation project is to develop a tectonic framework based on principles found within Amsterdam's historic timber joinery logic and to apply them in the architectural design of a lightweight rooftop extension. The framework defines how the principles operate within the contemporary frame of material, production, and regulatory constraints. It is transferable in method while remaining site-specific in its architectural outcome.
The motivation lies in an interest in historic timber construction as a form of practical architectural knowledge. In Amsterdam, historic timber joints and structures were direct responses to material behaviour, availability, and structural necessity. What is relevant for this project is not primarily the historic appearance but the way construction logic shaped space and architecture.
The project aims to translate this way of thinking into contemporary architectural practice using current tools, techniques, and constraints.



# 1.5 Site and case study

The Zeemanshuis at Kadijksplein 18, on the edge of Amsterdam's historic harbour area, is the site through which the framework is tested. It is selected for two reasons. First, it sits in a part of the city where the incremental logic of Amsterdam becomes visible: layered roofscapes, narrow plots and successive additions reveal a city developed through continuous adaptation. Second, since its establishment in 1856 as a welfare institution for sailors, the building has housed sailors, trainees, and visitors at various points in their journeys and lives, and continues to accommodate temporary stays and community functions today. The continuity of transitional use makes it a suitable base for a contemporary co-living extension. The site, the existing building's history, and the proposed spatial organisation are further developed in 3.5.

# 1.6 Research question

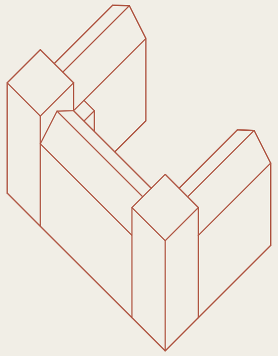
The central research question is:
*Can Amsterdam's historic timber joinery logic inform an architectural language for new lightweight timber layers?*
Joinery logic, in this project, is understood as the principles governing material selection, shaping, assembly and structural behaviour at the scale of the joint. In this project historic timber joinery logic is understood as the principles governing material selection, shaping, assembly, and structural behaviour. To inform means guiding architectural decisions through constraints and relationships rather than prescribing form.
The question is addressed through a single research-by-design method, organised in three steps: analysis of historic joints, repositioning of the extracted principles within a contemporary frame, and operation in the architectural design of a lightweight top-up for the Zeemanshuis. The method is set out in Part 2.

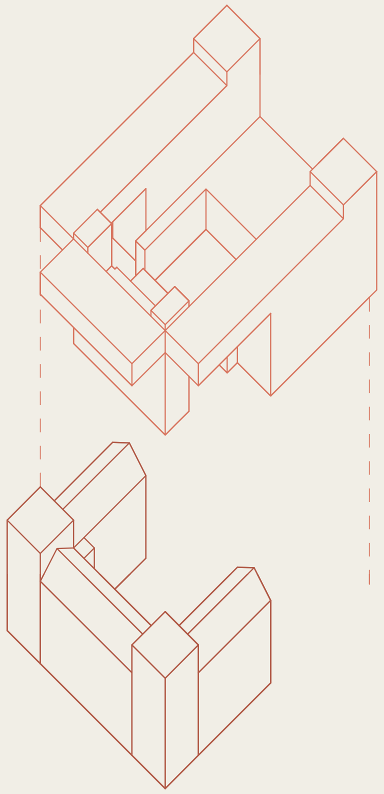

Fig. 1.2.1. The project's position: global condition, local condition, historic joinery logic, and project response. Own work.

1856

1920

2026





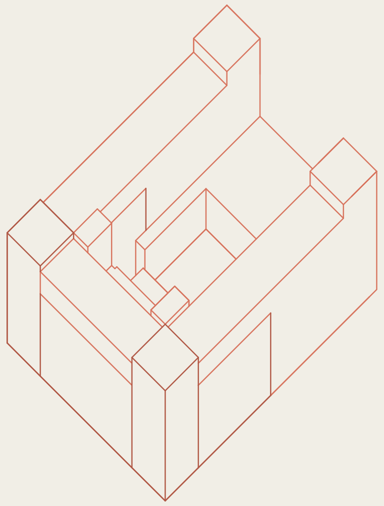
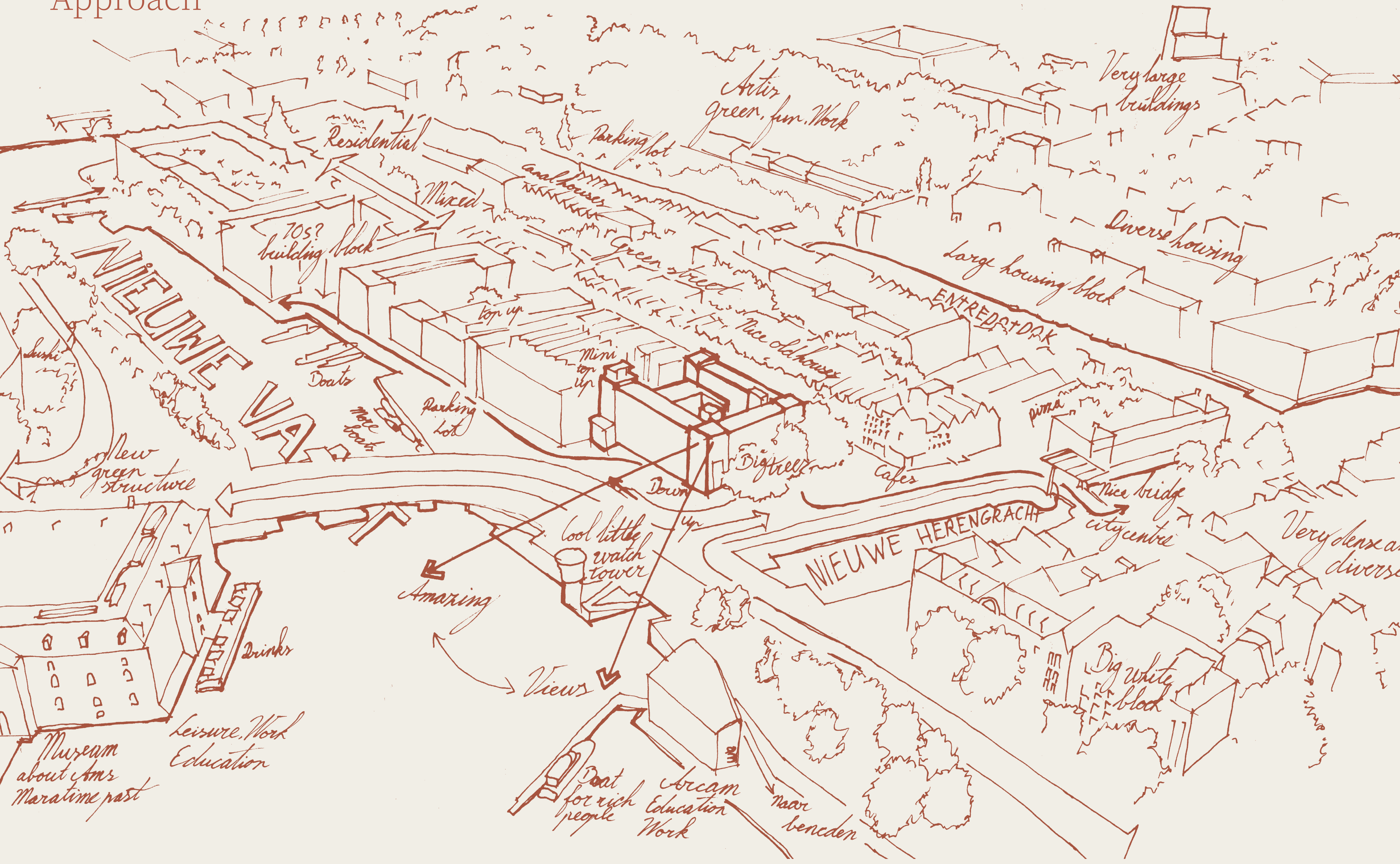


Fig. 1.5.1 Timeline of the Zeemanshuis, 1856 – 2026.

diagrams: own work
1856: Tielkemeijer, G. W., Blommers, P., & Hekking, W. Jr. (ca. 1858). Het Zeemanshuis, Kadijksplein 17–18, zojuist voltooid. Stadsarchief Amsterdam.
1856: Anonymous (n.d.). Touwknoop les, Het Zeemanshuis. Beeldbank Stadsarchief Amsterdam.
1920: Baanders Architectenbureau (1920). Uitbreiding van het schoolgebouw in het Zeemanshuis. Stadsarchief Amsterdam.
1920: Anonymous (n.d.). Aardrijkskunde, Het Zeemanshuis. Beeldbank Stadsarchief Amsterdam.
2026: Het Zeemanshuis, Kadijksplein 17–18. Own image (2025).
2026: Youth With A Mission (2024). Community gathering, Het Zeemanshuis.

# Part 2
# Approach

Fig. 2.0.1. Site sketch of Kadijksplein and surroundings, annotated during initial site analysis. Own work.



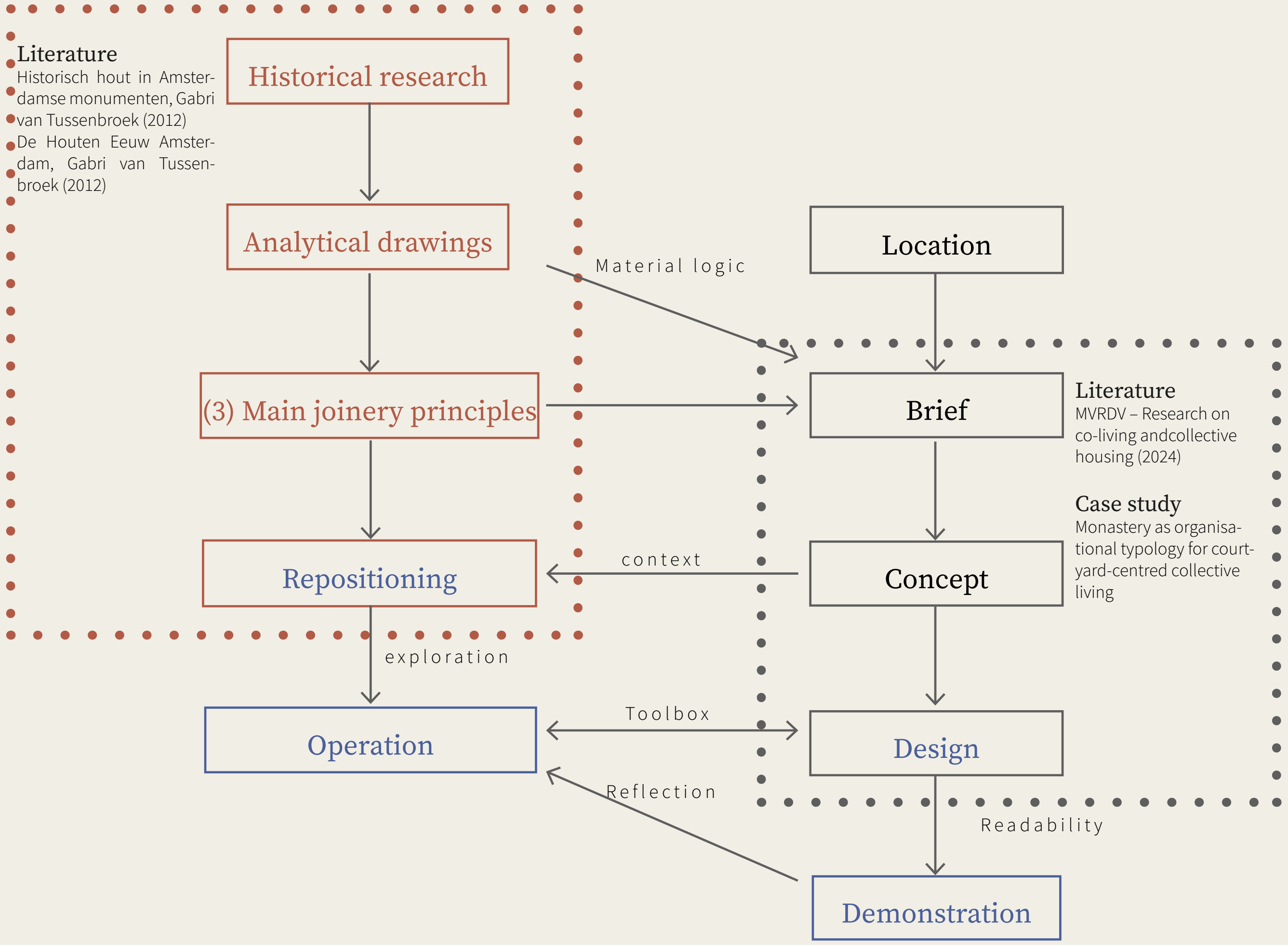



Fig. 2.1.1. Project methodology. The three-step research-by-design procedure (analysis, repositioning, operation) and its relation to literature, location, brief and concept. Own work.



## 2.1 Methodological approach

The project develops along research by design, structured as a three-step procedure that links historic timber joinery to contemporary architectural design.

ANALYSIS

Historic solid-timber joints from Amsterdam are studied through literature and analytical redrawing. The focus lies on the relationships between grain orientation, force flow, and geometric adjustment visible at the joint scale. From this analysis, three transferable principles are extracted: curvature, tolerance, and node articulation. The principles are not exhaustive; they are sufficient to test whether the approach can produce an architectural language.

REPOSITIONING

Each principle is reintroduced into a defined contemporary context composed of three constraints: material sourcing (organised in this project as a tiered system from standardised softwood to urban hardwood), fabrication methods (prefabrication, hybrid assembly, on-site fitting), and building regulation (fire safety, structural reliability, durability). The principles remain constant but the context in which they operate is different. Repositioning is the conversion mechanism of the method: it is where historic logic becomes contemporary practice.

OPERATION

The repositioned principles are tested in the architectural design of a lightweight top-up for the Zeemanshuis. The design identifies structural moments 'joints' where each principle is expected to operate, and resolves them through drawings and physical models.

The assessment criterion for the project is readability: whether the principles, abstracted from historic joints and applied at contemporary joints, remain traceable from the scale of the joint to the scale of the building.

## 2.2 Theoretical framework

The theoretical framework is organised in two strands. The first informs the tectonic research and the second provides the precedents for the programme, transitional co-living, through which the research is tested.

HISTORIC TIMBER CONSTRUCTION AND TECTONIC REASONING

The tectonic strand builds mostly on van Tussenbroek's two studies of Amsterdam's historic timber culture. De Houten Eeuw Amsterdam (2012a) situates timber construction within the city's governance, sourcing networks, and maintenance practices. It establishes that Amsterdam's solid-timber tradition was shaped by both trade and regulation as well as by craft. Historisch hout in Amsterdamse monumenten (2012b) provides the material-based evidence, dendrochronology, reuse patterns, and joint conditions that allow historic joinery to be read as a response to material availability and structural behaviour. Together, these works establish that Amsterdam's historic timber logic was grounded in specific material conditions. The principles extracted in Part 3 are read from this body of evidence.

The project's contemporary position draws on two references. Larsen, Tamke, and Ramsgaard Thomsen (2015, 2018) argue that contemporary timber architecture has narrowed under standardisation, and that promoting designing with the variability of timber rather than averaging it out, offers a way forward. This is the position the project takes, informing the tiered material system in 3.3. Sheil (2014) argues that contemporary fabrication is defined by the controlled relationship between precision and adaptation, not by precision alone. This frames tolerance, in this project, as a designed interface between prefabricated and on-site components.

The reading of the Zeemanshuis as part of an incremental city draws on Abrahamse (2010) for the historic logic of Amsterdam's growth, and on Brand (1994) and Habraken (1998) for the broader argument that buildings and cities develop through change. These references support the design position that the timber top-up is the next layer in a continuing story, not an isolated intervention.

CO-LIVING AND SPATIAL PRECEDENTS

The programmatic strand provides spatial precedents for the design. It does not contribute to tectonic research output. MVRDV's 2024 design study on co-living frames collective housing as a spatial system organised around shared domestic space, density, and gradations of privacy. This informs the spatial organisation of private and shared spaces in Part 3.4. The monastery is studied as an early example of collective living structured around a courtyard, in which individual rooms, shared daily functions, and circulation are organised through a clear spatial hierarchy. It is used to inform the relationship between private, shared, and courtyard spaces in the proposed top-up.

# Part 3
# Results

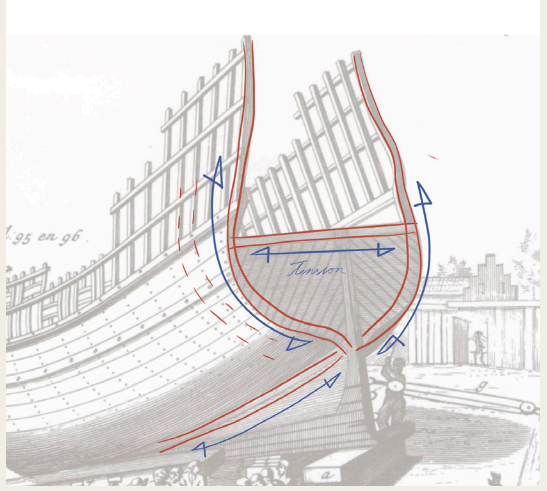


Fig. 3.1.1. Curved frame elements of a Dutch ship hull. From Van Yk, C. (1697). De Nederlandsche scheeps-bouw-konst opengestelt.

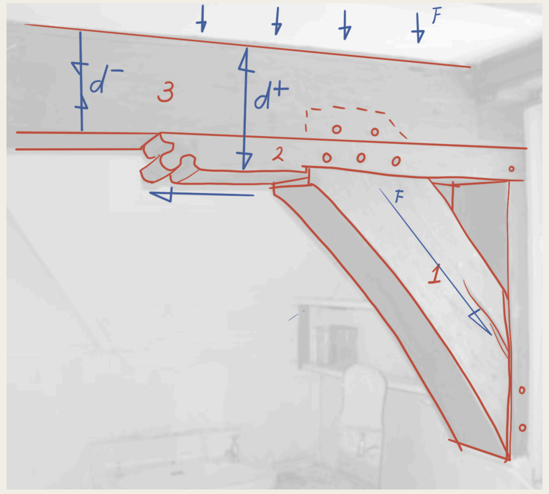



Fig. 3.1.2. Peerkraal-sleutelstuk with moerbalk, korbeel and muurstijl. Photo: Bureau Monumenten & Archeologie, Amsterdam / Dik de Roon. Analytical overlay: own work.

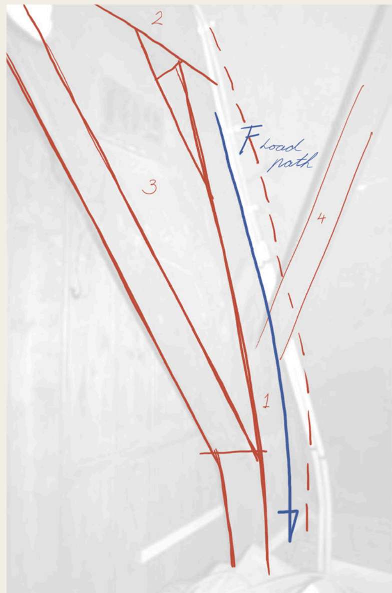



Fig. 3.1.3. Krommer in roof construction, Singel 124. Photo: Bureau Monumenten & Archeologie, Amsterdam. Analytical overlay: own work.


Fig. 3.1.4. Unworked beam in the Munttoren. Photo: Bureau Monumenten & Archeologie, Amsterdam. Analytical overlay: own work.

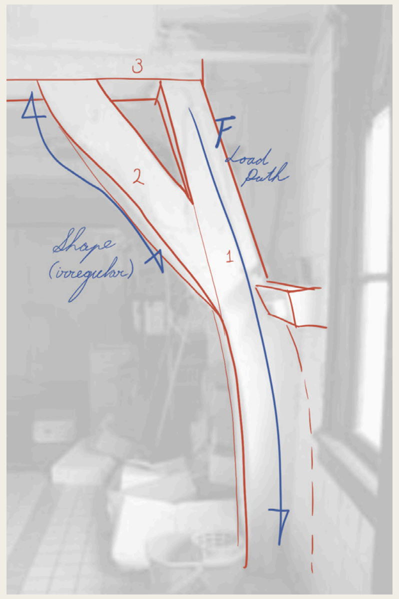



Fig. 3.1.5. Krommer, Spui 3. Photo: Bureau Monumenten & Archeologie, Amsterdam. Analytical overlay: own work.



## 3.1 Principles read from joints

Historic timber construction in Amsterdam is analysed through literature and analytical redrawing of historic joints. The drawings make three themes visible: how grain aligns with force, how variation is absorbed at a chosen interface, and how the meeting of structural members is resolved into a readable geometric moment. From this analysis, the project's principles are extracted.

### Curvature

Curvature is the use of natural grain direction to carry a directional change in load path. The krommer at Singel 124 (Fig. 3.1.3) is a single piece of timber whose grain follows the load as it turns horizontal forces into vertical forces. The joint works in compression along the grain, not through a connection that resists bending. The same logic is visible at a larger scale in the historic Dutch ship hull (Fig. 3.1.1, Van Yk, 1697). Most structural elements are curved, and the hull's strength comes from this systematic use of curved shapes. A curved element, when its grain aligns to the geometry it needs, replaces a moment-carrying joint with a continuous compression path.

### Tolerance

Tolerance is the absorption of variation at a chosen interface so that the rest of the structure stays geometrically fixed. The unworked beam in the Munttoren (Fig. 3.1.4) keeps most its natural form, only the joint inteface is to fit the member. The krommer of Spui 3 (Fig. 3.1.5) shows the same logic at a larger scale: the timber was used in a rough state with the form of the tree still visible (van Tussenbroek, 2012a). The peerkraal-sleutelstuk (Fig. 3.1.2) is the adjustable interface that resolves a single connection: moerbalk, korbeel and muurstijl meet at the sleutelstuk, which absorbs the variation between them. In each case one part is fixed, the adjoining part is trimmed, wedged or scribed to fit, and the boundary between them is a designed condition rather than an accidental gap.

### Node articulation

Node articulation is the resolution of several members meeting at one point into a thickening. The peerkraal-sleutelstuk (Fig. 3.1.2) brings moerbalk, korbeel and muurstijl together; the linear members on either side stay simple, the sleutelstuk carries the complexity. The node is visually articulated by the peerkraal.  The thickening is structural and spatial at the same time: it transfers the load between three members, and it makes the meeting visible as a distinct element in the room.

# 3.2 Abstraction

The principles are abstracted in order to move from historic joint to operative principle. The historic joints of 3.1 belong to a specific context: pre-industrial timber supply, hand tools, local knowledge, and regulation by guild. The principles those joints carry are operative because they are relationships between material behaviour, geometry and force that are readable. Abstraction separates what is operative from what is contextual: the geometric and structural logic of each principle is kept, its context is opened to be reconsidered under the contemporary constraints of 3.3.

Each principle is reformulated below in three parts. The definition states what the principle does. The architectural consequence states what it produces in the architecture. The design criterion states what counts as a readable application in the design. Together, these three criteria are the test conditions of the project. The drawings of 3.6 are read against them.

The principles do not act independently. Curvature, used at a change of direction, produces a moment of structural intensification, which is also where node articulation tends to occur. Tolerance, concentrated at one interface, defines the boundary between elements that behave differently, which is often where node articulation arises. At the most resolved joints in the design, more than one principle is at work. 3.6 reads the design's joints in those terms.

### Curvature

*Definition.* Curvature aligns timber geometry with the direction of internal forces at a change of direction, so that load is carried mostly through compression along the grain and not across a moment-resisting connection.
*Architectural consequence.* Curvature appears at changes of direction. It produces a hierarchy between the regular structural field and the points where direction changes.
*Design criterion.* A joint reads as curvature when the change of direction is carried by a continuous timber element whose grain follows the load path, and when the structure on either side is dimensioned to receive the curve as a regular structural input.

### Tolerance

*Definition.* Tolerance concentrates deviation at a single interface. An adjustable or designed interface absorbs variation locally without altering the geometry of the primary structure.
*Architectural consequence.* Tolerance allows irregular material to coexist with a geometrically controlled system. Prefabricated elements and site-fitted components can meet without compromising the global geometry.
*Design criterion.* A joint reads as tolerance when one side of the interface is fixed and dimensioned, the other side is adjustable, and the boundary between them is a designed condition rather than an accidental gap.

### Node articulation

*Definition.* Node articulation resolves several members meeting at one point into a thickening, so that the meeting becomes a single readable element while the members on either side stay simple.
*Architectural consequence.* The thickening can coincide with thresholds, transitions in the programme, or moments of use, linking load transfer to architectural experience.
*Design criterion.* A joint reads as node articulation when the meeting of members produces a thickening that is a material and geometric event, not a hidden connection.

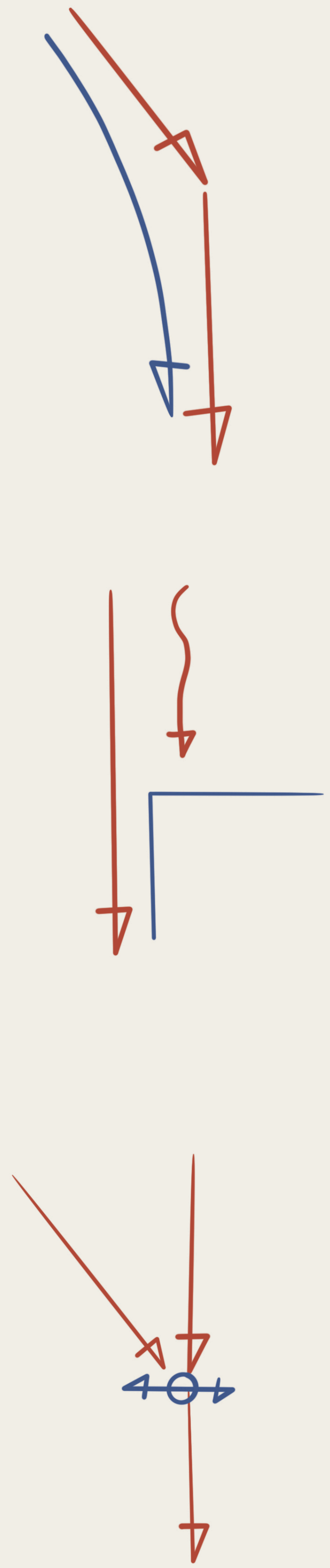
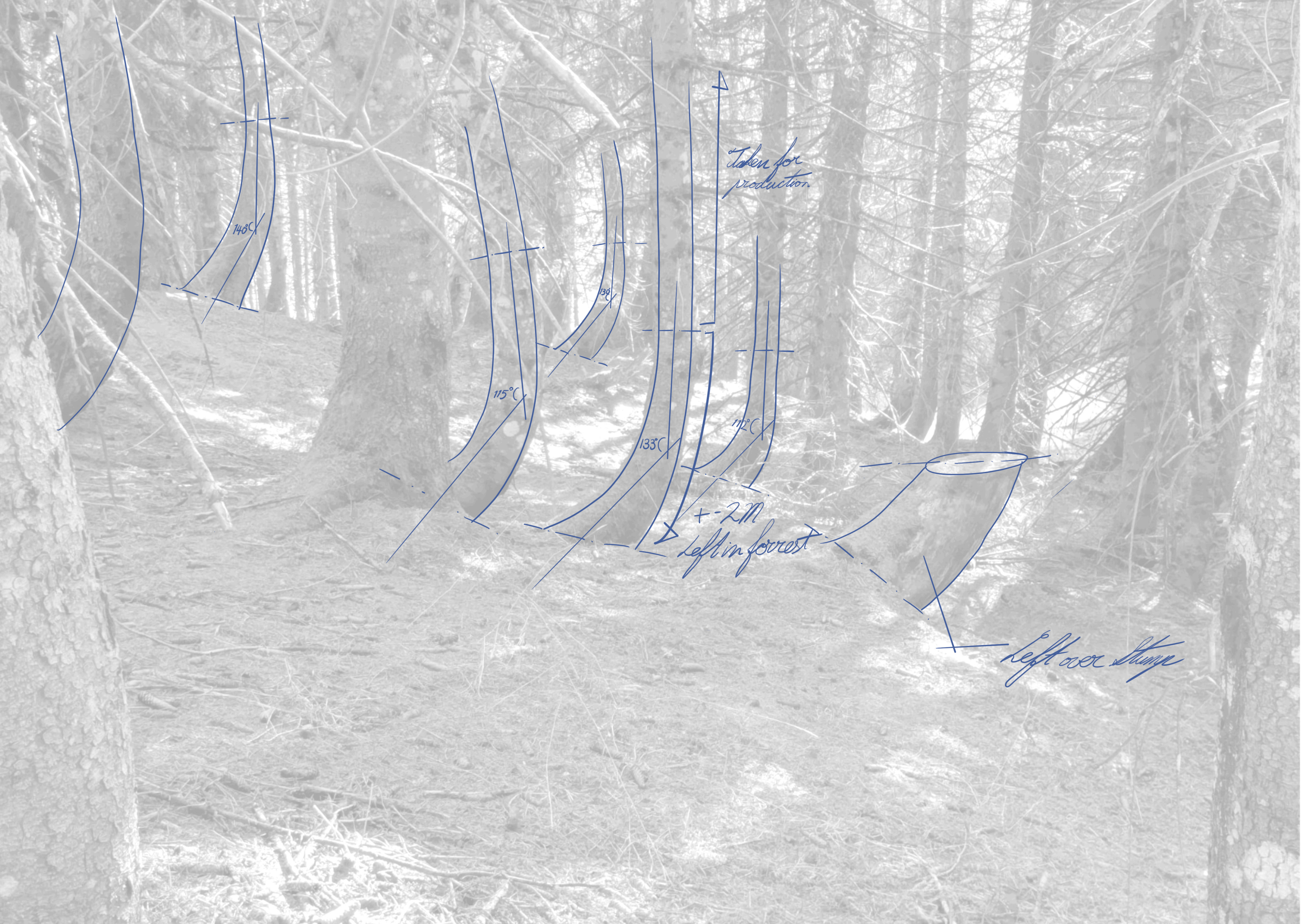


Fig. 3.2.1. Diagrammatic abstraction of curvature: a continuous timber element redirecting force along the grain. Own work.



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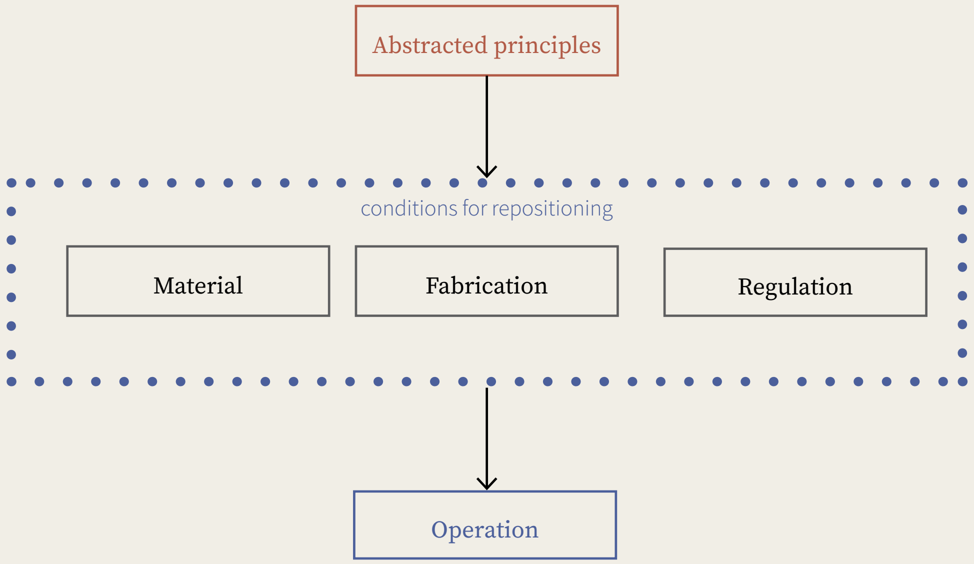



Fig. 3.2.1. Fig. 3.3.2. Repositioning diagram. Own work.

| | Structural role | Fabrication | Character |
|---|---|---|---|
| Tier 1<br>European graded softwood | Primary structural field | Industrial milling, prefab | Regular, |
| Tier 2<br>Slope grown spruce | Directional change | Adapted industrial milling,<br>Prefab | Categorized irregularity |
| Tier 3<br>Urban hardwood | Node intensification and cladding | Hand tools and urban milling,<br>on-site fitted | Irregular |

Fig. 3.3.3. Tiered material system. Own work.

## 3.3 Repositioning: the contemporary context

The principles cannot be directly applied. They emerge from a specific material, technological, and regulatory context that differs from contemporary buildings. To allow the principles to operate today, they need to be repositioned within a contemporary context of three conditions: material, fabrication, and regulation (Fig. 3.1). Each condition reshapes how the principles can operate. Repositioning is the conversion mechanism of the method: it is where historic logic becomes contemporary practice (Larsen, Tamke & Ramsgaard Thomsen, 2018).

### Material

Contemporary timber supply in Northern Europe is dominated by European softwood, principally Norway spruce, produced through large-scale monoculture forestry (Felton et al., 2016; EFI, 2018). This concentration is efficient but ecologically narrow. It stands in contrast to Amsterdam's own historic relationship with timber, which was characterised by a differentiated use of species, dimensions and grades, with each element selected for its specific suitability rather than averaged into a uniform product (van Tussenbroek, 2012a).
This project takes the stance that contemporary Amsterdam timber architecture can re-engage with that differentiated tradition. Instead of relying only on the dominant monoculture stream, it draws on three sourcing categories that together point toward a more diverse and less monocultural timber economy. The first is European graded structural softwood, the current default, mass-produced and dimensioned to standard sections. The second is slope-grown spruce, now a waste stream, proposed as a sorted, naturally curved structural product. The third is urban hardwood, sourced from Amsterdam's municipal tree-removal stream (Van Rooijen, 2025), 2018; Stadshout, n.d.). In this project, urban hardwood is used both structurally at discrete intensifications and as cladding.
These three streams are referred to as tier 1, tier 2, and tier 3 (Fig. 3.2). The tiers are not proposed as the solution for contemporary timber sourcing in Amsterdam, nor are they an existing organisation of the timber industry. They are the material context this project chose to work with, motivated by Amsterdam's historic differentiation and the ecological case for moving timber architecture away from the existing monoculture. Together this differentiated approach forms the contemporary context within which the principles are repositioned.

### Fabrication

Each tier suggests a different production method. Tier 1 elements are prefabricated as panels and frames, dimensioned for transport and assembled rapidly on site. Tier 2 elements are pre-cut in an adapted industrial workflow that allows for categorisation of curved elements, with on-site verification of the grown shape before final fitting. Tier 3 elements are fitted in place or prefab elements using hand tools and small-scale urban milling.
The fabrication strategy therefore, varies across the building, and the boundary between prefabricated and on-site work is itself a designed condition (Sheil, 2014).

### Regulation

Contemporary regulation is dominated by structural reliability, fire safety and durability. Each tier addresses these in a different way. Tier 1 is graded and certified, with calculable load paths and standard char rates. Tier 2 is categorised and verified: structural properties are confirmed by selection and grading before the material enters the regulatory regime. Tier 3 verified per batch, placed where the structure and space can absorb individual variation. Regulation does not contradict the principles. It reshapes how each tier earns its place in the building.
The two irregular tiers do not meet each other. Both interface with tier 1, which functions as the regular field that takes up the deviations introduced by the other tiers. The interfaces between tier 1 and each of the irregular tiers, together with the prefab and on-site interfaces, are the locations where the principles operate most clearly. They form the moments tested in 3.6

# 3.4 The monastry as spatial precedent

This section does not contribute to the tectonic research. The monastery is used as a spatial reference for the top up. Two monasteries, Klooster Ter Apel and Abbaye du Thoronet, are analysed: their religious function is stripped away and they are read as spatial precedents.

In both cases the courtyard is lined by a gallery. The gallery fully encloses the courtyard, but does not always sit directly adjacent to it or on the same level. At Thoronet, the gallery and the courtyard on the south side are separated by a change in elevation. The galleries on the other sides are lined by private and communal facilities. Thoronet has private units on one side, Ter Apel has them on both. In each case the church occupies one side, and on the opposite side, the gallery continues without further facilities behind it. This continuation completes the enclosure of the courtyard and forms the border between the interior of the complex and the outside.

The gallery is not only access but is read as a threshold between private and shared, open and closed. It binds the adjacent sides together and completes the courtyard as a single spatial figure.

From this reading, a single design rule is taken to the top up. The gallery must fully enclose the courtyard, but it does not have to sit directly next to it at every point. It can separate from the courtyard at moments, as long as its continuation brings the user back. The communal spaces have direct connection to the gallery. The gallery acts as the mediating threshold between private and shared, open and closed.

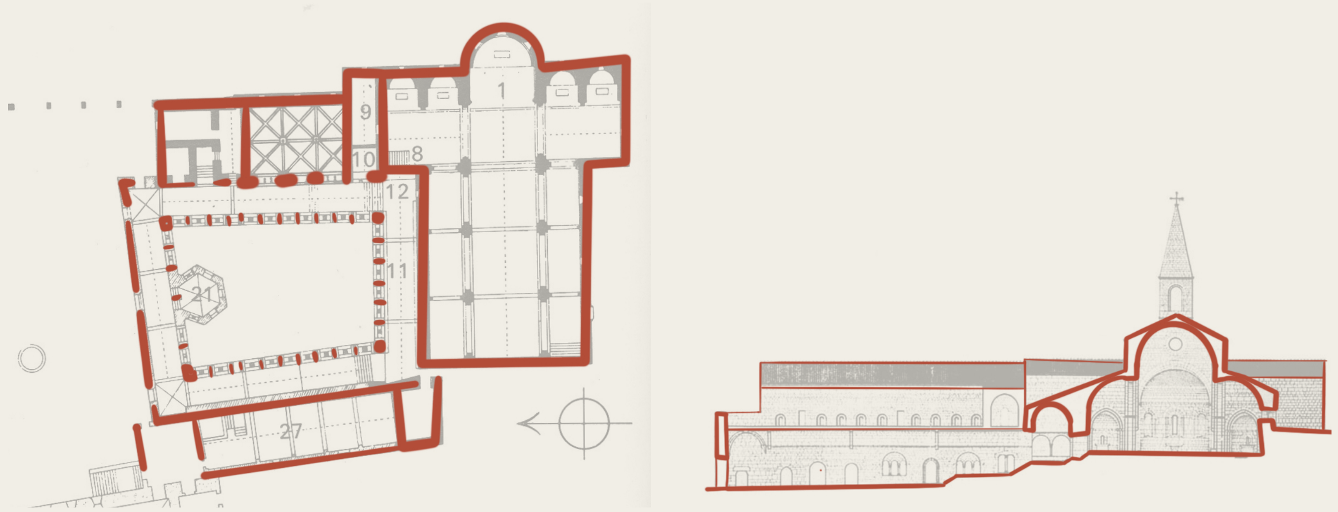



Fig. 3.4.1-2. Plan and section of Abbaye du Thoronet. Base drawing: after Le Thoronet abbey survey drawings (CMN). Overlay: own work.

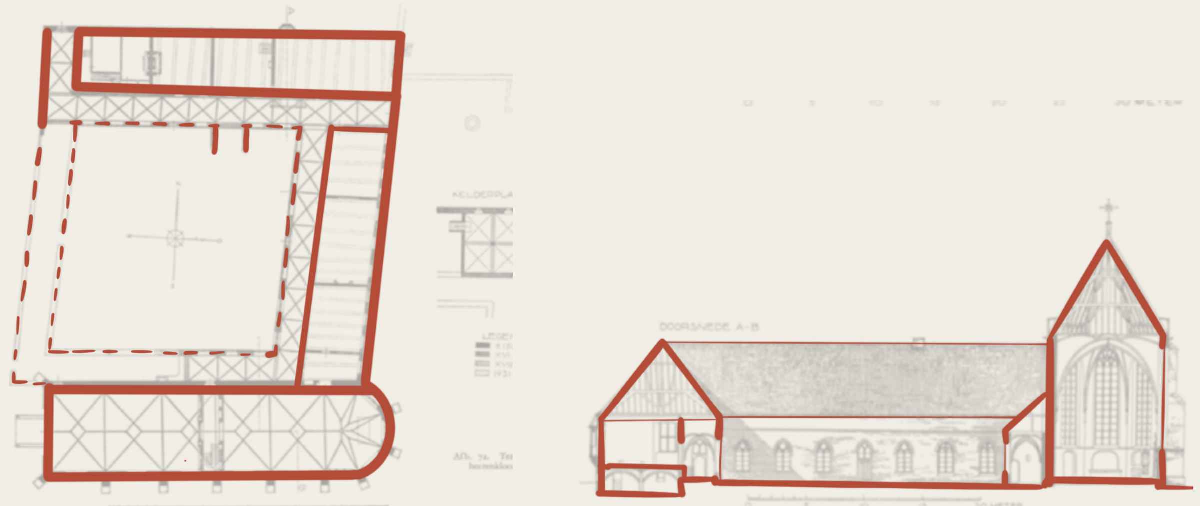


Fig. 3.4.3-4. Plan and section of Klooster Ter Apel. Base drawing: Rijksdienst voor het Cultureel Erfgoed. Overlay: own work.

# 3.5 The Zeemanshuis: site, programme, and integration

The principles operate in a specific place. The Zeemanshuis at Kadijksplein 18, on the edge of Amsterdam's historic harbour area, is the site through which the framework is tested.

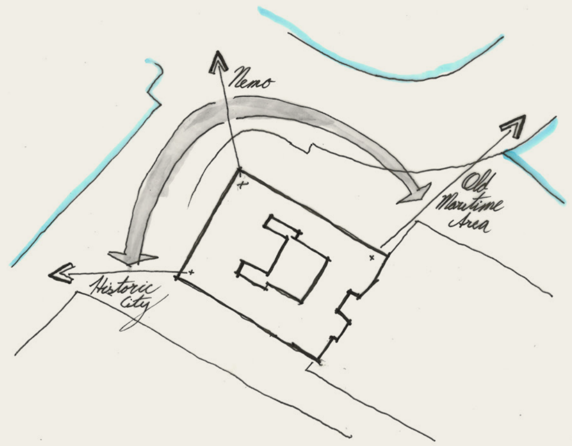
*The Zeemanshuis as incremental structure.* The surrounding fabric reflects a history of incremental growth shaped by trade, infrastructure and proximity to water. Layered roofscapes, narrow plots and successive additions show a city that has developed through continuous adaptation rather than fixed planning (Abrahamse, 2010). Within this context the Zeemanshuis can be read as an incremental structure rather than a single object. Since its establishment in 1856 as an institution for sailors, the building has been altered several times (Fig. 1.5, timeline). The most notable intervention is Baanders' 1920 extension, which added a new layer and extension onto the existing building and can itself be read as a early top-up. The proposed timber top-up extends this sequence: addition, replacement and reconfiguration as part of the building's architectural logic (Brand, 1994; Habraken, 1998).

*Transitional co-living as continuation.* The site has housed sailors, trainees and visitors between phases of journey and life since 1856. The proposal extends this lineage as transitional co-living: a housing model for residents in temporary phases (young professionals, educators, cultural workers) who require accommodation that is temporary but provides stability (MVRDV, 2024).

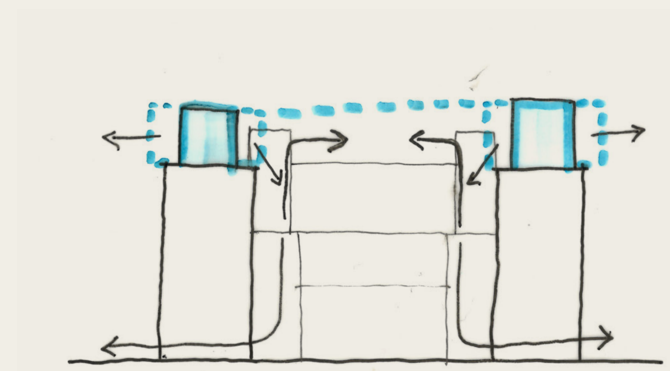
*Monastery as spatial reference.* The spatial organisation of the top-up uses monastery as a spatial precedent for collective living around a courtyard. In monastic architecture, individual rooms, shared functions and circulation are organised around a central open space, with circulation acting as a mediating layer between courtyard and rooms. (Herve, 2001) The design applies this logic: a courtyard is opened over the existing terraced roof, with units organised around it through a gallery that acts as the mediating threshold.

*Site analysis takeaways.* From the site analysis, six goals emerged (Fig. 3.4.1-6). Together they form the conditions that the final design has to address.



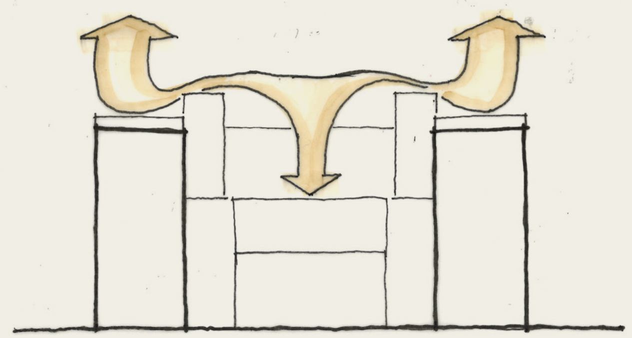



Designing with a view

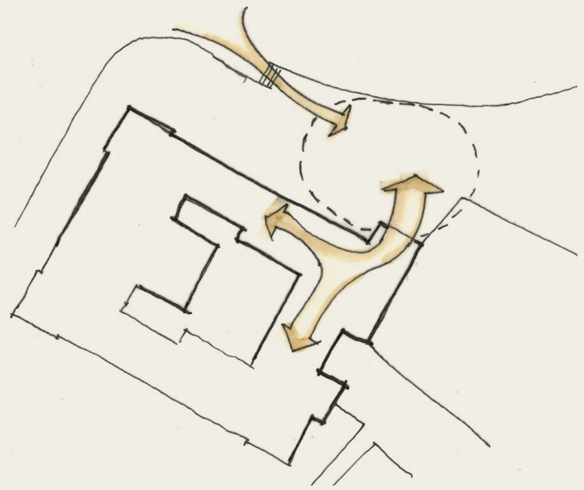


Courtyard informed circulation

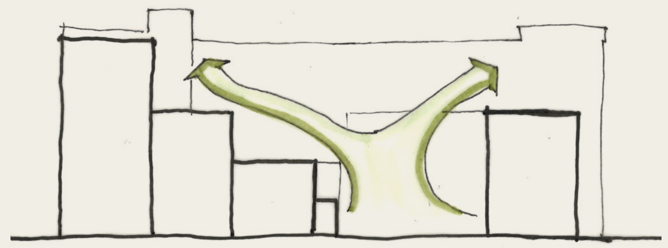
Expanding green structures



Utilizing the available roofscape



Reactivating the street area



Extending the courtyard vertically

Fig. 3.5.1-6. Six site-analysis takeaways for the top-up. Own work.

The first 1:200 section brings the ideas together in one drawing. Courtyard, gallery, units and existing building are placed in relation; the proportions of the terraced roof, the gallery threshold and the symmetry of the two top-ups across the courtyard are tested at building scale. Larger part of the architecture is not yet resolved, but the spatial logic survives: the verticalised courtyard, the inward-facing gallery, the perimeter units. The section operates as a test, not as a resolution.

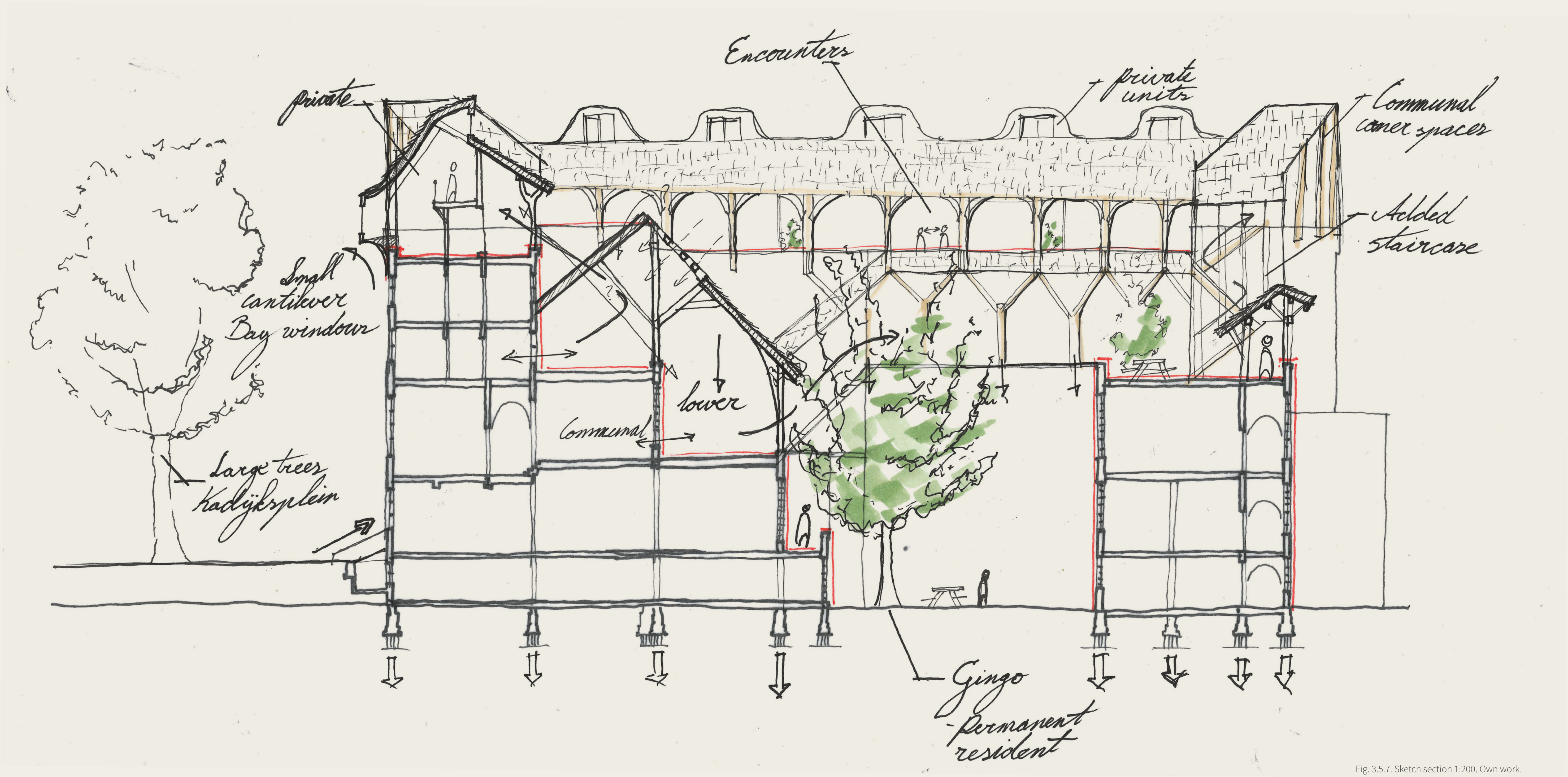
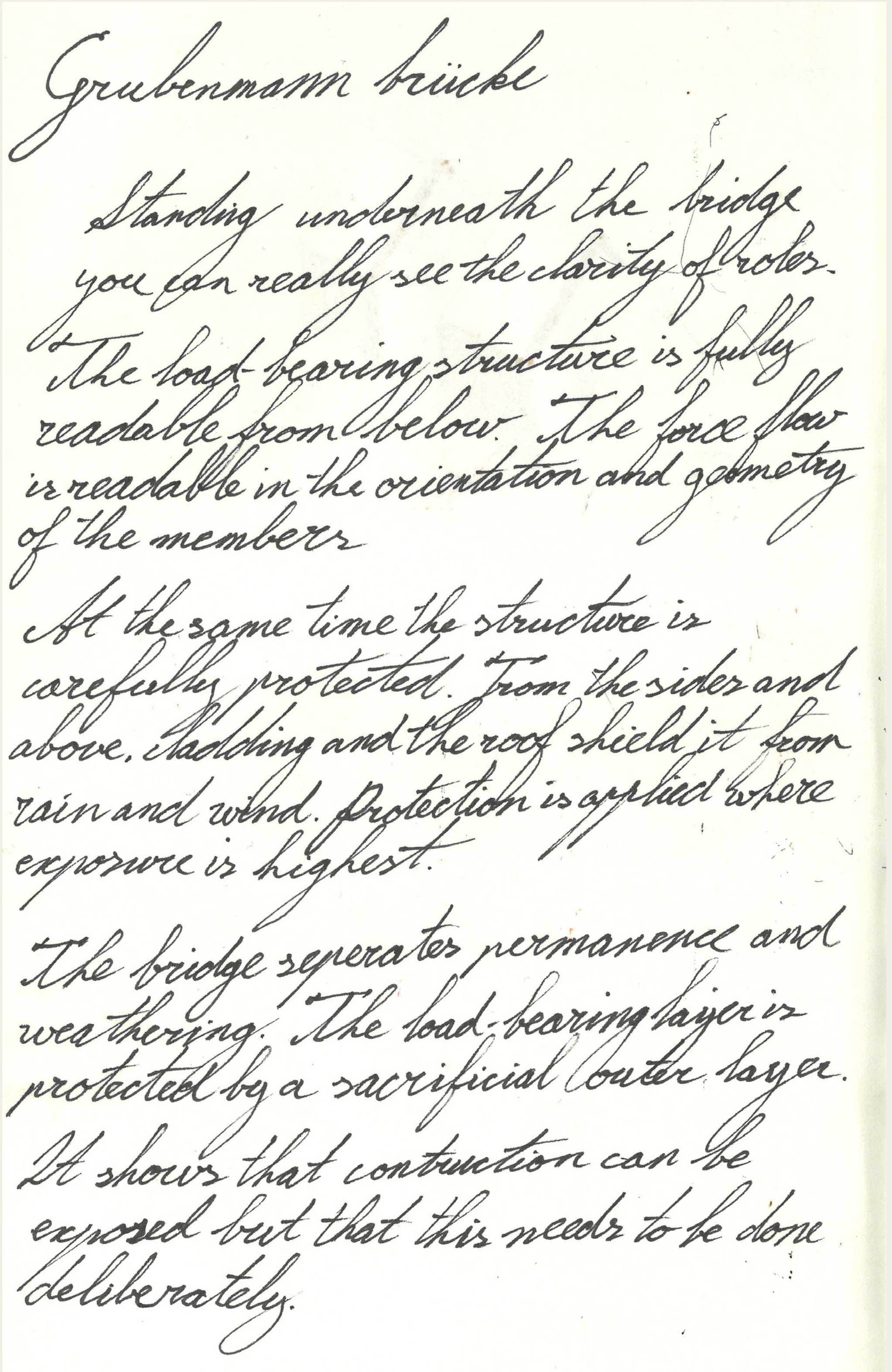



Fig. 3.5.7. Sketch section 1:200. Own work.



Grubenmann brücke

Standing underneath the bridge you can really see the clarity of roles. The load-bearing structure is fully readable from below. The force flow is readable in the orientation and geometry of the members

At the same time the structure is carefully protected. From the sides and above, cladding and the roof shield it from rain and wind. Protection is applied where exposure is highest.

The bridge seperates permanence and weathering. The load-bearing layer is protected by a sacrificial outer layer.

It shows that contuction can be exposed but that this needs to be done deliberately.

Important lesson learned

In case of the Grubenmann bridge, the load-bearing timber is permanent and protected, façades and cladding are sacrificial and tuned to orientation. The bridge shows structure exposed from below where it can be read, and shielded from the sides and above. Exposure and protection are one decision work together.

For the top-up. Tier 1 and Tier 2 carry the permanent structure; Tier 3 urban hardwood is used as weathiring layer. Structure stays readable on sheltered moments visible from below.

Fig. 3.5.8. Sketch and thoughts on Grubenmann Brücke 1:200. Own work.

The first 1:50 model tests how the repetitive bay logic might begin to operate spatially. Rather than resolving a final design, it explores how spatial qualities can emerge from structure. The project is read as a layered system: the courtyard is extended over the existing terraced roofs; the timber structures create more closed spaces on top and open but sheltered spaces on the activated roof terraces. The pitched roof elements are tested as primary spatial devices. They begin to define intermediate spaces such as galleries and covered thresholds.

The two photos shown here are successive iterations of the same model. In the first, the sloped roofs are present but do not yet read as a whole, and the proportions are off; the gallery sits too low. The second iteration introduces the tier 2 cruck blade and a semi-transparent roof. The cruck blade resolves the relationship between gallery and roof allows for enough free height in the gallery. The semi-transparent roof tests how the courtyard is extended vertically. The transparent roof is later abandoned for a fully transparent one to strengthen the visual connection with the courtyard. At this stage the relationships between some elements remain unresolved. The model acts as a testing ground, making visible where structural logic begins to organise space and where further articulation is required.

Fig. 3.5.9. First 1:50 model, initial iteration. Own work.

Fig. 3.5.10. First 1:50 model, secondl iteration. Own work.

Visual outlook

The two visualisations mark the shift the project made between A1 and A2. The first reads more historic: pitched dormers, decorative gables, a top-up that belongs more in a historic theme park. The second is contemporary in expression while the structural logic underneath remains the same.
The A1 review raised the question directly: does it have to look like it is from 2026? Yes, but informed. The shift is from visual reference to principle operation: curvature, tolerance and node articulation are now carried by the material logic rather than illustrated by historic form.

Fig. 3.5.11. First Impression sketch A1. Own work.
Fig 3.5.12. Second Impression sketch A2. Own work.

Materalization

The 1:20 section tests materiality at the scale where the build-up becomes visible. A thatched branch-bundle roof is studied as the outer layer, together with the relationship between krommer, rafter and the layered build-up above. The drawing also begins to show the assembly sequence. The bundled thatched roof is later abandoned because the pitch is not steep enough to shed water through the bundles.

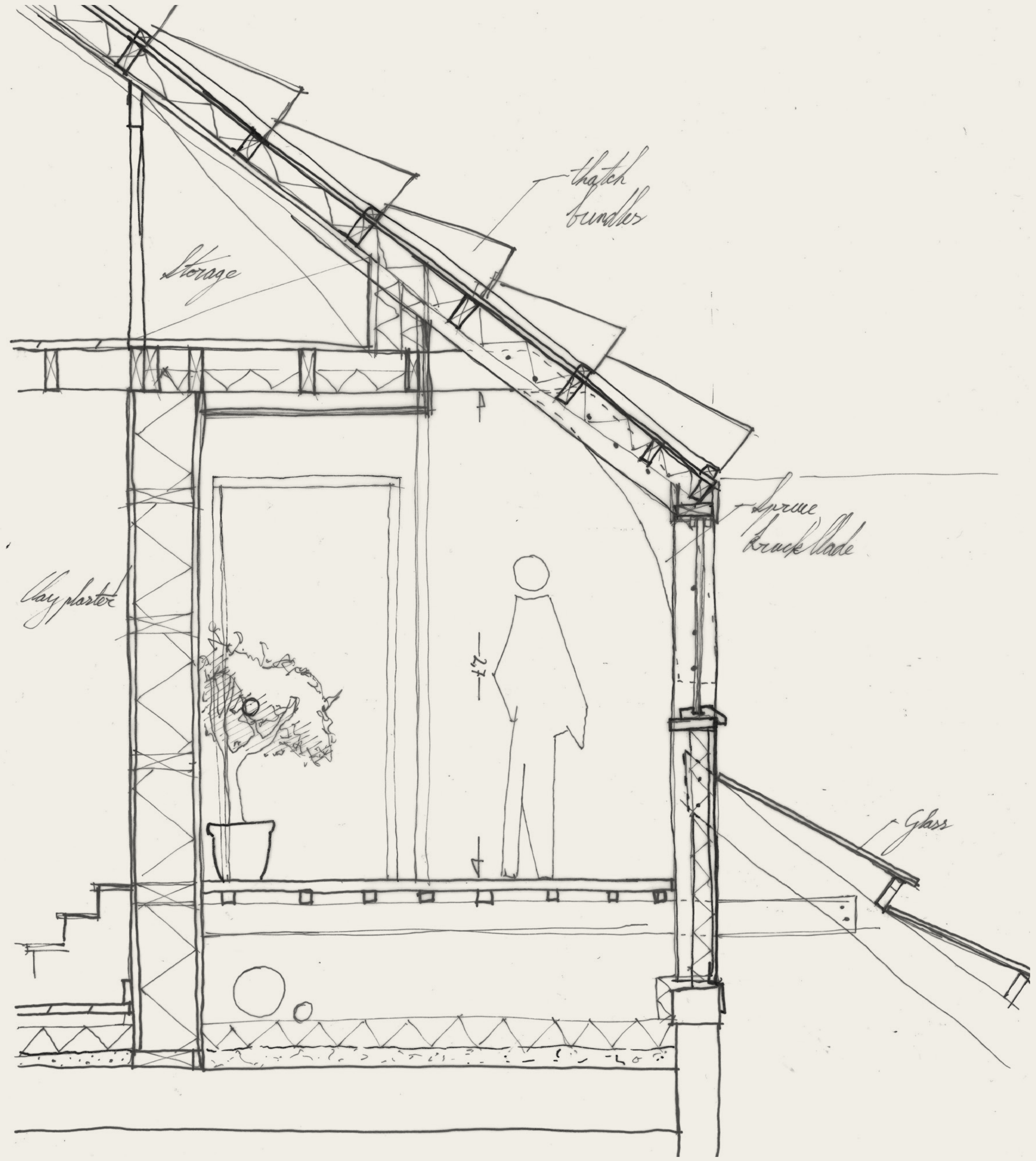



Fig. 3.5.13. 1:20 section sketch testing materiality: thatched branch-bundle roof, krommer, rafter and layered build-up. Own work.



The unit and gallery

The 1:50 section applies the lessons from the 1:20 at the scale of the unit. The thatched roof is replaced by a timber roof, the cruckblade, rafter and column are kept as the structural moment that makes the gallery threshold possible. The internal proportions of the unit and the position of the gallery are now studied alongside materiality. The section is the first point where the principles really become legible as architecture rather than as structural diagram.

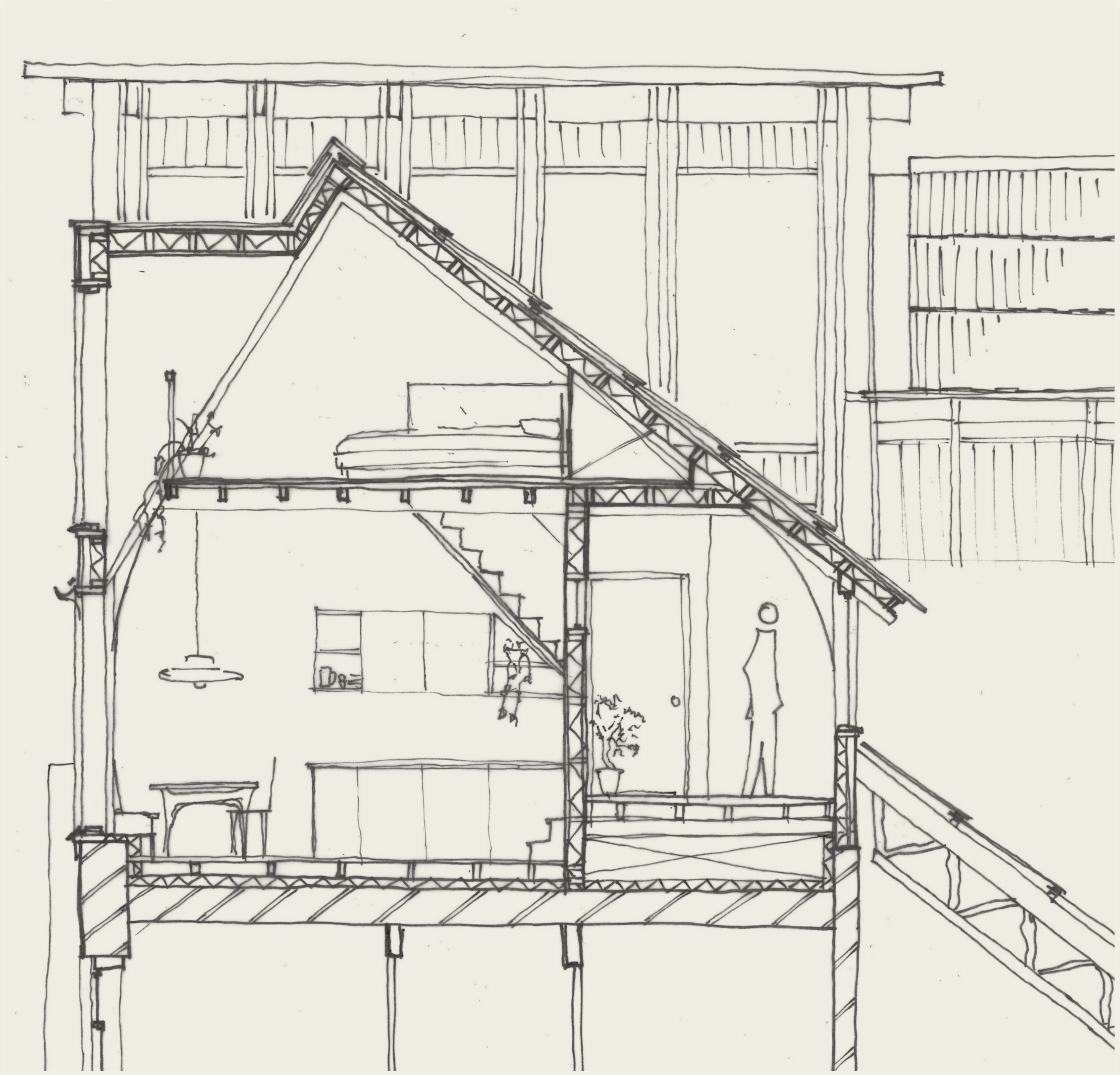


Fig. 3.5.14. 1:50 section sketch testing the unit and gallery: cruck blade, rafter and column as the structural moment shaping the gallery threshold. Own work.

# 3.6 design and demonstration

### ROOFSCAPE AS SPATIAL ORGANISER

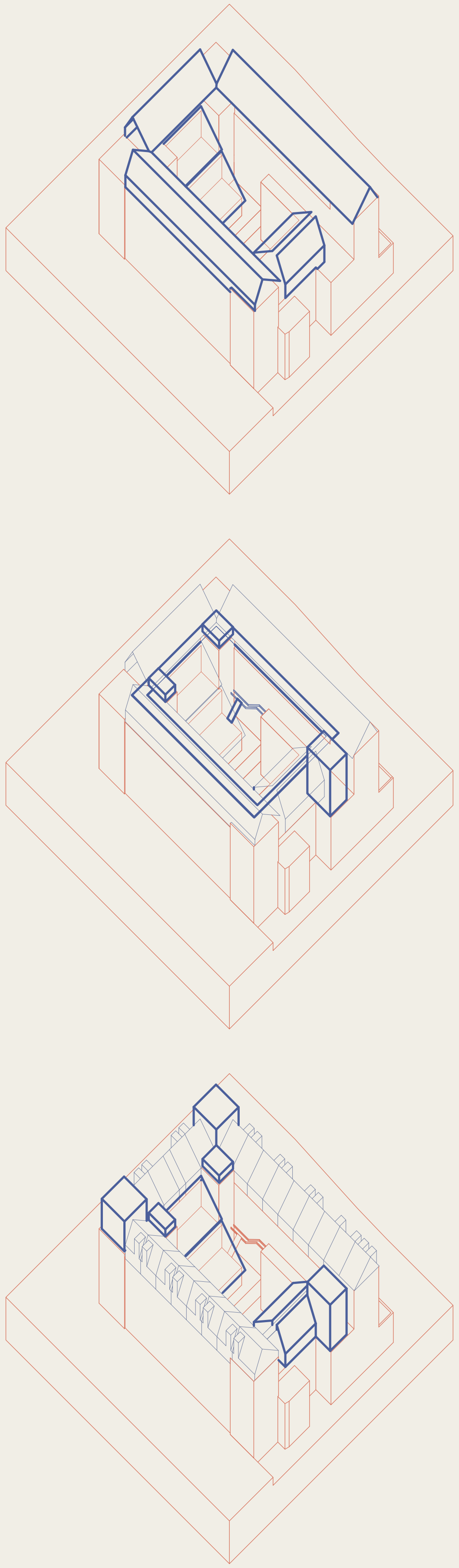
The roofscape of both the existing and new intervention acts as the primary means of spatial organisation. The added roof volume creates attic-like living spaces above the Zeemanshuis. Within the courtyard, a cascading glass roof extends over the existing roof terraces, creating sheltered exterior spaces while mediating between old and new building volumes. Together, the roofscapes structure circulation, enclosure and collective use across multiple levels.

### ENCLOSING CIRCULATION

The residential units are organised around a continuous gallery that encloses the courtyard. The gallery is accessed through the extended existing vertical circulation cores and a newly introduced staircase, integrating the intervention into the existing building structure. Adjacent to living clusters, the circulation space becomes sheltered and inhabited rather than purely transitional. The gallery bridges both residential clusters over the roof of the maker space, strengthening spatial continuity and collective interaction.

### DISTRIBUTION OF COLLECTIVE SPACE

The top-up  introduces collective spaces at the corners of the building, reinforcing the existing tower typology. Positioned towards panoramic views over Amsterdam's waterscape and historic roofscape, these spaces strengthen orientation and social interaction within the residential layer. A shared maker space, positioned on a lower level, connects existing and new users. The sheltered courtyard terraces create additional collective spaces shared across both communities.



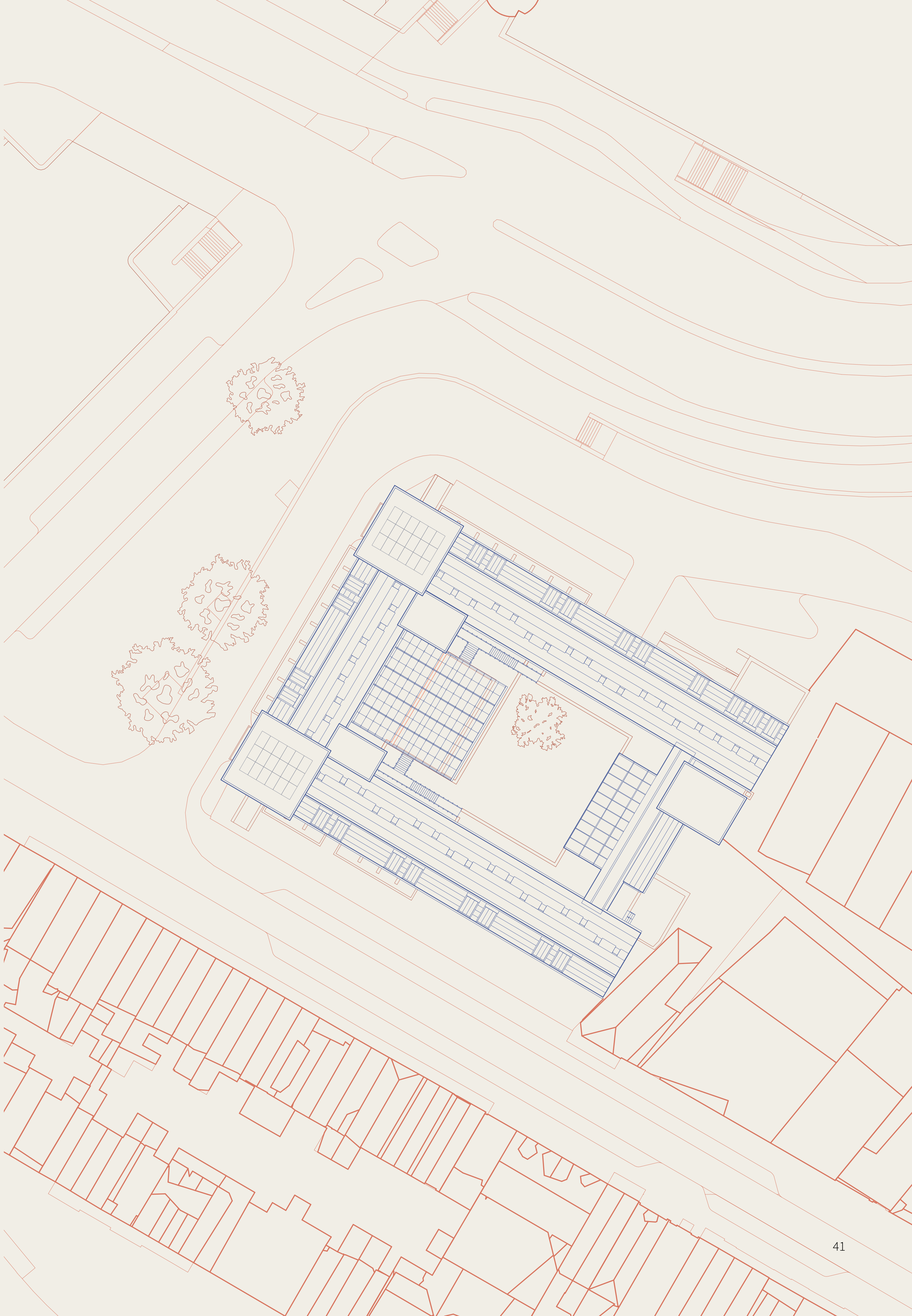
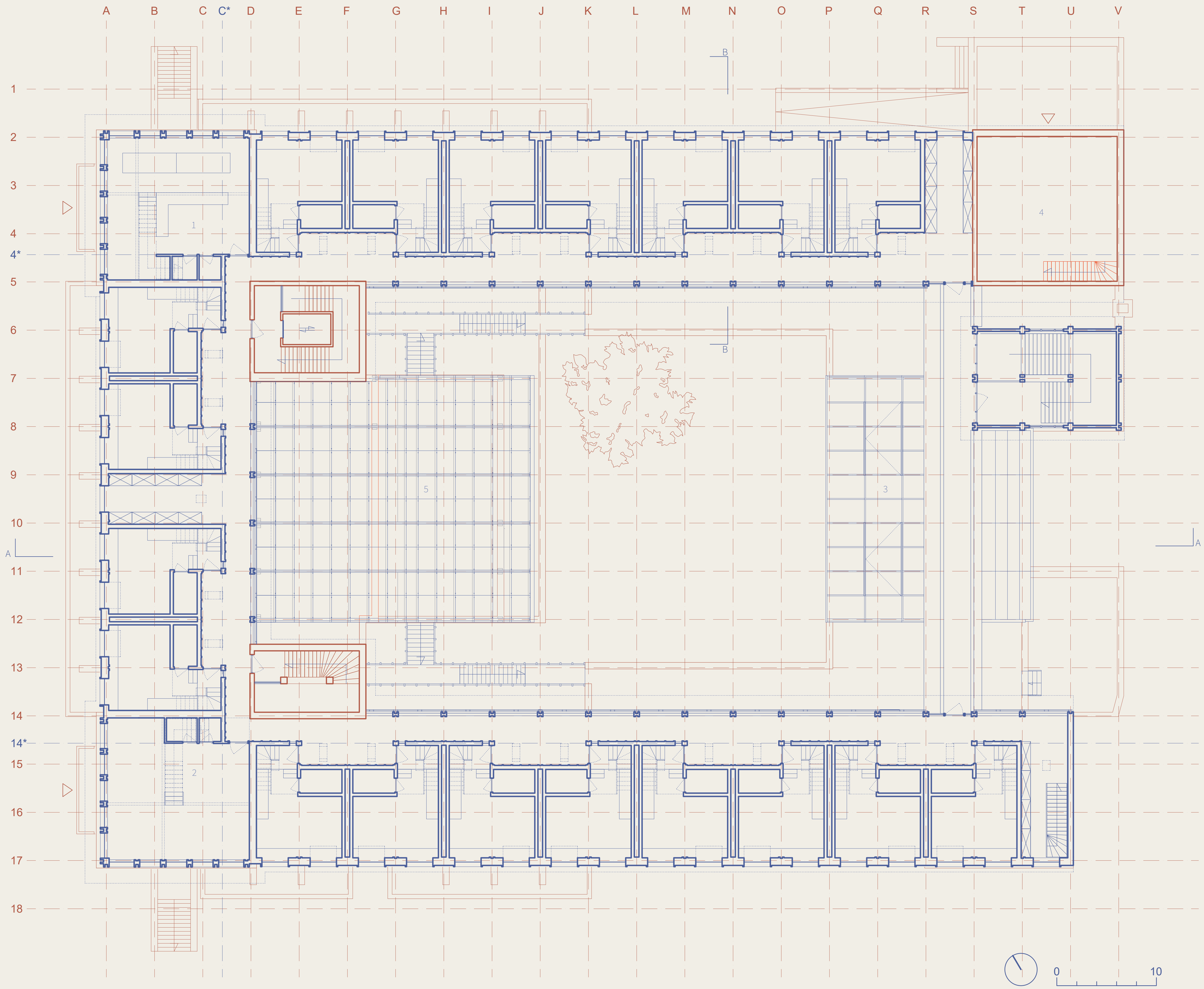


Fig. 3.6.1. Axonometric studies of the three organising principles of the top-up: roofscape as spatial organiser, enclosing circulation, distribution of collective space. Own work.
Fig. 3.6.2. Roof plan in urban context, showing the top-up within the surrounding roofscape. Own work.

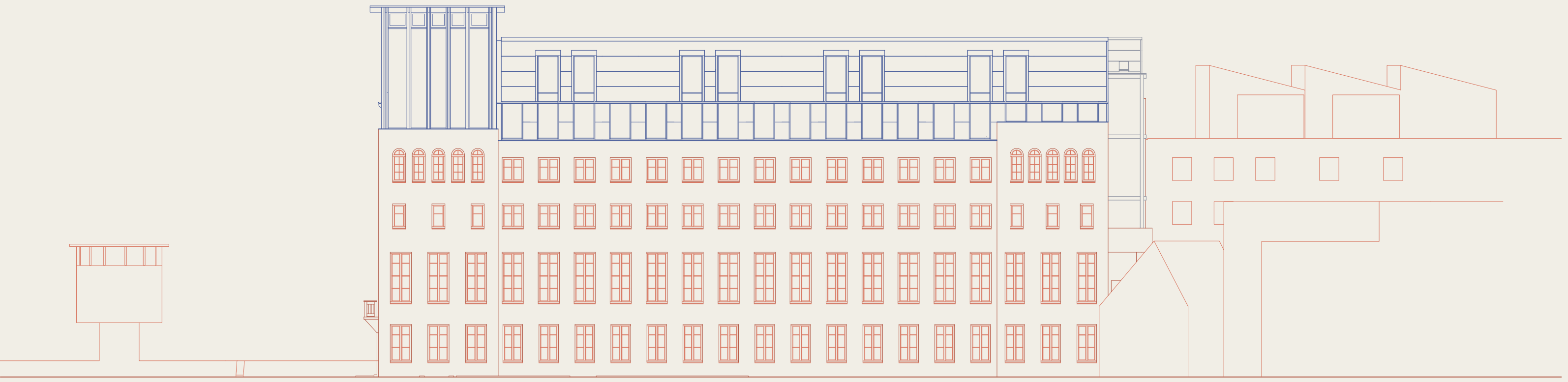
Fig. 3.6.3. Floorplan gallery level with programme distribution. Own work.




Programme

Collective functions are distributed throughout the intervention to strengthen interaction between users. Shared spaces activate circulation routes, courtyard levels and corner conditions.

1. Communal kitchen
2. Communal library
3. Makerspace
4. Existing communal area
5. Sheltered roof courtyard



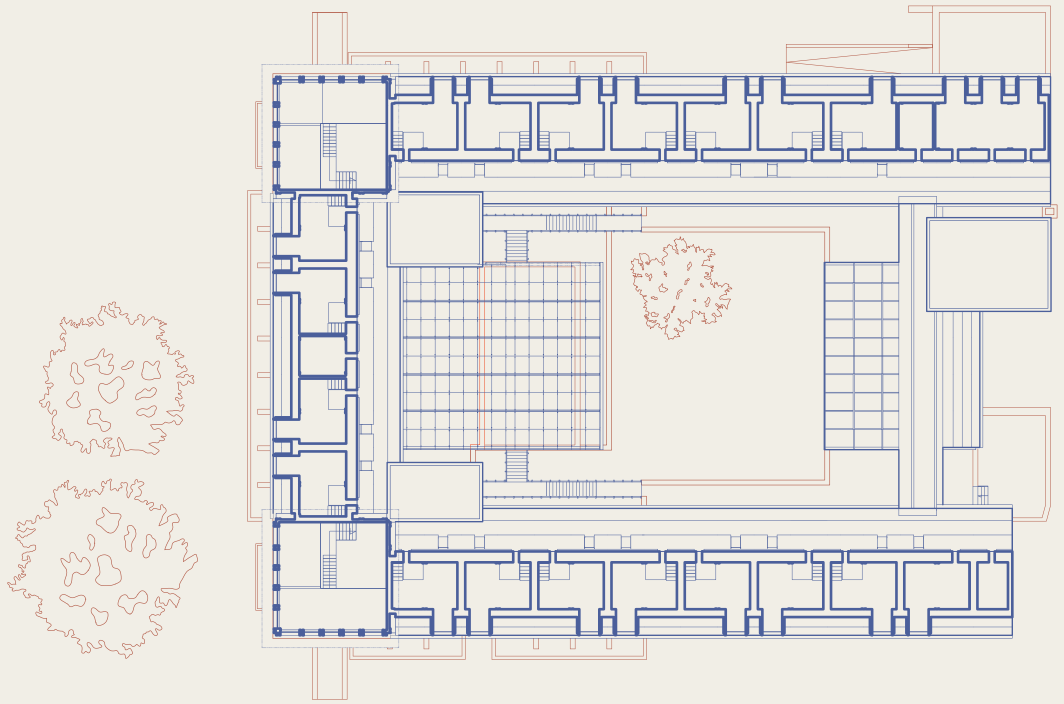
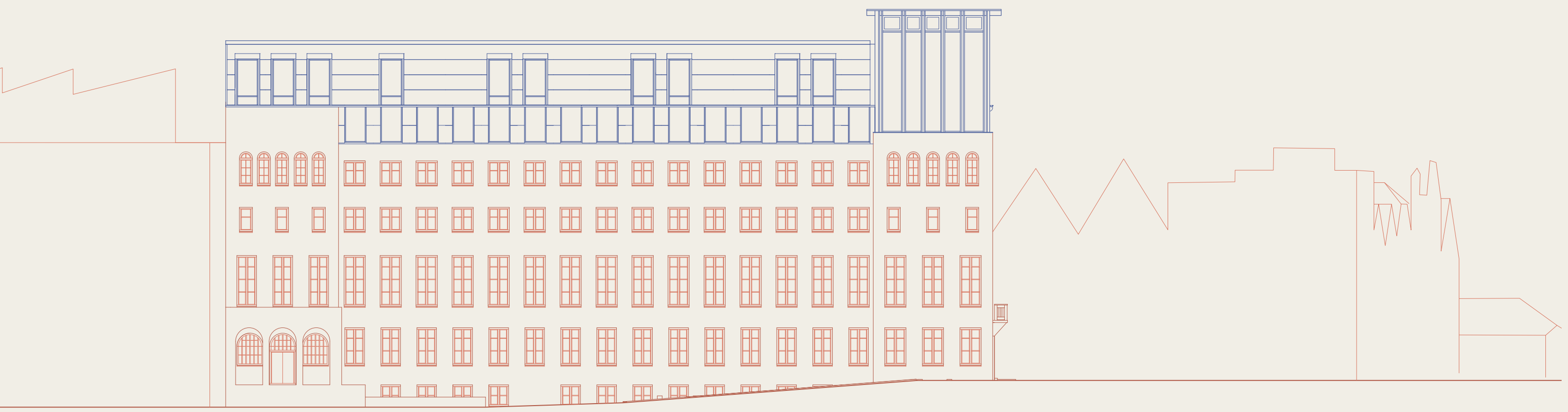


Fig. 3.6.4. South elevation, 1:500. Own work.
Fig. 3.6.5. North elevation, 1:500. Own work.
Fig. 3.6.6. floorplan mezannine level. 1:500. Own work.



Elevational expression

The elevations establish a dialogue between the historic masonry structure and the lightweight timber addition. Facade rythm and proportions are shared while material expression differentiates new and old. Structural logic and collective programme become visible through variations of horizontal and vertical expression and openness of the facade.

### Communal corner areas

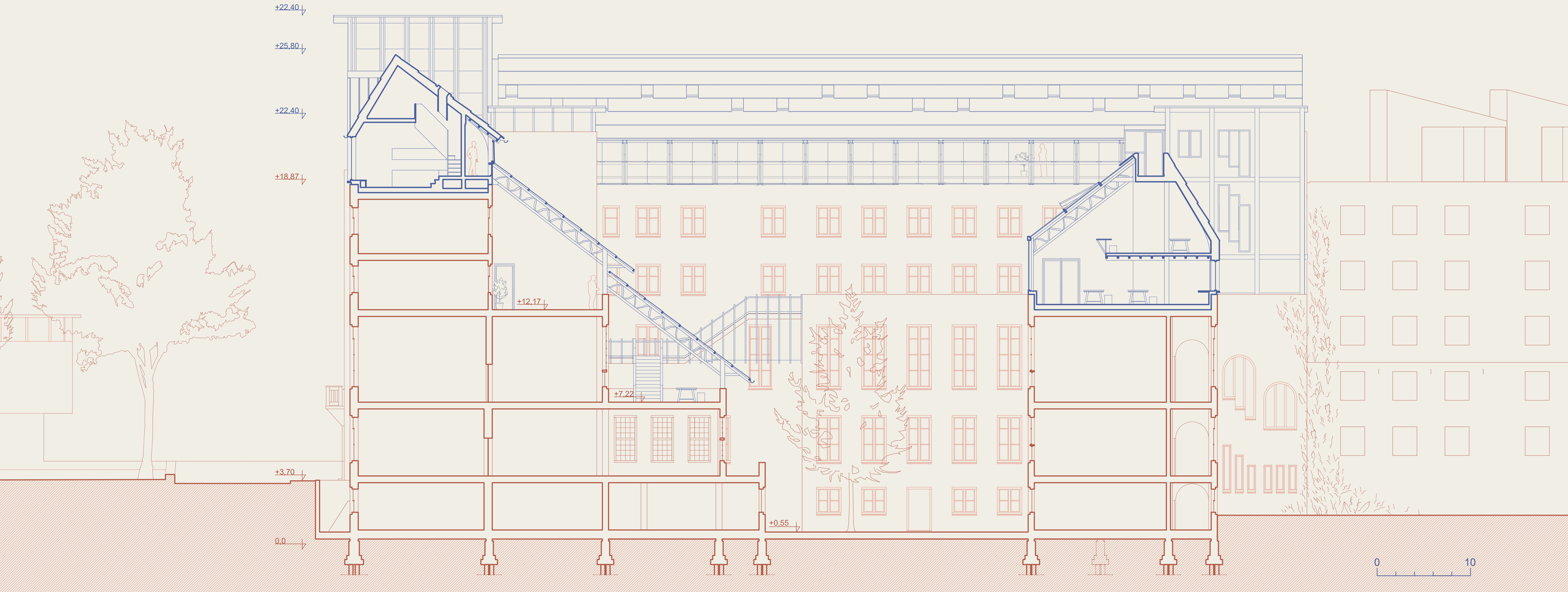
The corner areas contain the communal kitchen and library. These spaces architecturally reinstate the verticality the original 1856 towers carried, providing light communal volumes with larger capacities. The kitchen orients toward the water and city centre, the library toward the city centre and Artis. The verticality of these spaces repositions the Zeemanshuis within its prominent place in Amsterdam.

Fig. 3.6.7. West elevation, 1:200. Own work.
Fig. 3.6.8. Communal kitchen perspective section. Own work


Section AA 1:200

Read tectonically, the section makes the tier 1 structural field legible across the building's length: a regular bay rhythm that establishes the geometric order against which the irregular tiers operate.  Curvature and tolerance are visible in the Tier 2 cruck blades that structure the spatial condition of the gallery. Tolerance can be read in the irregular merbers taken up in the girder trusses cascading into the courtyard.

Fig. 3.6.9. Section AA 1:200. Own work



Section BB 1:50

This section clearly demonstrates principles, architectural consequense and the gallery as threshold.

The cruck blade carries the change of direction between column and rafter as a continuous timber element with the grain following the load path. It shows curvature in its most direct application. Node articulation is read at the cruck head, where the rafter, column and tie beam meet as a thickening rather than a hidden connection. The geometry of the cruck simultaneously shapes the gallery space, linking the structural moment to a spatial one.

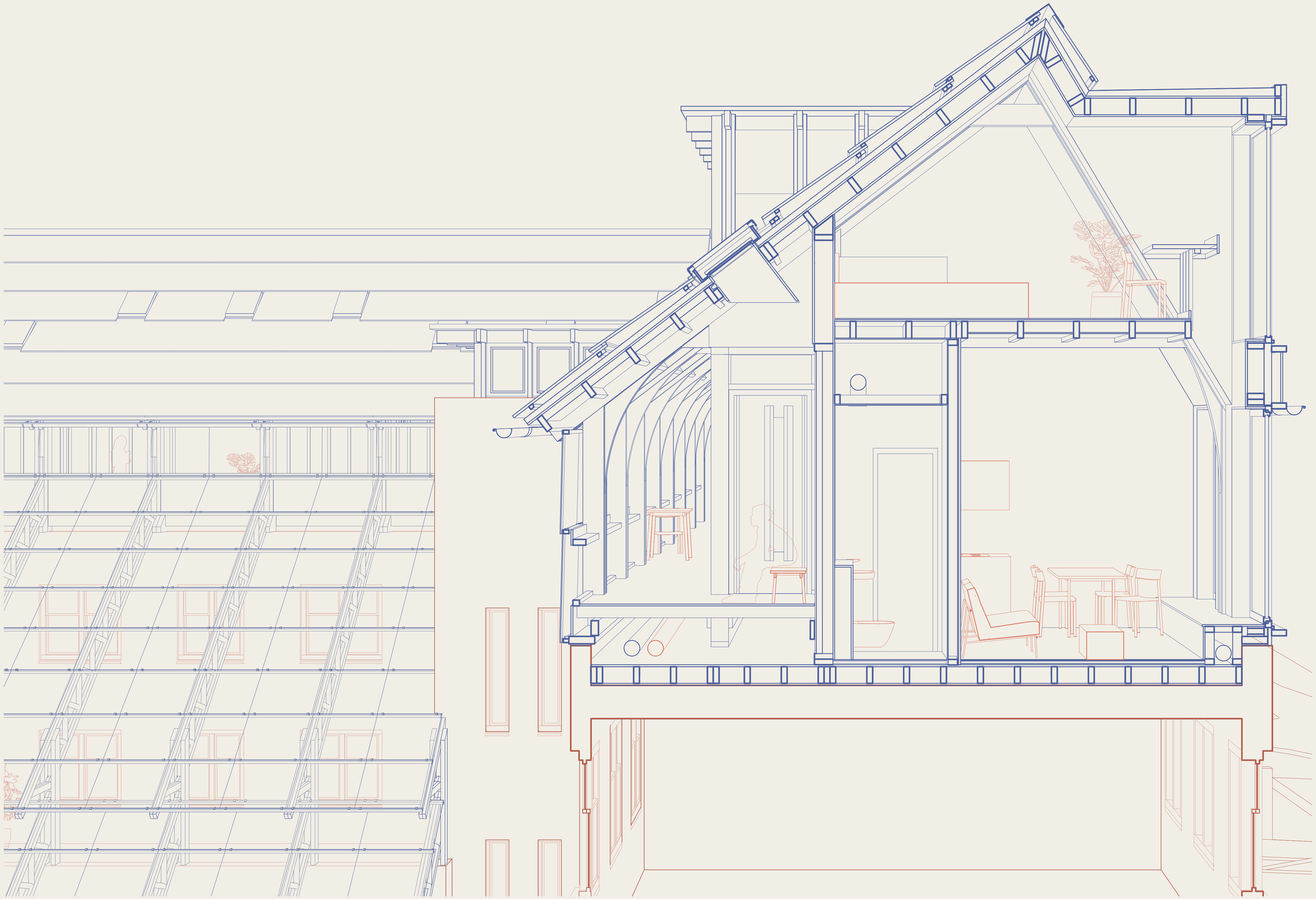


Fig. 3.6.10. Section BB 1:50. Own work

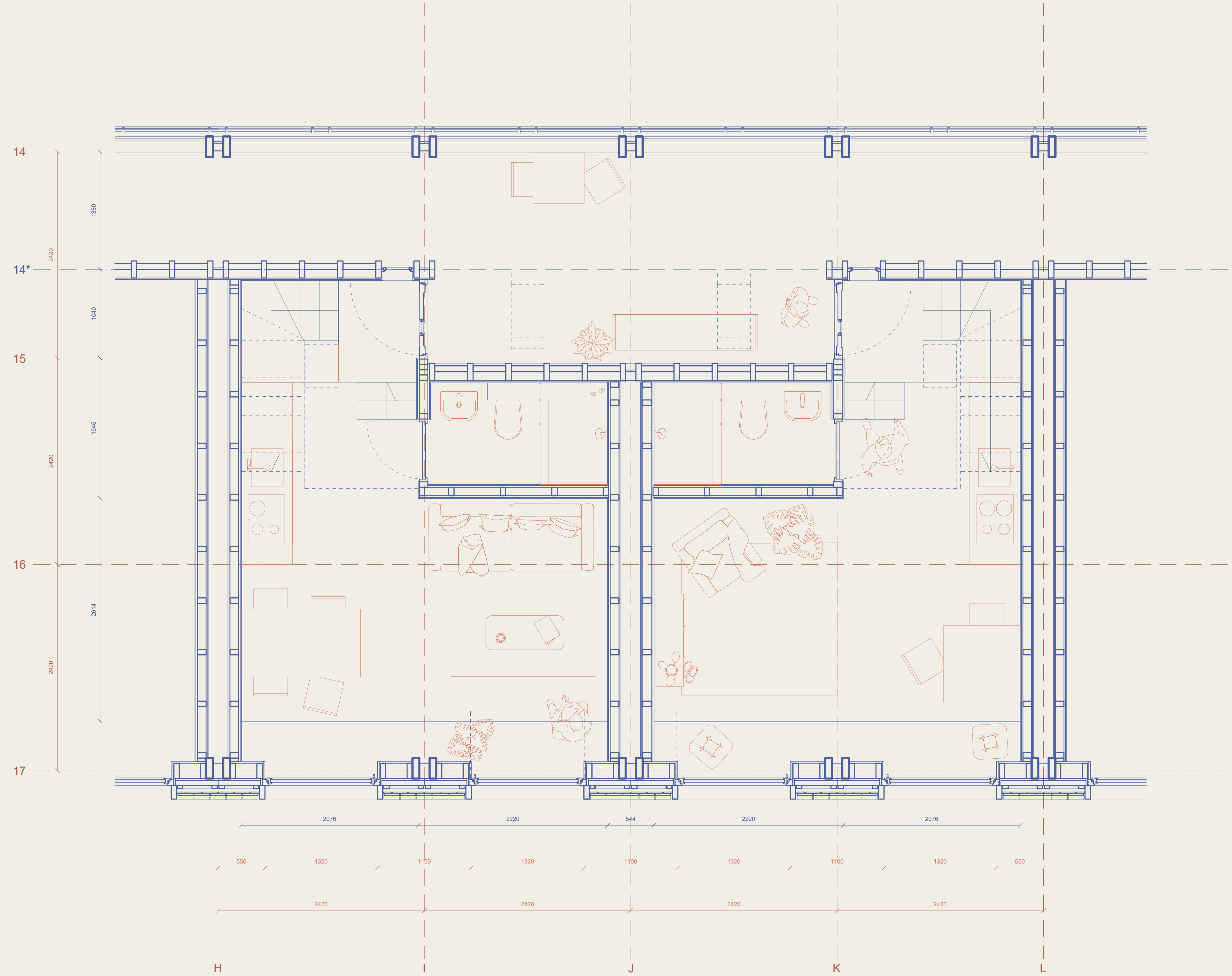
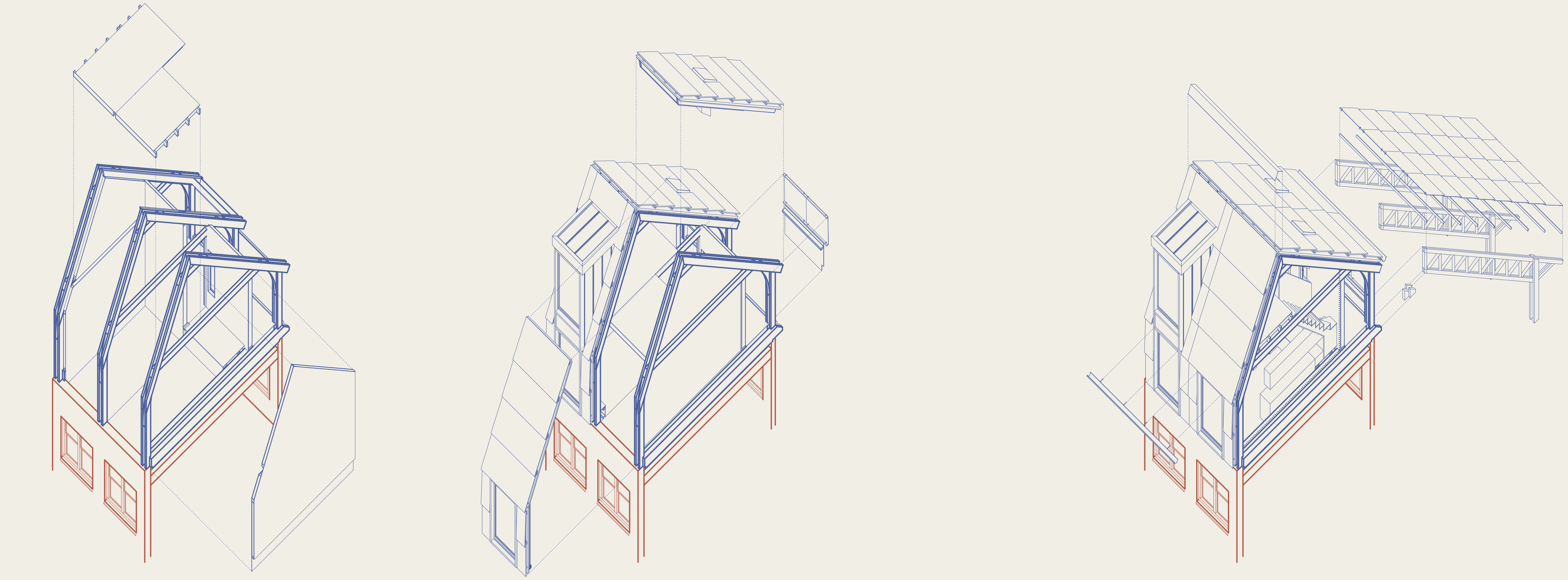
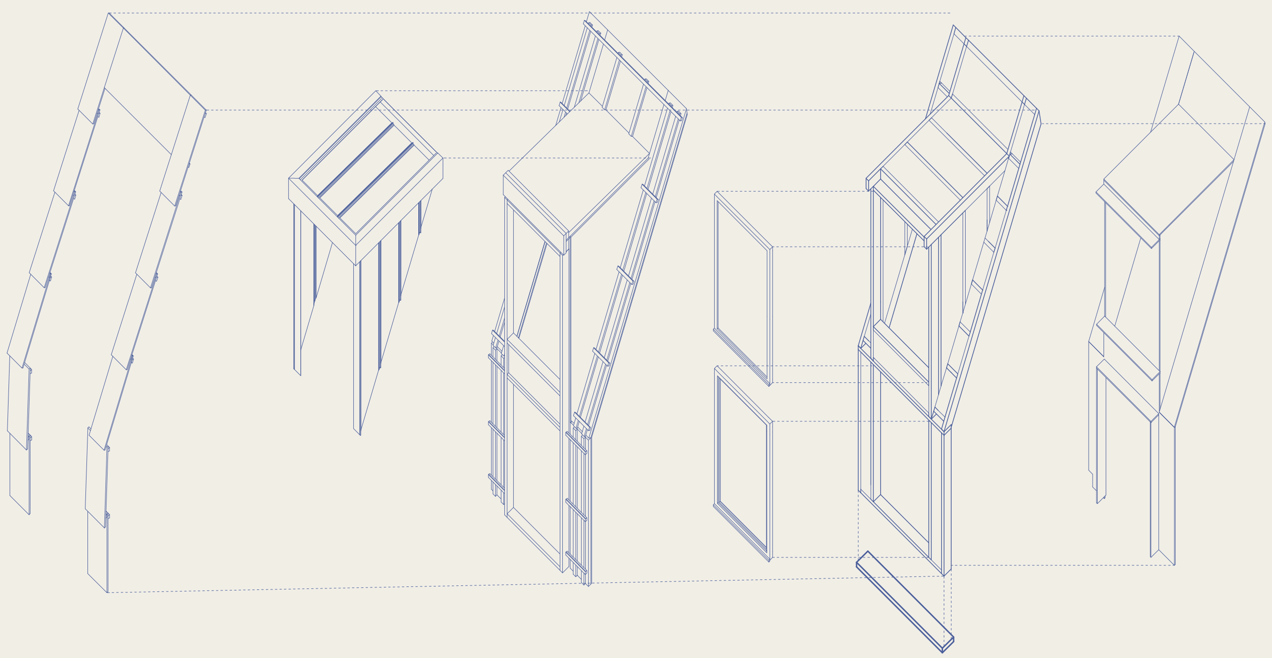



Fig. 3.6.11. Floorplan adjecent Units and gallery. Own work.

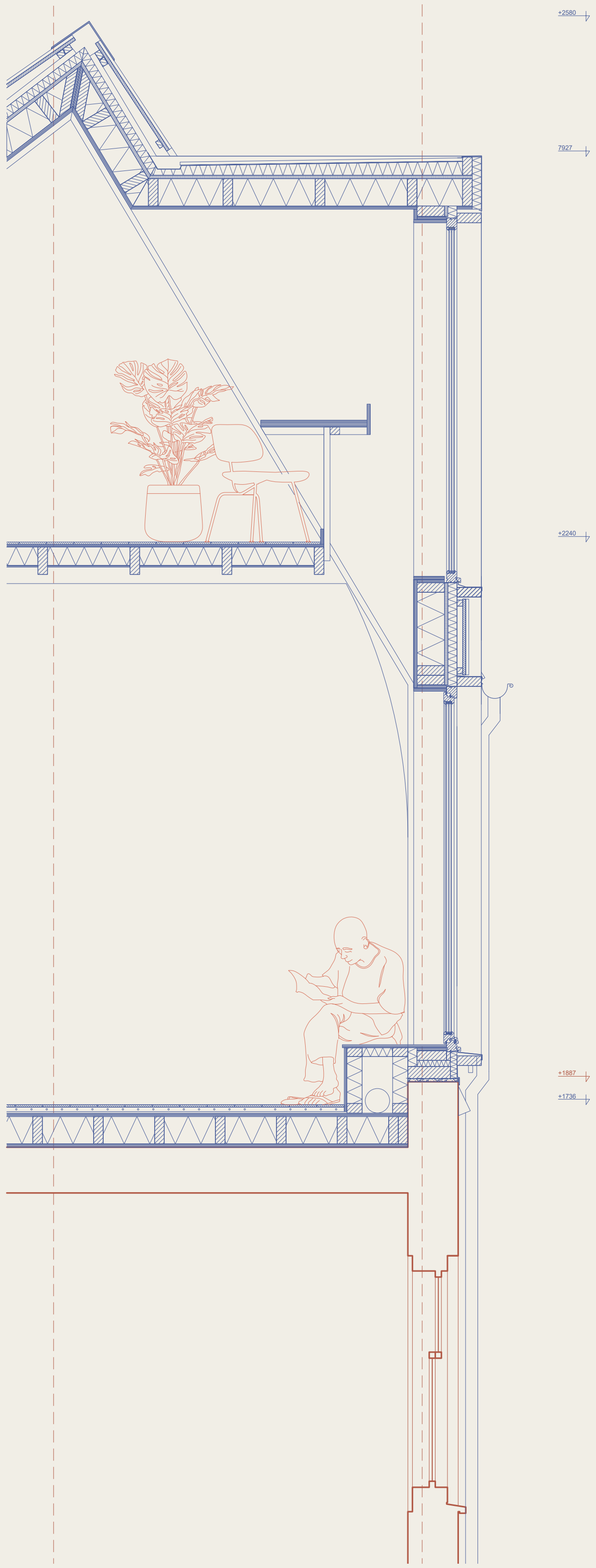


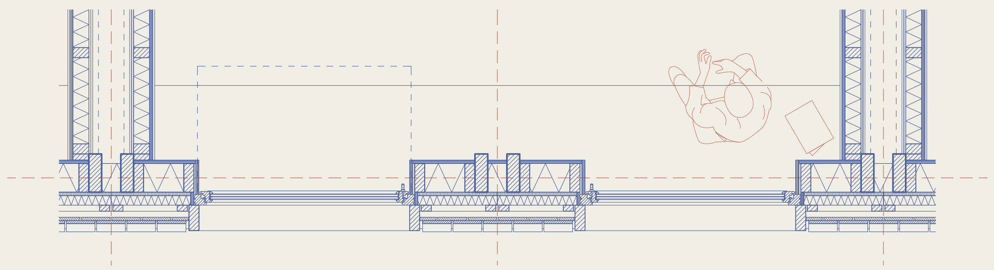


Assembly 1:200/1:100

The assembly sequence of a unit. Trusses and cassettes arrive prefabricated. The new floor cassette bears on the existing floor; the rest of the structure bears on the existing masonry walls. Wall and roof elements sit on the trusses. Partition walls sit on glulam beams spanning masonry to masonry.

Fig. 3.6.11. Assembly 1:200. Own work
Fig. 3.6.12 Prefab element 1:100. Own work.





1:20 facade detail

The 1:20 drawing brings structure, material and spatial quality together. At the point where new and old meet, the opportunity is taken to make this moment inhabitable: a window seat in the parapet thickness. The void created houses the building's services and completes the climate system. Roofing and cladding on this side share the same material, urban hardwood (Tier 3). It read as one single material making the architectural transition between existing and new legible.

Fig. 3.6.13. Facade 1:20 (scaled down). Own work.

### The timber joint

The exploded view shows the gallery joint as a system of prefabricated tier 1 modules combined with site fitted tier 2 and tier 3 elements. Tolerance is the principle that makes this combination possible: the tier 2 cruck blade sits in an off plane connection between the tier 1 elements taking up tolerance. A final tier 3 wedge is inserted to transfer the forces across the offplane interface. At the base, the existing structure receives the girder truss through a tier 3 hardwood foot piece, held in place between the column elements. The girder truss itself is built from tier 1 and tier 3 timber, with tier 3 members categorised as either compression or tension elements and matched to the standardised tier 1 girders that receive them.

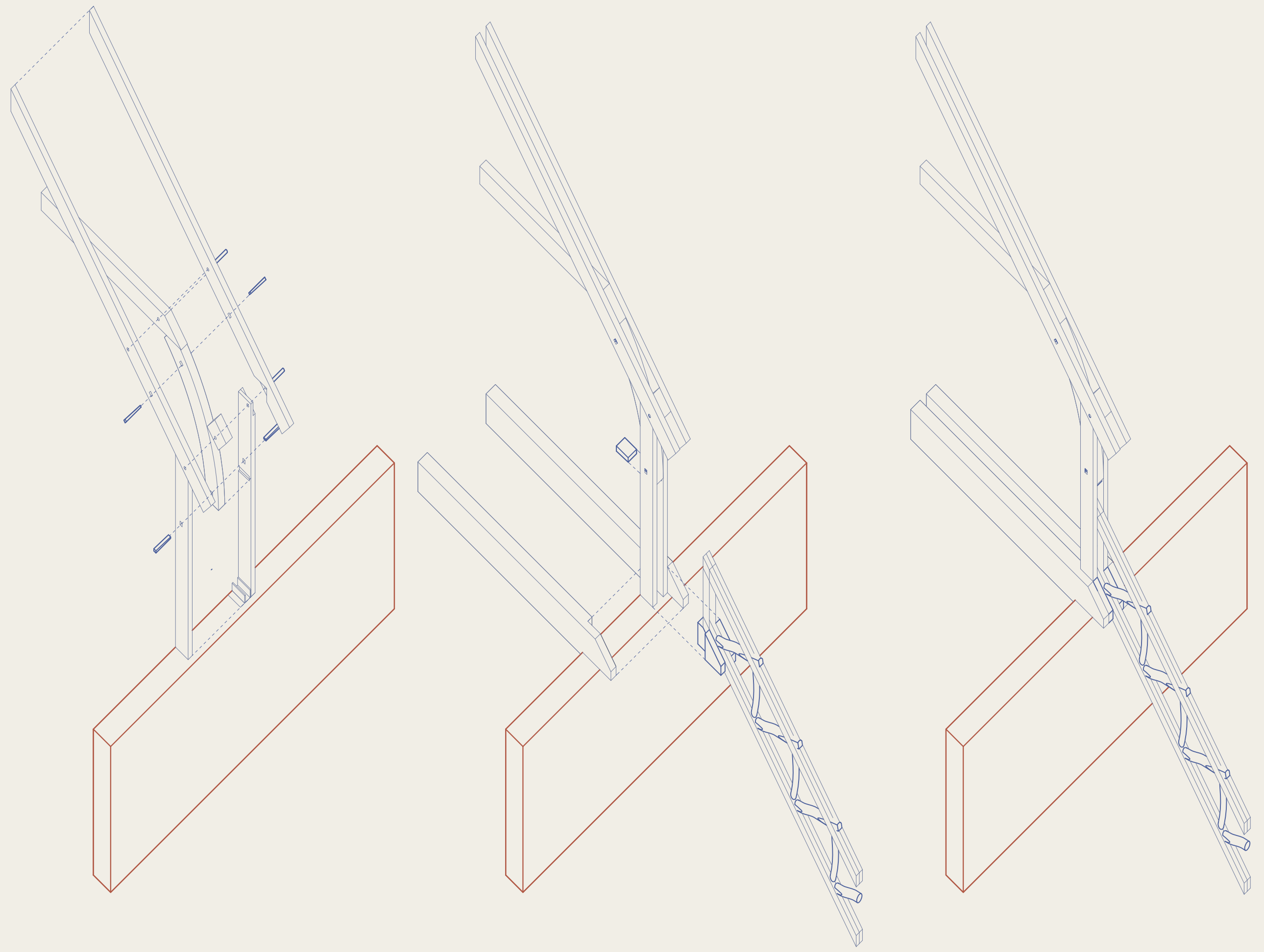
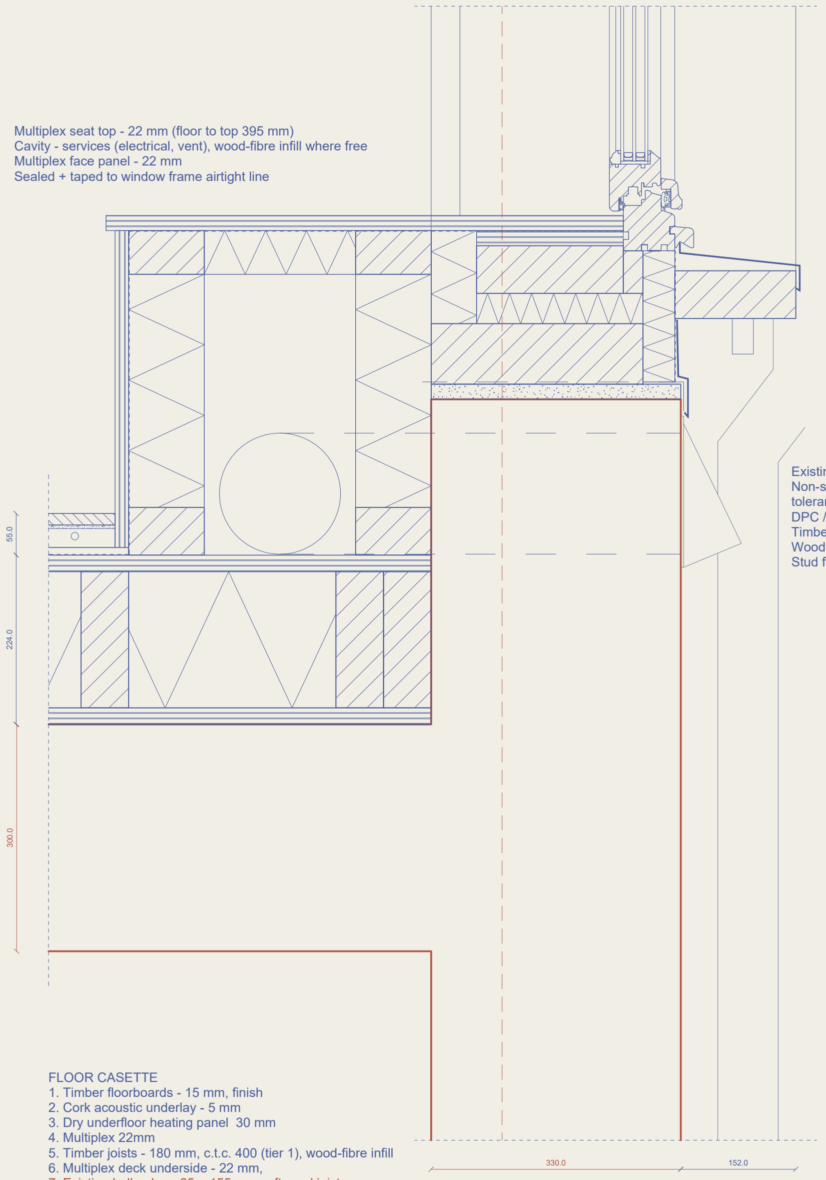


Fig. 3.6.14. Exploded view Gallery joint. Own work



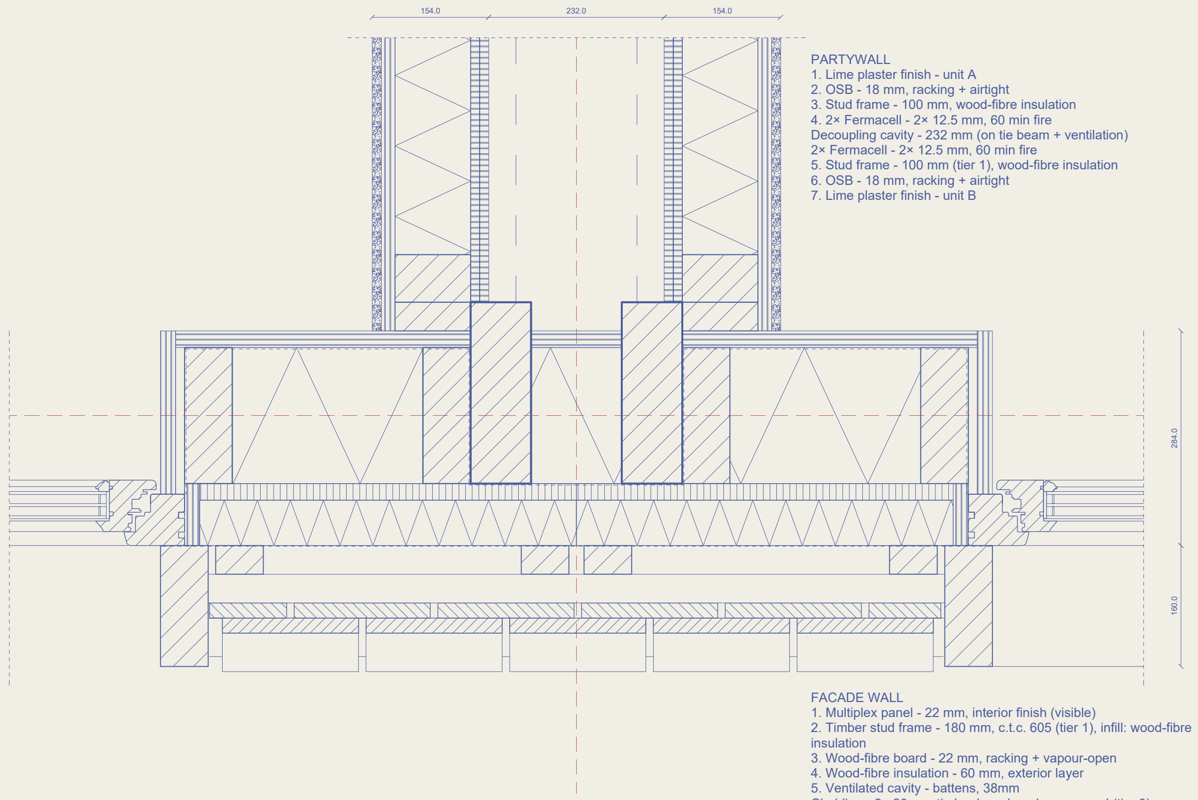




Fig. 3.6.15. Vertical Detail new structure on top of existing 1:5, scaled to 1:10. Own work.
Fig. 3.6.16 Horizontal detail partition wall, Facade, window 1:5, scaled to 1:10. Own work.

### Readability

The principles are readable at the timber connections and at the tier interfaces. Curvature is read at the cruck blade, at the 1:200 bay rhythm and at the 1:50 section. Tolerance is read at the tier interfaces: tier 1 to tier 2 at the cruck offset, and tier 1 to tier 3 at the cladding and at the truss tension members. These interfaces are also where node articulation reads. The different elements come together in a joint where the forces are traceable and the meeting is a thickening rather than a hidden connection.

Fig. 3.6.17-19. Photos of Models. Own work.

Fig. 3.6.20. Street level impression. Own work.

# Part 4 conclusion

## 4.1 Conclusion

The central research question of this project was: Can Amsterdam's historic timber joinery logic inform an architectural language for new lightweight timber layers? The answer is yes, but the contribution lies less in the three principles that were extracted than in the method through which they were extracted, repositioned and operationalised.

Three principles: curvature, tolerance and node articulation, were read from historic Amsterdam timber joints (3.1), abstracted into operative definitions with design criteria (3.2), repositioned within a contemporary frame of material sourcing, fabrication and regulation (3.3), and tested in the design of lightweight top-up for the Zeemanshuis (3.4–3.6). At each scale of the design, from the bare timber joint to the 1:50 structural section, the principles remained legible against the criteria of 3.2. The principles, when present, can be traced from the historic joint to the contemporary one across the repositioning conditions, which is the readability criterion stated in 2.1.

This narrow result demonstrates the broader claim. The three-step procedure: analysis, repositioning, operation, produced principles that survived the move from a pre-industrial material and regulatory context to a contemporary one.

Historic joinery logic can therefore, when applied through a identified contemporary frame inform an architectural language for new lightweight timber layers. The project contributes the first terms of such a language for Amsterdam, and a replicable method for extending it.

## 4.2 Implications and recommendations

*For the discipline of timber architecture.* The position stated in 1.1 was that contemporary timber architecture risks becoming generic under standardisation. The project demonstrates a possible way out of this condition. By extracting principles from a specific historic timber culture and repositioning them through a contemporary frame, a timber architecture can be both locally grounded and contemporary in its execution. The approach is transferable: other cities with their own timber histories and other principles within Amsterdam's history beyond the three taken here, could be developed through the same procedure.

*For the rooftop densification of Amsterdam.* The project shows that the rooftop top-up can carry architectural meaning specific to Amsterdam. The differentiated tiered material approach of 3.3, which draws together European graded softwood, slope-grown spruce and urban hardwood, points toward a sourcing logic that is less monocultural than current practice and that re-engages with Amsterdam's historic material differentiation.

The three-step procedure is offered as a transferable method for principle-based research-by-design. It makes the conversion from historic to contemporary explicit.

*Recommendations for further work.* Three principles are not sufficient to constitute a full architectural language. A fuller language would require further principles, extracted through the same procedure, and tested through further designs. The tiered material system of 3.3 is a chosen context more than an industrial reality. The emperical basis, actual volumes of slope-grown spruce, regulatory routes for non-graded urban hardwood, needs work that lies outside the scope of this architectural graduation project but that the project's claims depend on. These are openings for subsequent research.

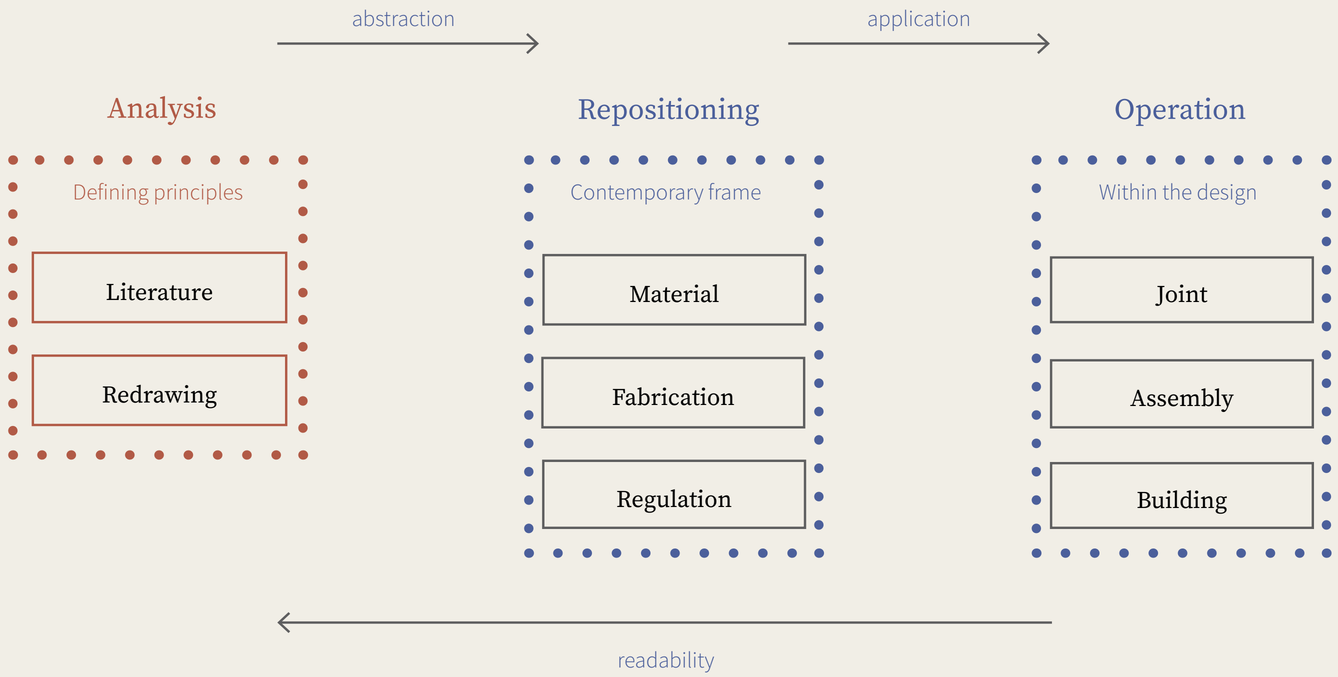



Fig. 4.1.1. The framework.

# 4.3 Reflection

*On the limits of three principles.* The project deliberately worked with a partial set. Three principles are sufficient to demonstrate that a language can be informed through this approach. What has been delivered is a method and a demonstration, not a completed grammar. A fuller language would require more principles, and an explicit study of how they combine and conflict. The project addresses this implicitly in 3.2 and 3.6, but does not develop it systematically. The identification of further principles, and the study of their relationships, is a direction for further work.

*On the abandoned matrix.* An earlier version of the framework, developed during A1–A2, took the form of a translation matrix. Each principle occupied a row, paired with a single contemporary counterpart in a “translation” column (see appendix X). The matrix was abandoned once two assumptions behind it failed under analysis. First, the principles do not translate one-to-one: a single historic joint can demonstrate curvature, tolerance, and node articulation all simultaneously. Making a contemporary translation column would have repeated the same joint across rows. Second, the operative verb during the research changed from translation but repositioning. The principle remains constant; what changes is the frame of material, fabrication, and regulation around it. The current framework (3.3) is built on that distinction. The matrix is evedince that the a field logic has to be applied and one-to-one translation does not work.

*On the readability test.* The project’s assessment criterion is readability: whether the principles, applied at contemporary joints, remain traceable from joint to building. The criteria of 3.2 make this testable at the joint scale, and the multi-scale reading of 3.6 makes it testable across scales. But there is a gap that the readability test cannot close: at some point the reader has to recognise the principle in the form. The test verifies that the principle is present and consistent with the design criterion; it does not verify that the principle is what produces the architectural experience.
This raises a question the project does not resolve. The principles, as defined here, are strictly tectonic. Amsterdam’s historic timber culture, however, was visual as much as tectonic. The peerkraal, zwanenhalskorbeel to name a few are structural nodes and visual articulations at the same time. Contemporary practice often abstracts the tectonic and sets the visual aside, on the grounds that direct visual reference risks becoming imitation. If the aim is locally recognisable timber architecture, this abstraction may be insufficient. Node articulation sits on this boundary in the project, and is the principle that most invites further work on visual and material expression as a legitimate companion to tectonic logic.

*On the relationship between research and design.* The project develops research and design simultaneously: structural moments in the design are identified, the principles are applied as a framework, the result is documented through models and drawings. This worked. The risk of this approach is that the design determines which principles are tested. A joint that does not exist in the design cannot test a principle. The project handled this by reading in 3.6 four joints that together cover all three principles. But the structure of the design inevitably shaped which joints became available to test. A different building would have produced a different set of resolved joints, and possibly a different reading of the same principles.
Mostly this relationship was also a problem in the time frame of the studio. From the beginning research and design were developed immediately. However because both concepts where already there it was sometimes hard to combine them. Location and research question were chosen in week one. What made it really tough to string them together
*On the relationship to the studio.*
The WOOD studio’s framing, timber for urban density with topping up as a strategy, set the conditions for this project. The project’s contribution to that framing is to show what the brief produces at the level of a single case, and how two results from the same studio in the same city fabric begin to form the new cityscape the studio proposes. This is visible in the 1:300 model, where the project sits alongside a neighbouring graduation. together showing a with timber densified Amsterdam.

*On the further possibilities of irregular timber.*
The project worked with irregular timber through a tiered system in which the regular tier 1 field absorbs the deviations of the irregular tiers. Slope grown spruce (tier 2) and urban hardwood (tier 3) carry the project’s argument for differentiated material practice, but their role remains limited. Tier 2 is used at directional changes, tier 3 is used as cladding and at discrete structural moments. The structural reach of both is constrained by what the current workflow can easily verify and certify.
This constraint is contemporary. Historic Amsterdam carpentry, and historic Dutch shipbuilding in particular, shows that knowledge of irregular timber once allowed it to carry the primary structure of a hull. The interest and the skill existed; what is missing today is not the principle but the verification chain. Contemporary tools begin to close this gap. 3D scanning makes the geometry of an irregular piece measurable. Machine learning approaches to grading make strength patterns in non standard timber categorisable. If these workflows mature, the role of the irregular tiers in this project would expand. Urban hardwood could move from intensification and cladding into primary structure. The tier 2 cruck blade, currently sawn from a slope grown stem, could remain attached to the full tree: a curved stem forming a truss immediately, with the change of direction carried by the grown geometry and the assembly reduced to one element where there are currently three. The complex joints the project resolved in 3.6 would become unnecessary.
This would produce a more differentiated architecture, but not necessarily a chaotic one. The historic ship hull is the clearest demonstration: nearly every structural element is irregular, yet the hull reads as a single coherent geometry because the irregularity is governed by structural logic. Irregular timber does not mean irregular architecture. It means using the raw strength of the tree while keeping the structure readable, which is the same readability criterion the project worked with throughout. The further development of irregular timber in contemporary practice is therefore the next step of the projects own argument.

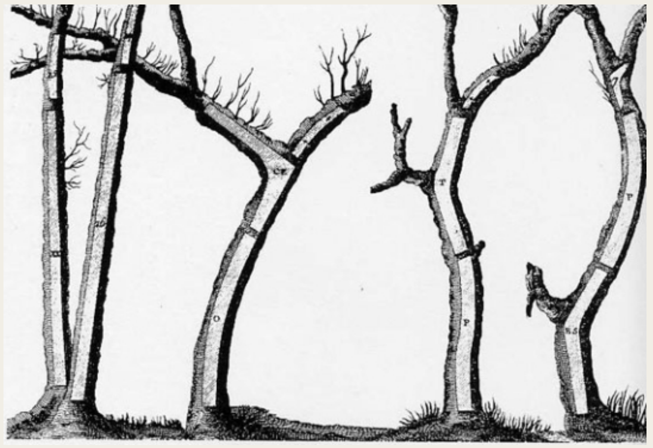


Fig. 4.1.12. Irregular timber the past. Benard Direxit


Fig. 4.1.13. Thoughts on irregular timber. Own work.

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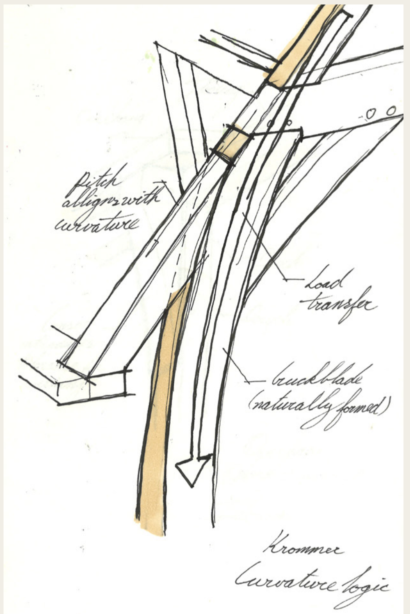
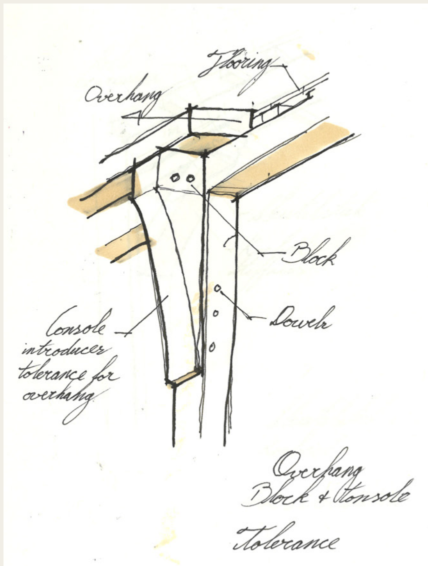
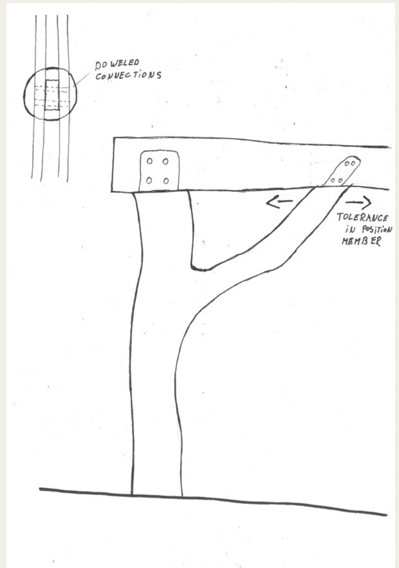
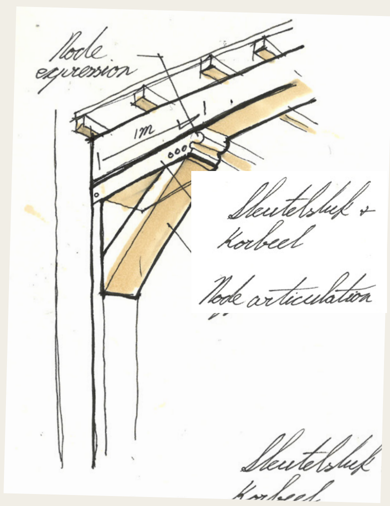
# Appendix A

| Identified principle | Origin examples | Explanation | Used species | Contemporary translation | Application |
|---|---|---|---|---|---|
| Curvature as structural asset |  | Curved timber elements are aligned with the internal force flow of the structure. They allow loads to be transferred primarily through compression along the natural grain of the wood, rather than through bending across it. This alignment exploits the inherent strength of the wood fibres and enables efficient use of material with minimal fibre disruption. The curved geometry increases joint stiffness, reduces bending stresses at connections, and allows forces to be redirected smoothly between structural members. | Oak | | |
| Tolerance for adaptive Construction |  | Amsterdam's historic timber construction developed within a culture of reuse, incremental building, and irregular masonry structures. Carpenters therefore introduced tolerance through oversized joints, wedges, pegs, and stepped housings, allowing reused or imperfect timber elements to be adjusted on site, maintained over time, and integrated into the city's layered fabric. | |  | |
| Node articulation as structural logic |  | Structural nodes were treated as deliberate points of articulation rather than hidden technical junctions. Elements such as sleutelstukken, knee joints, and beam intersections concentrated forces and made the logic of assembly legible. By expressing these nodes, carpenters revealed how loads were transferred and how structures could be assembled, adjusted, and extended over time. | | | |

A. Analystical drawings, Own work

# Appendix B

| Section A. General considerations | yes | no |
|---|---|---|
| 1. Is the graduation project conducted as part of an internship (at a company), or as part of a research project at TU Delft?<br><br>If a student's graduation project is conducted at a company or as part of a research project at the university, questions of data ownership and intellectual property rights need to be addressed in a written graduation or internship agreement before the project begins. Students and their supervisor should consult the Intellectual Property Rights of Students webpage. Additional information can also be found in the Extended Personal Research Data Workflow. | | ✓ |
| 2. Does the project involve conducting (part of) the research outside the Netherlands?<br><br>Students who intend to travel abroad (even to other EU countries) for study, exchange, research, internship, or graduation project purposes need to follow the Travel Safety Protocol. This includes attending a mandatory Travel Safety Training Session: see the Disclaimer. | | ✓ |
| 3. Will the research involve processing data from humans, such as running a survey, conducting interviews or workshops, collecting data through social media or internet forums, or re-using existing datasets about humans provided by a third party? (If 'yes', see follow-up questions 4 to 13 in Checklist B.)<br><br>Students who work with data from human participants must complete the next section and apply for and receive ethical approval from the Human Research Ethics Committee (HREC) before conducting the research. | | ✓ |

| **Section B. Extended risk factors** (only if question 3 has been answered with 'yes'.) | yes | no |
|---|---|---|
| 4. Will the project involve participants who may be considered vulnerable, such as the elderly, refugees or asylum seekers, ethnic minorities, patients, or people with disabilities?<br><br>Participants who may suffer very adverse consequences (for instance, due to discrimination) if their personal data became publicly available can be considered vulnerable. | | ✓ |
| 5. Will the project involve participants who cannot themselves give informed consent for taking part in the project, but for whom consent must be obtained from a legal guardian?<br><br>Participants who cannot give informed consent can include, for instance, children or participants with intellectual disabilities, mental disorders, or dementia. Such participants are also considered vulnerable in the context of the General Data Protection Regulation (GDPR). | | ✓ |
| 6. Will the project involve processing any of the special categories of personal data below?<br>- Race<br>- Ethnicity<br>- Criminal offence data<br>- Political opinion<br>- Union membership<br>- Religious or philosophical beliefs<br>- Sex life and/or sexual orientation<br>- Health data (including measurements such as heart rate)<br>- Biometric or genetic data (including fingerprints, iris scanning, facial recognition)<br><br>The General Data Protection Regulation (GDPR) defines a stricter rules for processing special categories of personal data. If it is necessary to process these data in a project, it is it is important to provide additional safeguards. | | ✓ |
| 7. Will the project involve processing personal data that could be considered sensitive, such as the ones listed below?<br>- Information about a person's income, debts, or other payments<br>- Information about a person's (un-)employment status<br>- Information about a person's performance at school or work<br>- Information about relationship problems or (gambling) addiction<br>- Information about poverty, domestic violence, or youth welfare/social work involvement<br><br>Some types of personal data are considered sensitive, because they can have a high impact on the privacy of the data subject if other persons gain access to these data. Sensitive personal data should only be processed if necessary: in such cases, additional safeguards need to be put in place. | | ✓ |
| 8. Will the project involve processing video-recordings, or photographs of participants?<br><br>TU Delft considers photographic and video-materials of research participants to be sensitive personal data. If such data need to be processed, additional safeguards must be put in place. | | ✓ |

| **Section B. Extended risk factors** (only if question 3 has been answered with 'yes'.) | yes | no |
|---|---|---|
| 9. Will the project involve sharing or transferring personal data between multiple partners or collaborating organisations involved, such as between TU Delft and an internship company?<br><br>According to privacy law, sharing personal data between organisations requires a privacy agreement to be in place: setting this up takes time, and requires support from additional university staff. Furthermore, personal data sharing can potentially expose research participants to different types of risks: these risks must be considered in the ethical application. | | ✓ |
| 10. Will the project involve deception, or covert observation of participants?<br><br>In some types of research, obtaining informed consent for processing participants' personal data is not an option: for instance, if the research involves deception, or the research is covert (conducted without participants knowing about it). In such situations, the steps to mitigate risks to participants are important, and an alternative legal basis for processing the participant's data needs to be established with the help of additional support staff. | | ✓ |
| 11. Will the project involve working with social media data?<br><br>Social media data are personal data, but since it is usually not possible to ask for informed consent for processing social media data, another legal basis for processing the participant's data needs to be established. Processing of social media data also involves legal considerations related to terms of use of data from third-party platforms: therefore, research with social media data requires expert support on privacy, ethics, and legal matters. | | ✓ |
| 12. Will the project involve using learning algorithms or other AI to analyse, combine, or otherwise process data from participants?<br><br>The use of AI in research involves many considerations in terms of data protection, ethics, security, and intellectual property: for more information, see TU Delft's Instructions for use of Generative AI. | | ✓ |
| 13. Will the project involve participants who are based in a country or countries outside of the EU?<br><br>Students affiliated with TU Delft must comply with Dutch and EU regulations of personal data processing (GDPR). Furthermore, the student and their supervisor must make sure that the research complies with local (privacy) legislations of any foreign destinations. Additional support from an external (local) expert may be required. | | ✓ |