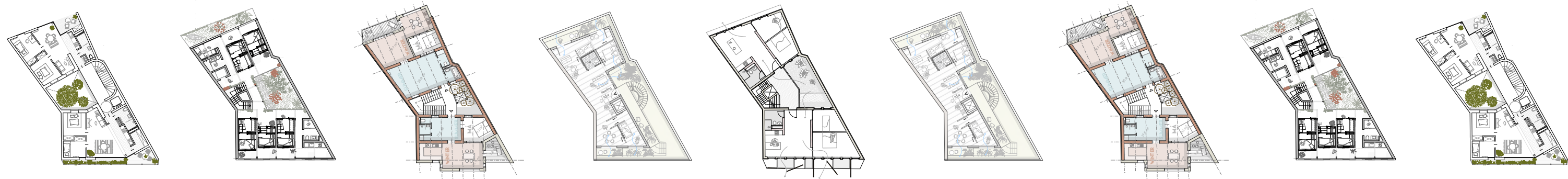


Contextualization Timber Construction ¡Vamos! Holzbau!

winter semester 2022/23



Content

01 Introduction	03
02 Acclimatise - Just push your box	10
03 Treecycle	22
04 City oasis	32
05 Vamos Holzbau	44
06 Wood like to live	52
07 House for summer/House for winter	58
08 Photos	66

¡Vamos Holzbau! Kaden_Gossak-Kowalski_Dengg
Joint Course with UPV Universitat Politècnica de València

IAT | Professur für
Architektur und Holzbau



© Stephan Brugger, via Midjourney

WS22_23_LV 149.902 + LV 149.910

Think Tank Material + Contextualization Timber Construction

Poster for the promotion of the courses at Graz University of Technology

Contextualization Timber Construction ¡Vamos Holzbau!

TUG: Dipl.-Des.BDAUniv.-Prof. Tom Kaden
Dipl. Ing. Bettina Gossak-Kowalski
Dipl. Ing. Alex Dengg

UPV: Full Prof. Agustín Pérez García
Assoc. Prof. Ignacio Guillén Guillamón
Assoc. Prof. Arianna Guardiola Villora
Assist. Prof. Vicente López Mateu

The joint project for students of the UPV and the TU Graz was elaborated by the above-mentioned teams of both universities. Extensive preparatory work was necessary to make this joint design project possible.

The overall goal of the course is to give students - in an internationally mixed composition - the opportunity to improve their design skills in the field of timber architecture, as well as housing design in different climatic zones. These learned skills will allow them

more sensitive and conscious designing and most importantly equip them for challenges that future architects will have to endure.

More than ever before - due to climate crisis – architectural design will have to satisfy ecological demands, function on low-carbon waste and foremost be bio-climatically smart. The thoughtfulness behind every design, allows us to create ecologically healthy cities, for people to inhabit, without lowering the life quality.

Students:

Elisabeth Beis
Christian Keuschnig
Martin Maurer
Adrián Puente Villafuerte
Anna Edelhofer
Valentina Lang
Franziska Vey
Álvaro Caballero Navarrete
Theresa Kurtz
Martin Raid
Viktoriya Yeretska
Liz Pamela Santillan Espinosa
Stefanie Frauenthaler
Larissa Kaltenbrunner

Chiara Stepanek
Mario Ballester Sanchez
Ana Aliaga Hilario
Victoria Mayer
Julia Westreicher
Víctor Benlloch Blasco
Miguel Sauras Colón
Ingo Candussi
Daniel Lučić
Robbe Broothaers
Alicia Nuria Correcher Parra
Rim Cherti
Kimberley Tirira Carlosama

Cooperation of UPV and TU Graz

Overview

The two universities aim to establish a comprehensive and enduring partnership focused on timber architecture in urban areas, with particular interest in multi-storey buildings. This partnership is set to prioritize equality and mutual benefits, promoting the exchange of teaching materials, knowledge, and research findings. Collaborative efforts will include joint teaching in courses, workshops, and other events, as well as visiting the universities, lecturing, and participating in symposia.

In addition, the partnership will facilitate joint research in the field of timber structures and their role in modern architecture, with the emphasis on building technology and its application in urban areas, including various bioclimatic conditions. Furthermore, the research will explore urban timber constructed buildings and their impact on living comfort, general sustainability, thermal comfort, building ventilation and air conditioning. The two universities will organize joint events such as symposia, lectures and video conferences to be able to share and disseminate the findings from their research.

The basic idea for the joint design course is based on a rudimentary design beforehand. The communicated input requirement deals with the situation of the building, considering its outlines, the space allocation plan for the plot and the requirement of four storeys for the building itself. The loadbearing structure of the building should be mainly designed with timber. In the second design phase constructional systems, window openings, balconies/loggias and shading must be foreseen and adapted according to the planning site. In this step the students must think about different design possibilities, reacting to the climate situation, adapting to the bio-climatic situation in Valencia.

The short- and mid-term goals of this project encompass several initiatives to strengthen the relationship between the two universities. One of the primary objectives is the creation of a Joint Course that combines the expertise and knowledge of both institutions. The course will encourage and support the collaboration among students, as well as the staff from both universities, with the objective to deliver a comprehensive program that will enrich the learning experience for everyone involved.

In addition, a series of visits, guest lectures, and excursions, including mutual visits of teaching and research staff, will follow. These will provide the students with the opportunity to participate in mid-term presentations, final critics, as well as for guest lecturers to offer supportive visits.

Furthermore, the project aims to identify common interests between the two universities, particularly in the department of teaching, publication, research, and to then enable coordination of specific activities accordingly. The appointed supervisors will be assigned with the development and managing of various initiatives to ensure their success. The ultimate result of this process will be a "Memorandum of Understanding" between the two involved universities, outlining the shared goals and objectives of the collaboration.

To promote the sharing of knowledge and expertise, research papers will be written as a part of this programme. Overall, this project aims to enhance the academic experiences of students and staff, create long-lasting relationships between institutions, and promote cross-cultural dialogue and understanding.



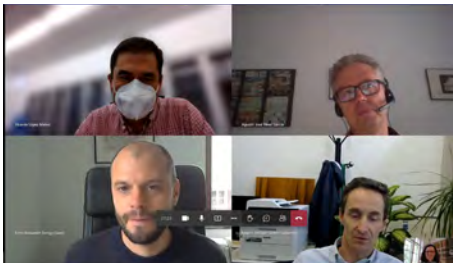
view of the building site

Masterplan and project site

Ruzafa street nº 47

workshop:

The workshop held on the 13th and 14th of October 2022 had several goals and objectives. One of the primary purposes of the workshop was to develop the organization and design concept with a well-defined space program. The participants worked towards creating a conceptual design that included the development of the urban setting of the project and its immediate surroundings. Another critical area focused on was the design idea for the timber system construction and bioclimatic design. The construction concept focused on timber, which is an excellent resource for construction, while the aim with the bioclimatic concept was to achieve maximum energy efficiency. A very important part of the progress was for the students to work in mixed groups. The exposure to different work approaches in a foreign language, had a high educational value for all students involved.



screenshot online meeting

online lectures:

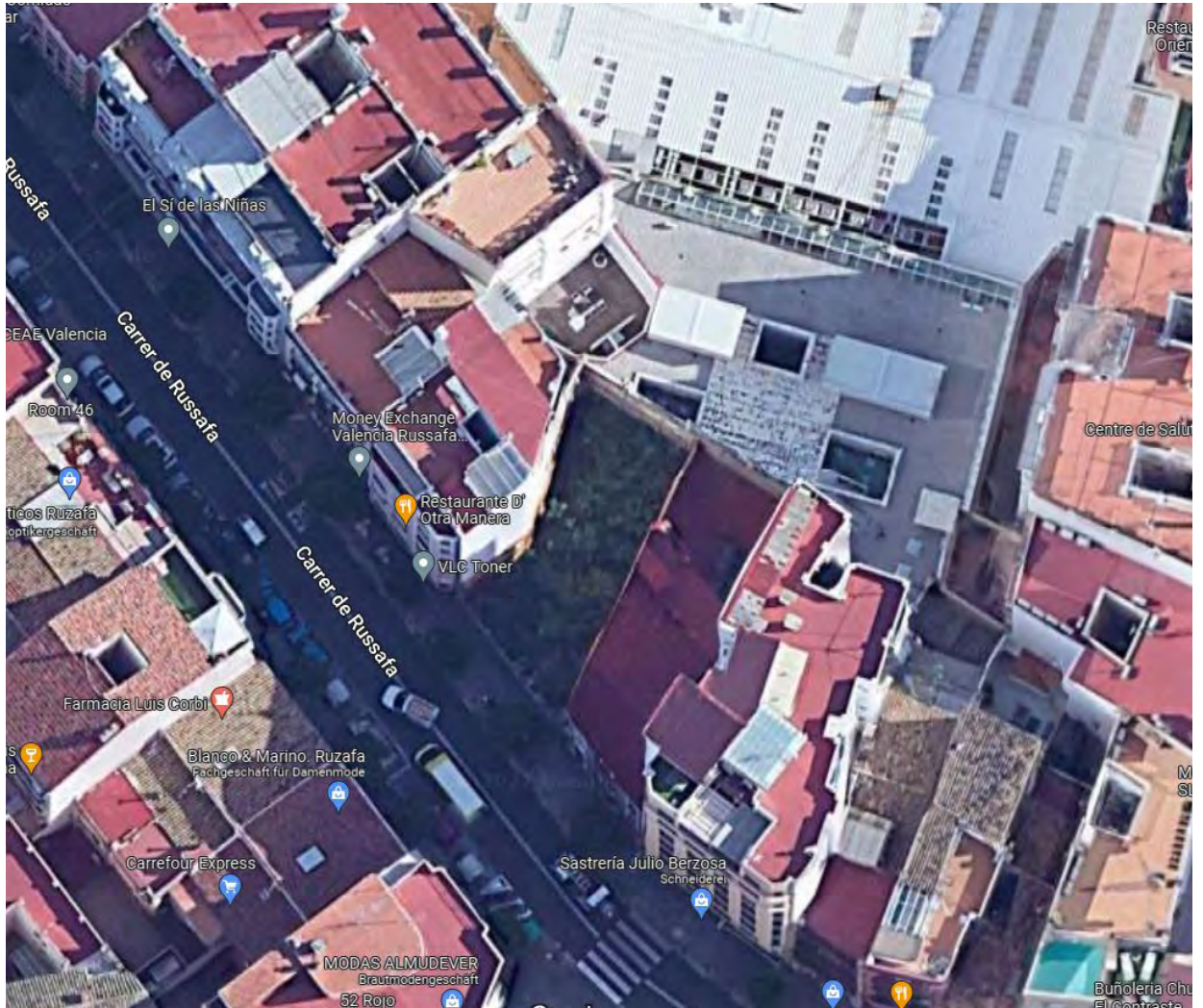
Online lectures were recorded and published to the universities teaching platforms. A total of 14 educational videos, with the duration of 15 to 35 minutes, were then available for the students to re-watch and explained the basic knowledge, that would help them with their design process in the course. These lectures covered various different chapters on timber construction, the topics being wood as a resource, construction and wood preservation.

field trip to Valencia:

From the 9th to 13th of January, the students of the TU Graz went on an excursion to Valencia. After a full week of working together at the UPV with the local students, they presented their final work. They also explored the city together and had some interesting tours in Valencia's old town, visited the Veles e Vents from David Chipperfield, the Cultural Centre from Eduardo de Miguel, Espai Verd from Antonio Cortés Ferrando and many more.



seminar room at the UPV



Buñolería Chu
El Contraste
google street view

Masterplan and project site

Ruzafa street nº 47

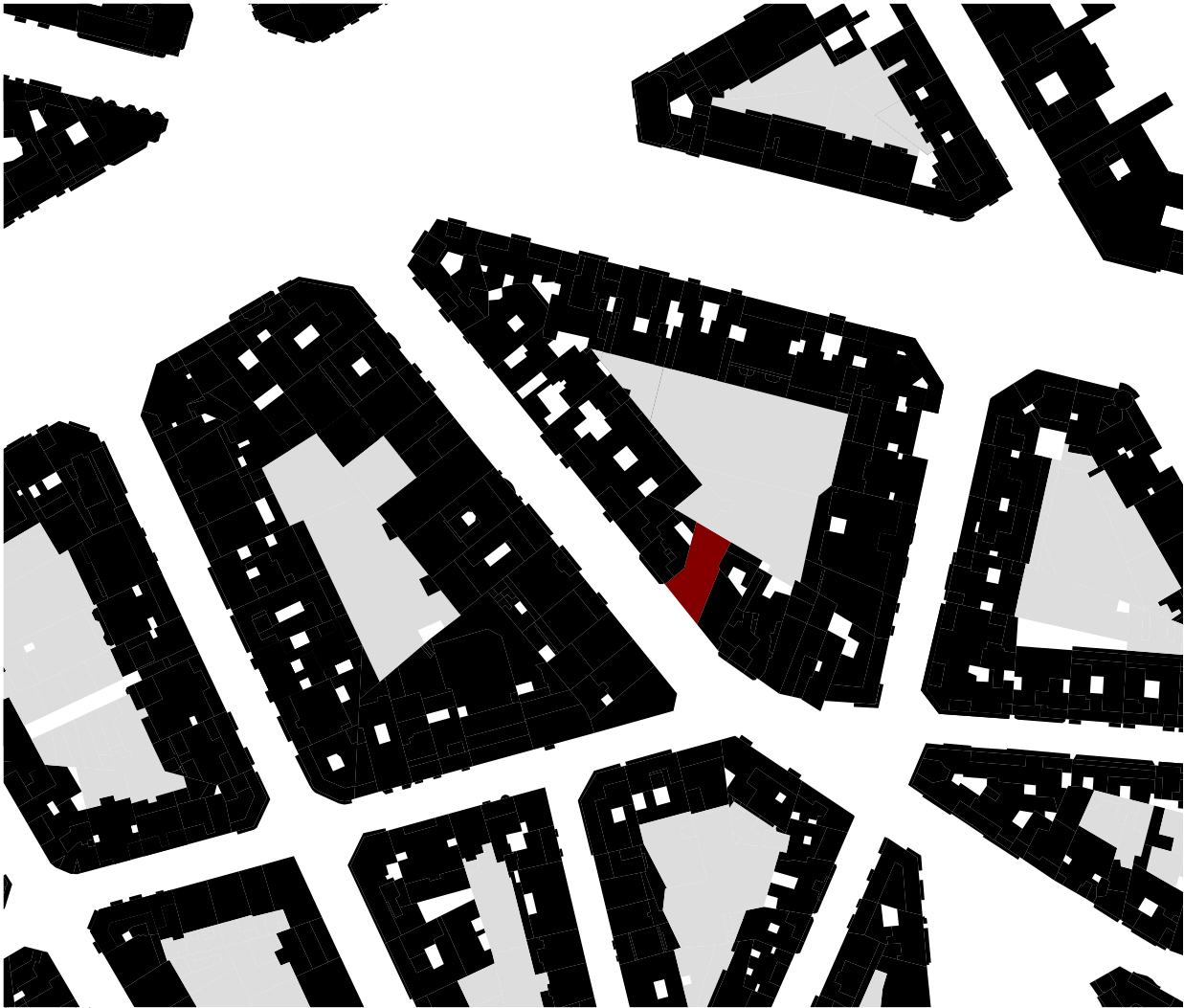


figure ground plan



Acclimatise - just push your box

Anna Edelhofer, Valentina Lang, Franziska Vey

concept:

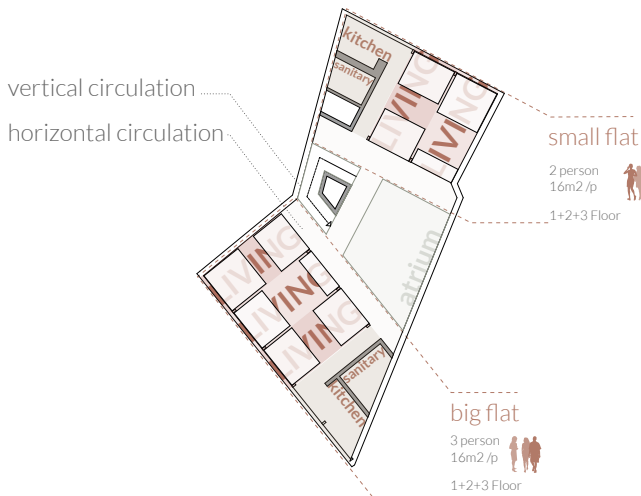
In studying the climate of Valencia, we noticed a big difference between what people need in their homes depending on the season.

In the hot and humid summer, there's a need for shade and airflow, while in the relatively cool winters, there's a reliance on the warmth from the sun and traditional heating systems. So, the challenge is this: how can we create living conditions that work for both seasons in the same space without having to move around the interior at least twice a year?

too hot	isolation	≠	isolation	too cold
too sun	shadow	≠	light	too dark
no air	openness	≠	closure	windy
humid	collection	=	collection	humidity

summer  winter

changing qualities in a transformational architectural solution





Acclimatise - just push your box

Anna Edelhofer, Valentina Lang, Franziska Vey

Our solution is an innovative living hub, meant to comfortably accommodate around five people per floor in a flexible apartment set-up. Each apartment includes slabs, each about 16 square meters, rented by the individual residents. We designed sleeping boxes in two sizes, modular furniture and office units. By combining these modules, each resident can customise their living space, on their leased slab. Together 2 or 3 slabs form one apartment with a shared kitchen and facility unit.

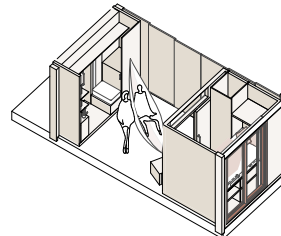
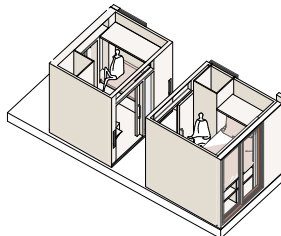
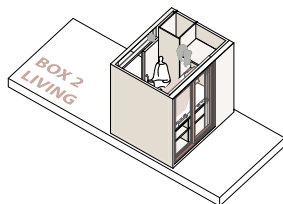
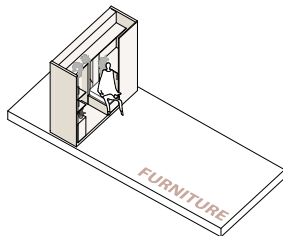
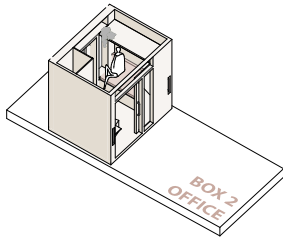
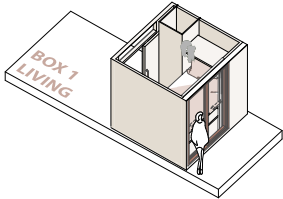
For the summer, the boxes can be moved towards the centre of the building, which opens up the facade to a balcony, promoting airflow and providing a shady area. In winter, the boxes can be moved back to the facade to create an indoor living room area, helping to warm up the space. The sleeping module at the facade will additionally be heated by

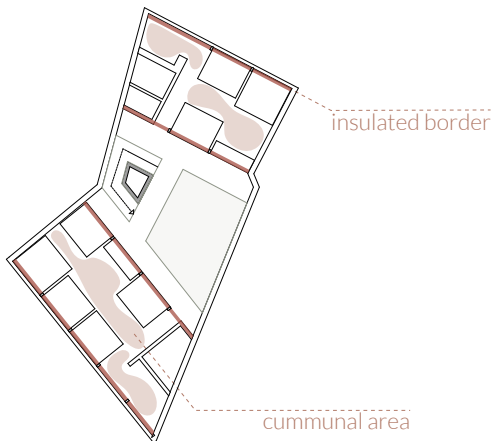
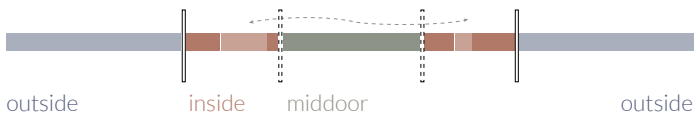
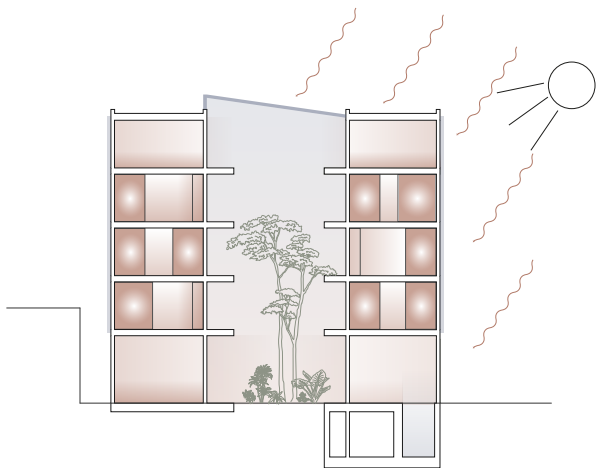
thermal mass.

The concept relies on and communal living spirit, where residents share their space, and help each other arrange their boxes for the times of the year, while still having privacy arrangements as well.

One sustainable aspect is the shared workspace on the ground floor, where the wooden modules are being built and repaired directly on-site. In between the space works as a workshop for the neighbourhood community.

We ran into a fair share of issues during the construction, especially making sure it was fit for both summer and winter living. But, the final prototype shows promise as a potential example of how we can live comfortably with changing climates using low-tech solutions in the future.





Acclimatise - just push your box

Anna Edelhofer, Valentina Lang, Franziska Vey



ground floor summer

ground floor winter



first, second & third floor summer

first, second & third floor winter

Acclimatise - just push your box

Anna Edelhofer, Valentina Lang, Franziska Vey





elevation summer



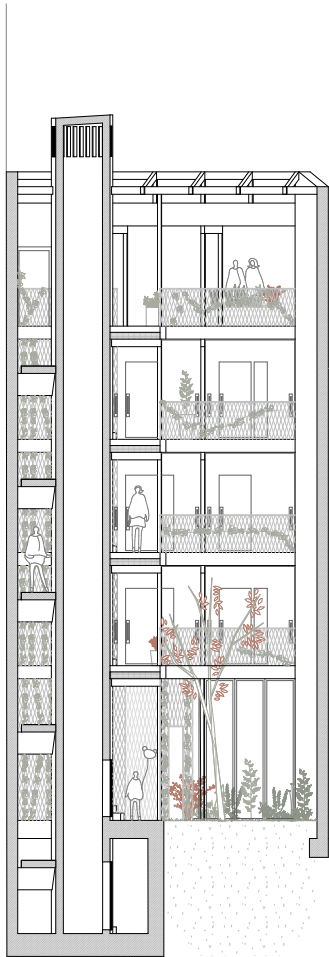
elevation winter

Acclimatise - just push your box

Anna Edelhofer, Valentina Lang, Franziska Vey



section winter



section BB



section summer

Acclimatise - just push your box

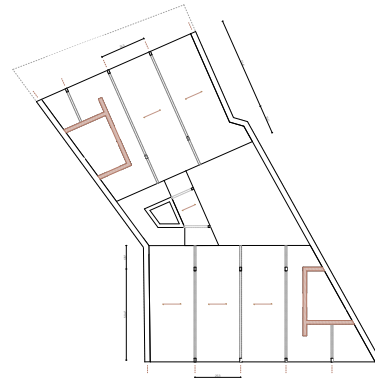
Anna Edelhofer, Valentina Lang, Franziska Vey

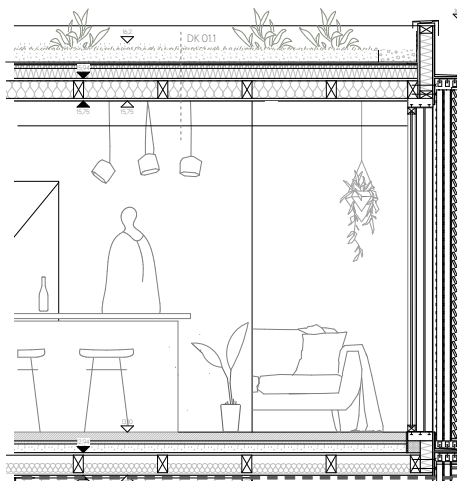
construction:

The basic construction of the building is composed of a primary structure that includes solid wood columns and beams, each measuring 100x200. A secondary structure is formed by a ribbed slab. To enhance safety, there are fire barriers made from 30cm thick concrete on both sides of the building. Stiffening is achieved through two concrete cores which also house the installation shafts for all floors. Additionally, a third core is situated at the center of the building and it is responsible for distributing cold air throughout the structure, functioning as a badghir.

As for the Box-module system itself, it is comprised of solid wood boxes, each weighing around 400kg, roughly equivalent to the weight of a caravan. These boxes are suspended from the ceiling and can be moved by pushing or pulling them along several hand railings. The modules are insulated towards the exterior of the apartments, forming a solid, insulated barrier during the winter season.

The facade system incorporates both movable and fixed frames which provide shade for the upper floors. The ground floor level, on the other hand, is equipped with a foldable glass facade, lending a modern and sophisticated to the building's exterior.





DK 03 | ROOF CONSTRUCTION
[E2]

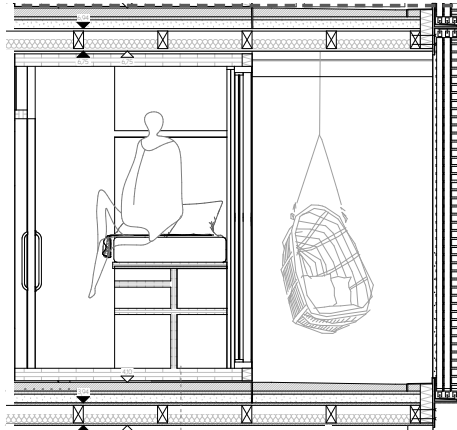
10,00	VEGETATION & SUBSTRATE
	FILTER FLEECE
3,00	DRAINAGE
	ROOT PROTECTION BAIL
	DOUBLE BITUMEN MEMBRANE
40,00	EPS SLOPE INSULATION, 3%
	VAPOR BARRIER
2,40	WOOD FORMWORK, SPRUCE
14,00	BEAM, SOLID WOOD (H4/D)
	+ MINERAL WOOL INSULATION BOARD
190	WOOD FORMWORK, SPRUCE
20,00	BEAM, GLUE LAMINATED TIMBER (D4)

61,30	TOTAL THICKNESS
0,196	U-VALUE [W/m ² K]

DK 03.1 | DACHAUFBAU
[E2]

10,00	BEIHOHT
	VEGETATION & SUBSTRAT
	FILTERFLIES
3,00	DRANAGE
	WURZELSCHUTZBAHN
	DOPPEL BITUMENBAHN
40,00	EPS GEFÄLLEDÄMMUNG, 3%
	DAMPFSPERRE
2,40	HOLZSCHÄLLUNG, FICHTE
14,00	BALKEN, EIVH (H4/D)
	+ MINERALWOLLDÄMMPLATTEN
19	HOLZSCHÄLLUNG, FICHTE
20,00	BALKEN, ESH (D4/D)

61,30	GESAMTDICKE
0,196	U-WERT [W/m ² K]



DK 01 | DECKENAUFBAU INNEN
[E1]

10,00	BREITSPERRHOLZ, 3 DL
	ZEMENTESTRICH E 300
	ÜBERLACHTERSTICH BESCHICHTET
	FE-FILM
2,50	STRAUSSTROHM, EPS 70/50
7,00	KORNSCHÜTTUNG (3-12mm)
	BECKENSCHICHT
2,40	HOLZSCHÄLLUNG, FICHTE
14,00	BALKEN, KVM (H4/D)
	+ MINERALWOLLDÄMMPLATTEN
19	HOLZSCHÄLLUNG, FICHTE
20,00	BALKEN, ESH (D4/D)

61,90	GESAMTDICKE
	U-WERT [W/m ² K]

DK 01 | CEILING CONSTRUCTION INDOOR
[E1]

10,00	CLT, 3 DL
7,00	CEMENT SCREED E300
	SURFACE FINISHED/COATED
	FE FILM
2,50	STRAUSTROHM, EPS 70/50
7,00	CORR BLK (3-12mm)
	SINKLE PROTECTION
2,40	WOOD FORMWORK, SPRUCE
14,00	BEAM, SOLID WOOD (H4/D)
	+ MINERAL WOOL INSULATION BOARDS
190	WOOD FORMWORK, SPRUCE
20,00	BEAM, GLUE LAMINATED TIMBER (D4/D)

34,8	OVERALL THICKNESS
	U-VALUE [W/m ² K]

DK 04.1 | WALKWAY CONSTRUCTION
[E2]

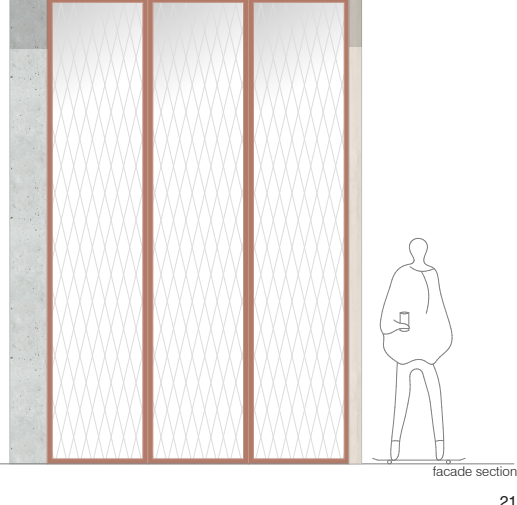
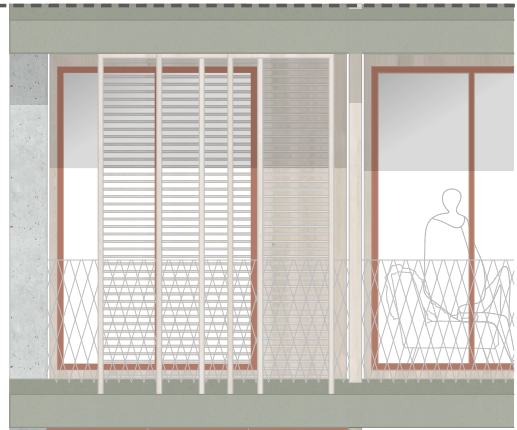
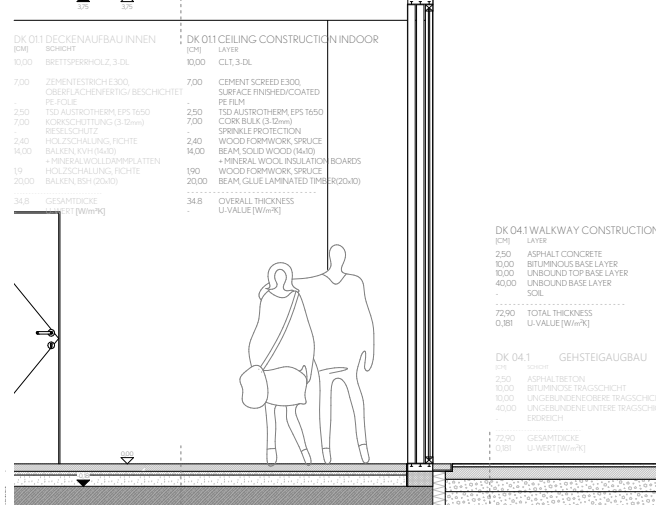
2,50	ASPHALT CONCRETE
10,00	BITUMINOUS BASE LAYER
10,00	UNBOUND TOP BASE LAYER
40,00	UNBOUND BASE LAYER
	SOIL

72,90	TOTAL THICKNESS
0,181	U-VALUE [W/m ² K]

DK 04.1 | GEHSTEIGANGBAU
[E2]

2,50	ASPHALT BETON
10,00	BITUMINÖSE TRAGSCHICHT
10,00	UNGEREBENDE OBERE TRAGSCHICHT
40,00	UNGEREBENDE UNTERE TRAGSCHICHT
	ERDBECH

72,90	GESAMTDICKE
0,181	U-WERT [W/m ² K]



facade section

Treecycle

Elisabeth Beis, Christian Keuschnig, Martin Maurer

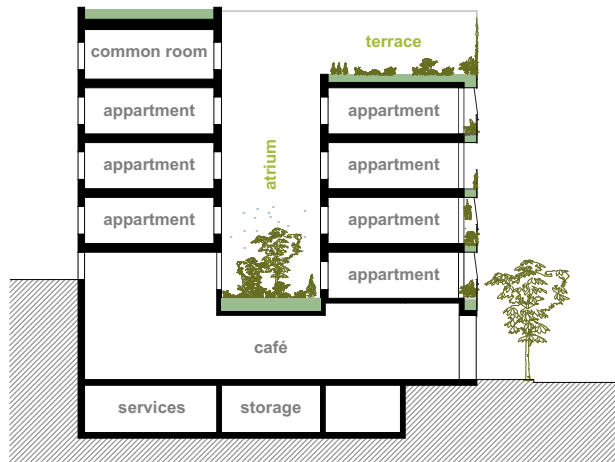
concept:

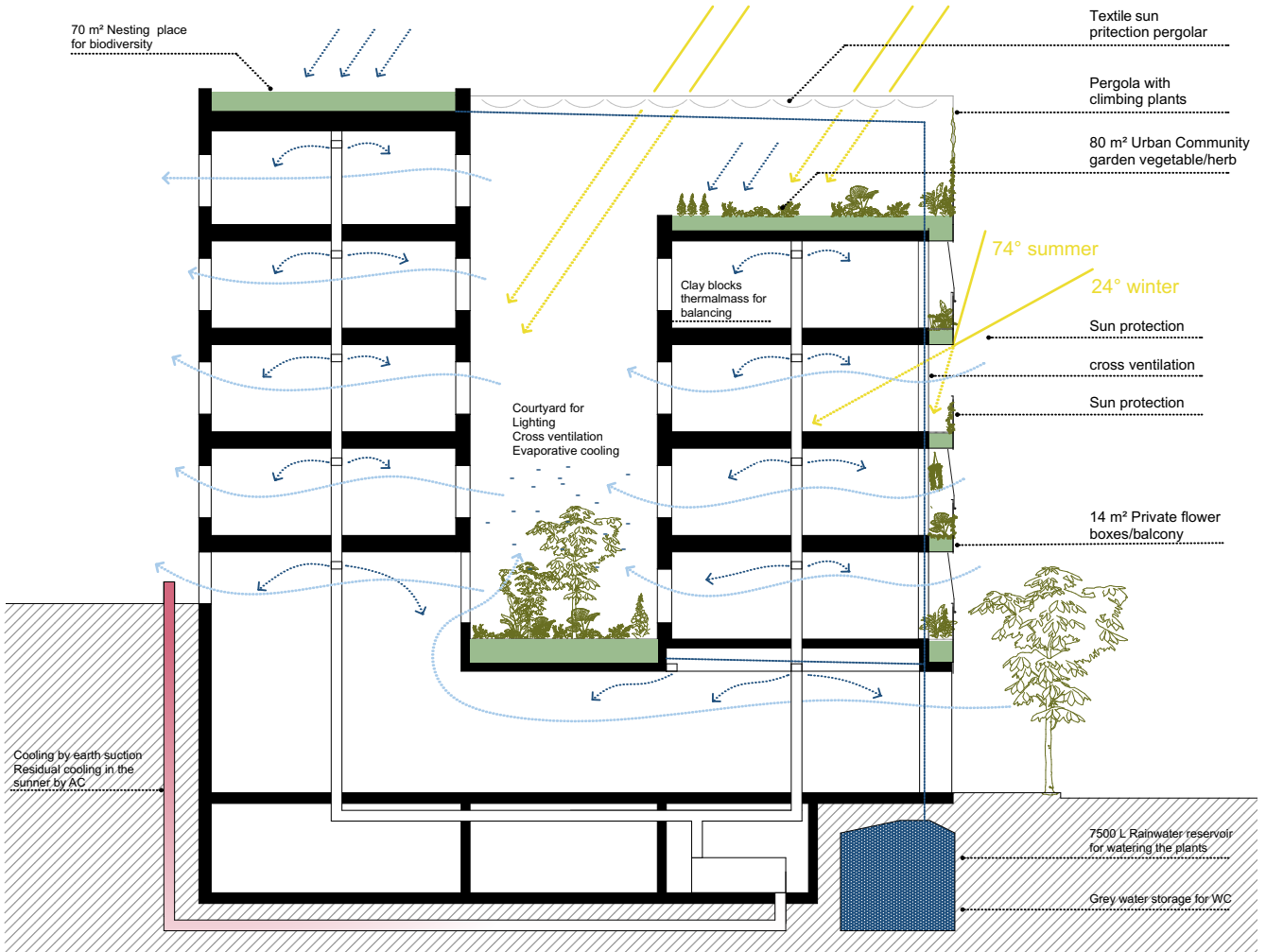
The new five-story building constructed in the gap, has a green atrium for the use of natural light and ventilation in the central axis. The ground floor will house a café and gallery space. This will create an active and engaging street-level presence, encouraging pedestrians to stop and spend time in the space.

The upper floors are apartments and the fifth floor has a roof top garden and a common room for all inhabitants. The flexible apartment floorplan offers 3 to 4 rooms

and can be adapted as needed. In total the design has 7 apartments and hosts approximately 21 residents. That concludes that every resident has 21m² living space in average.

Large windows will be used to maximize the amount of daylight entering the building, while also providing views of the surrounding urban environment. The cross ventilation allows for natural light and air to circulate throughout the building.



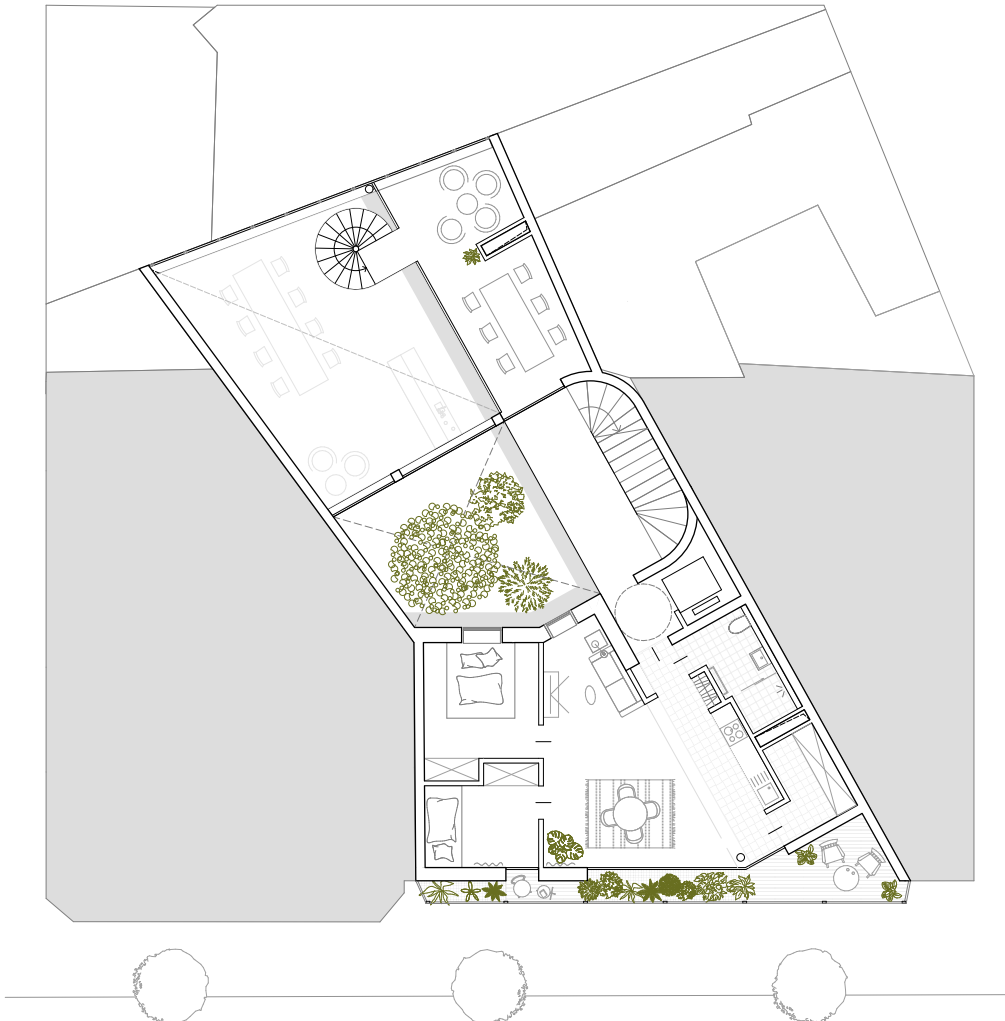


Treecycle

Elisabeth Beis, Christian Keuschnig, Martin Maurer



ground floor



Treecycle

Elisabeth Beis, Christian Keuschnig, Martin Maurer



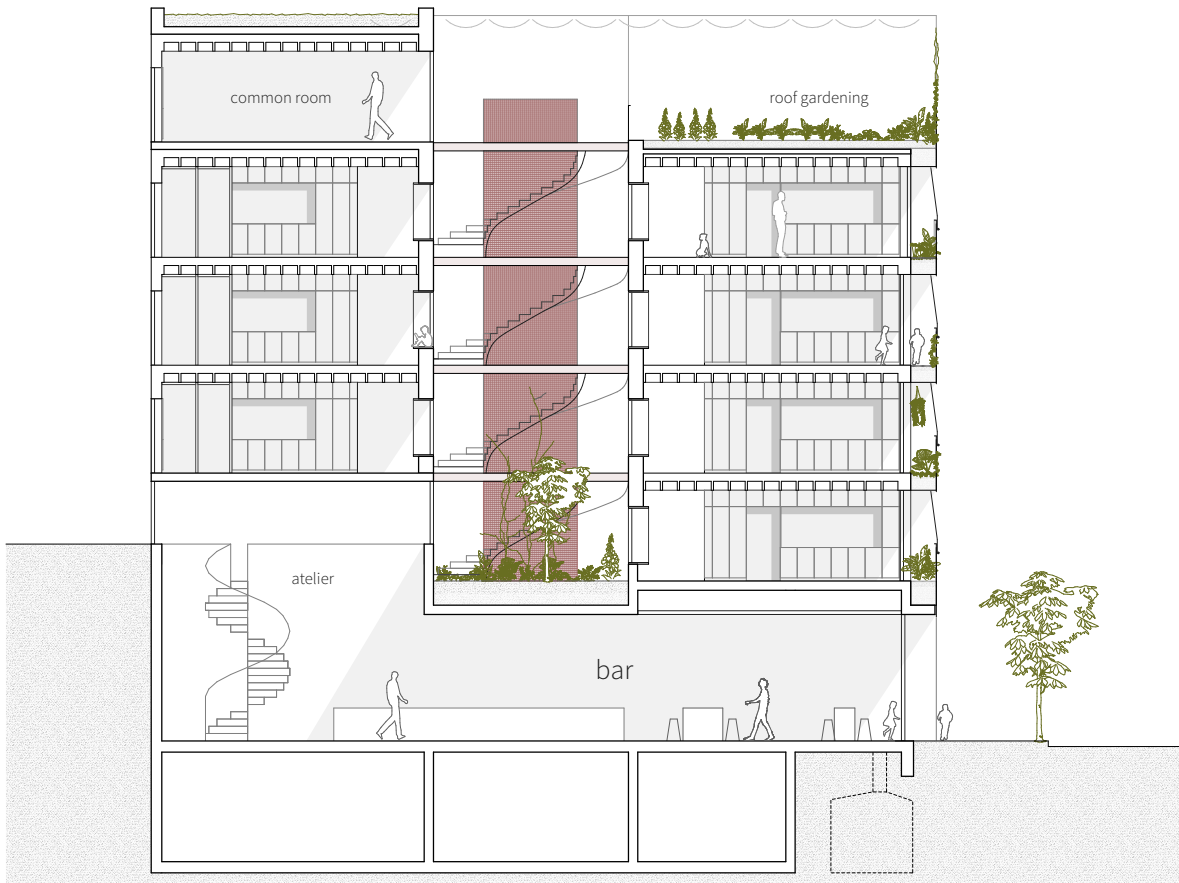
second floor



Treecycle

Elisabeth Beis, Christian Keuschnig, Martin Maurer





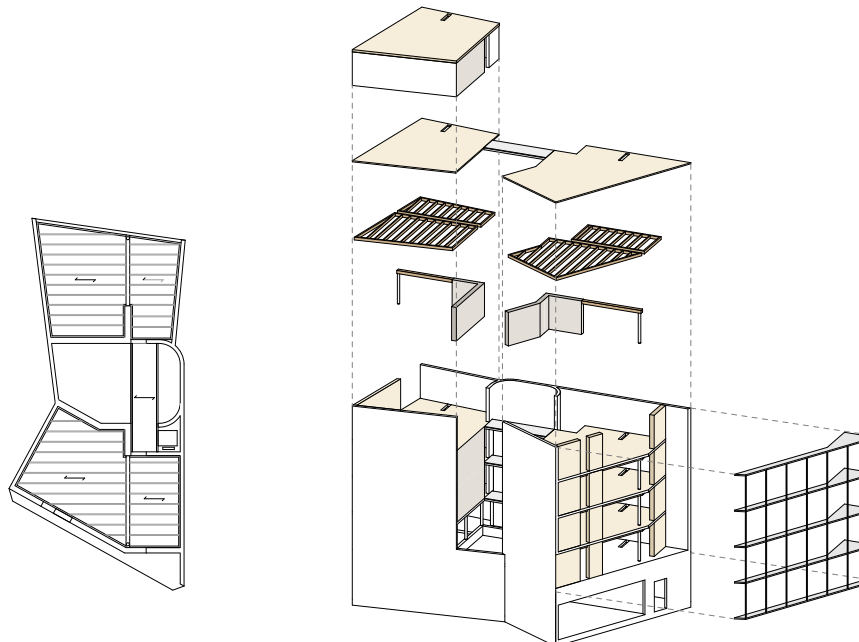
Treecycle

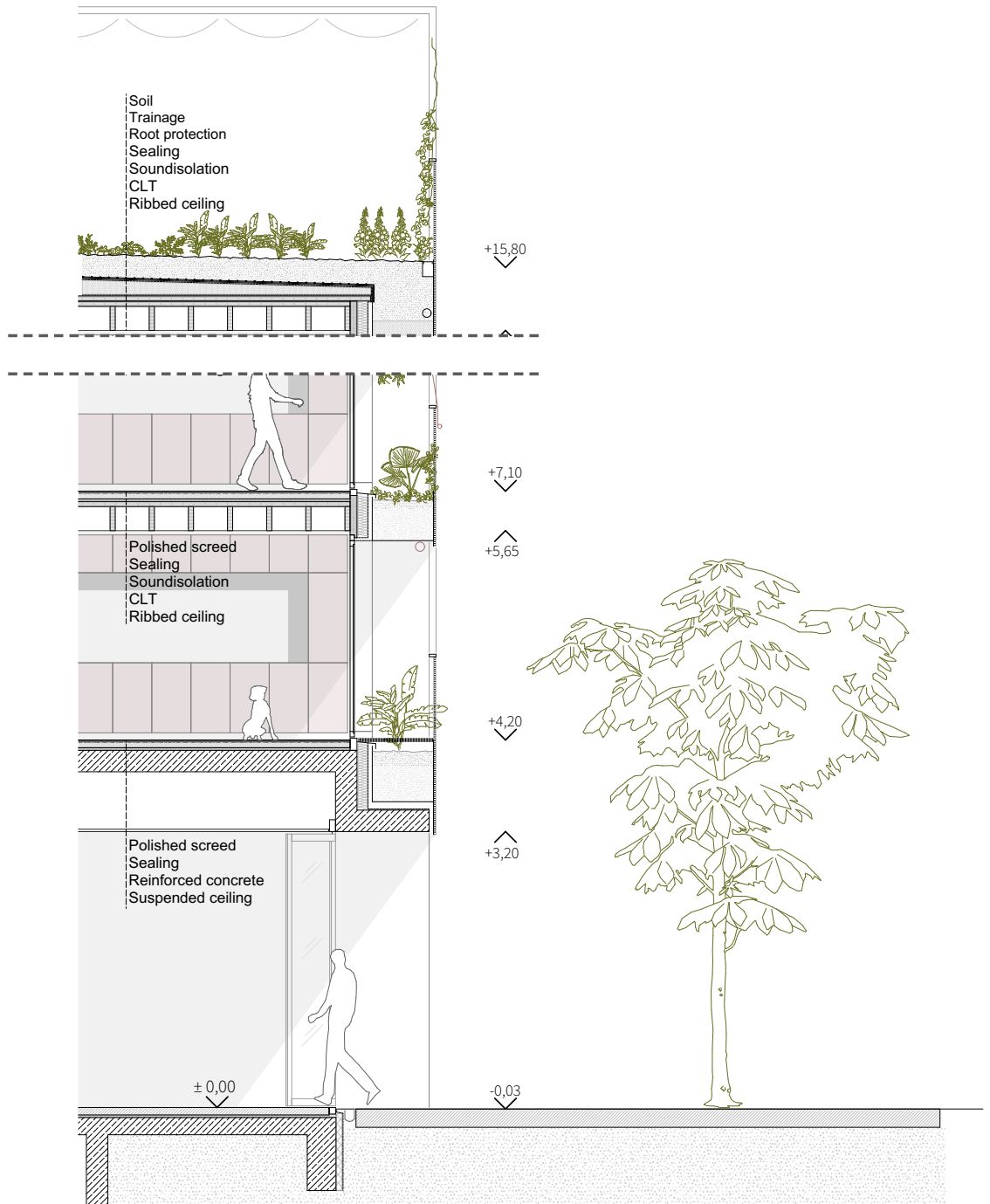
Elisabeth Beis, Christian Keuschnig, Martin Maurer

construction:

Climate-friendly and cycle-effective construction must become the standard, especially in the new construction sector. In order to obtain a concept that is as holistic as possible, all levels of sustainability are considered and incorporated. Everything is planned in the sense of the circular economy, from sufficiency-oriented floor plan design to thought-out conversions to easily detachable superstructures and connections. Each material is used where its material-specific properties can be exploited to the fullest. Due to the acoustic

properties, moisture and fire resistance, the first floor ceiling is concreted. The ceilings on the upper floors consist of a ribbed wooden ceiling with a polished clay finish. The exterior walls consist of non-load-bearing framed wall with wood fiber insulation and ventilated facade. A self-watering balcony zone made of folded metal sheeting acts as a buffer zone. The roof structure consists of a ribbed ceiling with sloped insulation and EPDM waterproofing membranes clamped on the outside.





facade section

City Oasis

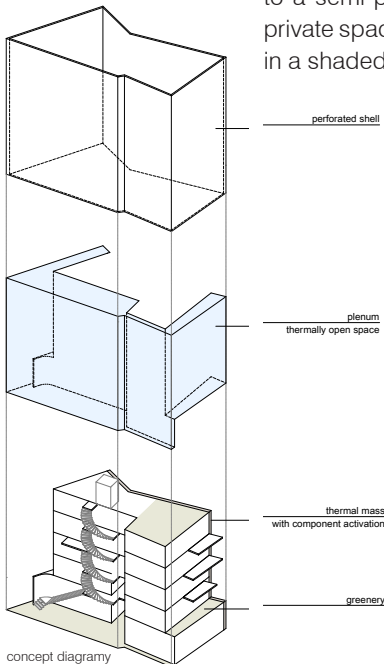
Ana Hilaro, Chiara Stepanek, Larissa Kaltenbrunner, Stefanie Frauenthaler

concept:

Enclosed in a perforated shell, the resilient wooden building is surrounded by an open atrium with greenery. This design element fosters a unique microclimate and atmosphere within the urban setting.

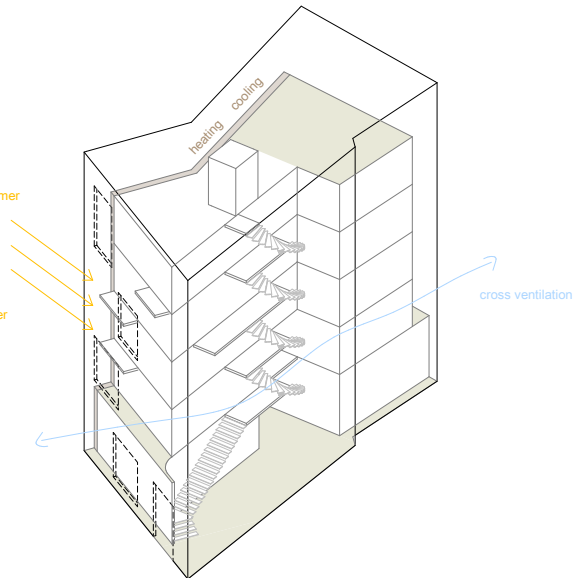
The courtyard, facing the street and easily visible, beckons visitors into the interior, where they are welcomed by a new world—the green urban oasis. The building seamlessly transitions from a public ground floor area to a semi-public first floor, and finally to the private spaces of the apartments, culminating in a shaded communal terrace for residents.

By transforming the staircase from a grand stairway on the first floor to a smaller half-turned staircase on the upper floors, the transition between different areas is subtly conveyed to visitors. The apartment floor plans are flexible, accommodating various configurations for families and shared living arrangements. Sliding doors serve as room dividers, allowing for easy adaptation. Outdoor spaces and common areas are thoughtfully designed, with the atrium and roof terrace capable of being shaded during summer to encourage the growth of an aromatic herbal garden located on projections and setbacks.



no direct solar insolation in summer

direct solar insolation in winter
intern solar gain



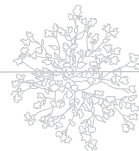
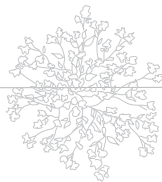


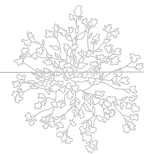
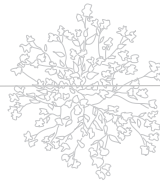
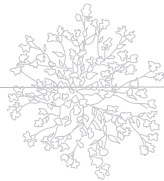
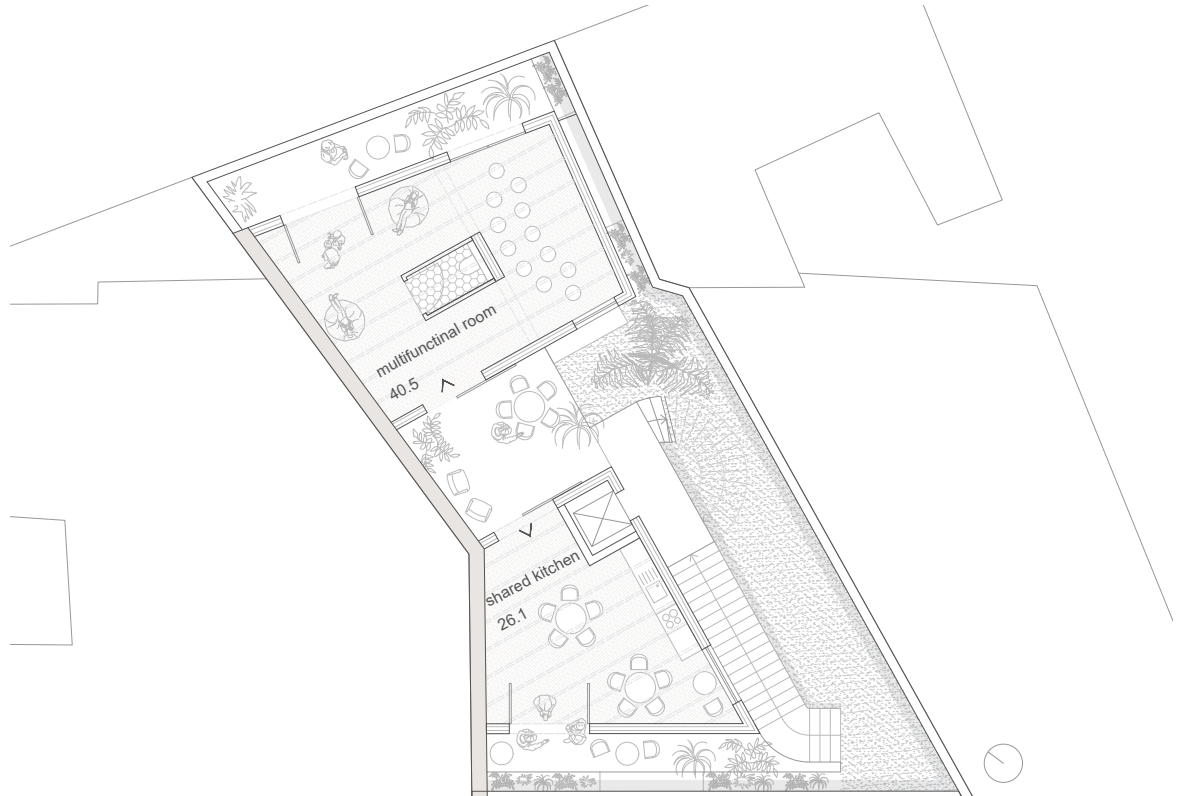
City Oasis

Ana Hilario, Chiara Stepanek, Larissa Kaltenbrunner, Stefanie Frauenthaler



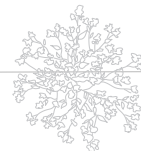
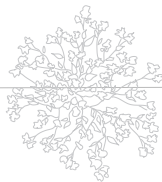
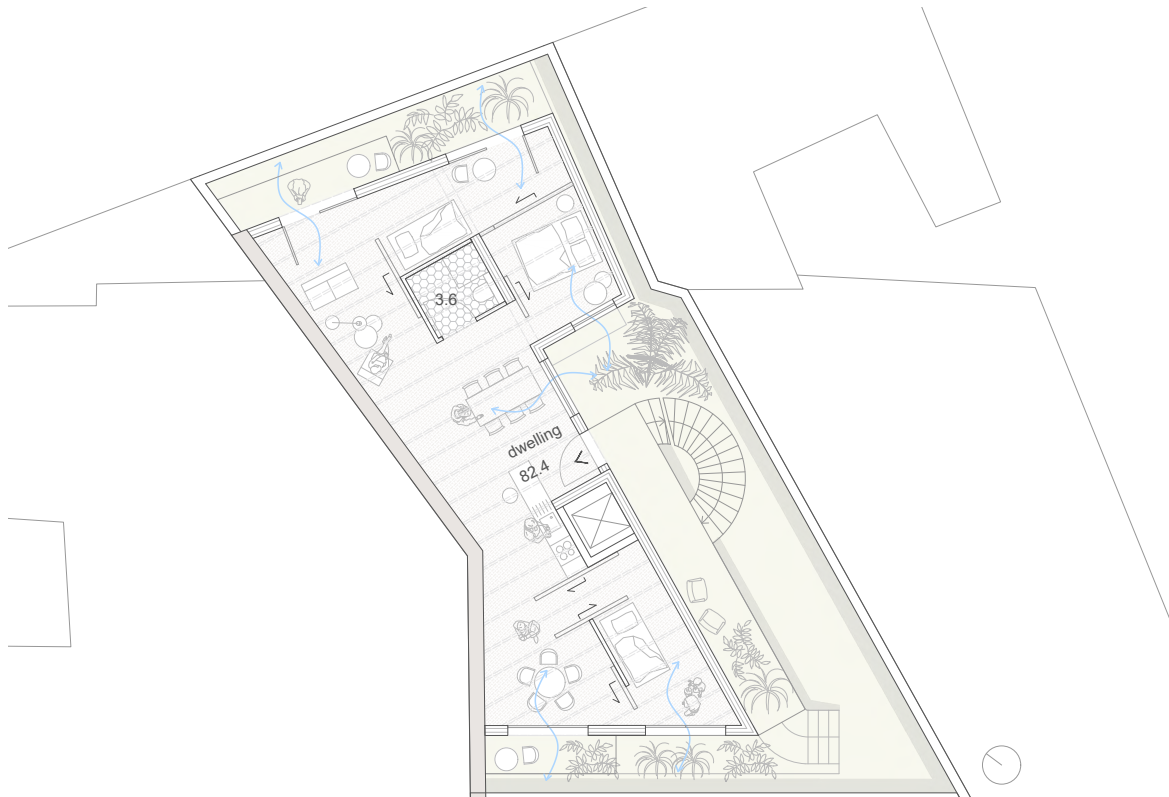
ground floor

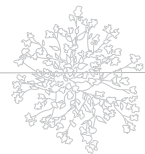
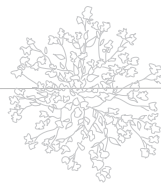
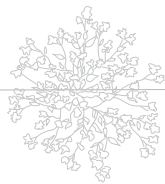




City Oasis

Ana Hilario, Chiara Stepanek, Larissa Kaltenbrunner, Stefanie Frauenthaler





City Oasis

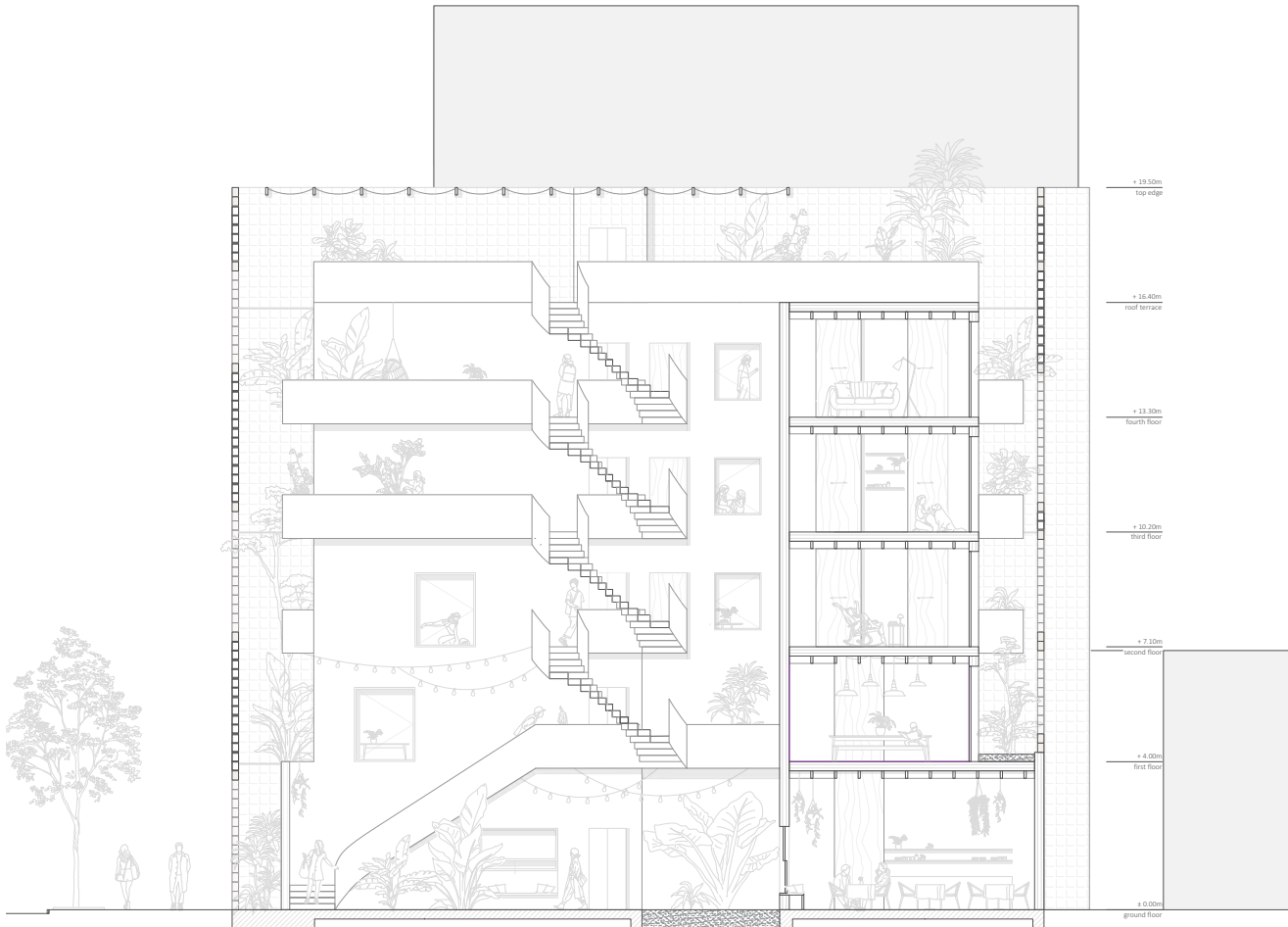
Ana Hilario, Chiara Stepanek, Larissa Kaltenbrunner, Stefanie Frauenthaler



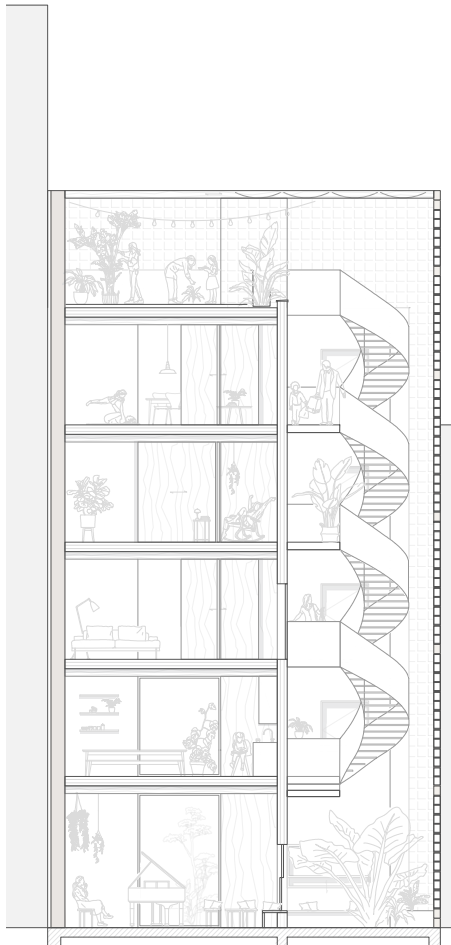


City Oasis

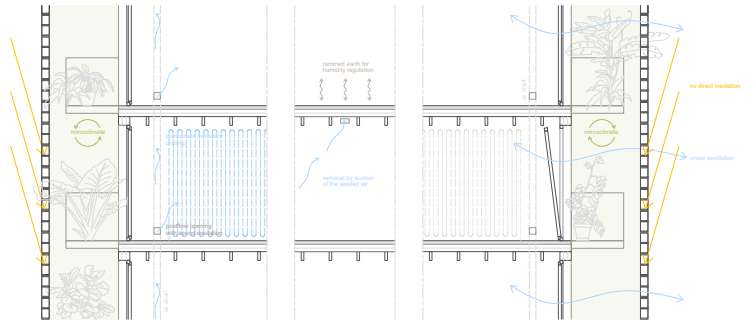
Ana Hilario, Chiara Stepanek, Larissa Kaltenbrunner, Stefanie Frauenthaler



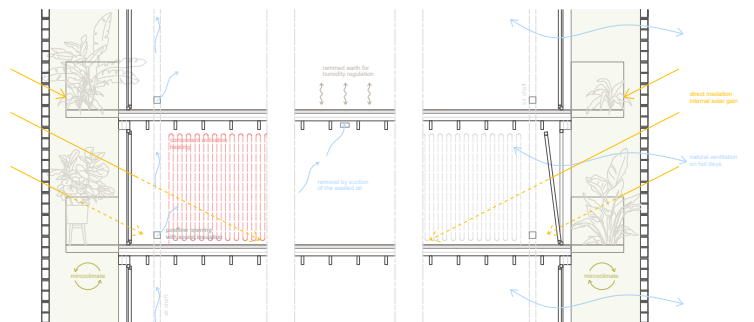
section AA



section BB



climate diagram summer



climate diagram winter

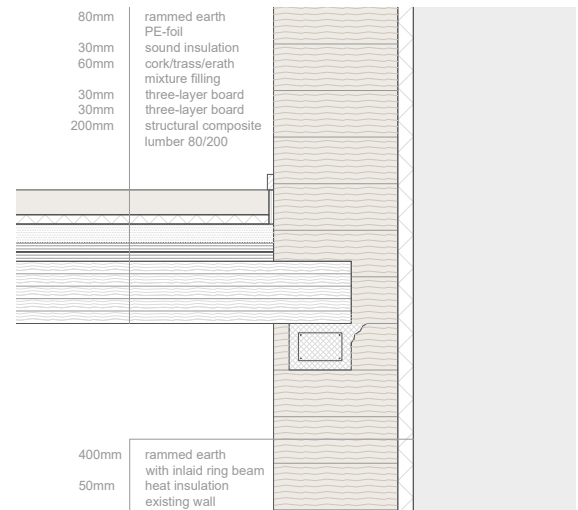
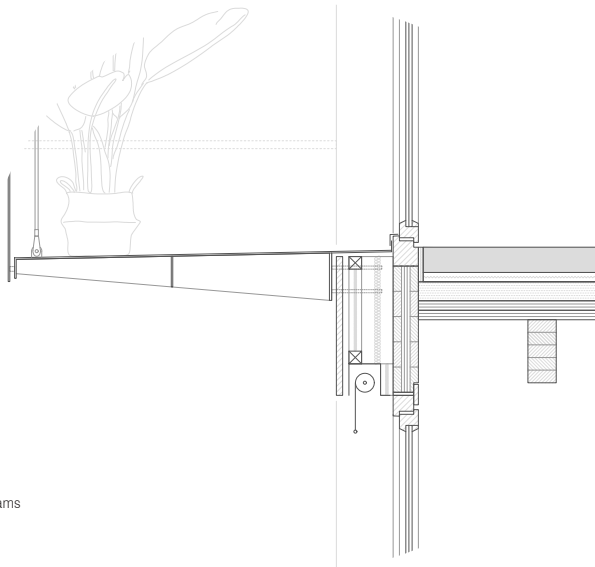
City Oasis

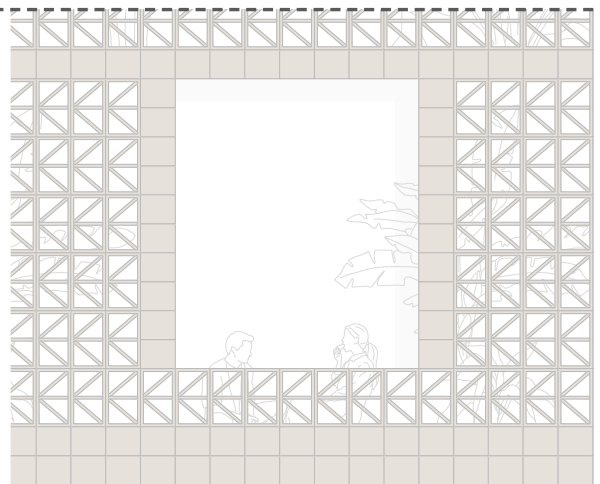
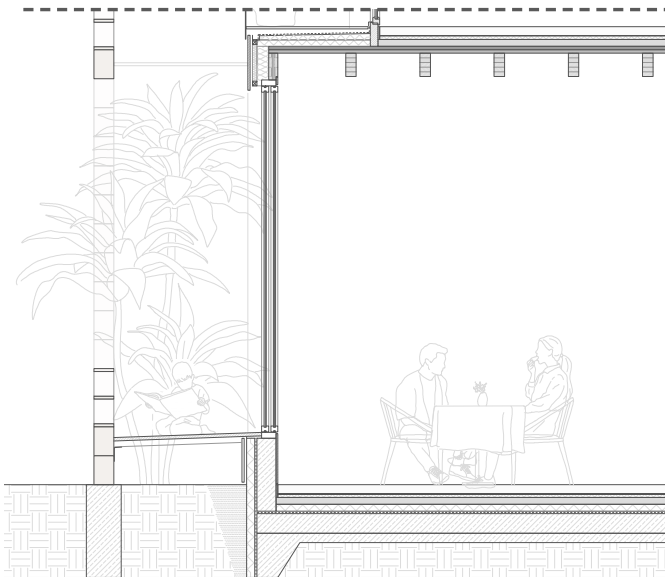
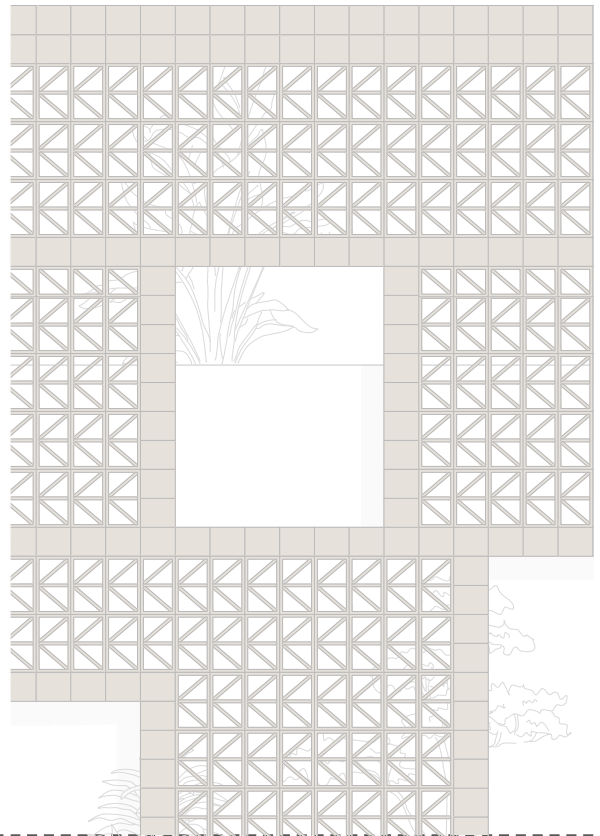
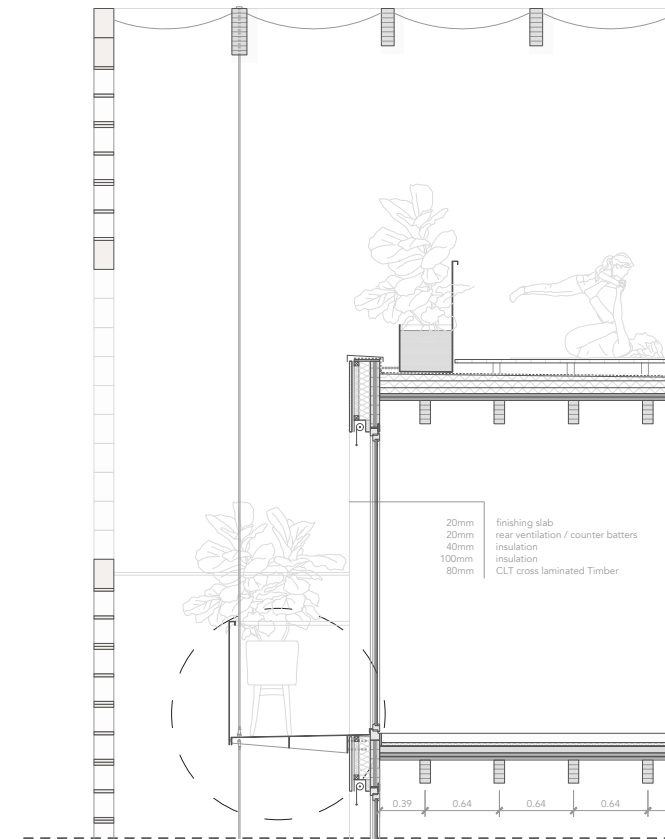
Ana Hilario, Chiara Stepanek, Larissa Kaltenbrunner, Stefanie Frauenthaler

climate and construction concept:

The climatic concept employs low-tech measures that leverage natural processes. The perforated shell acts as a sunshade in the summer, while allowing sun rays to pass through during winter, maximizing solar gain within the interior spaces. Cross-ventilation facilitated by the greened courtyard aids in cooling the space during transitional months. To mitigate extreme hot and cold days, the building incorporates thermal mass activation, utilizing the building components to cool or heat the premises. The rammed earth wall adjacent to the neighboring development acts as the thermal mass, regulating humidity in the air and wood, and is complemented by a rammed earth floor.

Structurally, the exterior walls employ a solid wood construction, minimizing the thickness of the cross-laminated timber through the bracing effect of structural timbers in the insulating plane. The perforated envelope, made of fired clay bricks, is connected to the wooden exterior wall with struts to ensure stability. Ribbed ceilings were chosen to minimize wood consumption and bridge wide spans. The beams extend to the roof, facilitating the attachment of sunshade elements and serving as supports for balconies and the stairway, minimizing the moment at the connection point with the exterior wall.





facade section

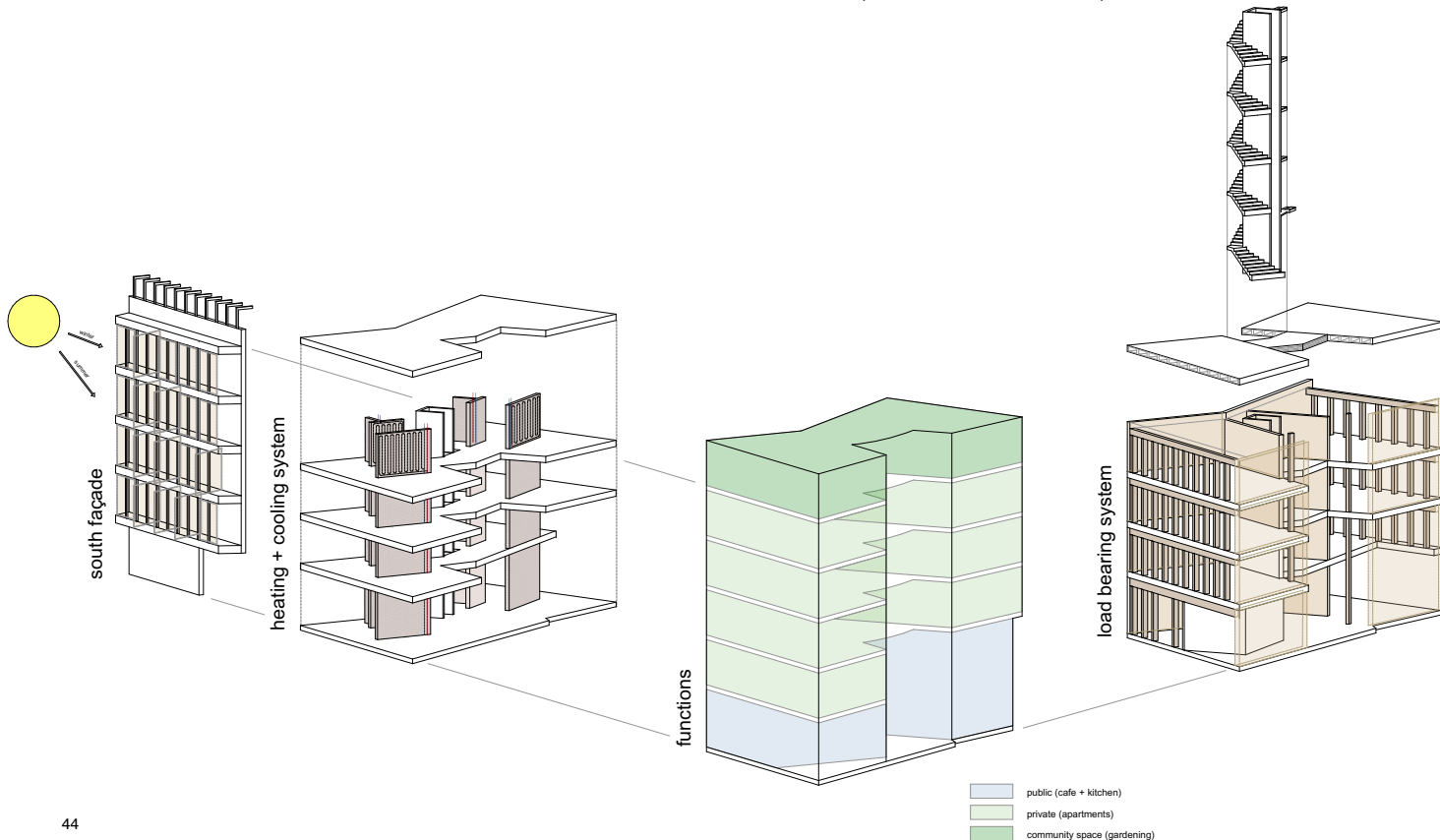
Vamos Holzbau

Theresa Kurtz, Martin Raid, Viktoriya Yeretska, Lisa Santillian Espinosa

concept:

The building volume is separated in two parts because of the depths of the building site. The groundfloor is mainly used publicly, offering a café and a communal kitchen. The upper floors are used for social housing with a roof terrace that can be used by all residents. In the middle, the two volumes

are connected via an external staircase, creating a balcony which is the access to each apartment. The staircase opens up to a courtyard, bringing in light and fresh air. The apartments are organized in a flexible way with only a few fixed walls, so that a variety of floor plan constellations are possible.





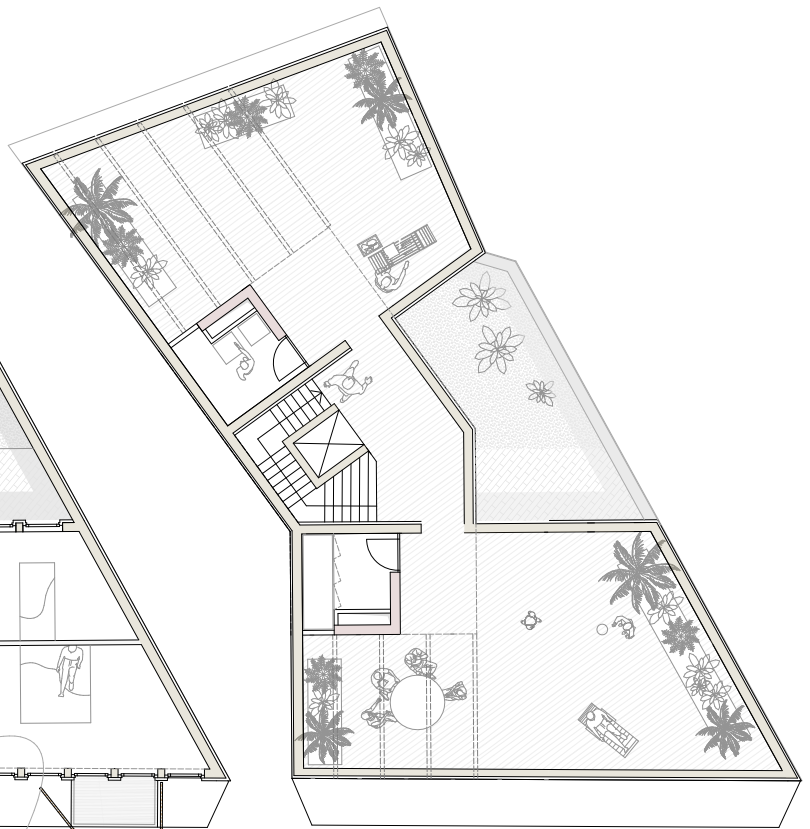
Vamos Holzbau

Theresa Kurtz, Martin Raid, Viktoriya Yeretska, Lisa Santillian Espinosa





standard floor



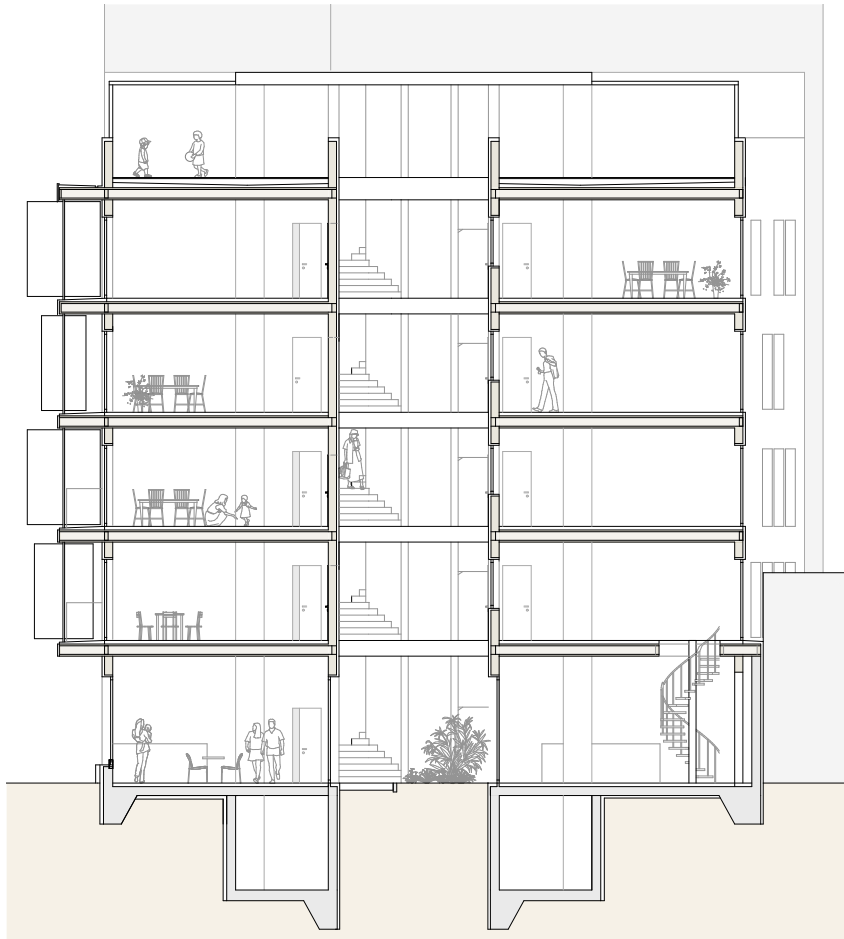
fifth floor

Vamos Holzbau

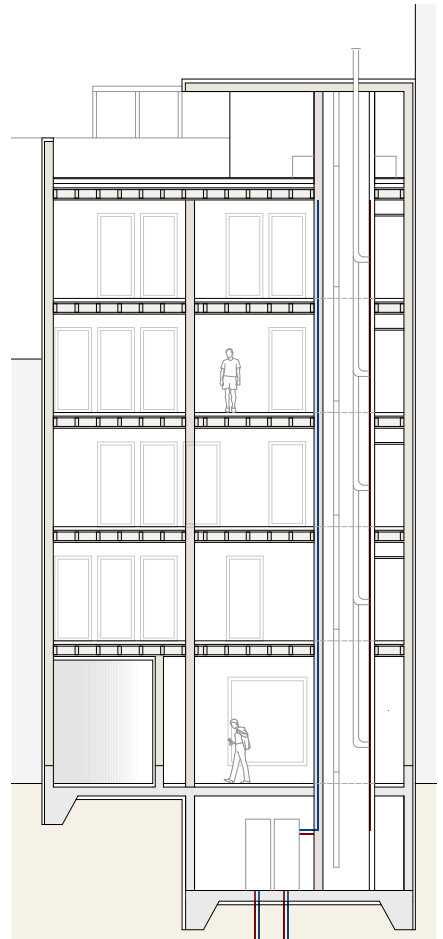
Theresa Kurtz, Martin Raid, Viktoriya Yeretska, Lisa Santillian Espinosa



0 1



section AA



section BB

Vamos Holzbau

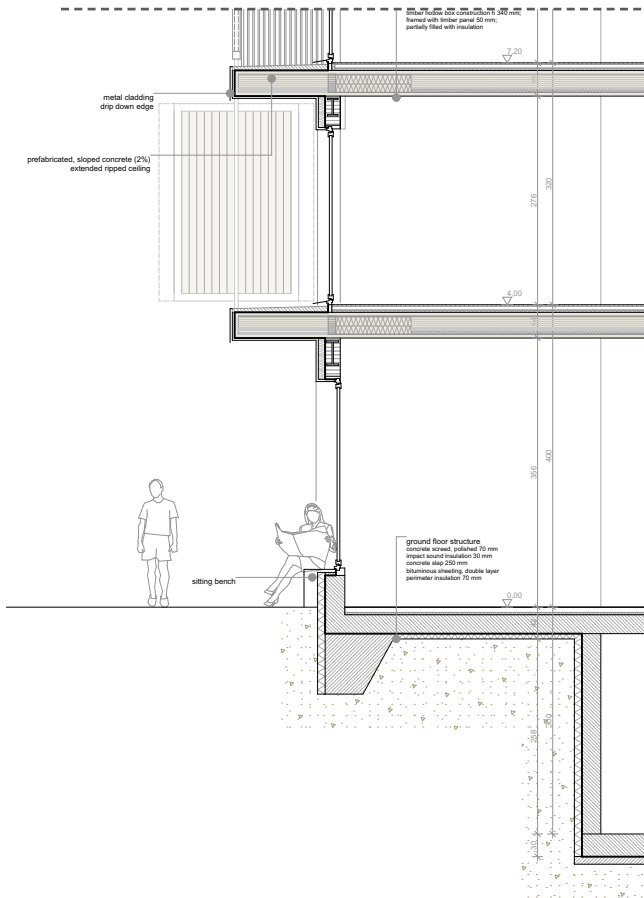
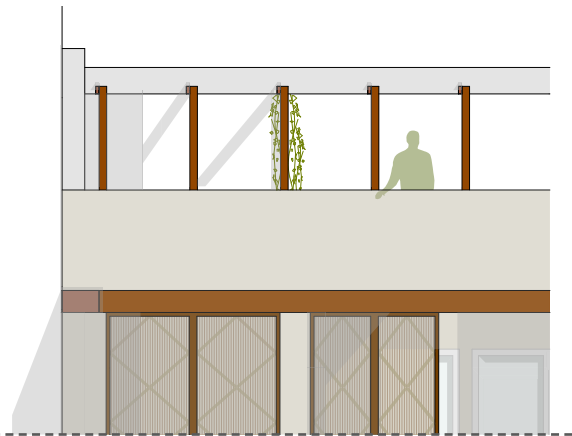
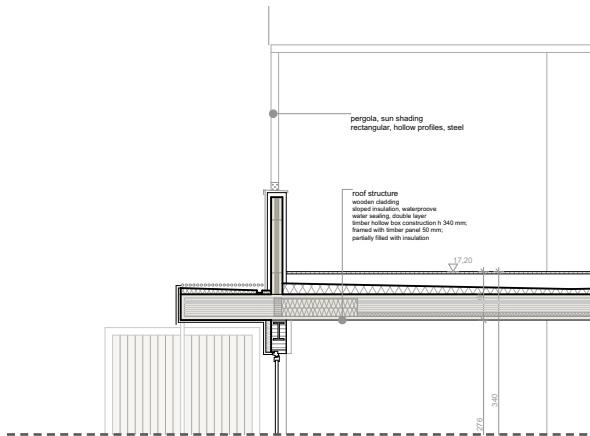
Theresa Kurtz, Martin Raid, Viktoriya Yeretska, Lisa Santillian Espinosa

construction and climate concept :

Heating and cooling is achieved through water pipes running through these brick walls and make them function as activated components. The energy for this climate concept comes from geothermal heat using the steady temperature of the ground.

The south façade is extended outwards, creating balconies with shading elements made out of wood. These panels can be rotated manually, letting sun in during colder months and blocking it in the summer.





facade section

Wood like to live

Victoria Mayer, Julia Westreicher, Víctor Benlloch

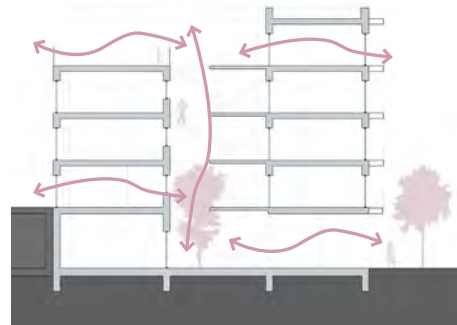
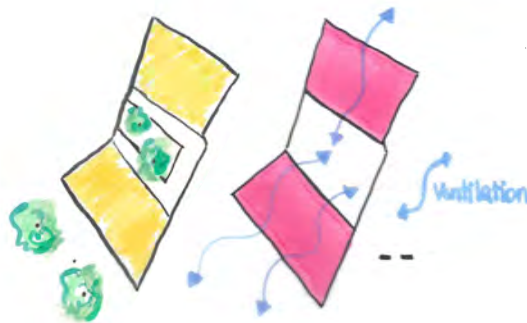
concept:

Our design concept for the building consists of two cubes that enclose a central green inner courtyard. This courtyard, which acts as the heart of the building, contains the central, vertical access and at the same time ensures optimal ventilation of the apartments and promotes the circulation of air within the building.

The cube facing the street houses a small, open shop area on the representative ground floor. The apartment types consist of a studio apartment and a 2-room apartment. We have opted for relatively small apartments to create affordable housing for singles, young couples, and students in Valencia. These apartments are intended for short-term

occupancy and offer a pleasant and cozy home despite their location facing the street. The cube facing the quiet backyard comprises an open work area over two floors, which offers a concentrated and relaxed working atmosphere, with a view of the green inner courtyard. In addition, on the third floor, we have opted for a spacious 3-room apartment that can accommodate a family or can also be used as a shared apartment. This apartment is designed to offer longevity and create a cozy home.

We plan to offer the residents an opportunity to relax and escape from everyday life with a spacious roof terrace in the rear cube, which invites you to relax, drink coffee, and read.





Wood like to live

Victoria Mayer, Julia Westreicher, Víctor Benlloch



ground floor

first floor



second and third floor

fourth floor

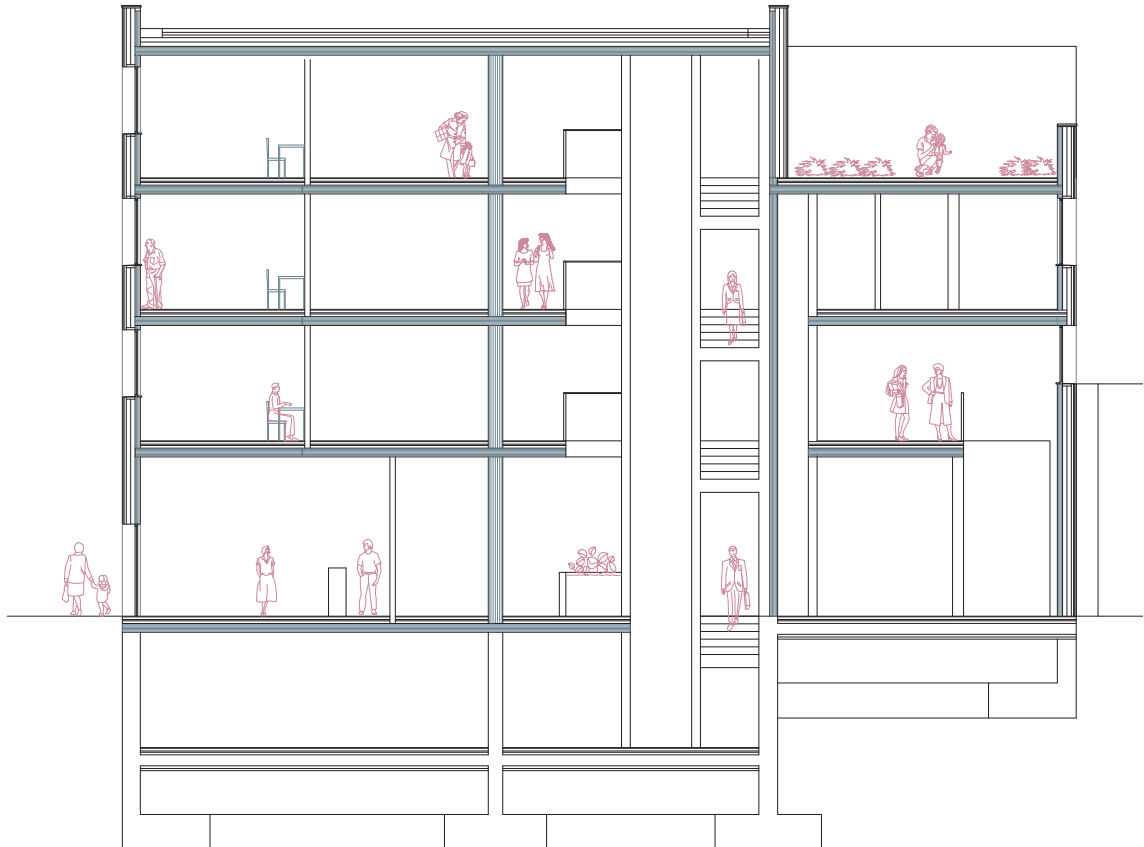
Wood like to live

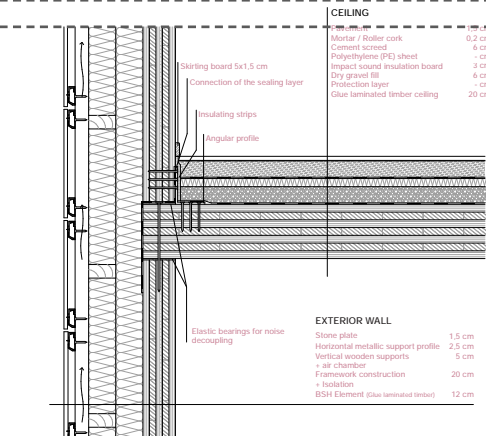
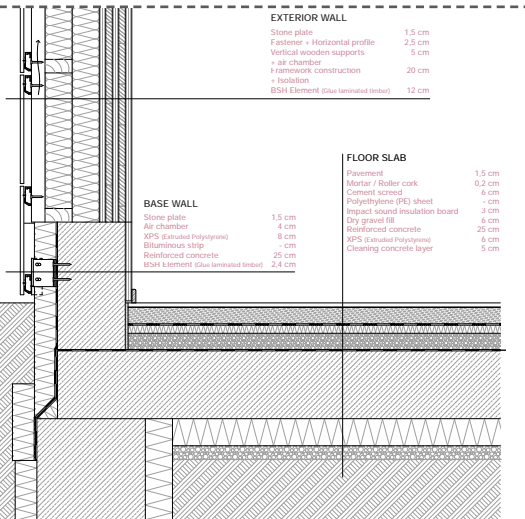
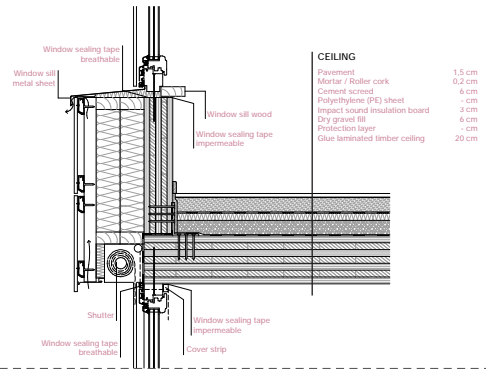
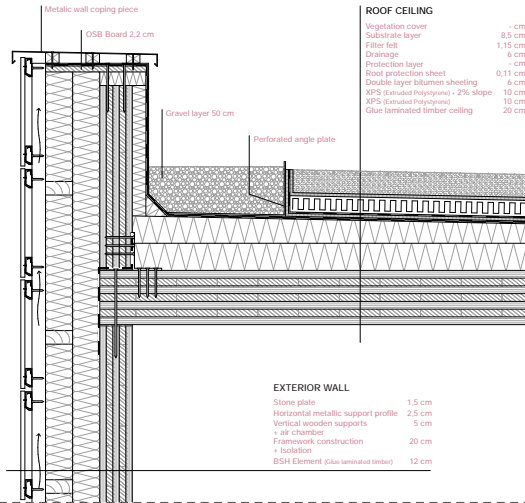
Victoria Mayer, Julia Westreicher, Víctor Benlloch

construction:

The construction consists of solid wood with glulam panel elements, which offers flexibility in the floor plans and can span large spans. The façade construction consists of a ventilated stone slab façade, which serves as a thermal mass and absorbs the heat of

the day to create a cool indoor climate inside. Rotating wooden slats are used as sun protection in the south, which not only serve as shading but also as privacy screens and prevent heating through windows.





House for Summer/for Winter

Alicia Correcher Parra, Kimberley Tirira Carlosama, Robbe Broothaers, Ingo Candussi, Daniel Lučić

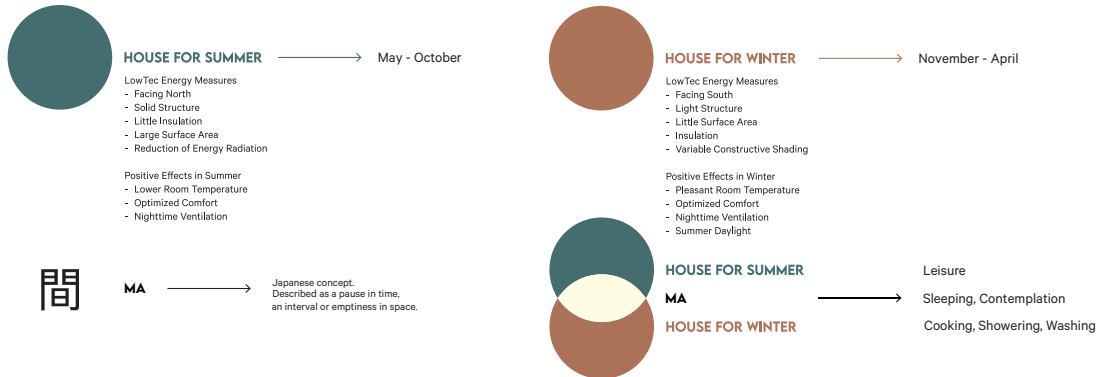
concept:

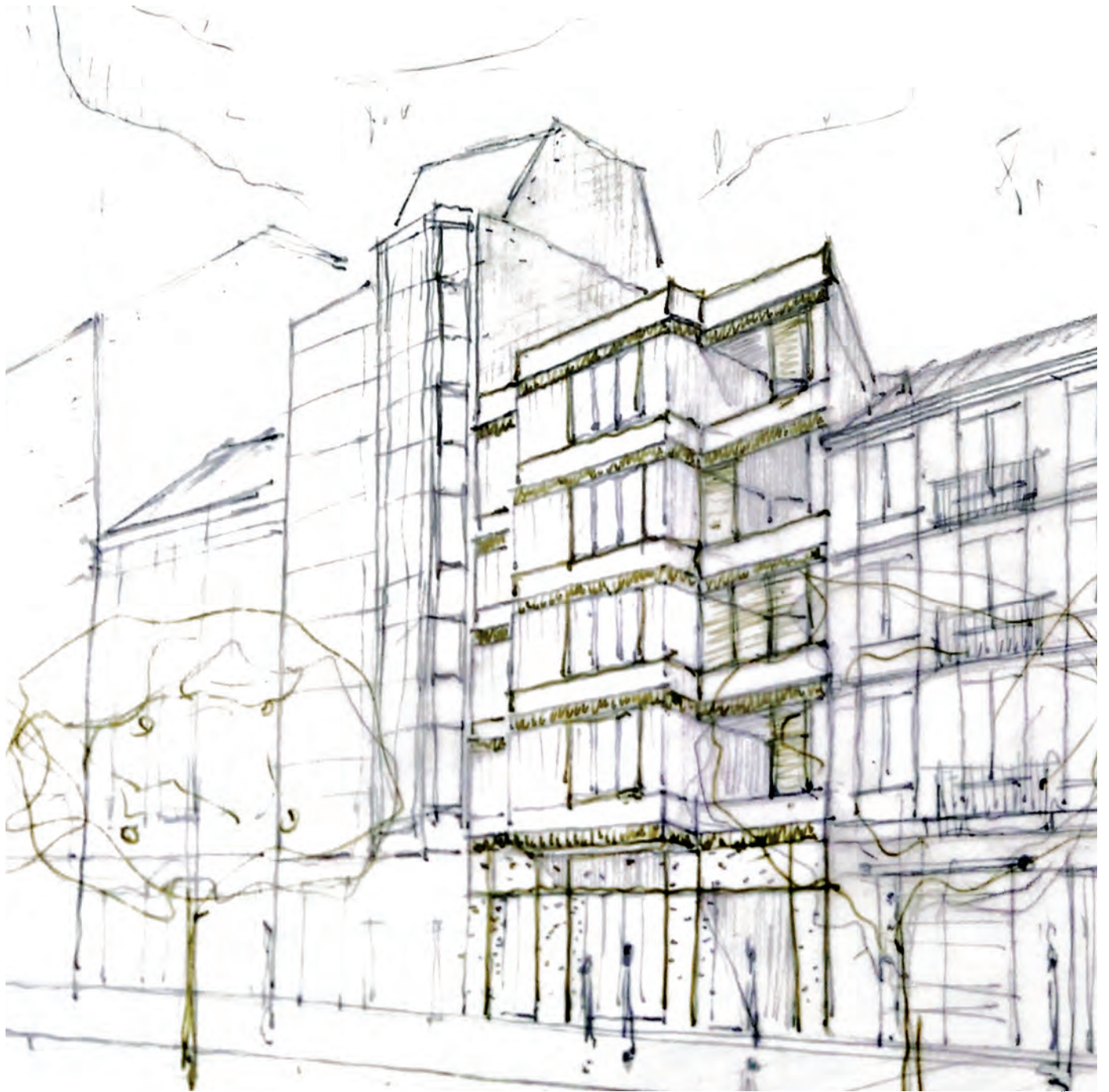
Valencia is a city known for its rich cultural heritage and architectural diversity. While traditional stone and masonry structures dominate the historical landscape, the integration of wooden buildings has added a contemporary touch to the urban fabric. These wooden structures, whether they are modern designs or restored historic architecture, showcase the city's commitment to combining tradition with innovation, creating a unique and harmonious blend of old and new in the heart of Valencia.

The design of the 120sqm residential building „House for Summer/for Winter“ in Valencia integrates seamlessly into the urban environment. The first floor serves as a public zone, providing access to the residential floors above. To enhance natural lighting and ventilation on lower floors, an atrium is incorporated, dividing the residential units.

The project's main idea focused on addressing the climatic conditions of Valencia. Analysis revealed that the average temperature never drops below 7°C, even during the cold season. While the summer nights are hot due to the surrounding sea and increased humidity. To mitigate these factors, the design implements low-tech measures.

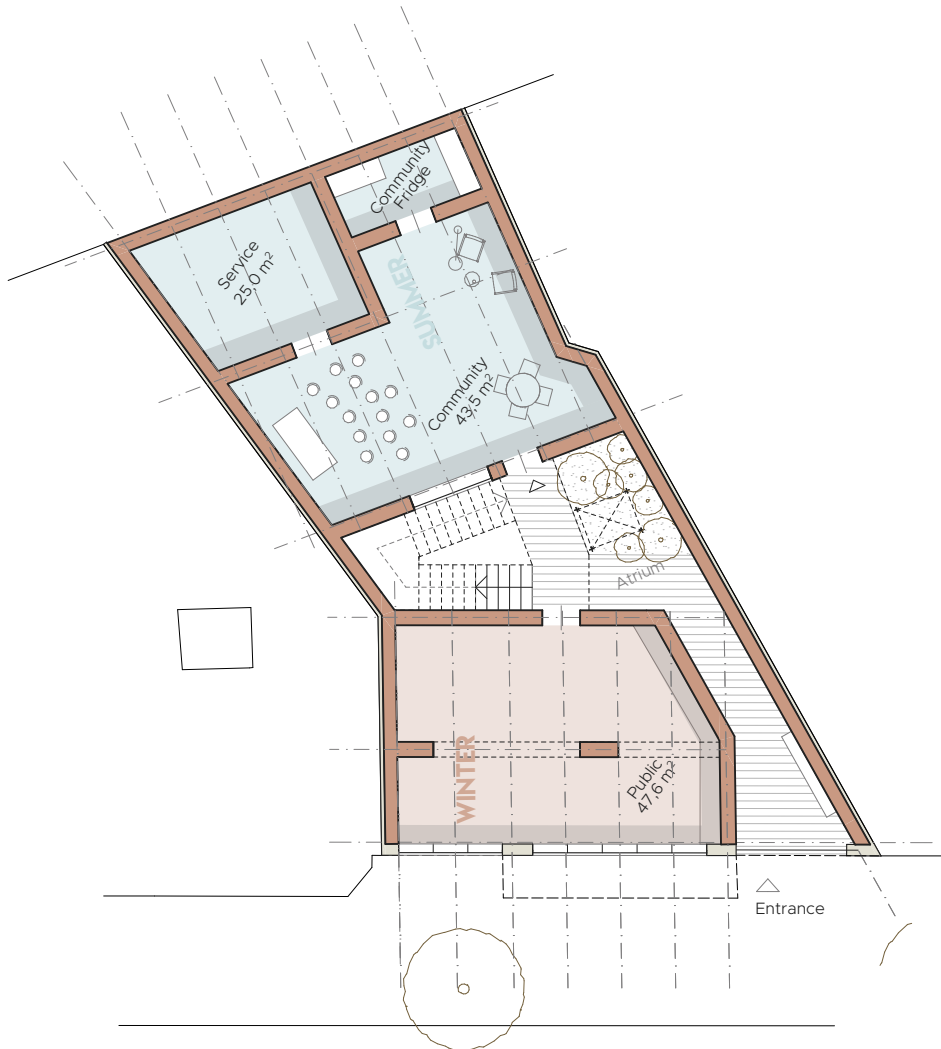
To create a thermal gradient across each residential unit, the project resulted in a house for the summer, a house for the winter, and a buffer zone in between. The summer house, oriented to the middle, features solid construction with minimal insulation and avoids heat-emitting activities. This design aims to keep the rooms comfortably cool during summer, without requiring mechanical cooling.



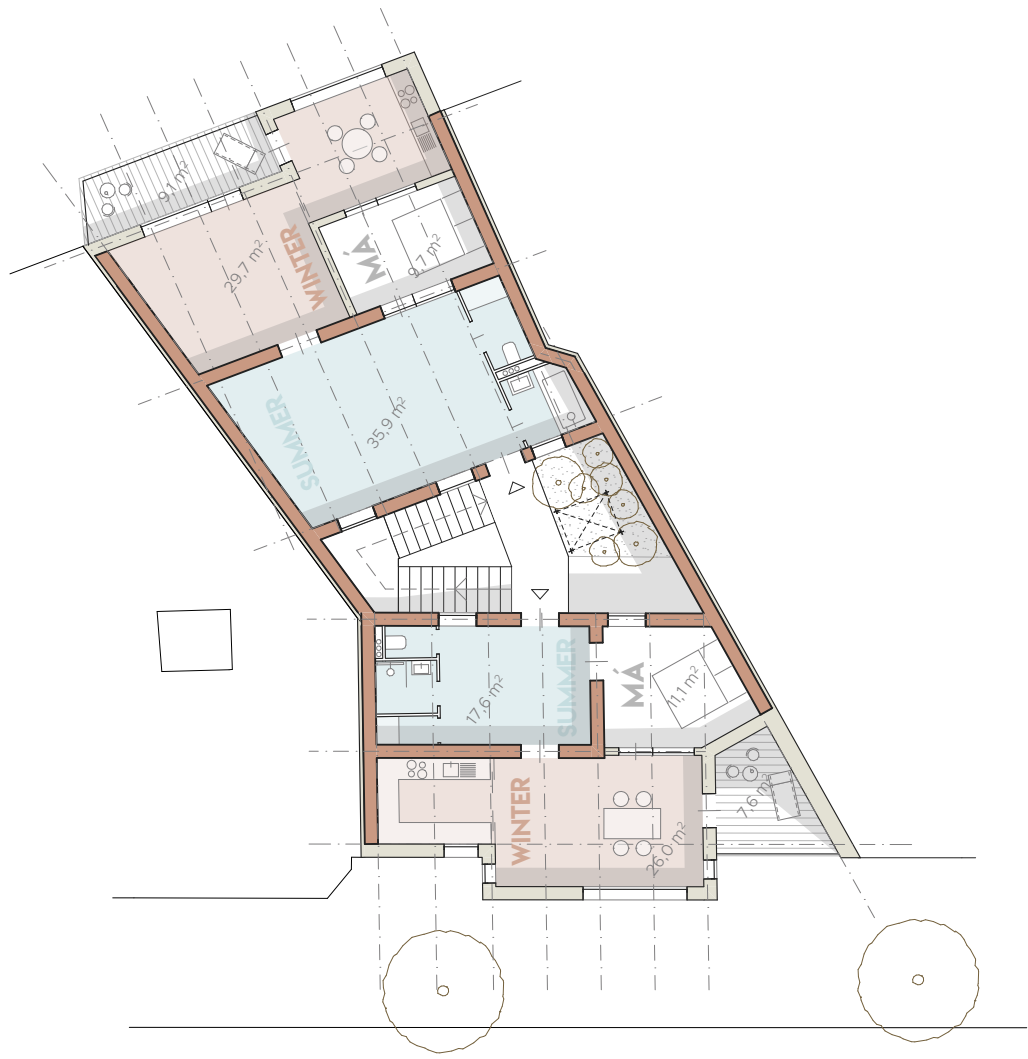


House for Summer/for Winter

Alicia Correcher Parra, Kimberley Tirira Carlosama, Robbe Broothaers, Ingo Candussi, Daniel Lučić



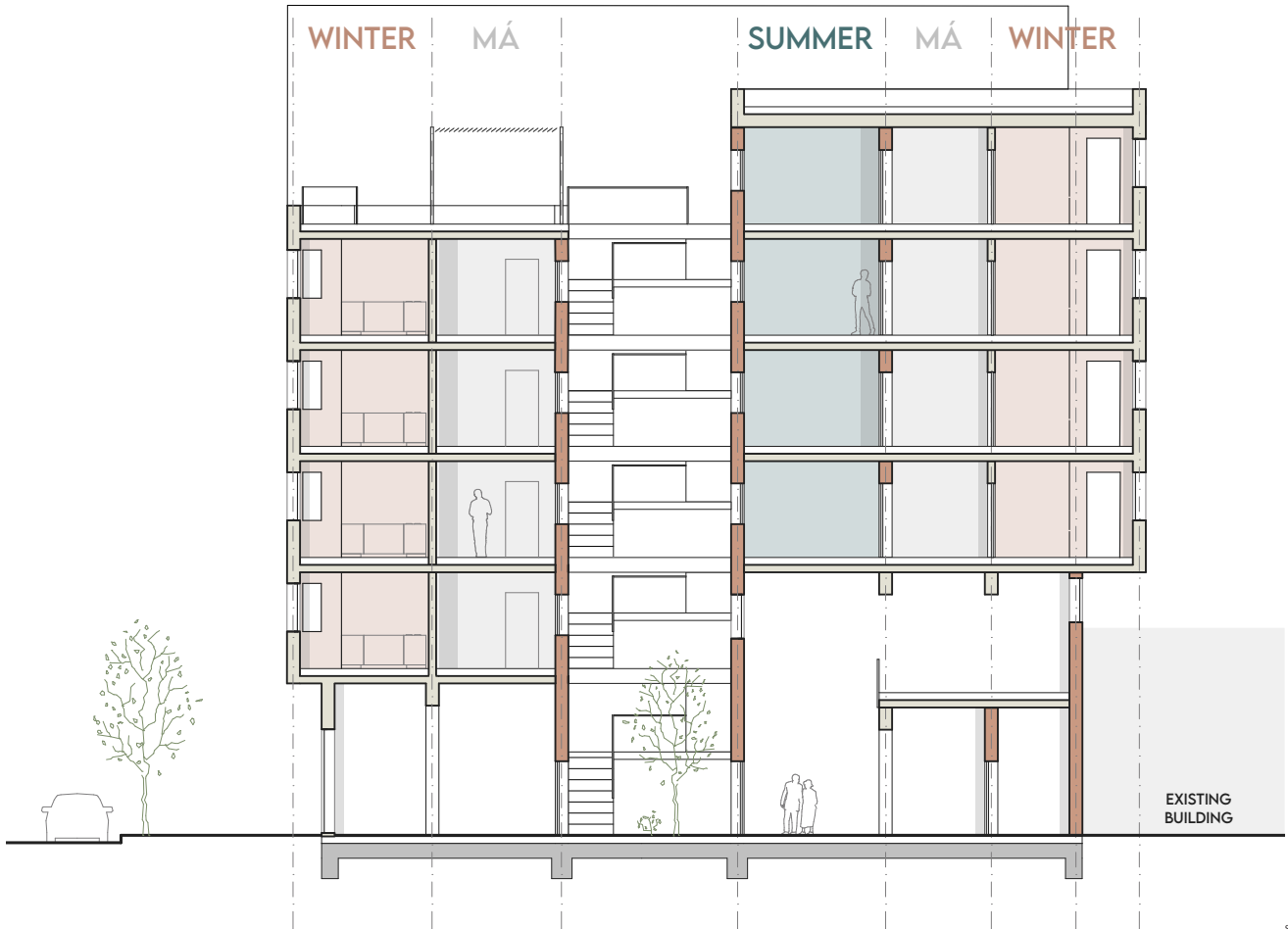
ground floor



House for Summer/for Winter

Alicia Correcher Parra, Kimberley Tirira Carlosama, Robbe Broothaers,
Ingo Candussi, Daniel Lučić





House for Summer/for Winter

Alicia Correcher Parra, Kimberley Tirira Carlosama, Robbe Broothaers, Ingo Candussi, Daniel Lučić

construction:

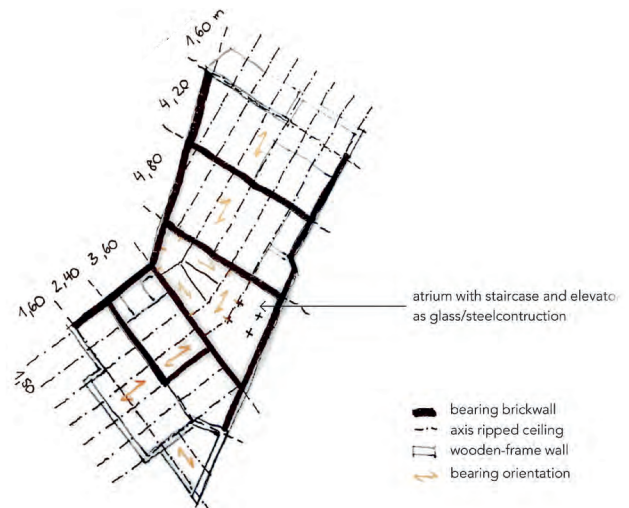
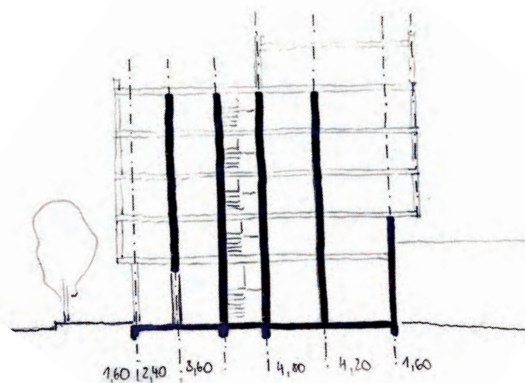
Due to the low-tech approach, the architecture is focused on the constructive idea. The project incorporated multiple layers, with an open patio and apartment entrances at the centre.

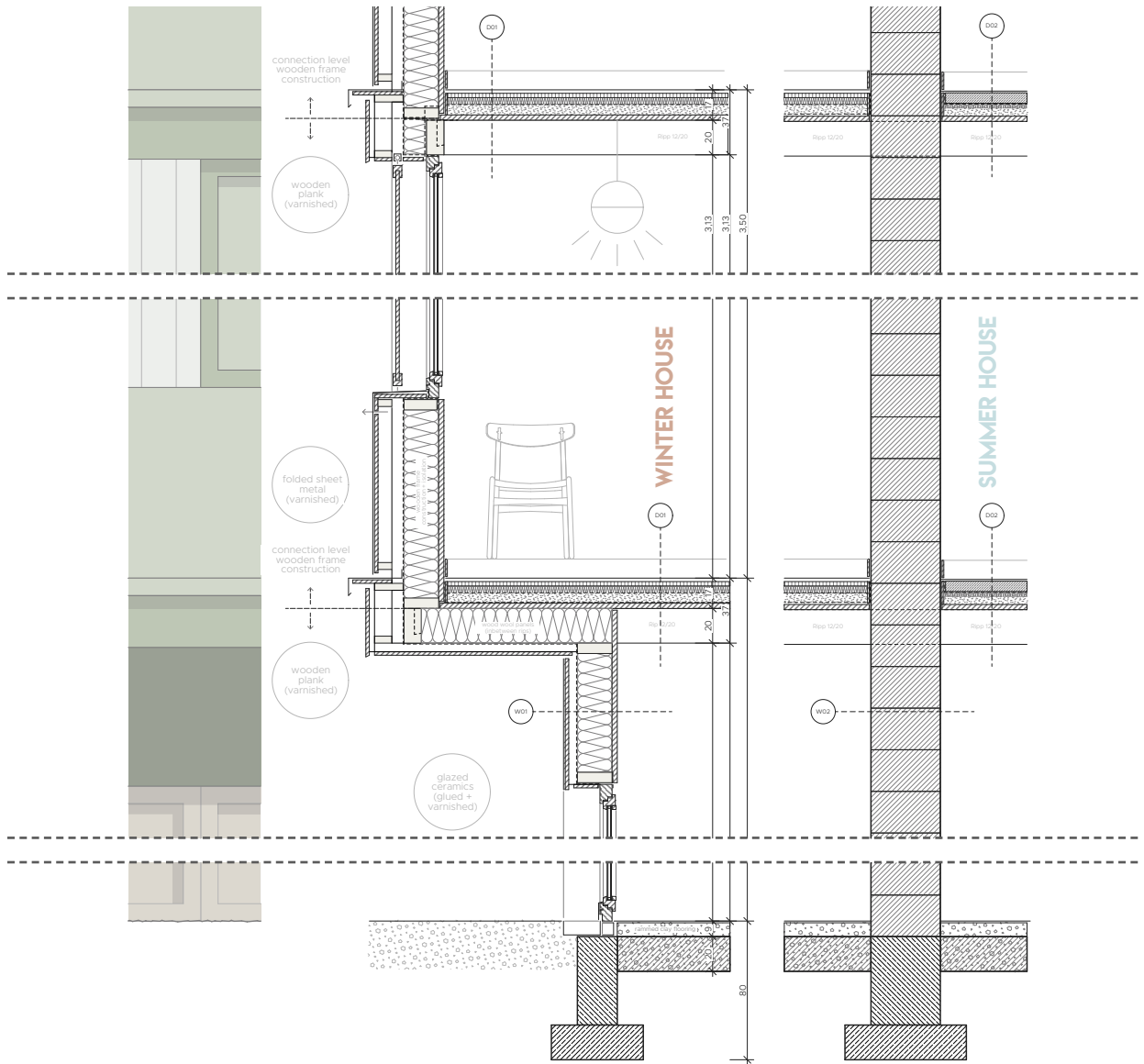
The atrium and the first area of the flats were constructed with bearing brick walls and a ripped ceiling topped with a cement-based screed. These materials possess high heat storage capabilities and shield the inner layer from direct sunlight, maintaining cooler temperatures during hot days. This zone represents the summer house.

On the outer layer, which experiences direct sunlight exposure, a lightweight and well-insulated timber-frame construction was employed.

Instead of a cement-based screed, a dry screed was used. Manual sliding elements allow shading. The low heat capacity of this building area prevents heat storage and facilitates night-time ventilation and cooling. This area is referred to as the winter house.

The concept demonstrates a harmonious co-existence with the climate, incorporating natural elements and allowing user-dependent control over thermal comfort through the manipulation of windows and doors. It serves as an example of building design that adapts to the environment and individual needs, contributing positively to the dialogue on climate and energy conservation.





Photos

excursion to Valencia





Photos

excursion to Valencia





Photos

excursion to Valencia





Photos

excursion to Valencia





Photos

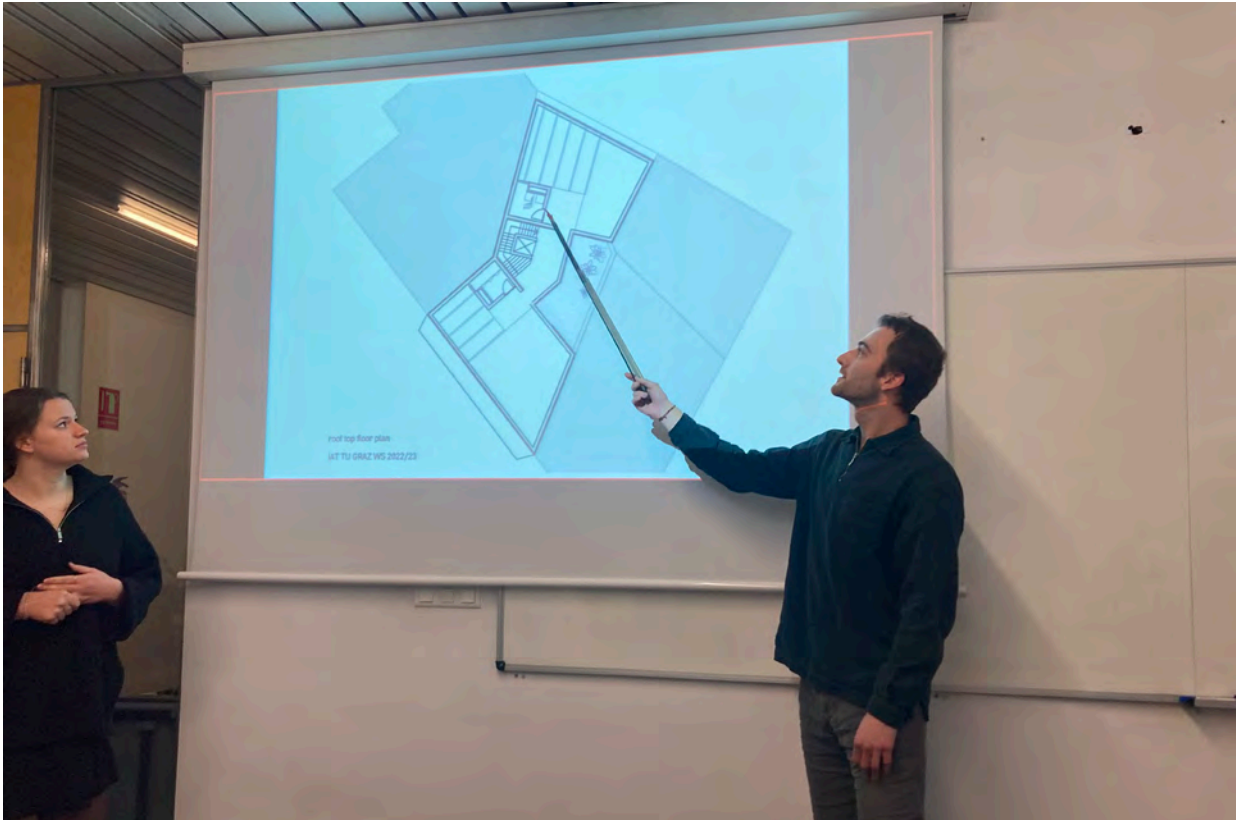
excursion to Valencia

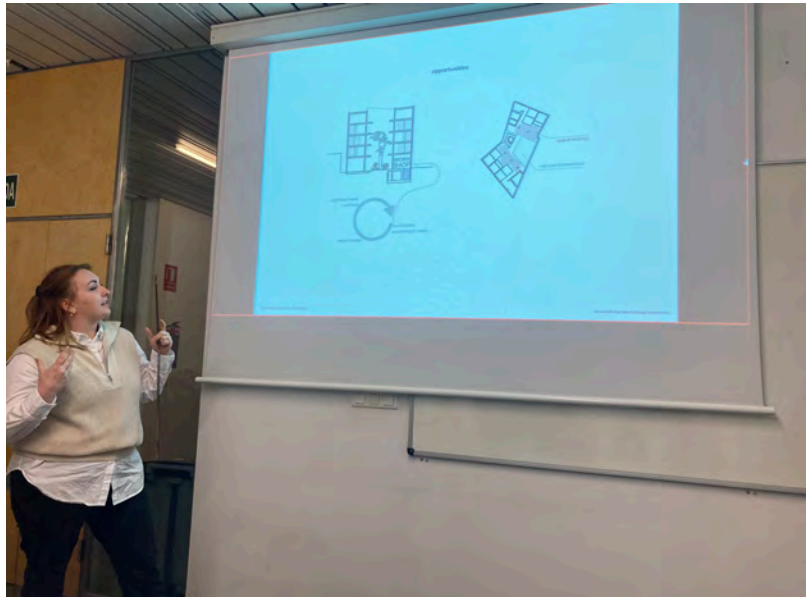
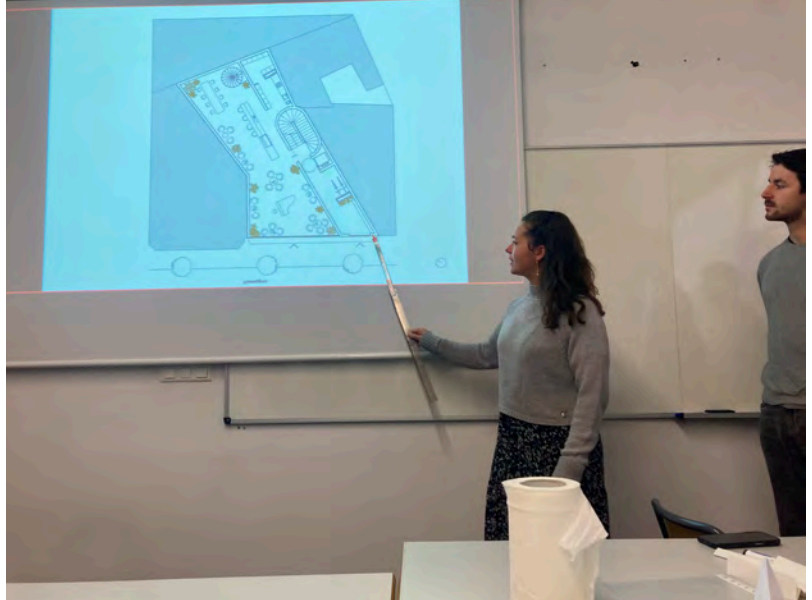




Photos

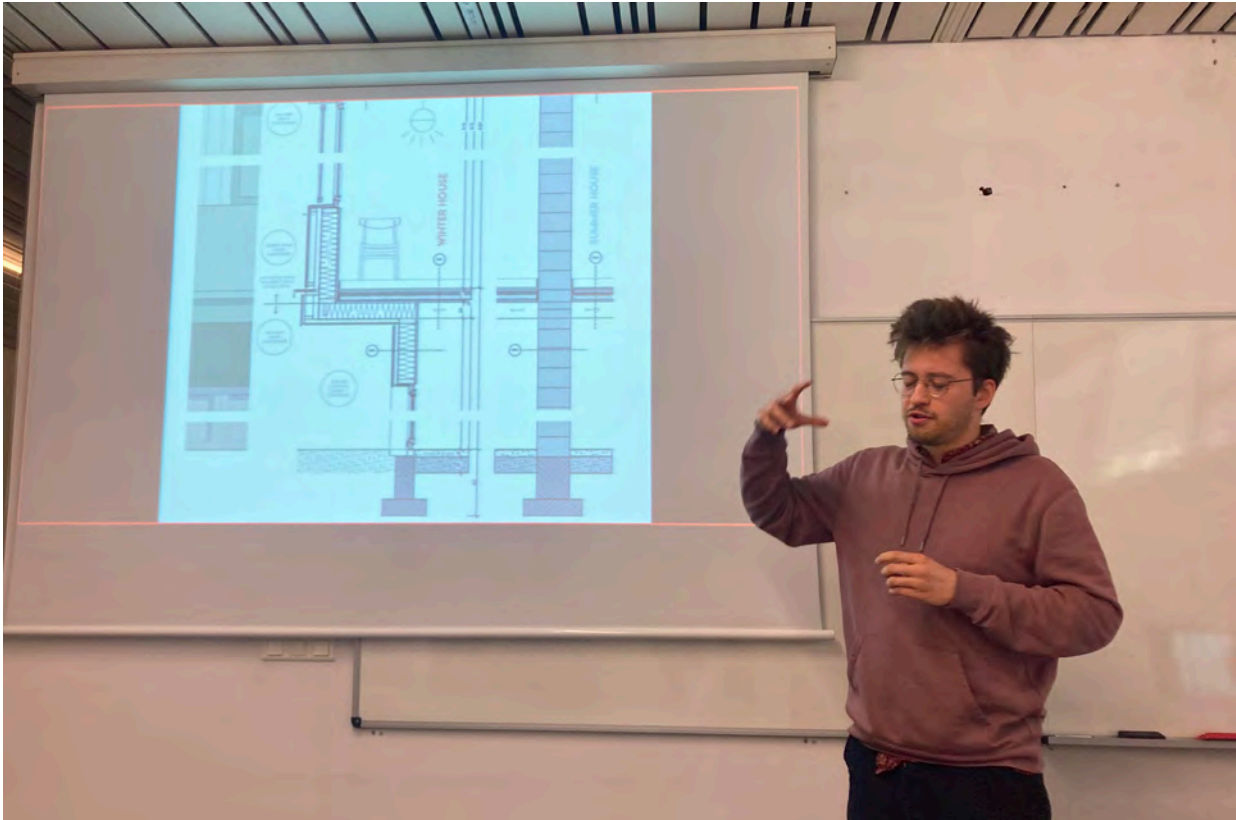
final presentation at the UPV

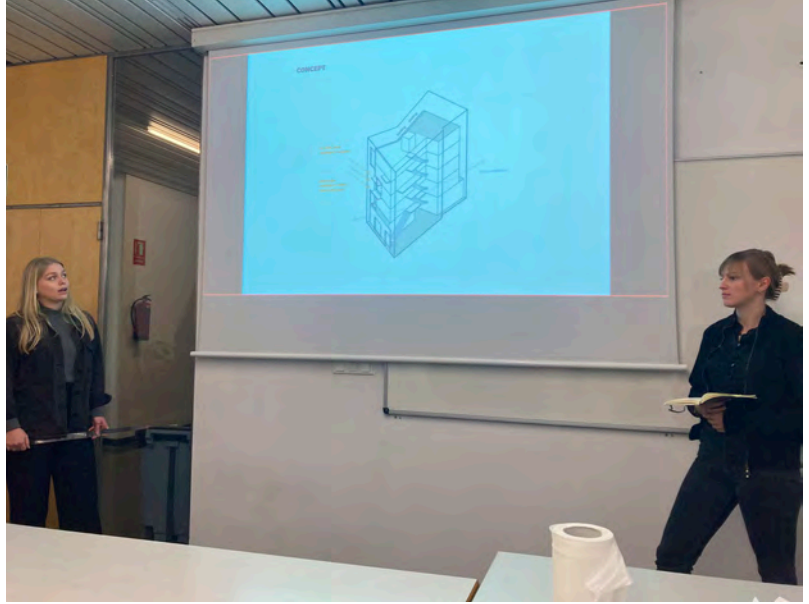




Photos

final presentation at the UPV







UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA



IAT | Professur für
Architektur und Holzbau

Inprint

Contextualization Timber Construction iVamos Holzbau!

October 2023

Institut für Architekturtechnologie
Professur für Architektur und Holzbau
Technische Universität Graz
Rechbauerstraße 12, 8010 Graz

Escuela Técnica Superior de Arquitectura
Dpto. de Mecánica de los Medios Continuos y Teoría de Estructuras
Universitat Politècnica de València
Camino de Vera, s/n, 46022, València

www.iat-holz.tugraz.at

concept and realization_Bettina Gossak-Kowalski, Dipl. Ing.
Alex Dengg, Dipl. Ing.
Full prof. Agustín Pérez García
editing and layout_Elisabeth Beis Stud. Ass.
Anja Zamuda Stud. Ass.

ISBN 978-84-09-52844-8

copyright_This brochure including all contents is protected by copyright. All rights reserved. Reprinting or reproduction (including excerpts) in any form (print, photocopy or other process) as well as storage, processing, duplication and distribution using electronic media of any kind, in whole or in part, is prohibited. All translation rights reserved.