

portfolio.

Cong Liu

Selected Works 2017 - 2025



Starting from building materials, I seek the harmonious coexistence of man and nature. By using different building materials and transforming the spatial geometry to express the cultural core, convey a sense of cultural identity and belonging.

The collision of materials and nature, culture and space makes me continue to innovate and introduce new combinations, and at the same time have a deeper understanding of people and society.

I believe that architecture is the balance and link between man and nature. Continuous innovation based on tradition and making designs that go beyond tradition can make our lives better.

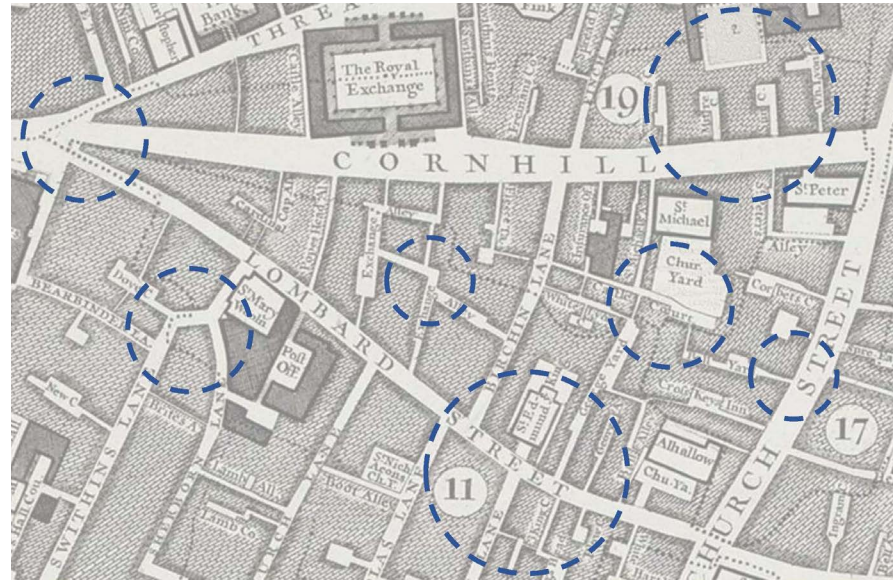
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Barclays Amenity Design

Short-listed Design Competition
Amenity renovation project
Led by INC Architecture & Design

At 1301 6th Ave, New York, USA



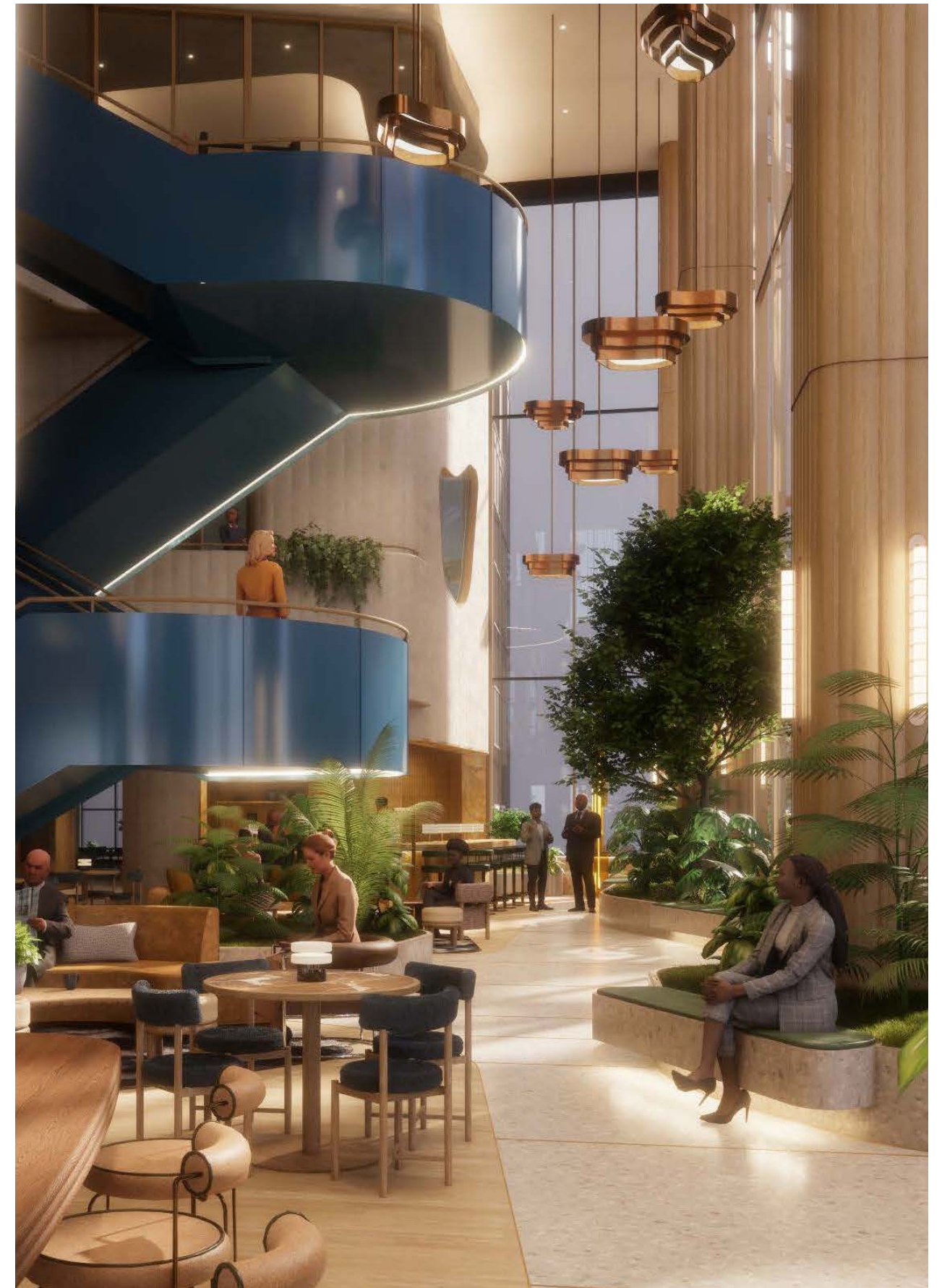
This project is a competition I participated in at INC, with Barclays as the client. The goal was to redesign and upgrade the amenities in their headquarters building in New York City. The project aimed to embrace sustainable design principles, with a strong focus on resiliency and future adaptability. Barclays envisioned creating a work environment that reflects the relentless ambition of New York City while offering an unparalleled experience for colleagues. The design strives to foster a strong, diverse, inclusive, and thriving community, setting the stage for Barclays' future into 2040 and beyond.

Barclays' vision for the headquarters, which is also our scope, included:

- Dedicated spaces for knowledge sharing, along with access to a newly designed terrace

- Flexible collaborative workspaces for impromptu huddles, integrated into the workplace
- A dynamic and flexible dining space
- Facilities that cater to light to high-impact workouts, with an outdoor space

In this project, I was responsible for conducting an initial site analysis, developing a terrace usage plan, and creating several amenity layout options based on the existing elevator configuration. I also contributed to the space planning phase and was involved in the final rendering work. My role helped us better understand the project requirements and contributed to designing a modern and adaptable workspace that aligns with Barclays' vision for the future.



Left
Origin of Barclays London
Right
Atrium visualization

Our Scope

Elevate the quality of amenity space and integrate amenities throughout



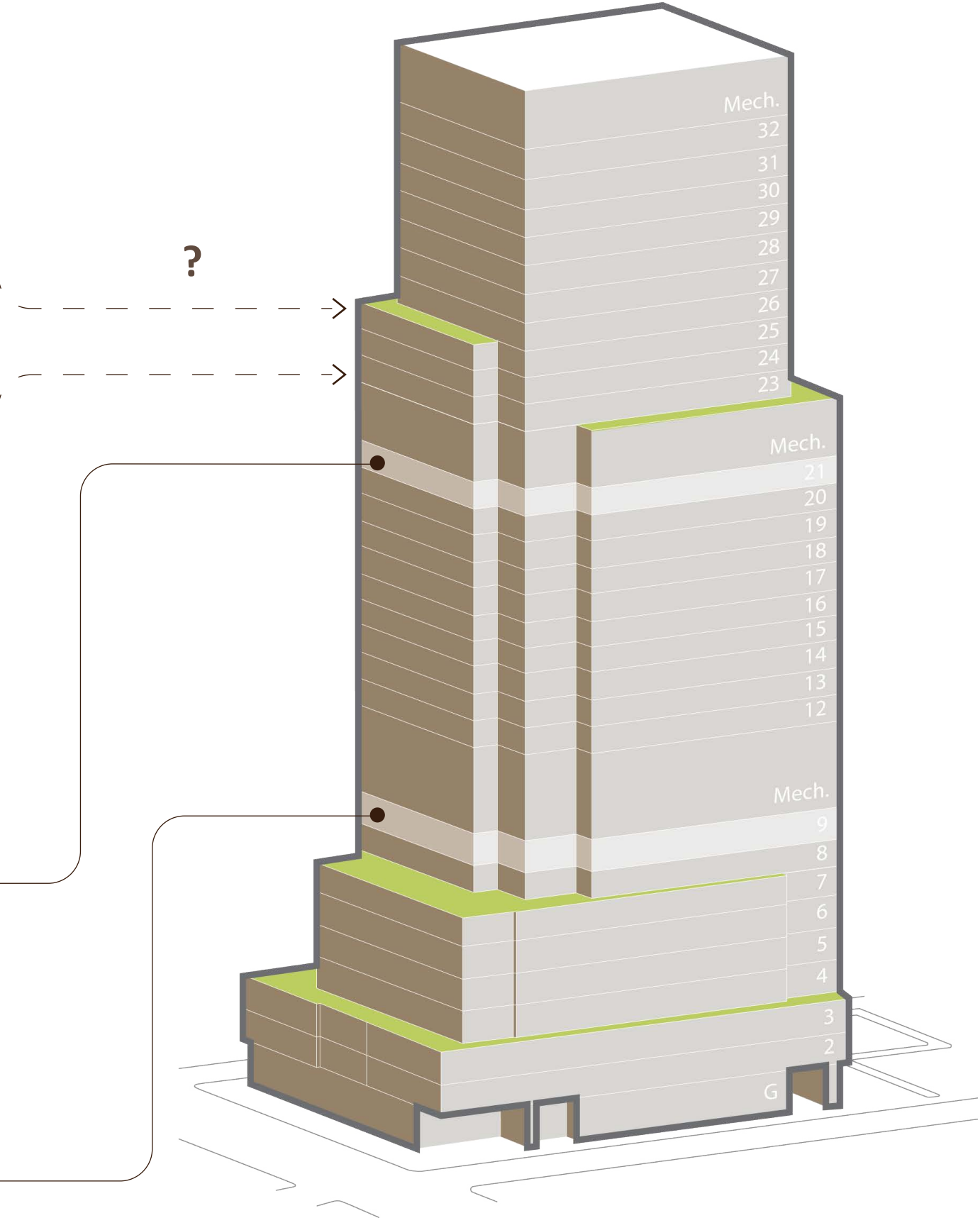
Team Time
Dedicated Spaces for knowledge sharing with access to an all new terrace

Collaborative Workplace
Space for impromptu huddles integrated into the workplace

Fitness for All
Facilities to accommodate light to high impact workouts with and outdoor space

Food and Beverage Service
A dynamic and flexible dining space that offering a range of offerings to appeal to any appetite

Barclays Tower - 1301 6th Ave, New York



Analysis - Variations

Existing Stacking

Scattered distribution

- Identify the locations of amenities
- Consider the development strategy

Elevator Analysis

The artery of the building

- Analyze most accessible level based on existing stops
- Identify potential levels for secondary connection

Variation 1 - Intersection Hub

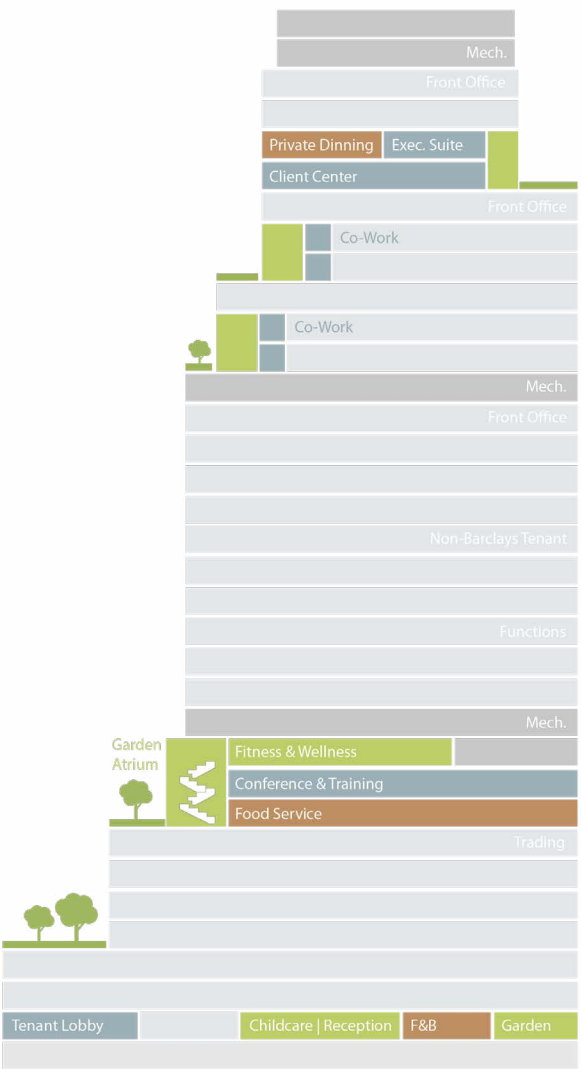
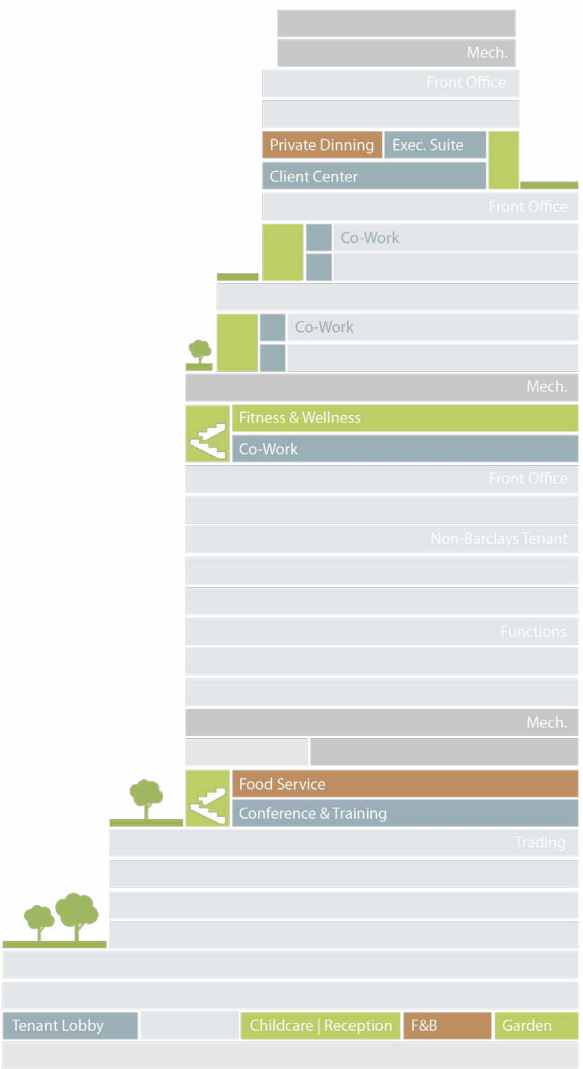
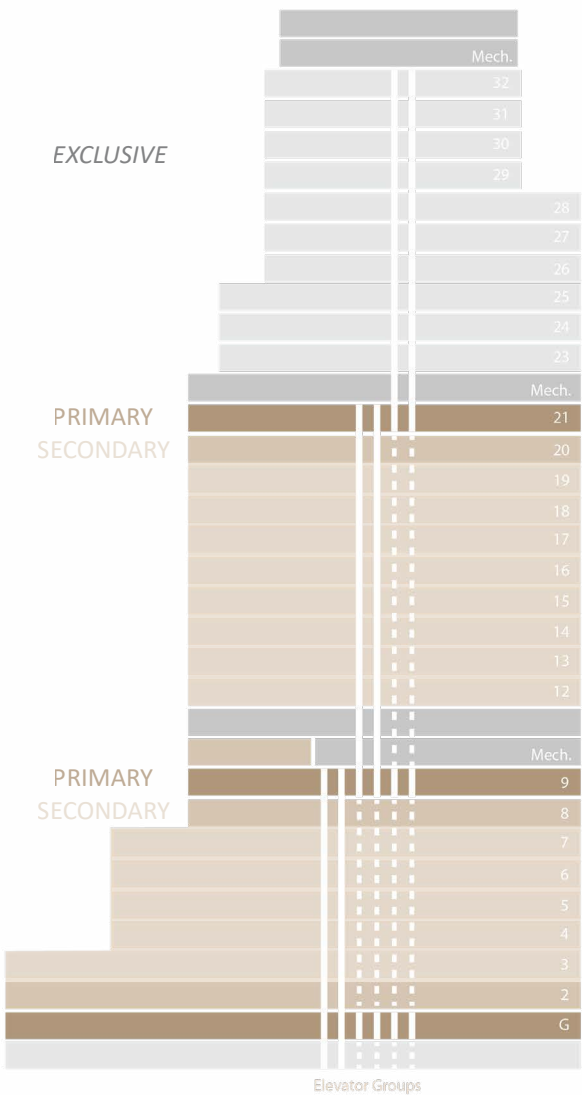
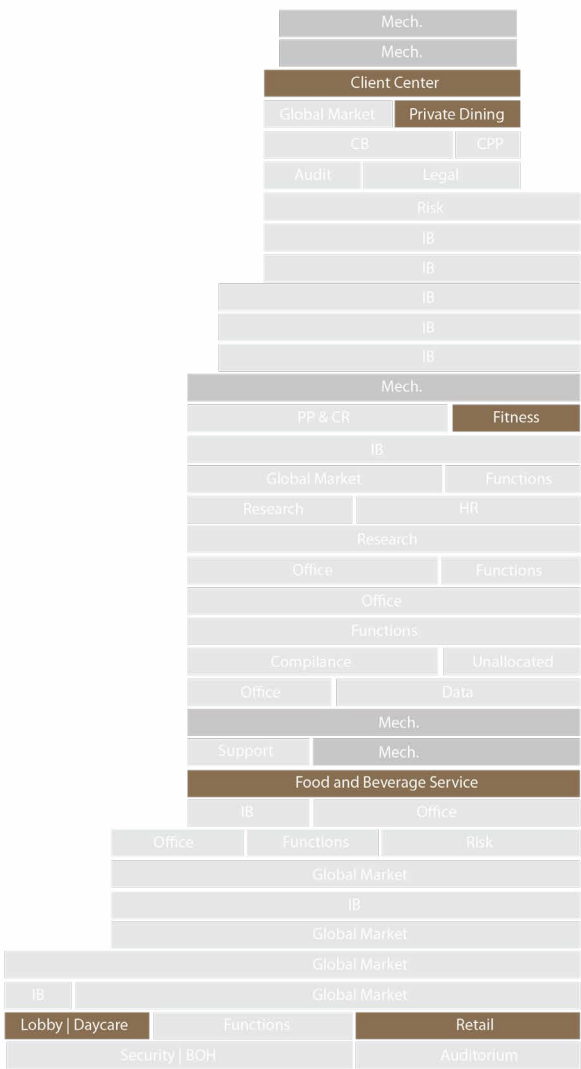
Low Intervention Scheme

- Use elevator stop to create hierachical intersection
- Prioritize F&B remaining in current location

Variation 2 - Active Hub

High Intervention Scheme

- Centralize F&B, conferencing and fitness/wellness
- Prioritize F&B terrace access

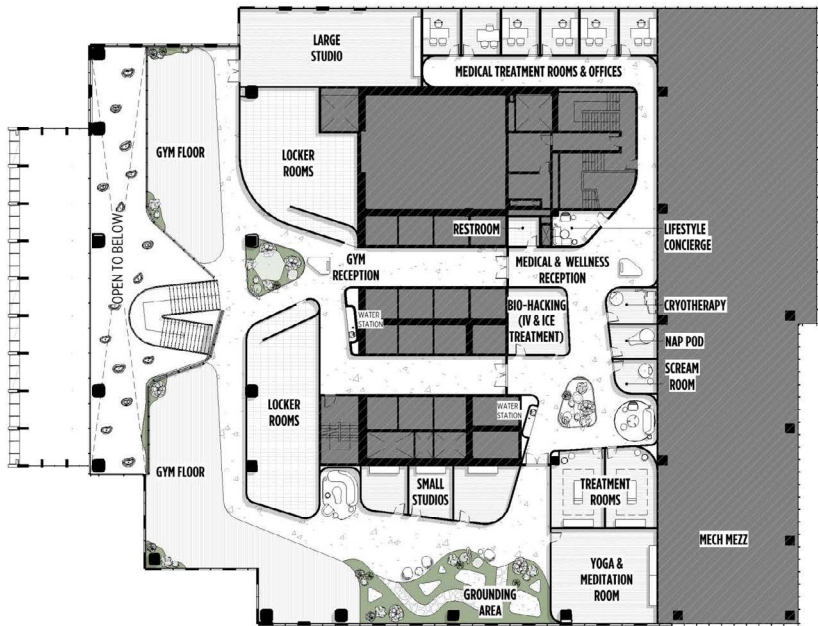


Floor Plans

8th Floor



10th Floor



9th Floor





Left
Atrium sculpture stair & bar close up
Right
Terrace garden

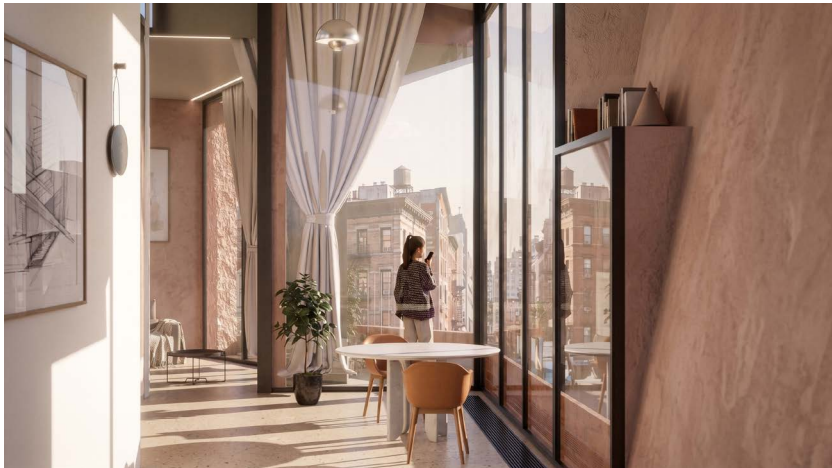


Above
Atrium cafe visualization

2 Bowery

Project in construction, Studio Castellano
Renovation of historic town house
Led by Yihong Lin

At Lower East Side, NYC, USA



In this architectural exploration, we conceived the notion of Architecture as a camera, interpreting urban nuances. Our innovation involved incorporating AI as a medium to project DTLA’s cityscape onto the building. Additionally, we introduced cyanotype, a primitive yet evocative tool, complementing AI to meld with the original opera house facade. This historical site lacked conventional windows to maintain a dark interior for performances. Our vision applied AI-generated geometry along the building’s curves, forming apertures or lenses on the facade. These apertures extended inward, harmonizing with exterior geometry to shape interior spaces.

The architectural journey unfolds across four chapters. Through an oculus study, we delved into how AI interprets images—distinct from human perspectives, AI translates similar geometry into uncanny features. Wanderings in DTLA provided raw material fed into AI, yielding textures and apertures reminiscent of the city. Our narrative converges in a cinematic experience, where the building becomes a storyteller, connecting visitors to the pulsating heart of DTLA through touch, perception, and a transformative journey.



Top
Facade
Right
Chunk model

Current Condition



Doyer street resi. entrance



Doyer street storefront



Residential windows

Historical Photos



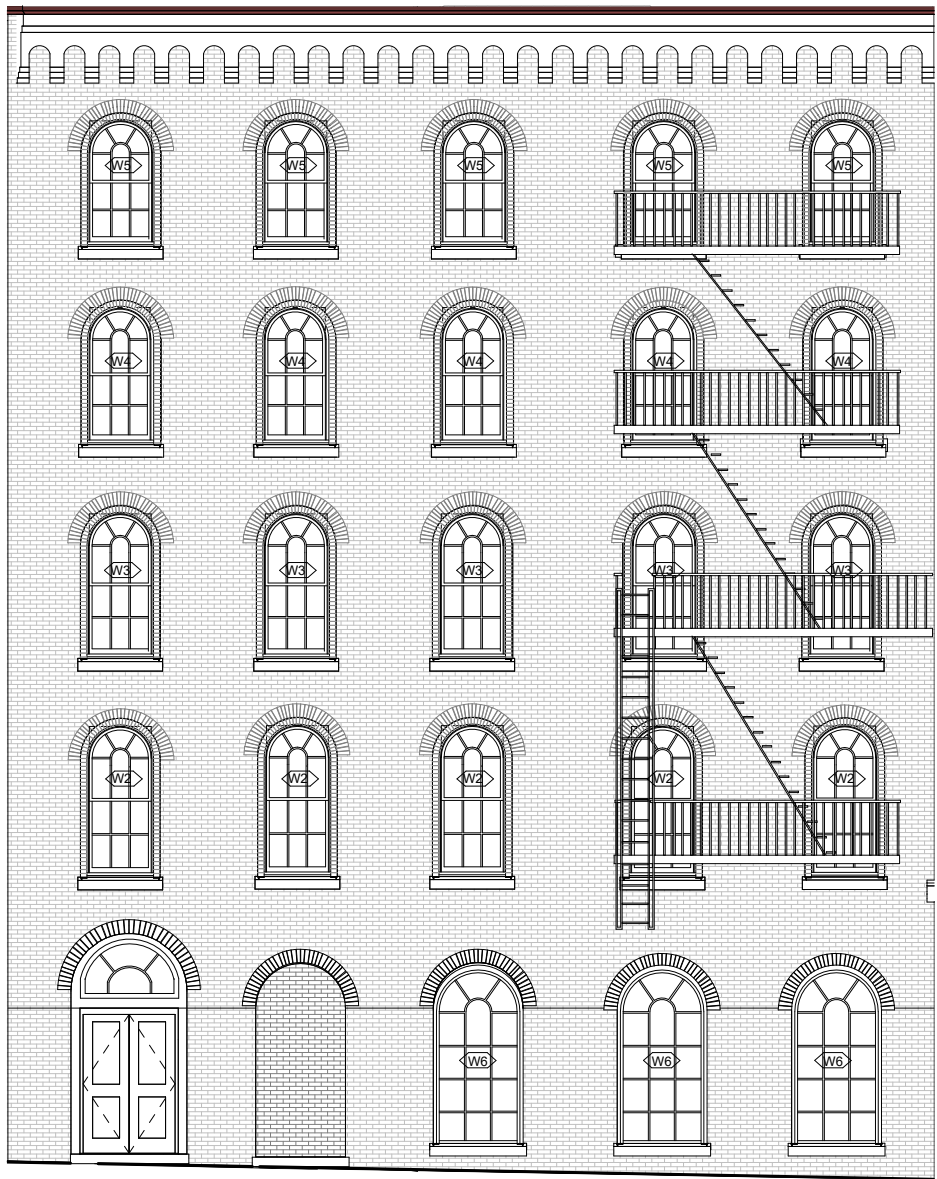
Doyer street storefront



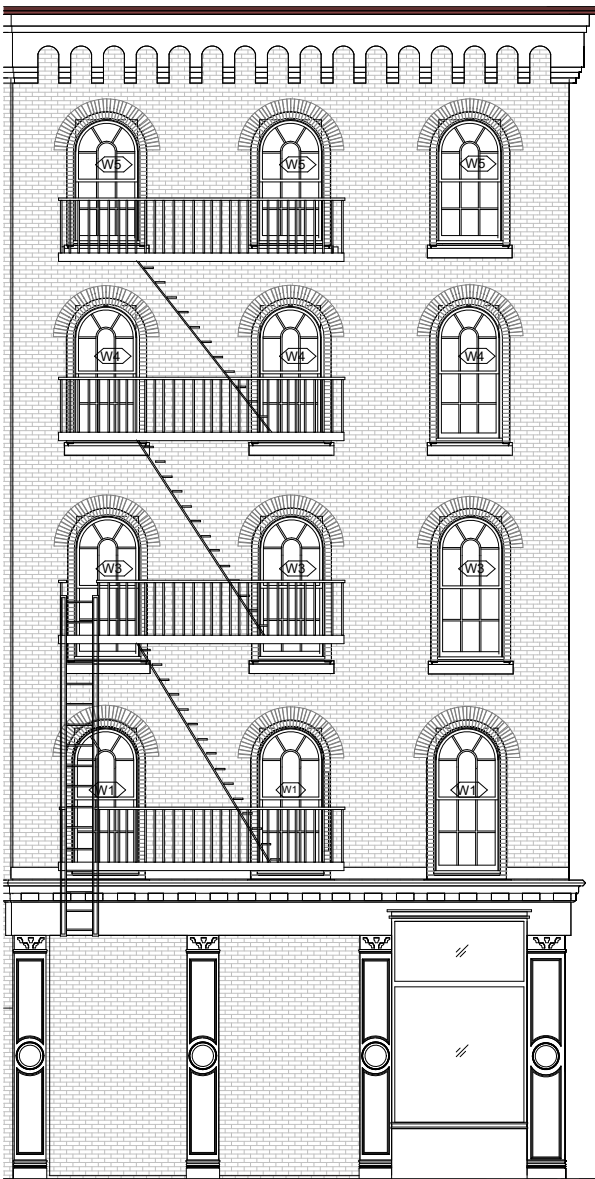
Bowery street storefront



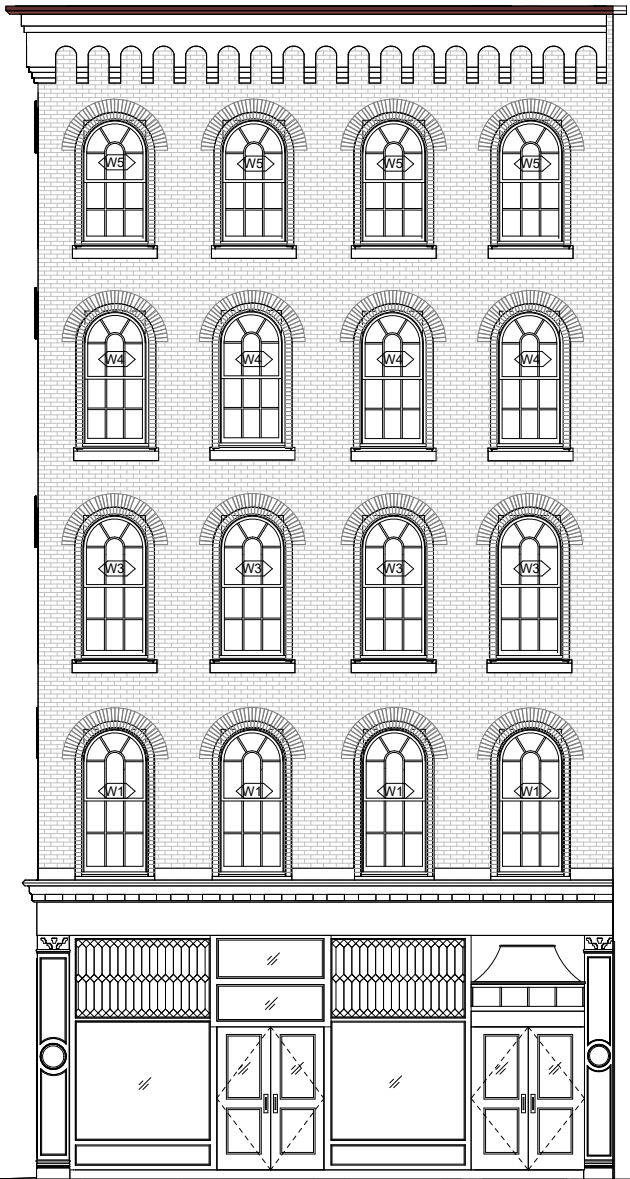
Residential windows



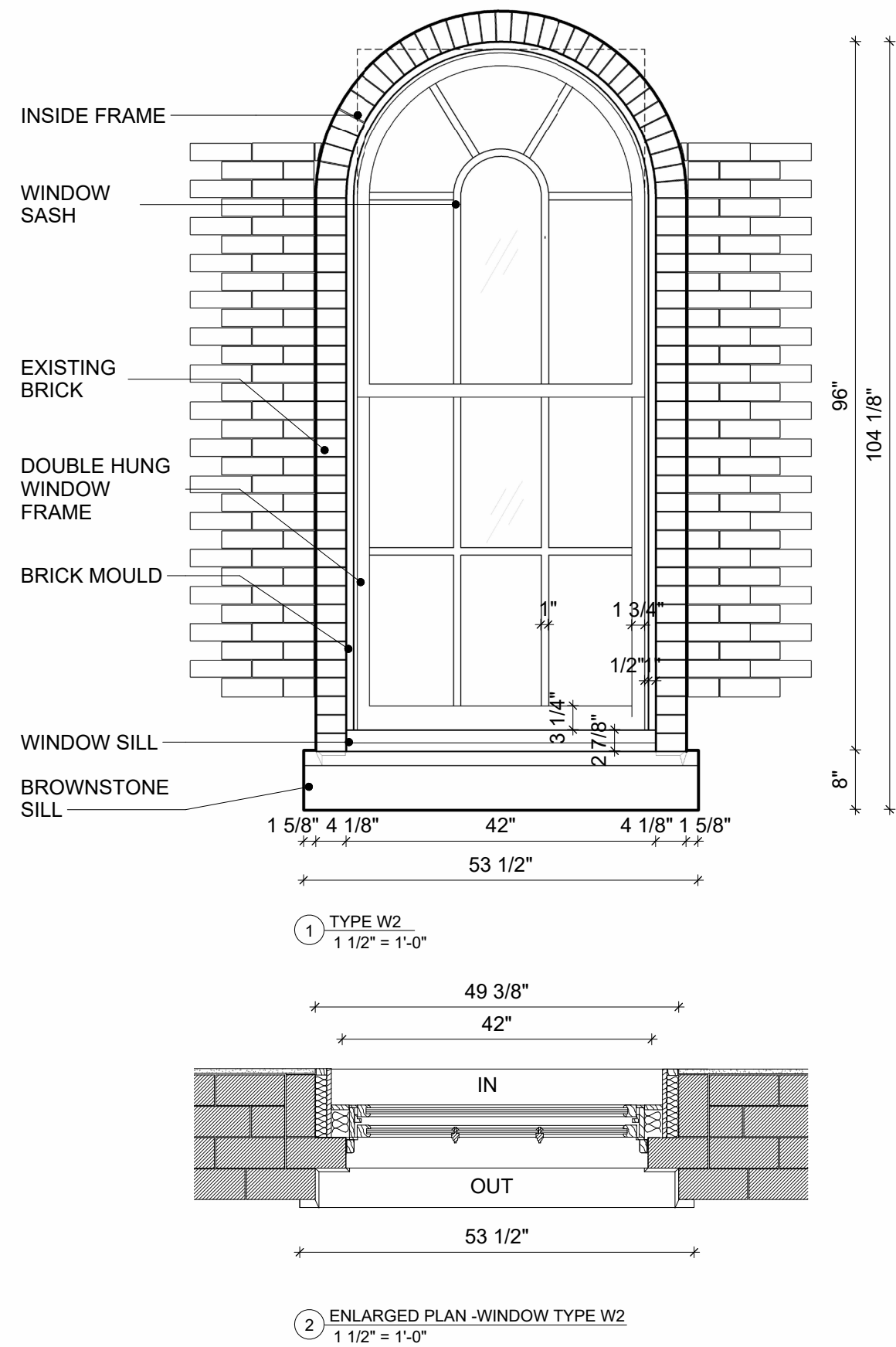
1 BLDG. ELE DOYER ST. RESIDENTIAL ENTRANCE
1/4" = 1'-0"



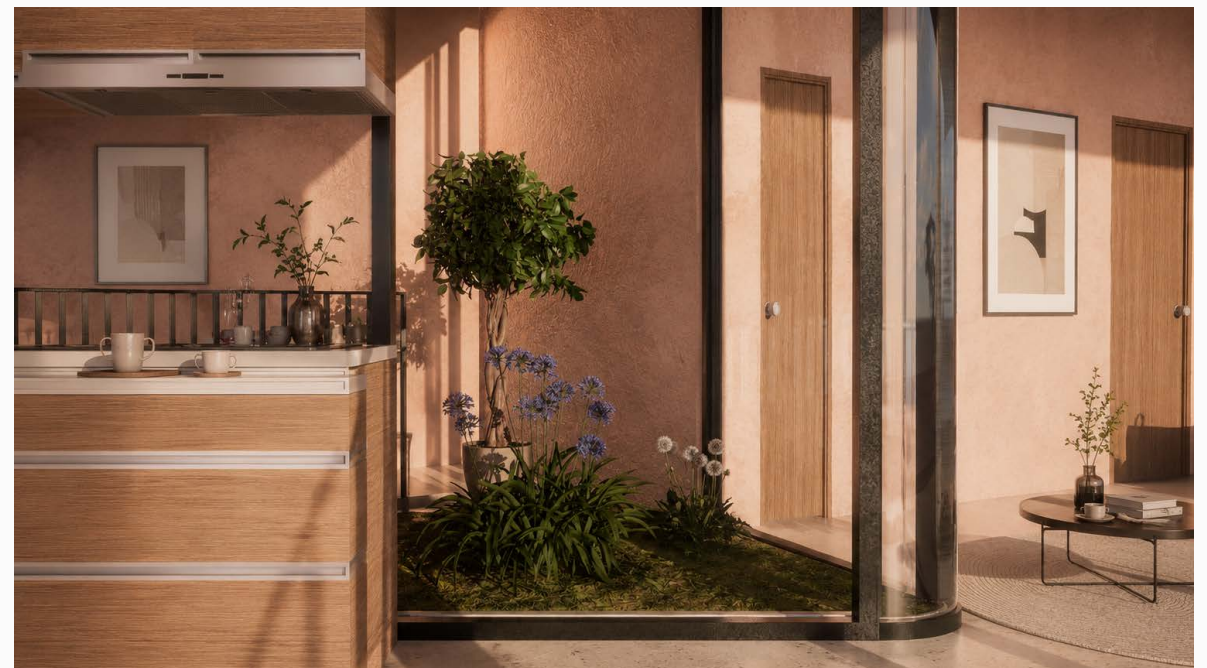
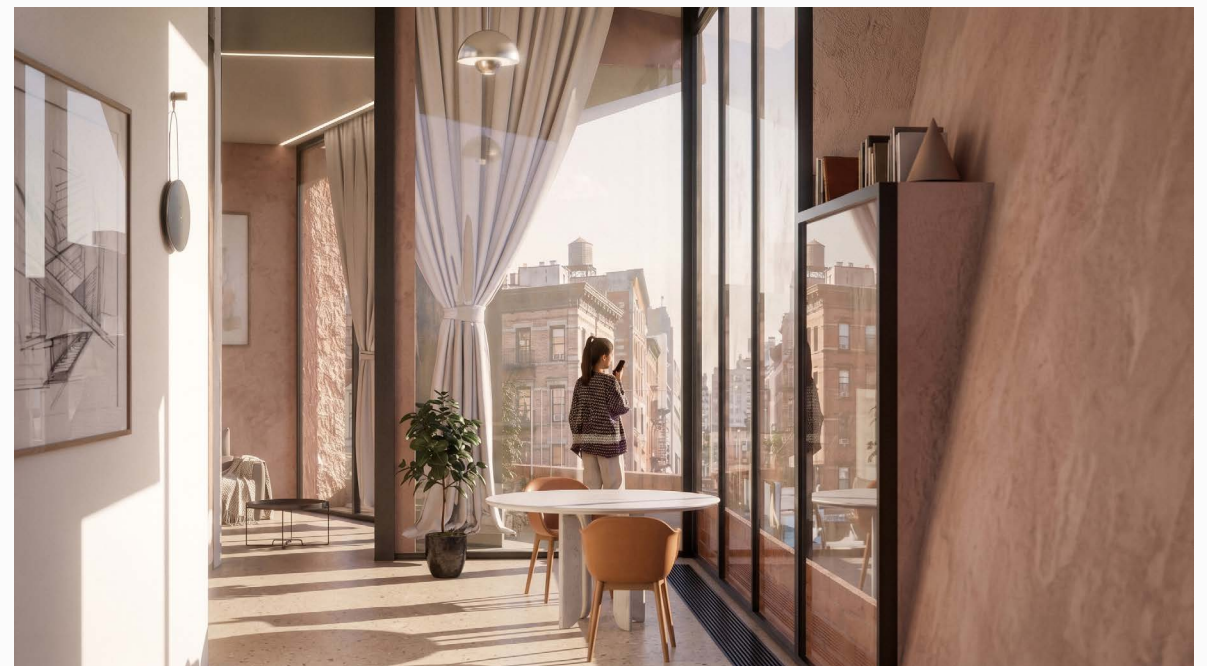
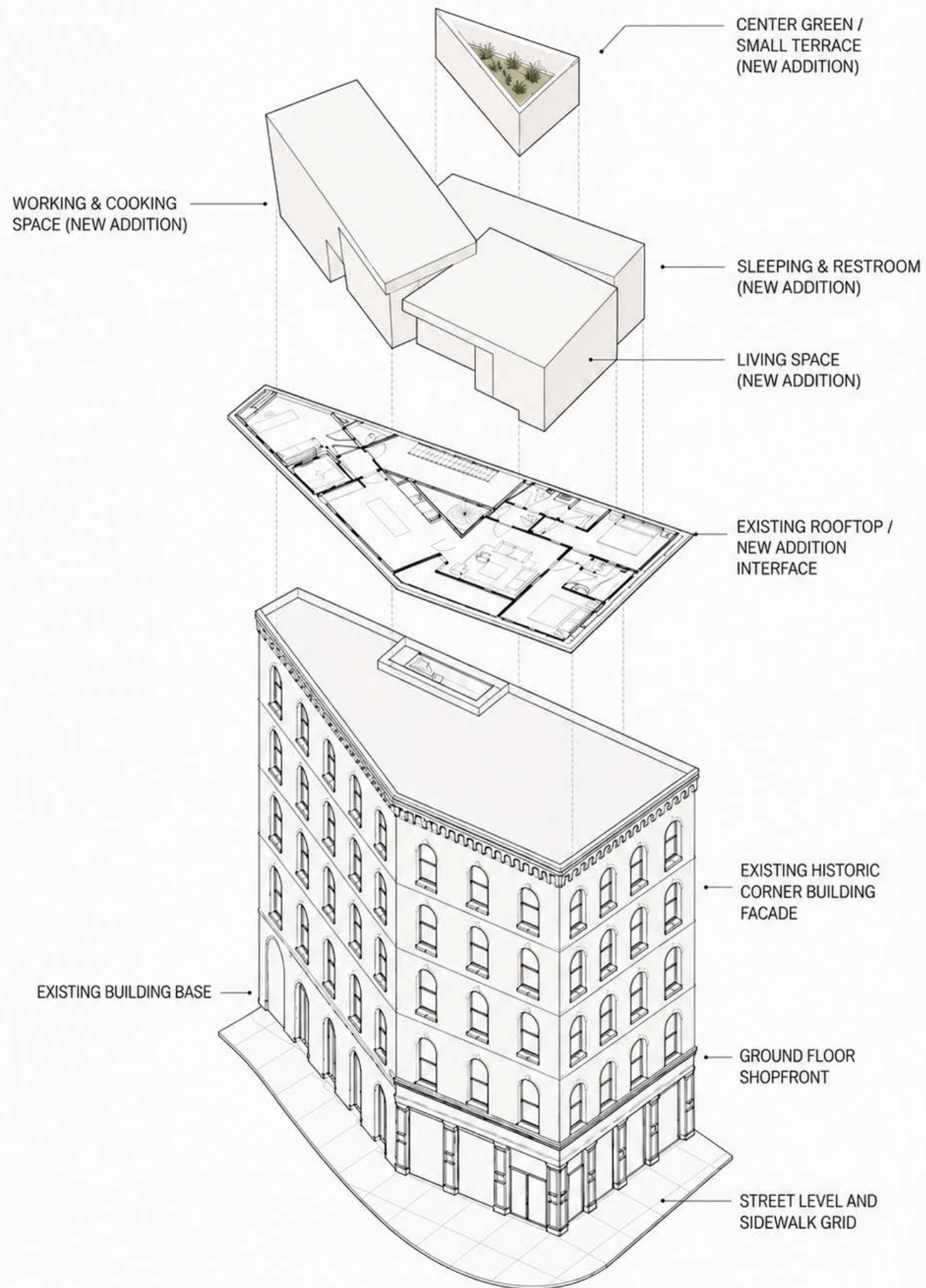
2 BLDG. ELE DOYER STOREFRONT
1/4" = 1'-0"



3 BLDG. ELE. BOWERY STOREFRONT
1/4" = 1'-0"



Left
Window Schedule
Right
Construction Site



Top
Top floor elevation
Bottom
Living space

Wohnquartier Stephanitor Süd

Project in realization
Urban housing project with public commons proposal
Led by Allmann Wappner Architects

At Stephanitor Sued, Bremen, Germany

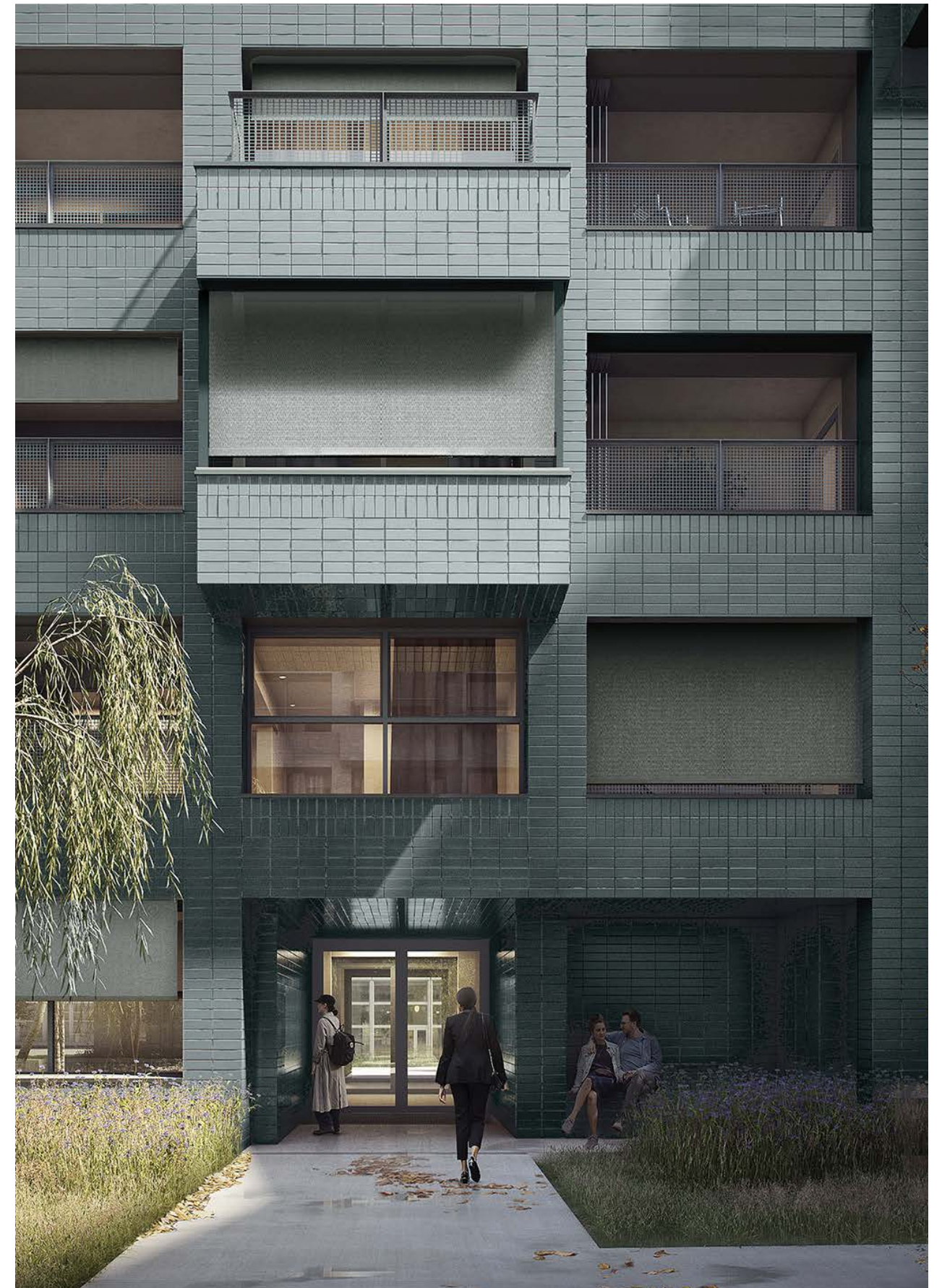


The Stephanitor Süd residential area is part of the Ueberseeinsel development area in Bremen, in which the harbor areas are being restructured into a new district with residential, commercial and leisure uses.

The three houses are designed based on their previous use as storage facilities and incorporate elements of traditional Bremen construction methods. Together with the formation of gable roofs, a symbolic character is established that makes the residential use clearly visible. The exciting dialogue between industrial and regional architecture is promoted by an open grid structure, combined with bay windows, French balconies and loggias, which have been adapted to the modern floor plan.

Contrary to the historical construction method with clinker or brick, all facades are clad with ceramic tiles. Traditional in format, the tiles break with the usual through their materiality and their installation without association. All houses are presented in individual shades of green and blue that assimilate the colors of the Weser. In accordance with the overarching district concept, the buildings are planned in a wood-concrete hybrid construction method, thus enabling long-term, robust and therefore sustainable use.

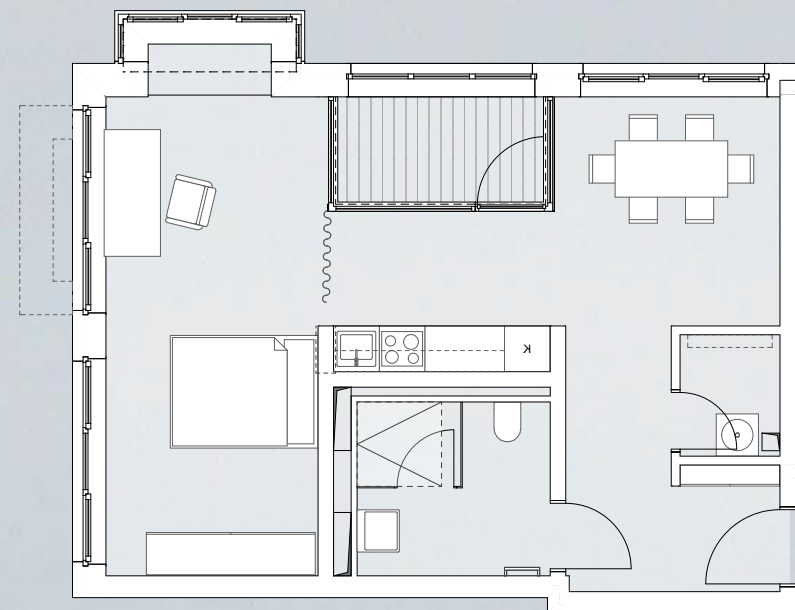
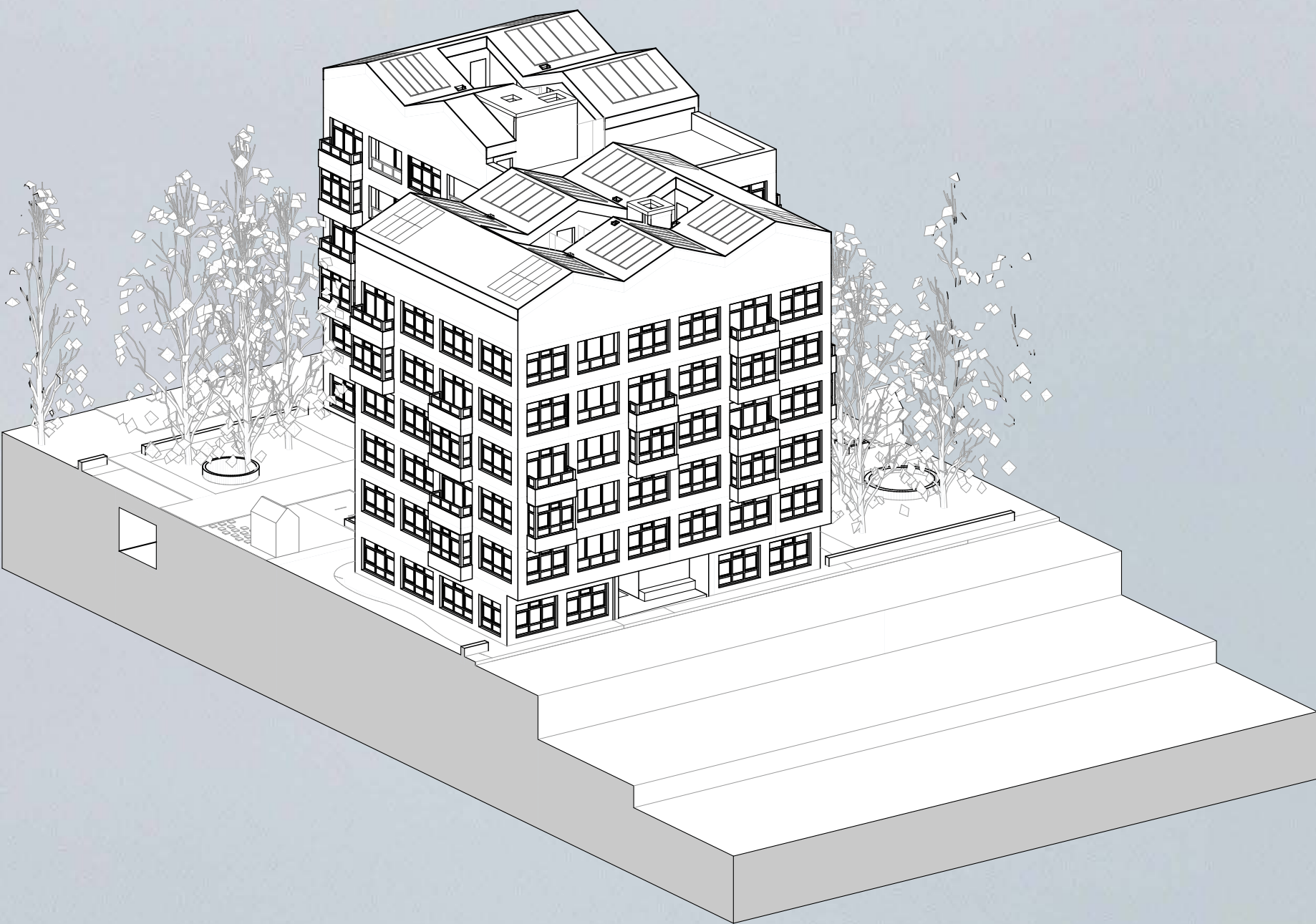
As part of the design development team, I mainly worked on the apartmenttype study and floorplan organization. Further more, I was in charge of facade design and material study as well as coordination with tile supplier.



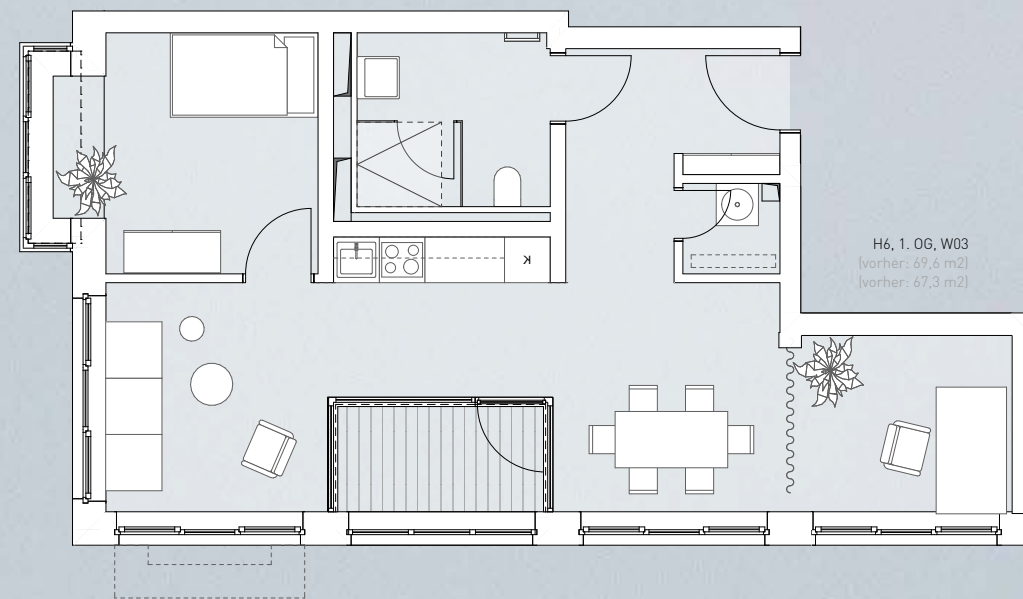
Left
Overview at the riverside
Right
Elevation



Top
Regular floor plan



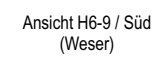
H6, 1. OG, W02
[vorher: 62,8 m²]
[vorher: 60,4 m²]

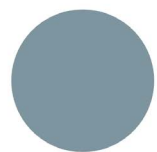


H6, 1. OG, W03
[vorher: 69,6 m²]
[vorher: 67,3 m²]

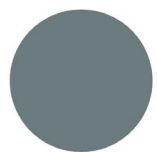


Le
Axonometric drawing of Haus 6
Right
Apartment type 2 and

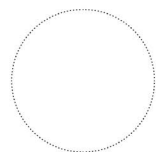
[illegible]



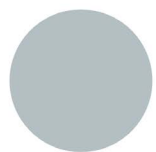
H 9
121 150 161



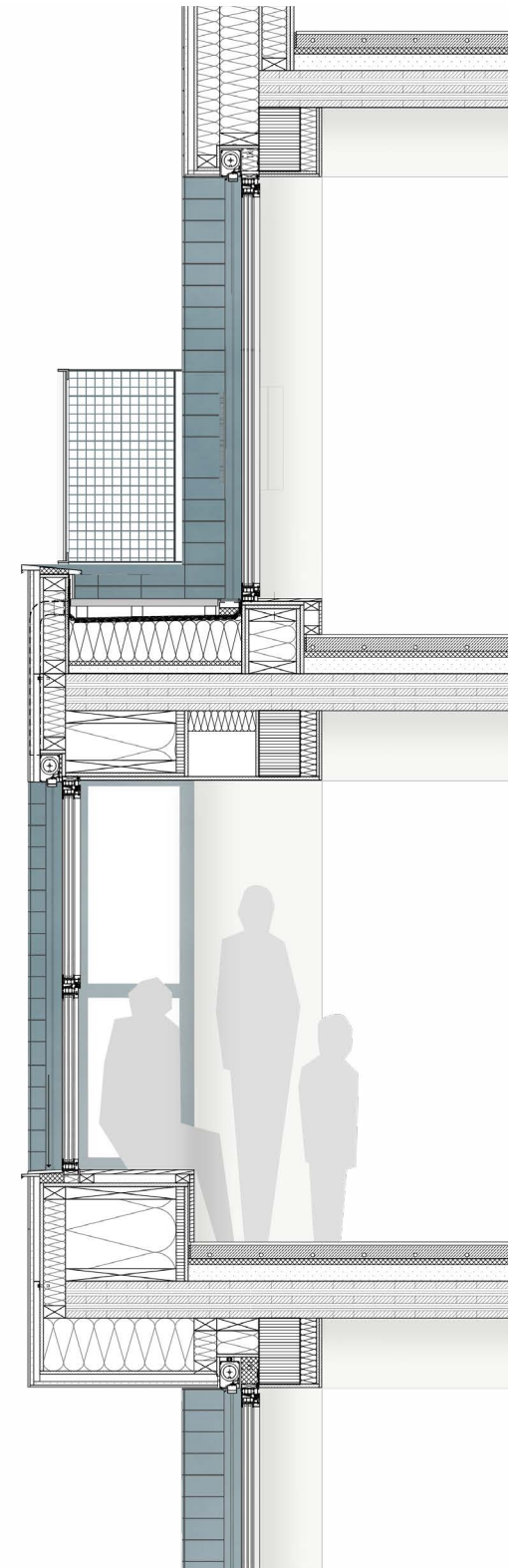
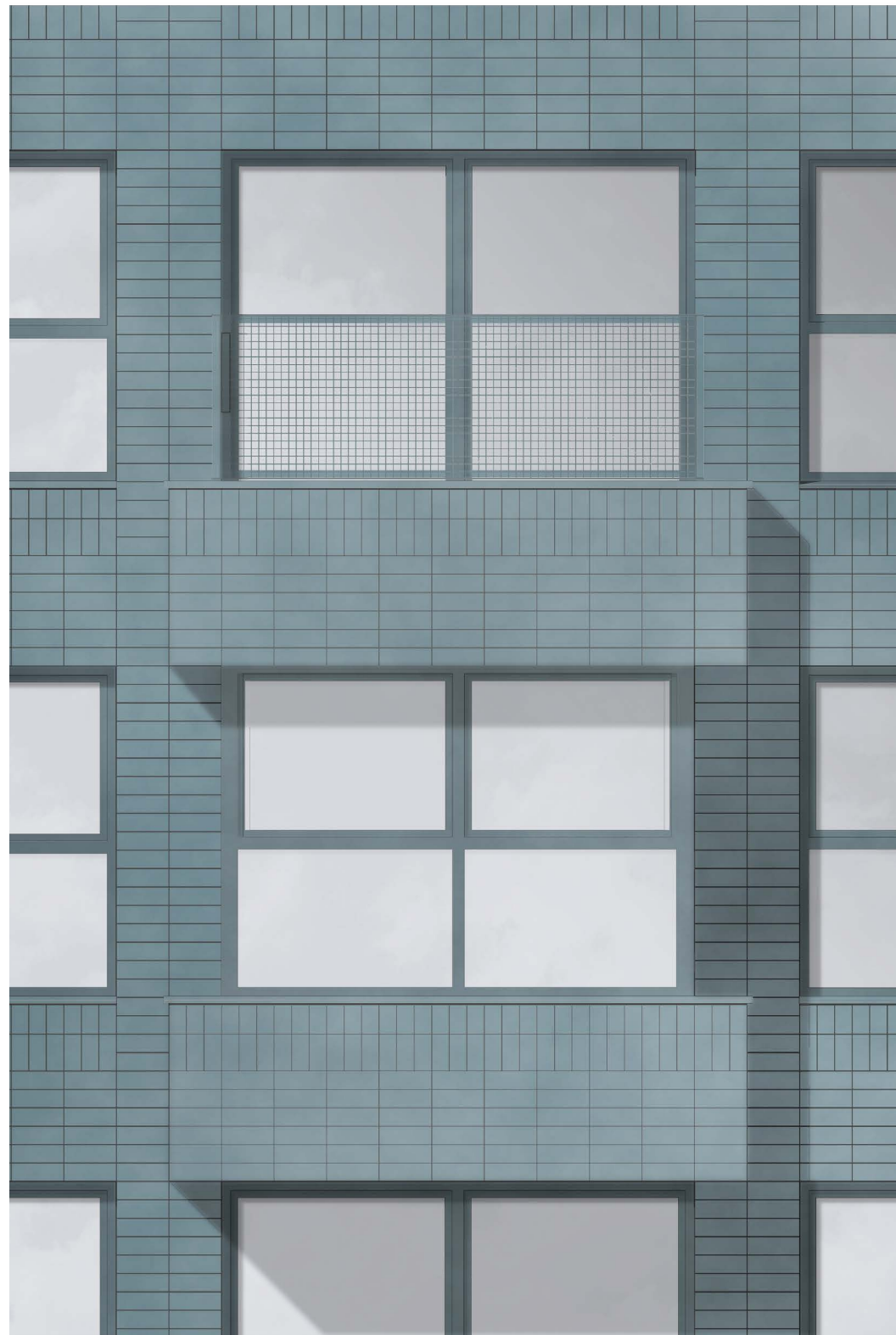
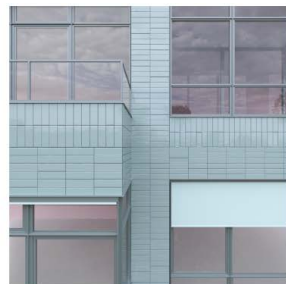
H 8
105 124 128



H 7
- - -



H 6
178 191 196



Left
Facade study
Right
Construction detail



Left
Elevation of Haus 6
Right
Physical model for facade study

Cyclogic

Studio solo project
Urban housing project with public commons proposal
Led by Jonas Coersmeier

At Brooklyn Navy Yard, NYC



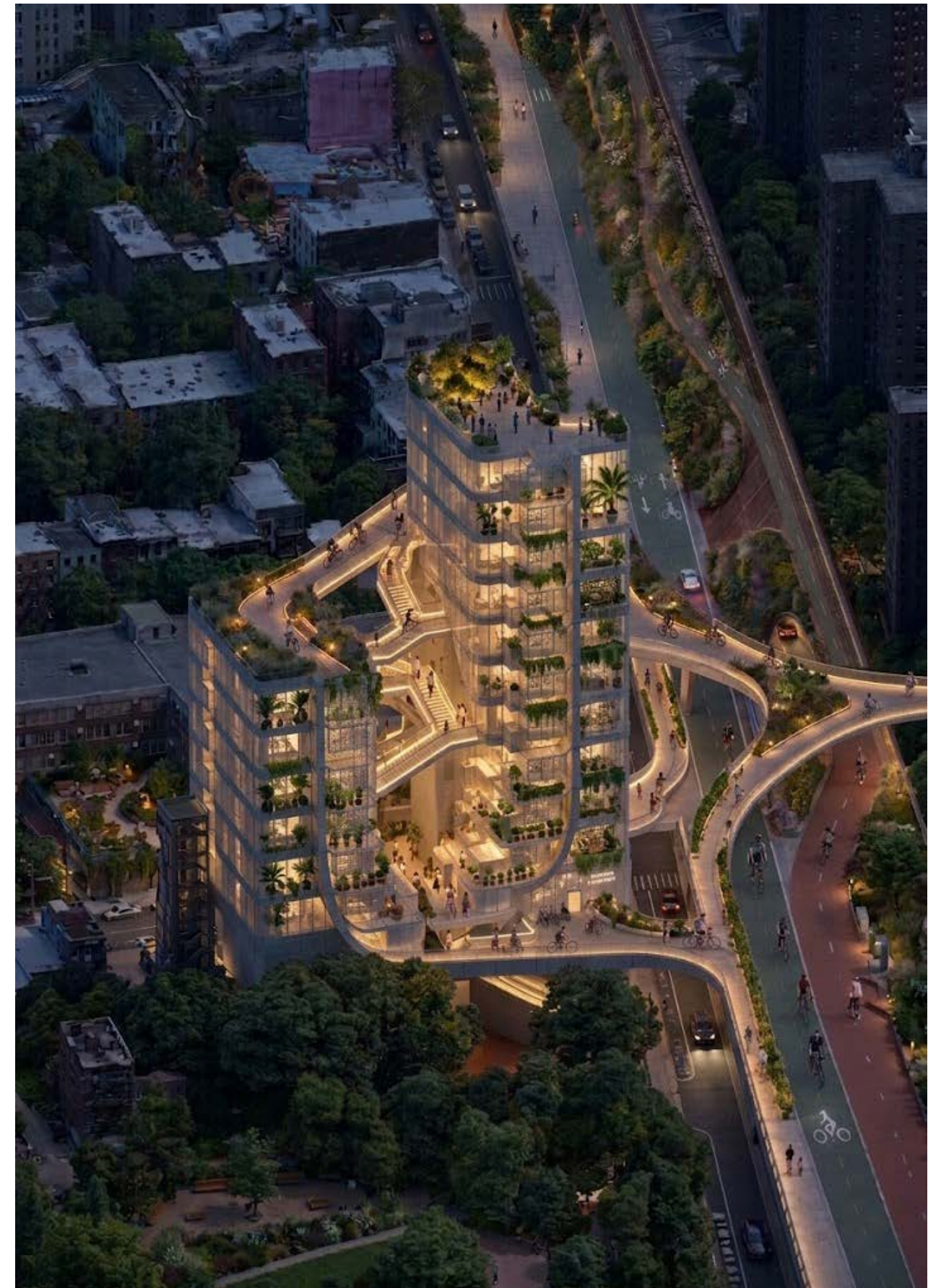
As the artery of New York, BQE has largely influenced the way that people are living and commuting. It offers the convenience for people live far away, but doesn't bring much accessibility and occupation for people near by. For instance, it takes longer when people want to across the neighborhood and while cars are flashing by above. This cross section inspired me to think about mitigate the difference.

Instead of reconstruct the BQE, people are expecting it to transform to a more green and sustainable facility. There was several bike events happens on BQE before COVID and I think it is a interesting connection for BQE neighbors and transform it to be a more accessible and sustainable bike park.

But bikers in New York usually doesn't have a good living condition with their bikes, for example countless the doors and narrow hall ways. So I tried to create a housing project for people commuting with bike or any other no motor vehicles.

So I started from here to connect the building with BQE through bike lane and trail parks. It extend from the BQE and circulate in to the common platform on BQE level. It has open entrance to access easily to groceries and bike related retails.

The material study is considering the brown from existing building. It becomes varietal to more neutral since bycycle is a common activity for almost all kinds of people and it is absolutely natruall bioenergy.



Top
Elevation
Right
Aerial view



1. Public Connection to BQE
Park & Retail space
2. Primary Circulation
Ramps towards residential tower
3. Secondary Circulation
Interconnected common space



Top left
Housing type diagrams
Right

Regular floor plan integrated with existing building



Left
Cluster chunk of residential tower
Top right
Floor plan of residential tower
Bottom right
Section of residential tower

Bathhouse Revitalization

Studio project, MArch, UPenn
Decadence-degradation-revitalization of central Philadelphia
Leaded by Daniel Markiewicz
Groupmember: Andy Hu

At Downtown Philadelphia, USA



This project explores the intersection of architecture, nature, and human experience, with a focus on creating spaces that evoke a sense of adventure, comfort, and connection. The project revolves around the design of a bathhouse located at the Cliffs along the Schuylkill River in Philadelphia, envisioned by Daniel Markiewicz’s studio.

The design explores how forms can emerge from or integrate seamlessly into the natural environment, creating a harmonious and immersive atmosphere. The bathhouse is conceived as a haven for private luxuries and fantasies, offering a spectrum of experiences from serene and quiet to joyfully bustling. It serves as a retreat from the daily grind, inspiring relaxation and comfort.

The bathhouse is designed as a maze, with intertwining paths both indoors and outdoors, leading to hidden landscapes and cozy nooks. The architectural forms seamlessly blend with the natural surroundings, appearing as if emerging from the ground or buried like cyclopean conches. The interplay of rough, large GFRC panels on the exterior contrasts with the smooth, pink, shiny interior made from small, glazed bricks, creating a distinct threshold between inside and outside. It explores spatial variation based on a grid, incorporating elements such as elevation, openness, and relationships with nature. The bathhouse becomes a place where visitors can reconnect with the ground, gaze at the open sky, and experience the presence of plants, animals, and the soothing sound of water.



Left
Massing study
Right
Elevation



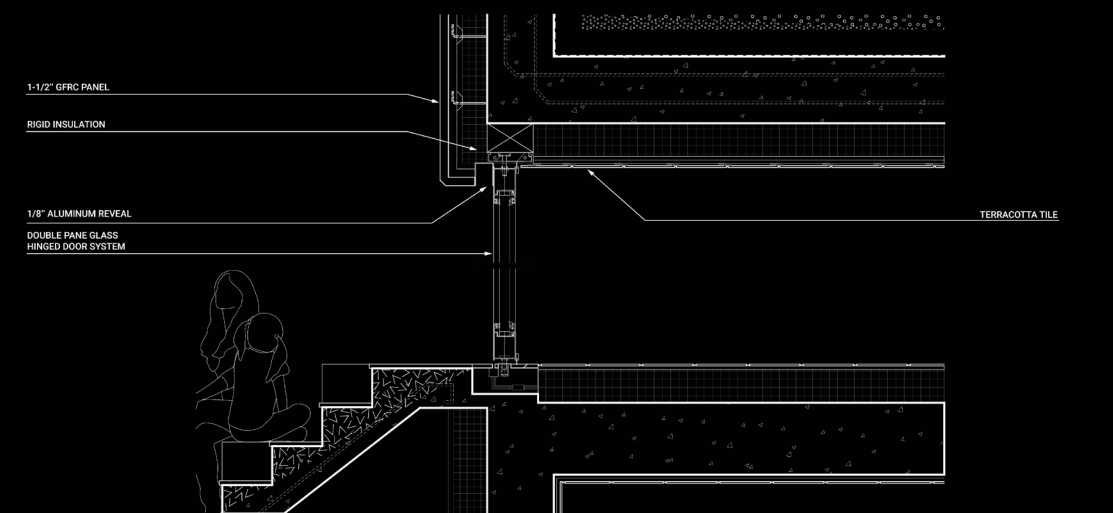
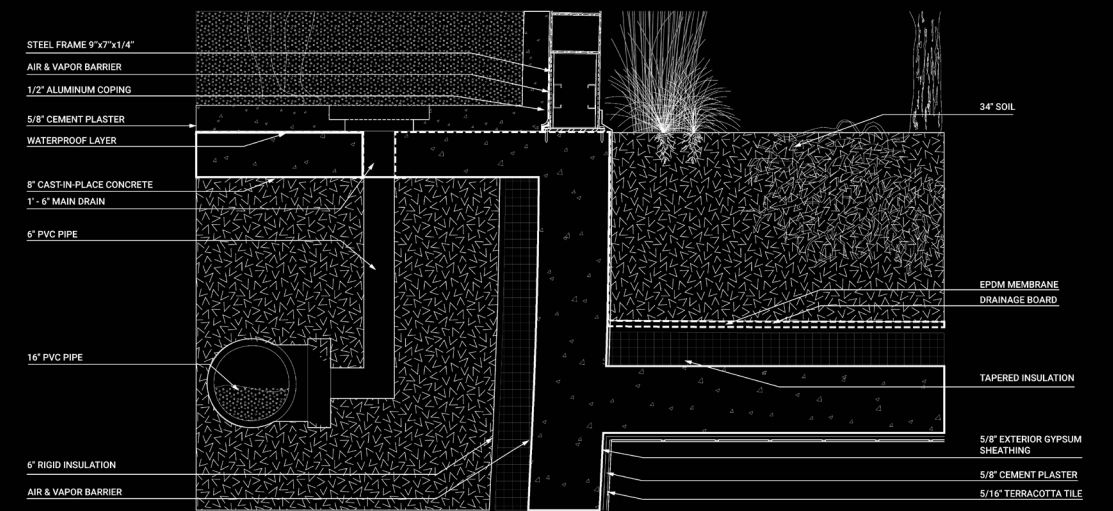
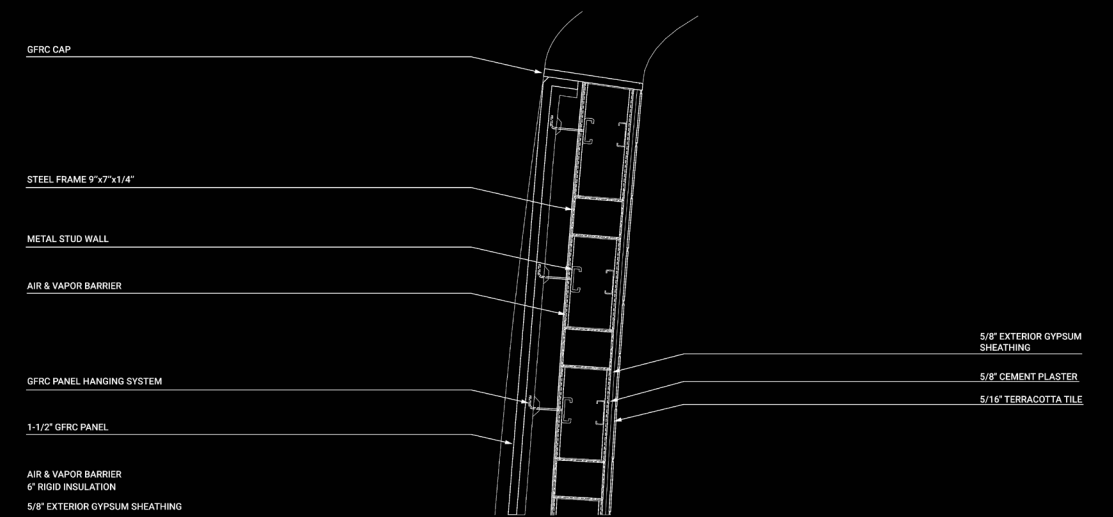
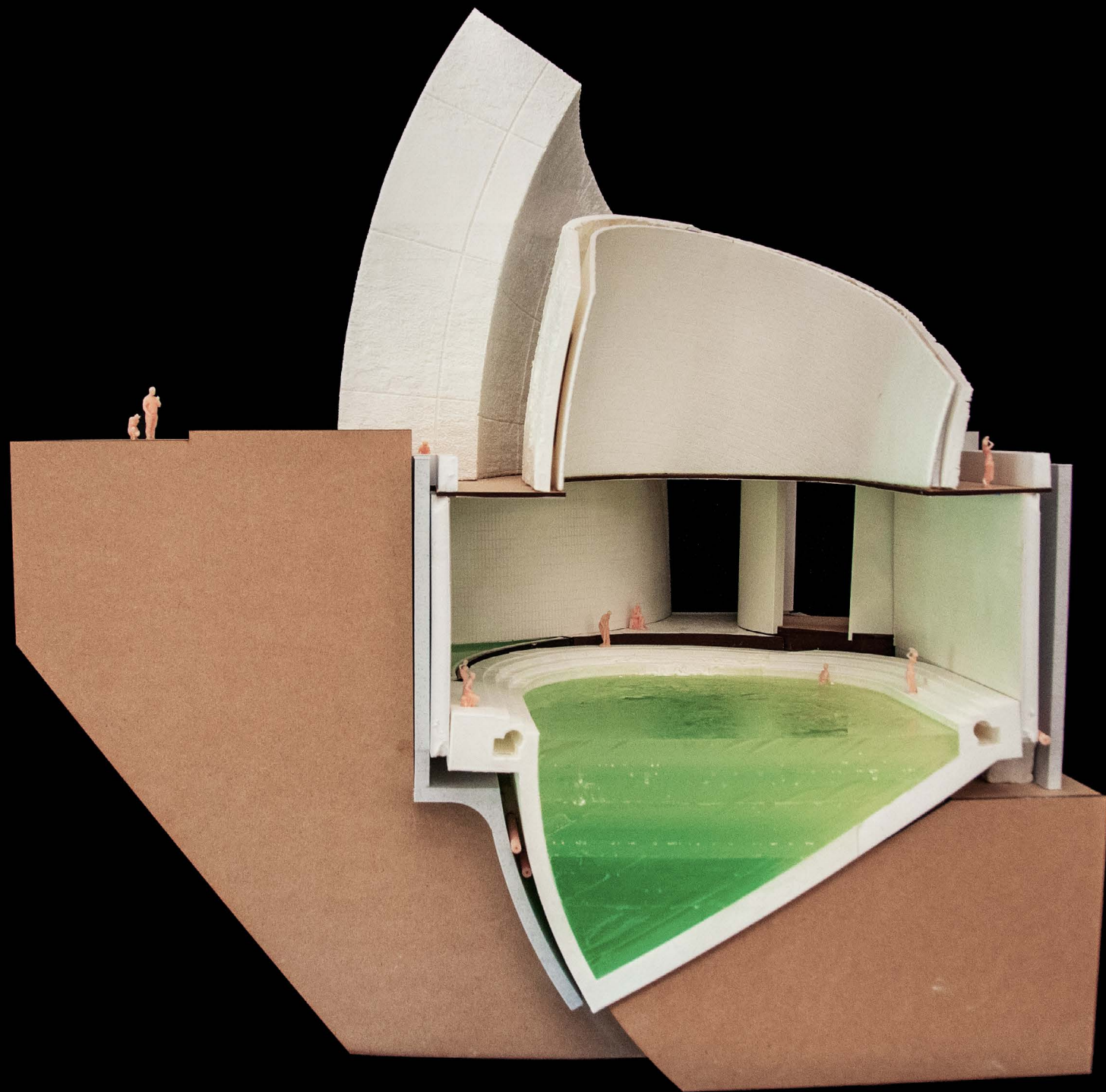




Left
Plaza at the main entrance
Right
Hall way to the thermal bath



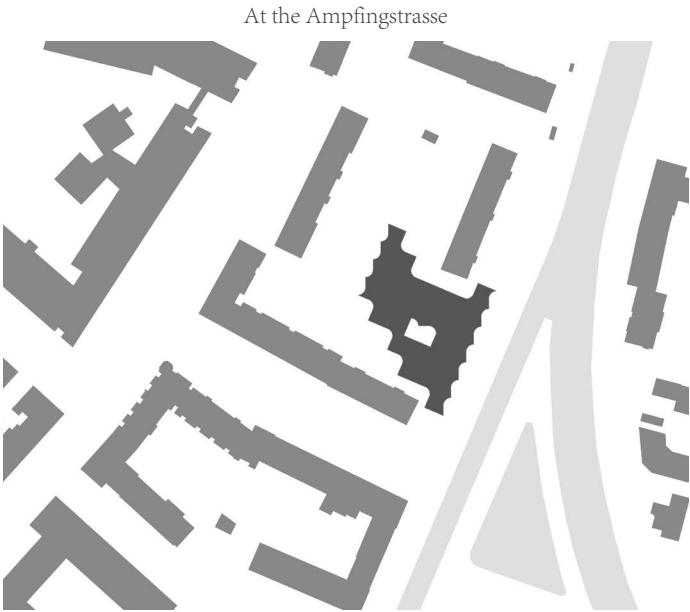
Top
Underground bath



Left
Sectional model photo
Right
Construction details

Thick Brick Building

4. Semesterproject, B.A. TUM
leded by prof. Krucker & Prof. Bates
Groupmember: Niaoniao Li, David Zhou, Daniel Schoepflin



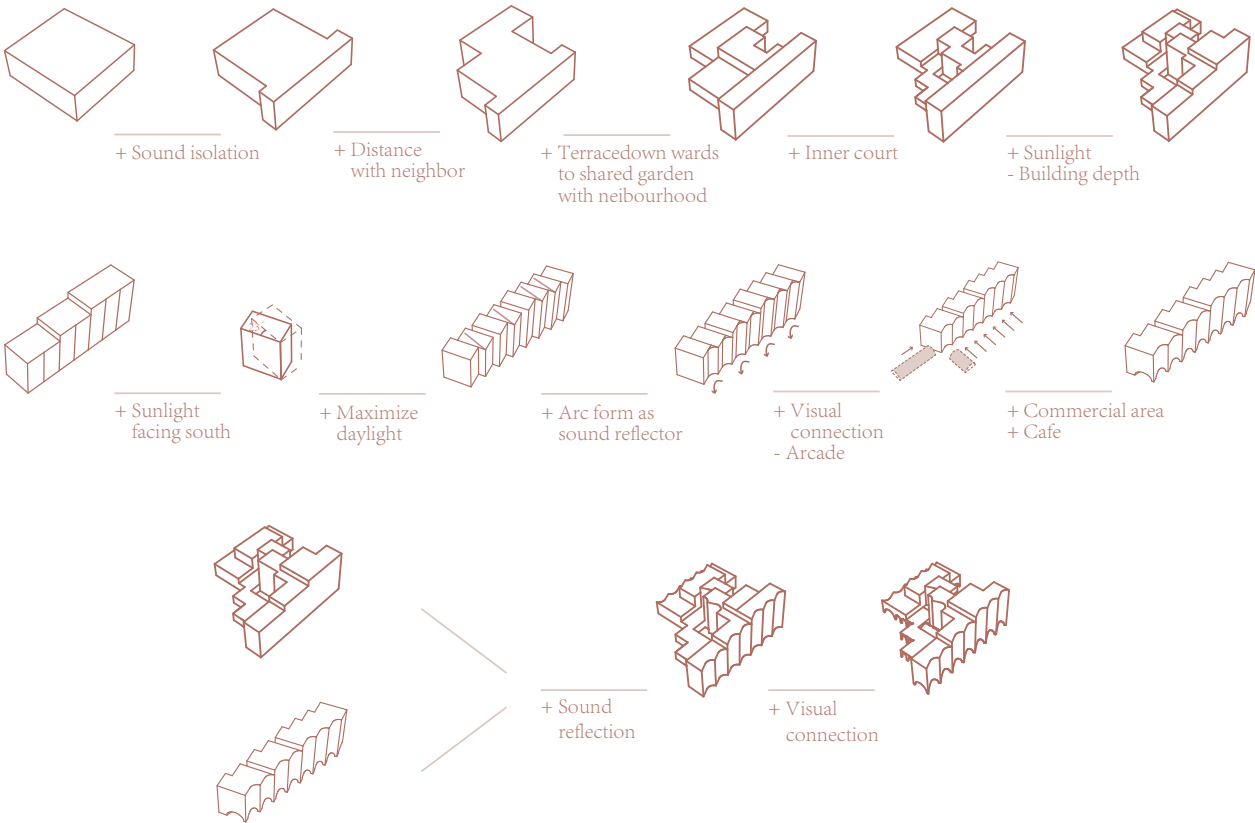
The site of Ampfingstraße 43 is located right next to the junction of Ampfingerstraße and Innsbrucker Ring Tunnel, which is a segment of the Middle Ring, a significant and constantly used highway in Munich. Due to its steady flow of vehicles and the noise created by them, the junction’s traffic becomes something that is always present at this location. This also affects the surrounding architecture and how it has to react to it and is a very important aspect to consider while looking for a new solution for this site. So we choose the curved form for our modul to reflect and block the noise. Also in order to gathering more sunlight, we reorient the modul to face south.

The project is to build a mixed use buiding with residential, office and commercial areas, which we have arranged in unit of floor. For the different usings there are diverse sizes of moduls, which for residential level is 12m x 8m and office area is 10m x 8m, due to the light effect influced by the depth of the inner space. The public commercial area with a atrium garden is located on the first floor, leaded by arcade, which filters the traffic noise to provide a relative enclosed and quiet garden.

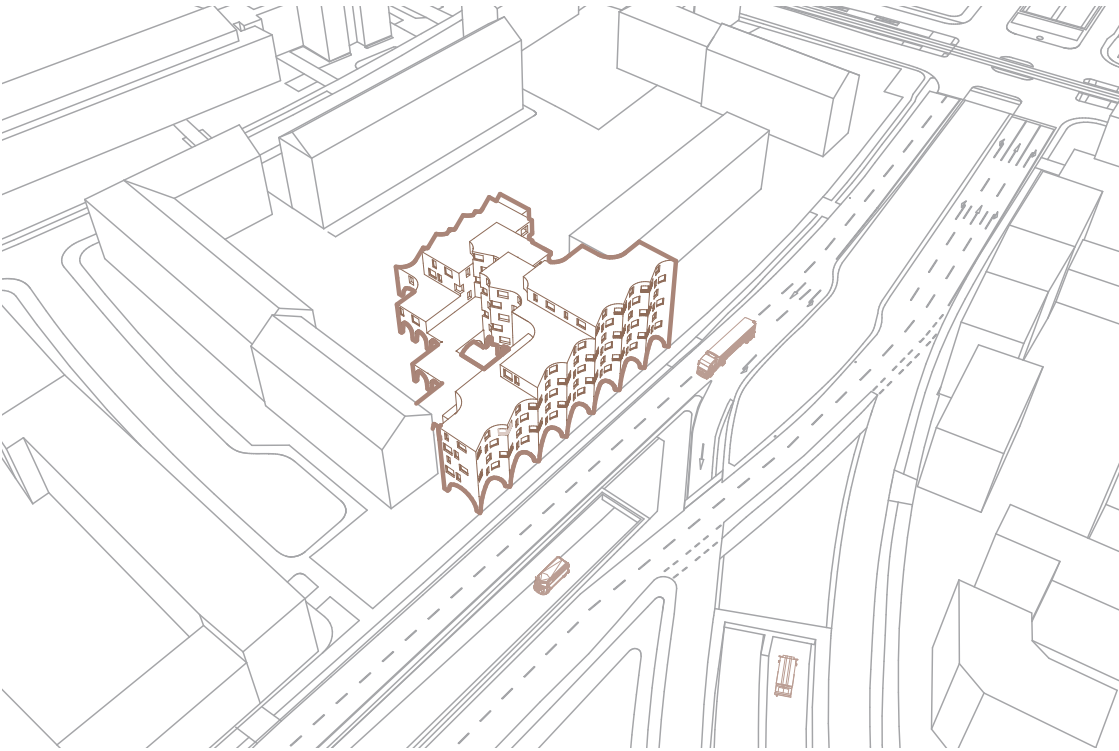


Top
Site plan
Right
Visualisation of hallway

INTERACT WITH
NEIBOURHOOD



Top
Volume diagram
Bottom
Section AA



The Terrace on the working floor provide a relaxing and peaceful place for employee. Also, as interaction with the neighbourhood building, the terrace offers a great opportunity to have a visual connection with the shared garden, but at the same time the transition to private apartment.

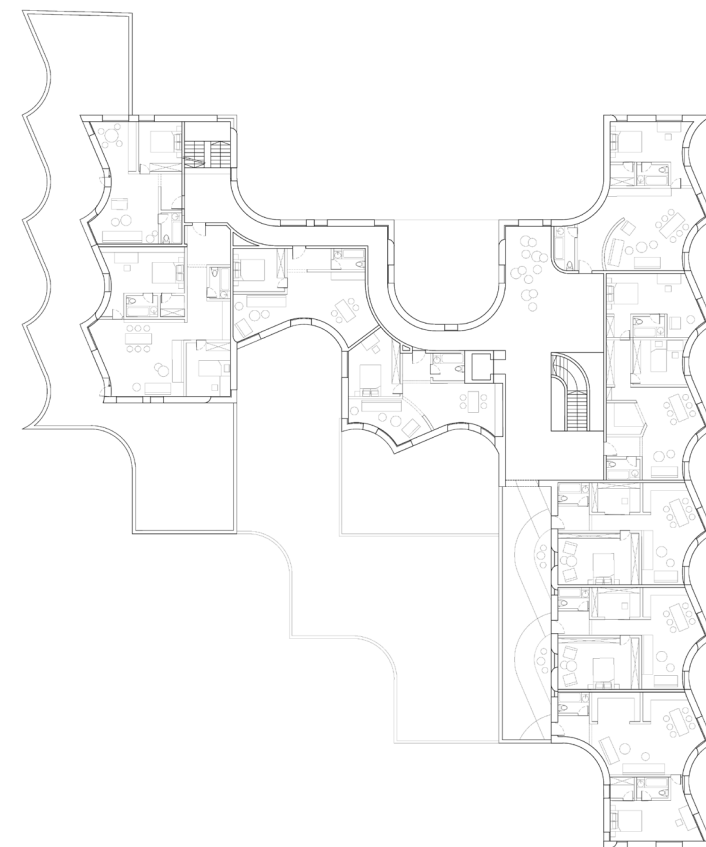
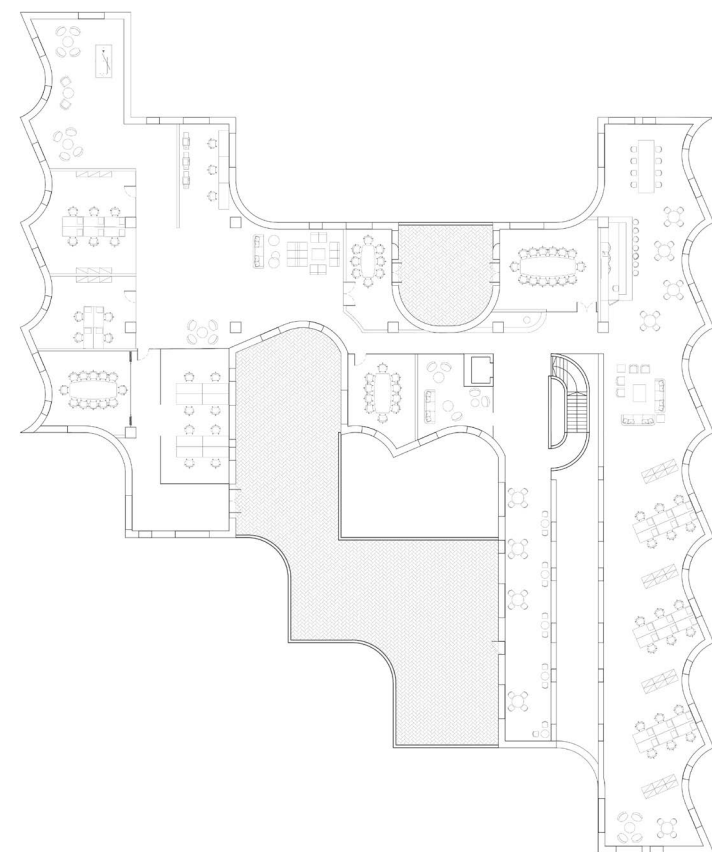
The arcade filter not only traffic noise but also non-resident. Thus, the garden is equipped with private atmosphere.



Top
Bird eye view
Bottom
Section BB

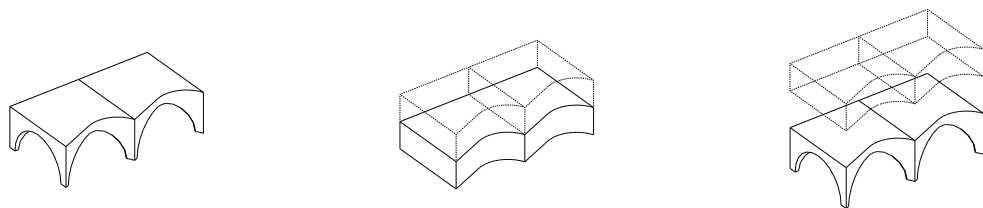


Left
 ground floor plan/commercial area
Top
 1st floor plan/office area*
Bottom
 2nd floor plan/residential area

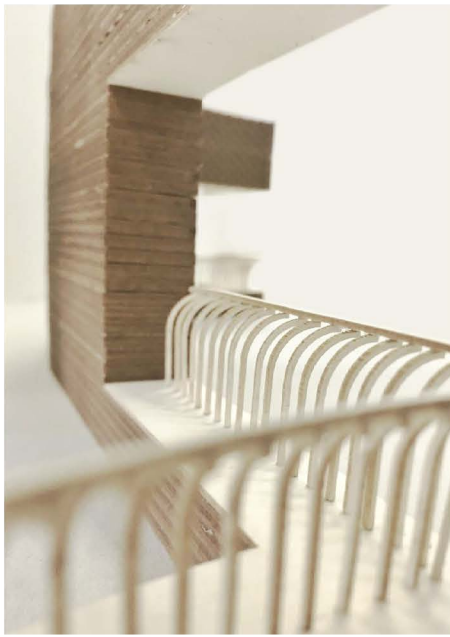


Concept of facade

The way that the brick constructed is arccording the shape of the facade. The more curved the more gape between the adjacent brick piece. To maintain the curve as the architectual language in our design, the openings have rounded reveal towards in side, which in one hand provide more privite space against the main road, in the other hand smooth the whole facade and emphasize the dominant edges. As the same idea of the window reveal, the handrail repeats the curve element once agian.



Top
Volume diagram
Middle
1:100 model foto/yard
Bottom
1:100 model foto/facade



Top
Detail model of facade
Middle
Facade details
Bottom left
Visualisation of arcade



Ephemeral Permanence

Workshop project M.A. TUM
Reused material design for water side pavillion
Leaded by
Mario Rinke, UAntwerp
Tina Vestermann Olsen, AAU
Alessandro Tellini, ETH Zurich

At Fjordmarken, Aalborg



Designing and building with reclaimed structural materials?

The most sustainable construction materials are those we already have. Reusing what already exists is at the heart of circular construction and a fundamental element of a more sustainable architecture. If a building cannot be used anymore and faces demolition, we must at least reclaim its components. On the technical side, the major components should be recognised and reintroduced into the market. On the design side, this new broader notion of materiality pushes towards an availability-based design that also shapes the way we decide forms, connections, component arrangements and spaces.

Provided with a given set of components, such as light steel parts, bricks, timber beams and panels, the participants first analysed their technical and architectural properties. They then designed a temporary pavilion serving as a social place at the site close to the city center but also to the nearby marina. In the coming years, the site will undergo a transformation dealing with among other things rising sea water levels and the project contributes by making visible potentials of the future. In the final phase of the workshop, the group built the selected design. The pavilion serves as a 1:1 demonstrator of circularity that brings to life the potential of the site and foregrounds material reflexivity.



Top
Material close up
Right
Construction site



1
Concrete Plate

Leftover elements from a construction site in Aarhus.
//GreenDozer



2
Steel Column

Leftover elements from demolishing a building in Aarhus.
//GreenDozer



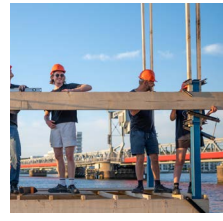
3
Marine Plywood

Leftover elements from a construction site in Herlev.
//STARK gentræ



4
Gas Concrete

Previously used for an exhibition at the Utzon Center.
// Utzon Center



5
Pine Beam

Leftover elements from a construction site in Herlev.
//STARK gentræ



6
Brick

Brick are leftover from demolishing a building in Aarhus.
//GreenDozer



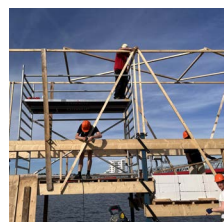
7
Steel, C-Profile

Specially designed clamps for the main joints of the structure to prevent damaging the elements.
// FAB LAB, AAU



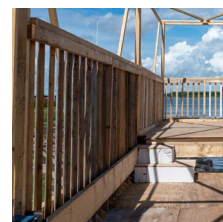
8
Roof Tiles

Leftover elements from a construction site in Aarhus.
//GreenDozer



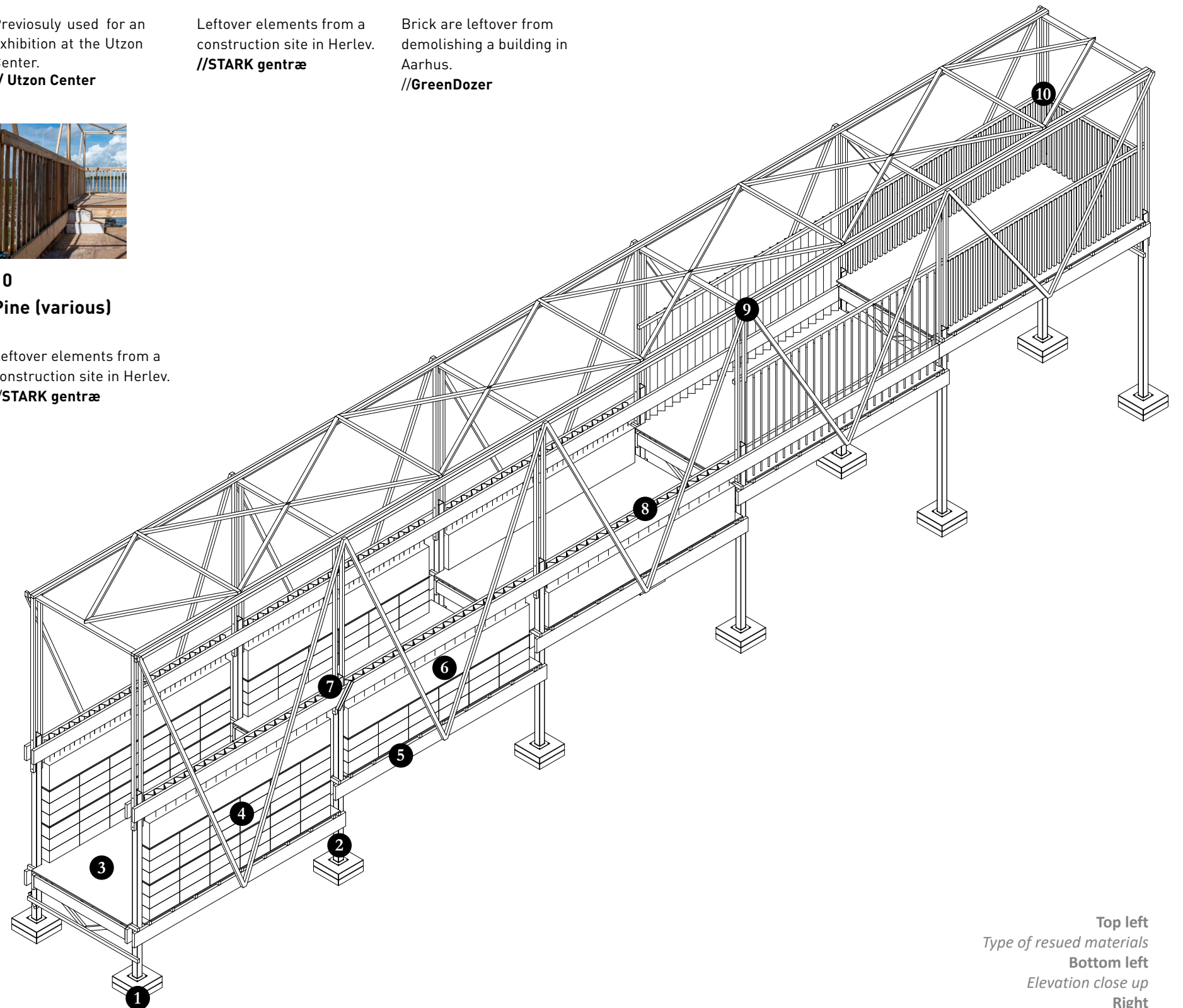
9
Roof Lath

Leftover elements from a construction site in Herlev.
//STARK gentræ

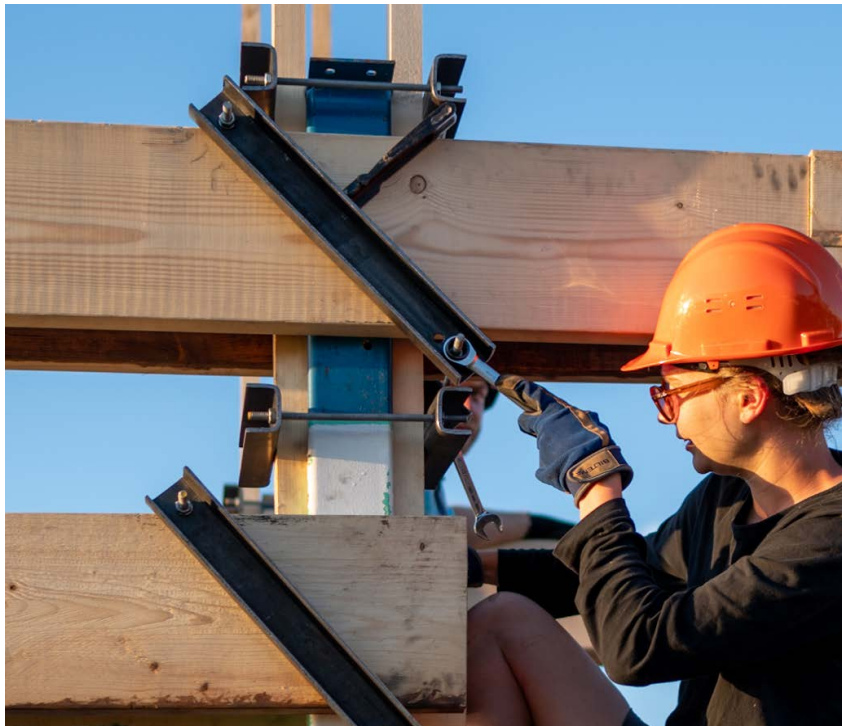


10
Pine (various)

Leftover elements from a construction site in Herlev.
//STARK gentræ



Top left
Type of reused materials
Bottom left
Elevation close up
Right
Construction perspective



Left
Pavilion
Top right
Combining recycled material on facade
Bottom right
Fasten clamps for joints on the colum

Fabrication-Aware Digital Design

Seminar project M.A. TUM
Human-robot cooperative design proposal for brick pavillion
Led by Lidia Atanasova, Kathrin Doerfler

At Bauinung, Munich

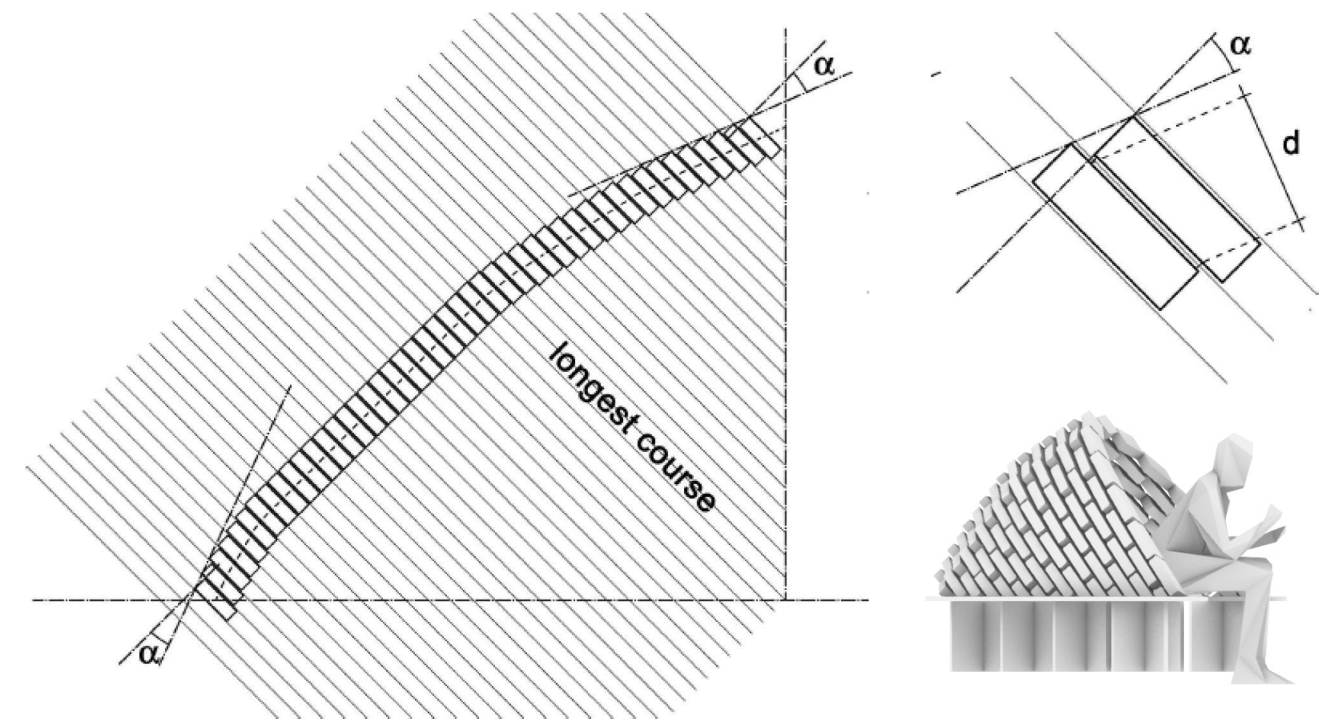


At the beginning of the seminar, bricklayer apprentices from the training center of the Bauinung München-Ebersberg share the theoretical and practical basic principles of historical brickwork. Building on this, we are taught theories and basic practical knowledge for fabrication-oriented digital design and robot-based fabrication in architecture. Using existing examples, we learn the principles of parametric design of brickwork using the Python programming language in Rhino and Grasshopper software. The theoretical principles discussed are deepened in design exercises. These serve as preparation for the fabrication in which human and a mobile robot create collaboratively a 1:1 scale design at the premises of the Bauinung.

We take the nubian vaults as our reference, which has a self-supporting principle and could be constructed without formwork. However, to build a vault from ground normally needs highly skilled masoner. So task for us is to test to build with help of computational design and robot together. Moreover, we developed the idea of rotating the bricks individually to give the vault an interesting texture and give it some value that can only be realized by mechanical cooperation. Regarding the pavillion as a resting area for students at Bauinung, we caculated the volume as high as it could stand and oriented the vaults to provide shading in the meanwhile also preserve the chance to enjoy sunshine.



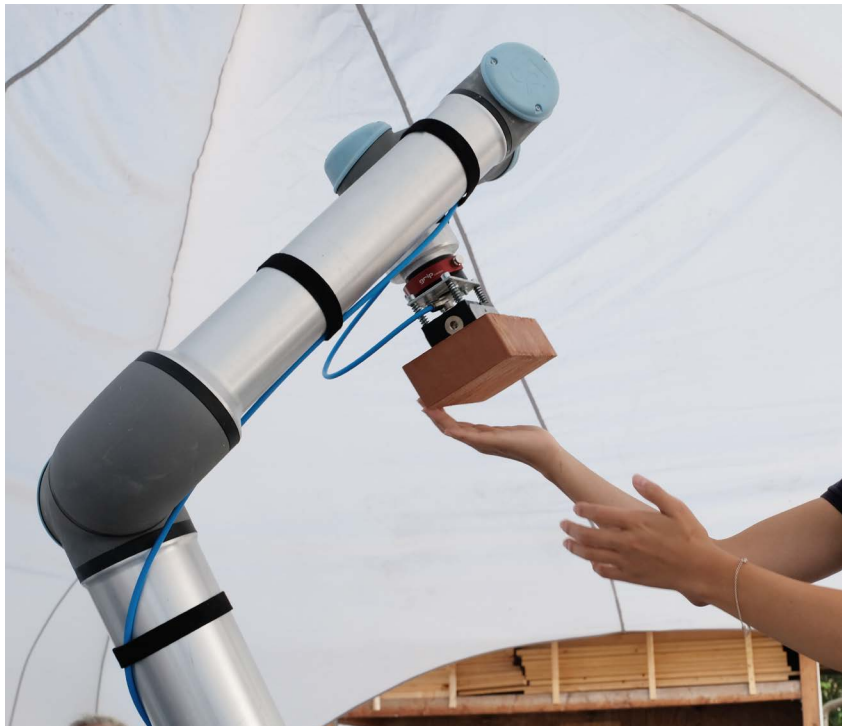
Top
Elevation close up
Right
Working on construction site



Recurse: David Wendland (2007) Traditional Vault Construction Without Formwork: Masonry Pattern and Vault Shape in the Historical Technical Literature and in Experimental Studies, International Journal of Architectural Heritage, 1:4, 311-365, DOI: 10.1080/15583050701373803



Top left
Site plan
Bottom left
Digital design preview
Right
Masonry theory



Left
Co-working scenario
Top right
Cleaning surface
Bottom right
Taking off-sending brick

Thank you

