

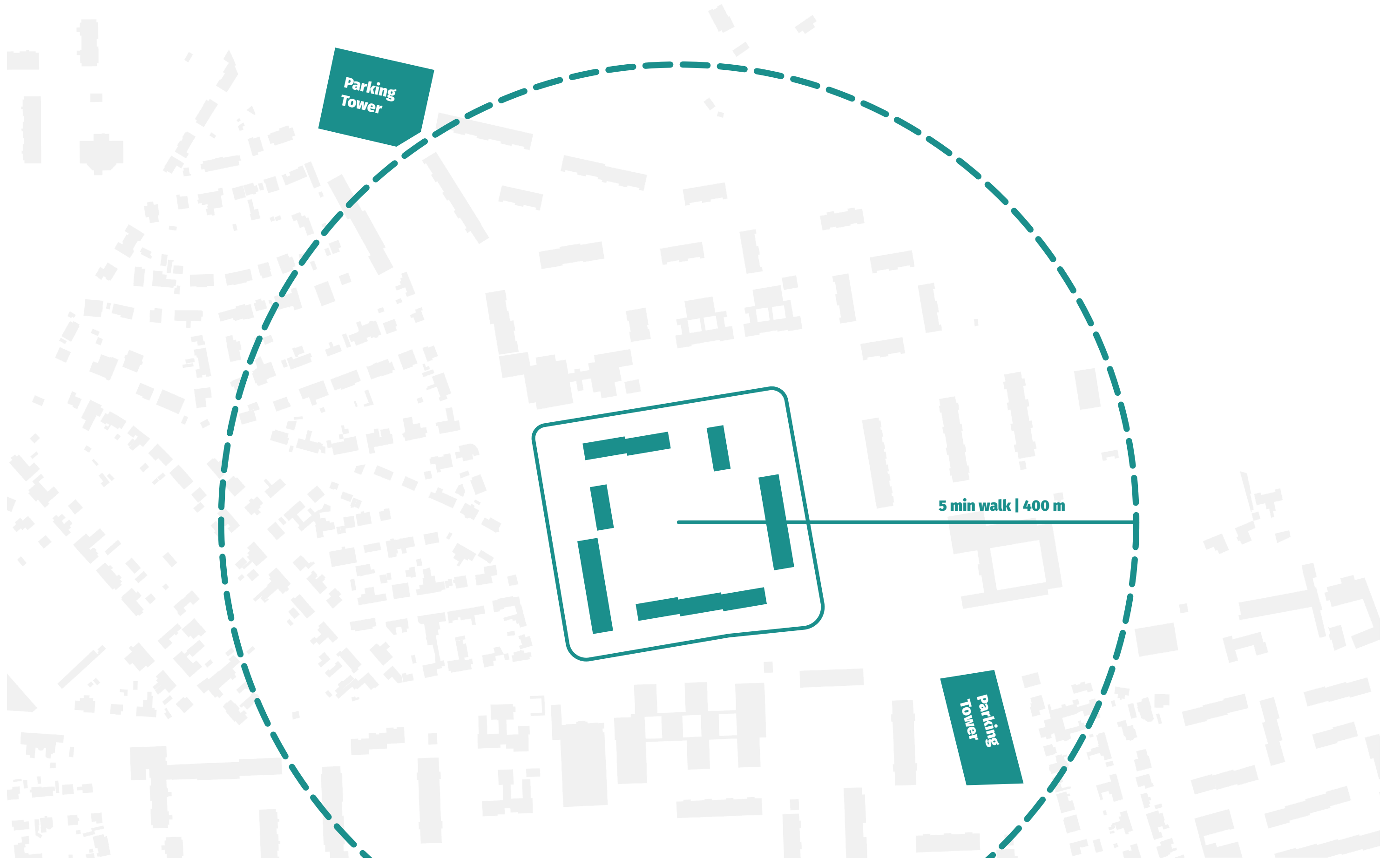
DESIGN DRAWINGS

ŠIMON KNETTIG



BACK TO THE USER

*Shaping the user experience of architecture
through evidence-based design*



P

Parking—provided but limited

Car access is crucial for various needs, such as moving large items or transporting disabled individuals. However, cars and their parking spots can also create barriers for pedestrians, reducing interaction opportunities. To balance these needs, inhabitants or visitors can park their cars briefly at the edges of the urban block. For longer-term parking, large centralized facilities are located around the district, within a five-minute walk.

Derived from experts' proposals

5-minute-walking distance

Jungle

Large empty areas between modernist apartment blocks are challenging to maintain both technically and financially. Instead of over-programming these spaces, dense forestation is proposed to integrate nature into urban life and increase biodiversity levels.

Chosen by majority of users

Food/drinks kiosk

To foster relationships and interactions among neighbors, modular kiosks offer small refreshments and shelter with a convenient view of children playing nearby.

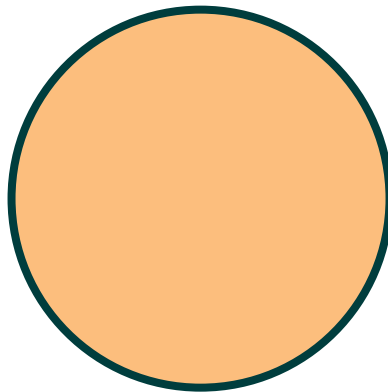
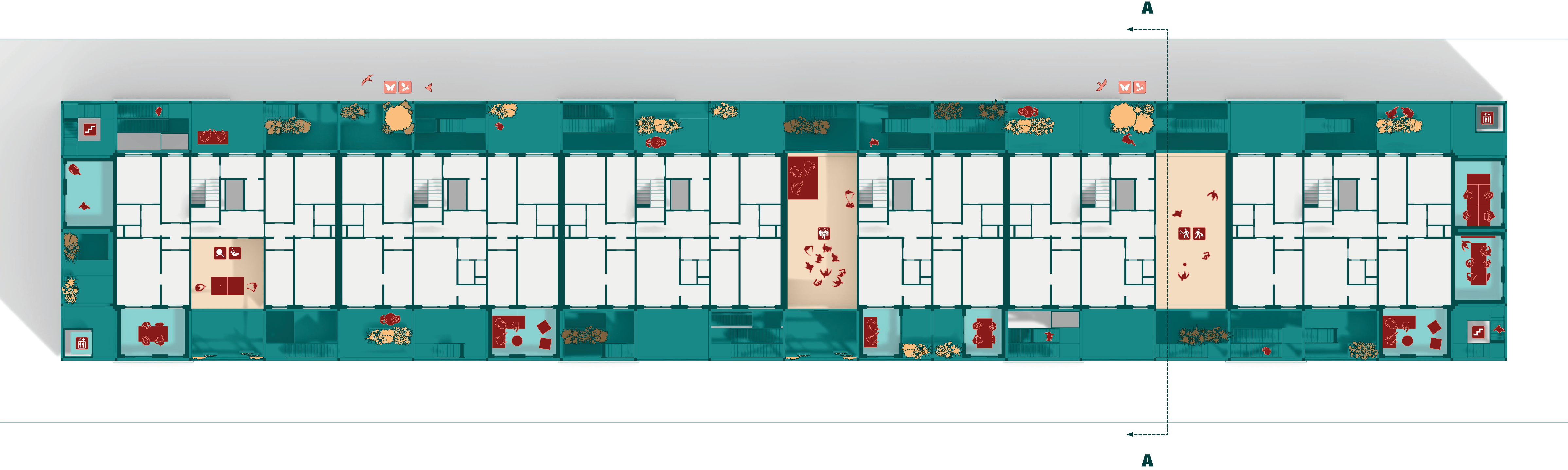
Proposed edit by users

Playground

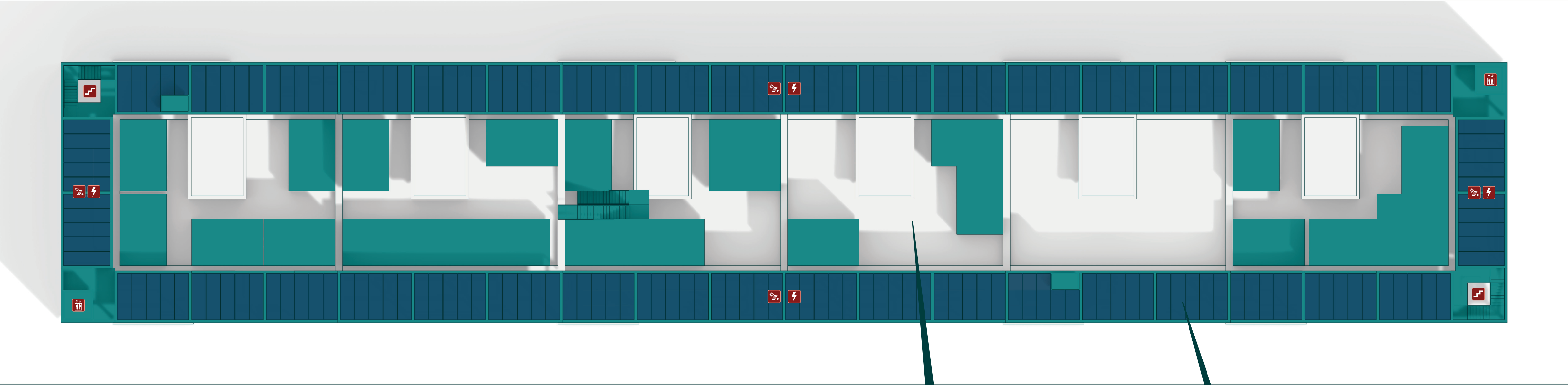
To create a family-friendly environment, a playground is situated close to all units and shaded by the surrounding forest, encouraging kids to connect with nature.

Proposed edit by users

Tested detail



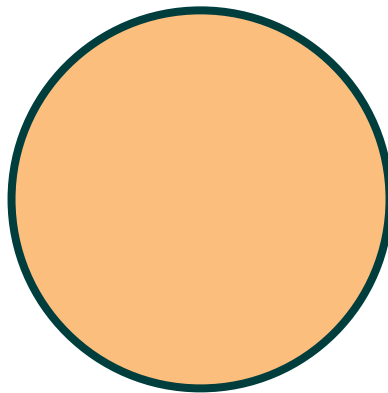
Typical floorplan
1:200 | A1
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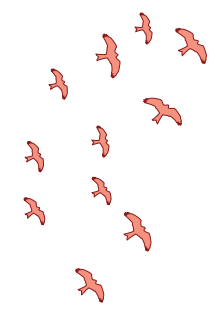
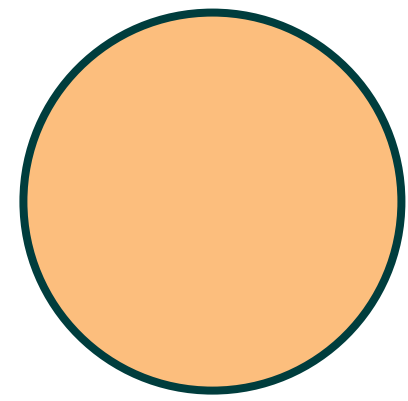
Roof village
To offer more varied apartment units, new modules are placed on the rooftop of the existing structure, creating a village-like environment with closely connected neighbors.
Chosen by majority of users



Solar farm
To promote the use of sustainable resources, photovoltaic panels placed atop the skeleton structure provide a zero-emission energy source for the entire block.



Roof
1:200 | A1
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Residential extensions
The size of apartments was identified as one of the most problematic issues for current residents. The neighborhood lacks flexibility in unit sizes, making it difficult for residents to adapt their living spaces to their needs, especially as their families grow. The extension system offers the adaptability to add or reduce space as needed.
Derived from users' needs study



Polyfunctional spaces
By merging the ground floor and basement, a new double-story space has emerged, providing opportunities for public amenities to be incorporated directly into the otherwise monofunctional residential block. This can increase interactions in the area, enhancing the energy and livability of the entire neighborhood.
Chosen by majority of users



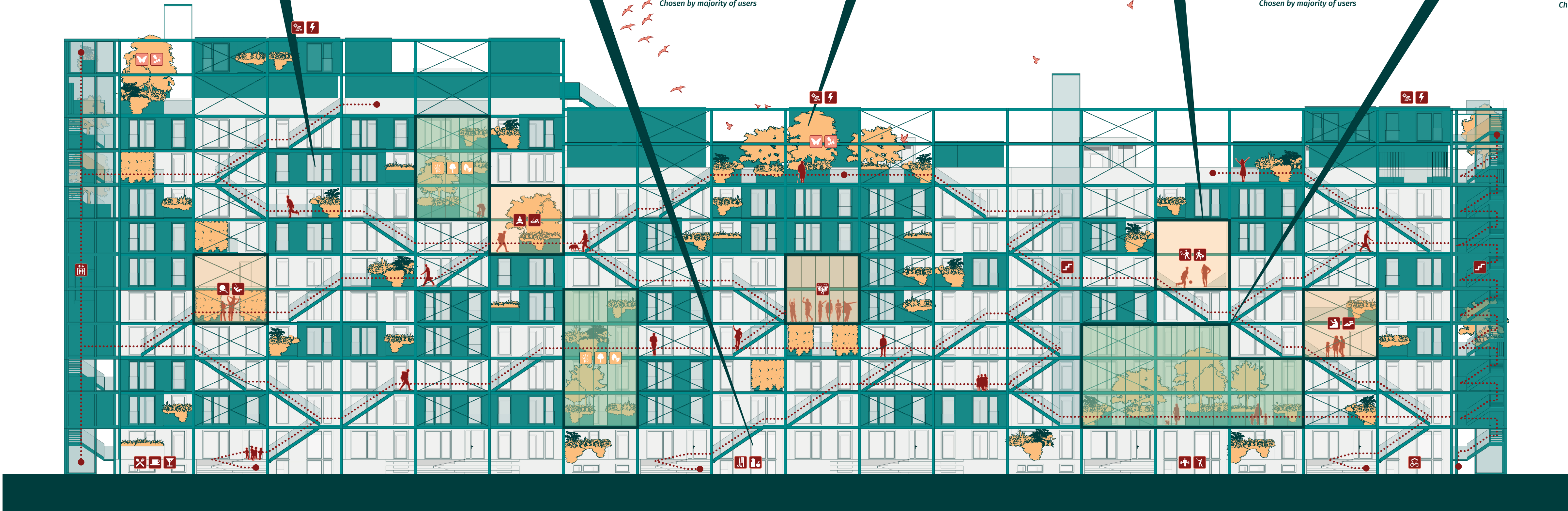
Flora infrastructure
The terraces of the structure feature large flower pots that can hold individual plants, bushes, and even multi-story trees. These plants not only help reduce heat and increase humidity but also provide space for fauna to flourish, thereby increasing biodiversity in the middle of an urban area.
Chosen by majority of users



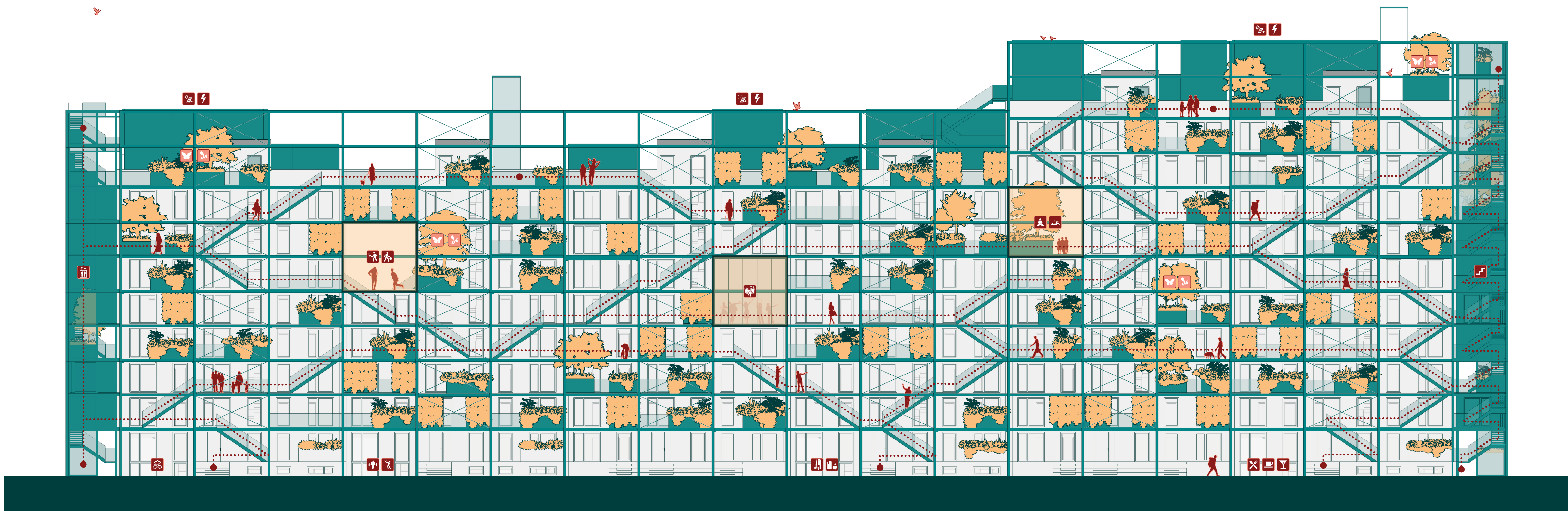
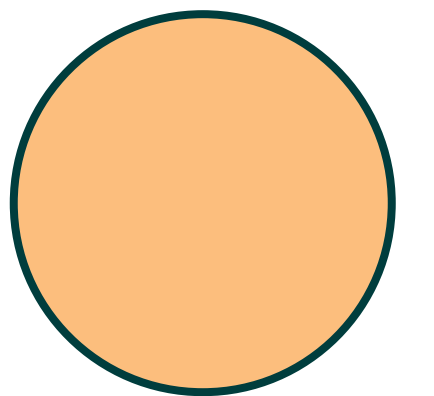
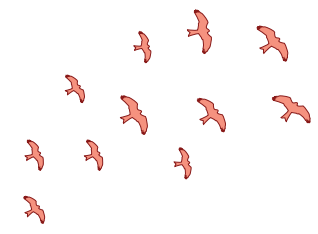
Community cavity
By removing some units from the building's structure, new communal spaces emerge, offering potential for various activities. These spaces can host a barbecue party, a ping pong match between neighbors, a sandbox for kids, or a garden for calm meditation under the shelter of a roof. It's up to the neighbors to decide how they want to share their time.
Chosen by majority of users



Greenhouse
Due to the solar radiation, the greenhouse can provide comfortable temperature for vegetation to grow all-year long, prolonging leisure period outside, and pre-heat air for interior spaces.
Greenhouse enclosure can be provided for individual units, for the block community or even fully public depending on the desires of inhabitants.
Chosen by majority of users

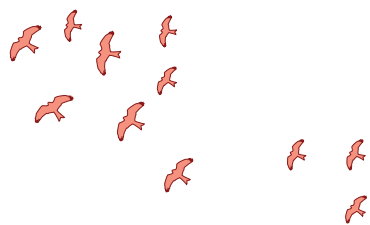
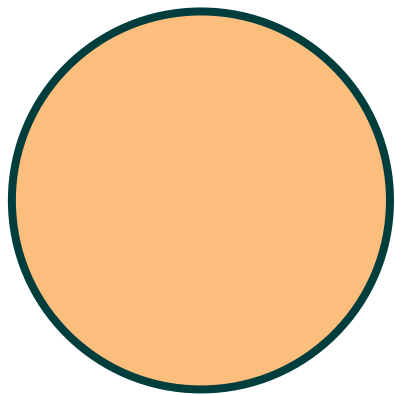


South elevation
1:200 | A1
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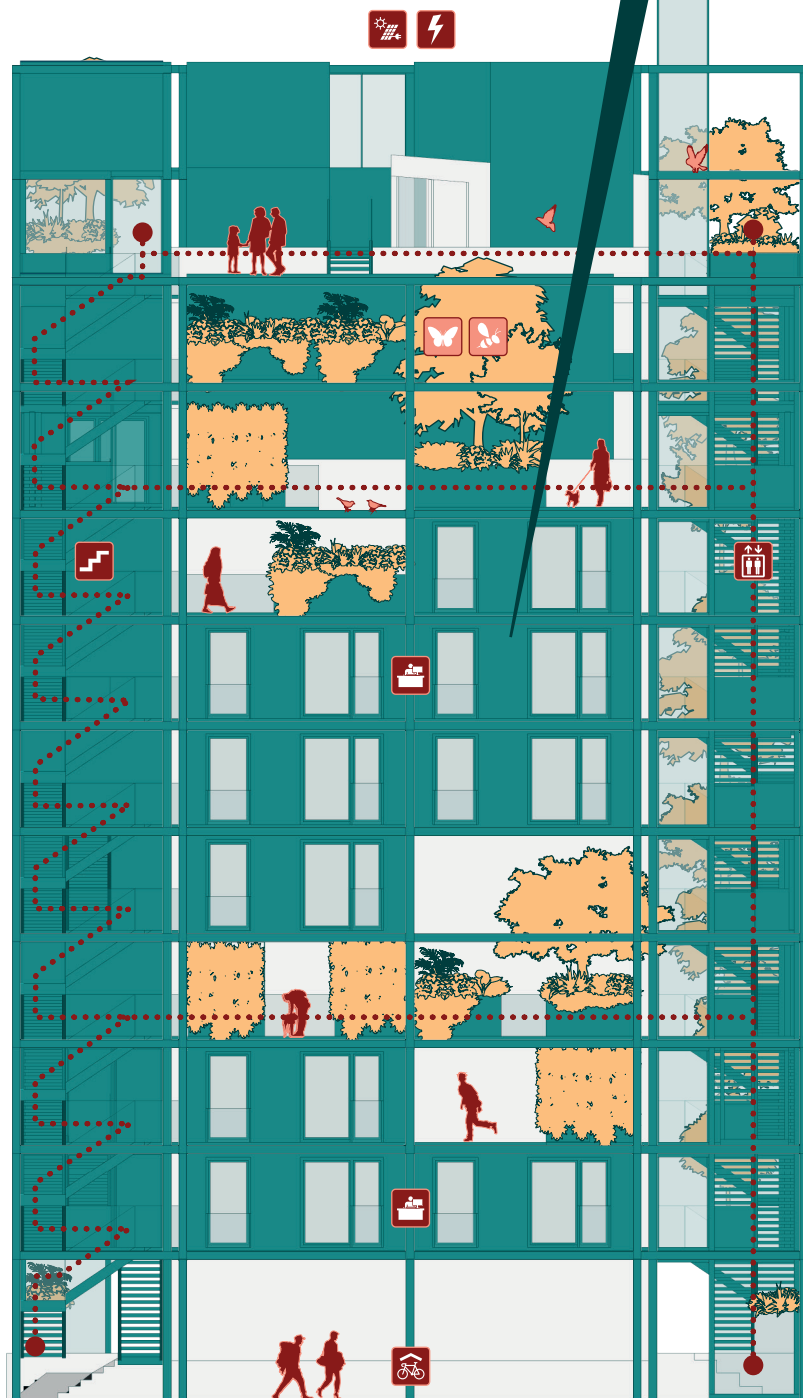
North elevation
1:200 | A1
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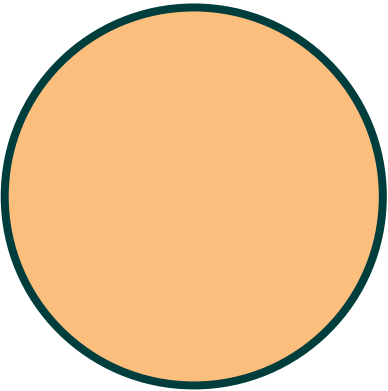
Co-working
With the rise of remote working opportunities, more people desire flexible office spaces close to their homes, allowing them to book these spaces as needed in terms of time and style. By utilizing the blind walls of the blocks to add these spaces, the community can strengthen through shared work environments.

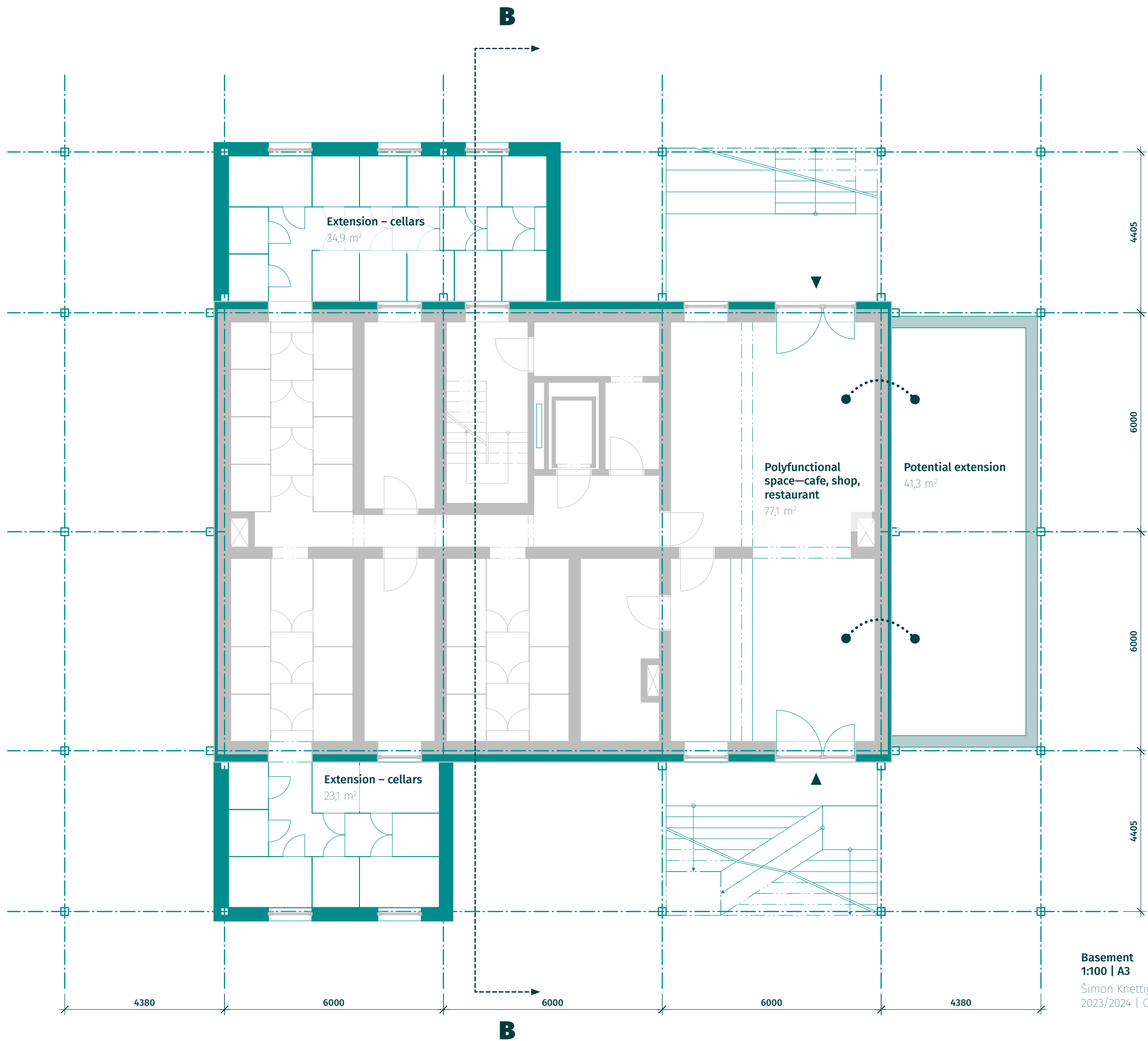
Derived from users' needs study

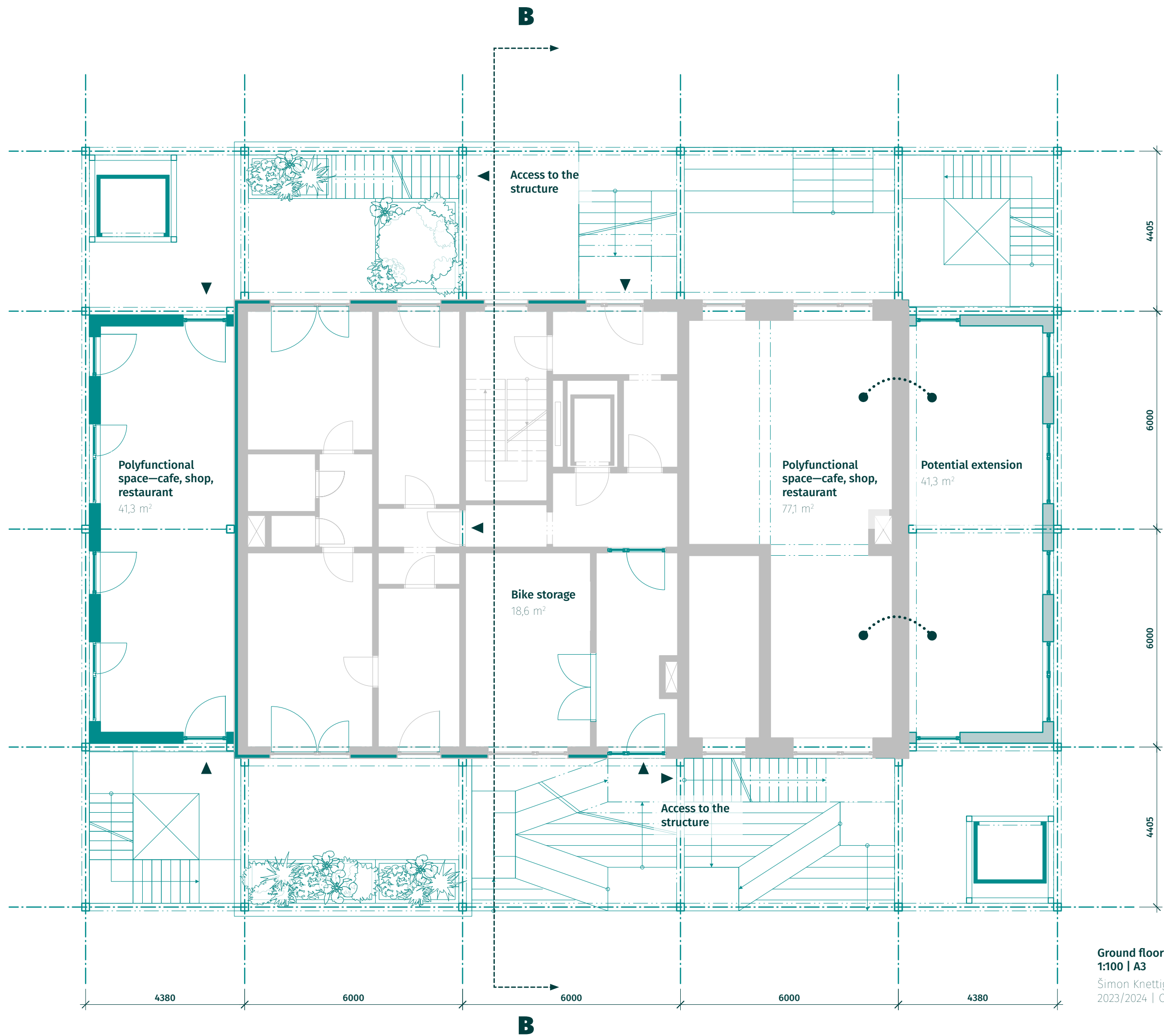


East elevation
1:200 | A3

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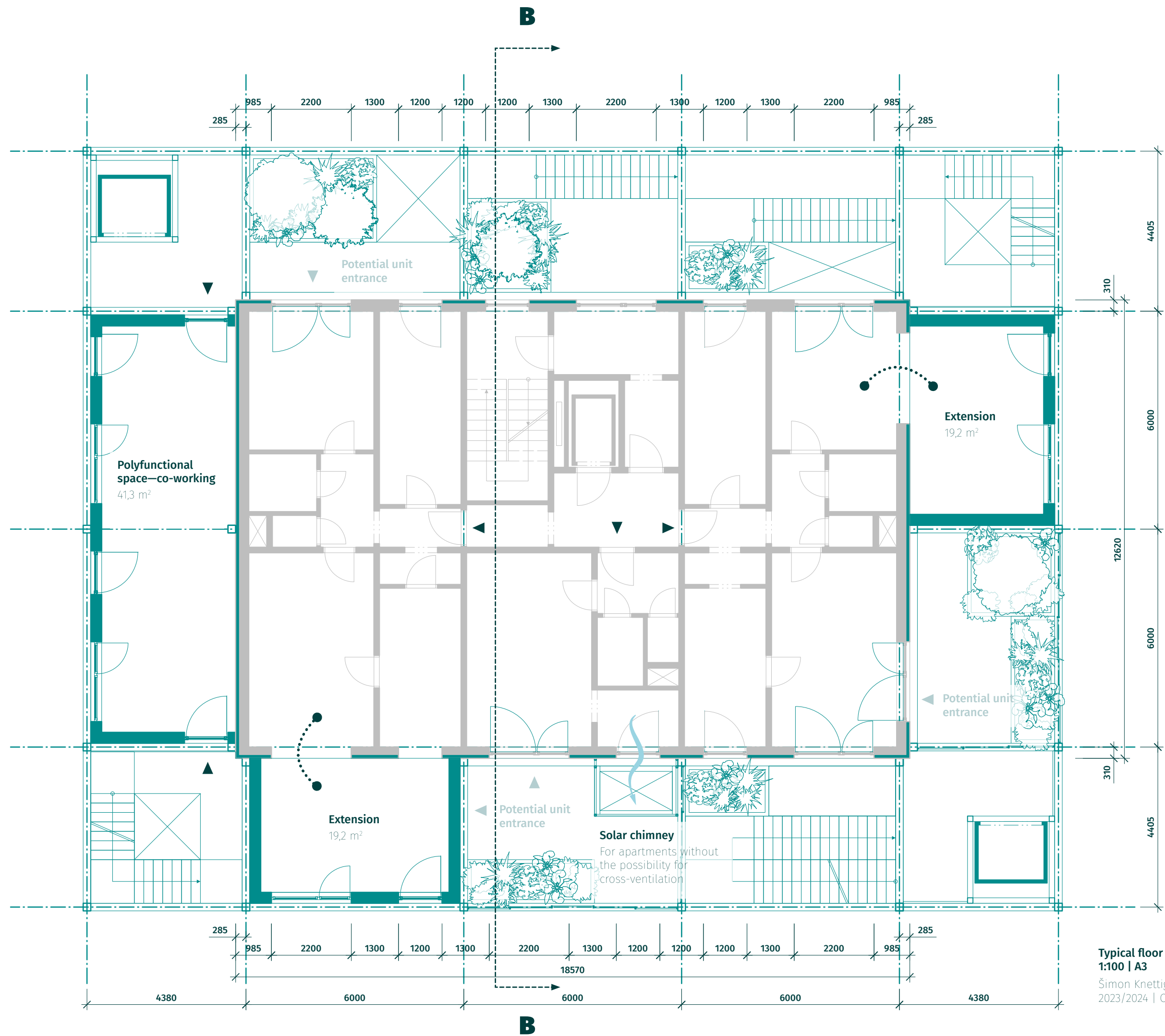


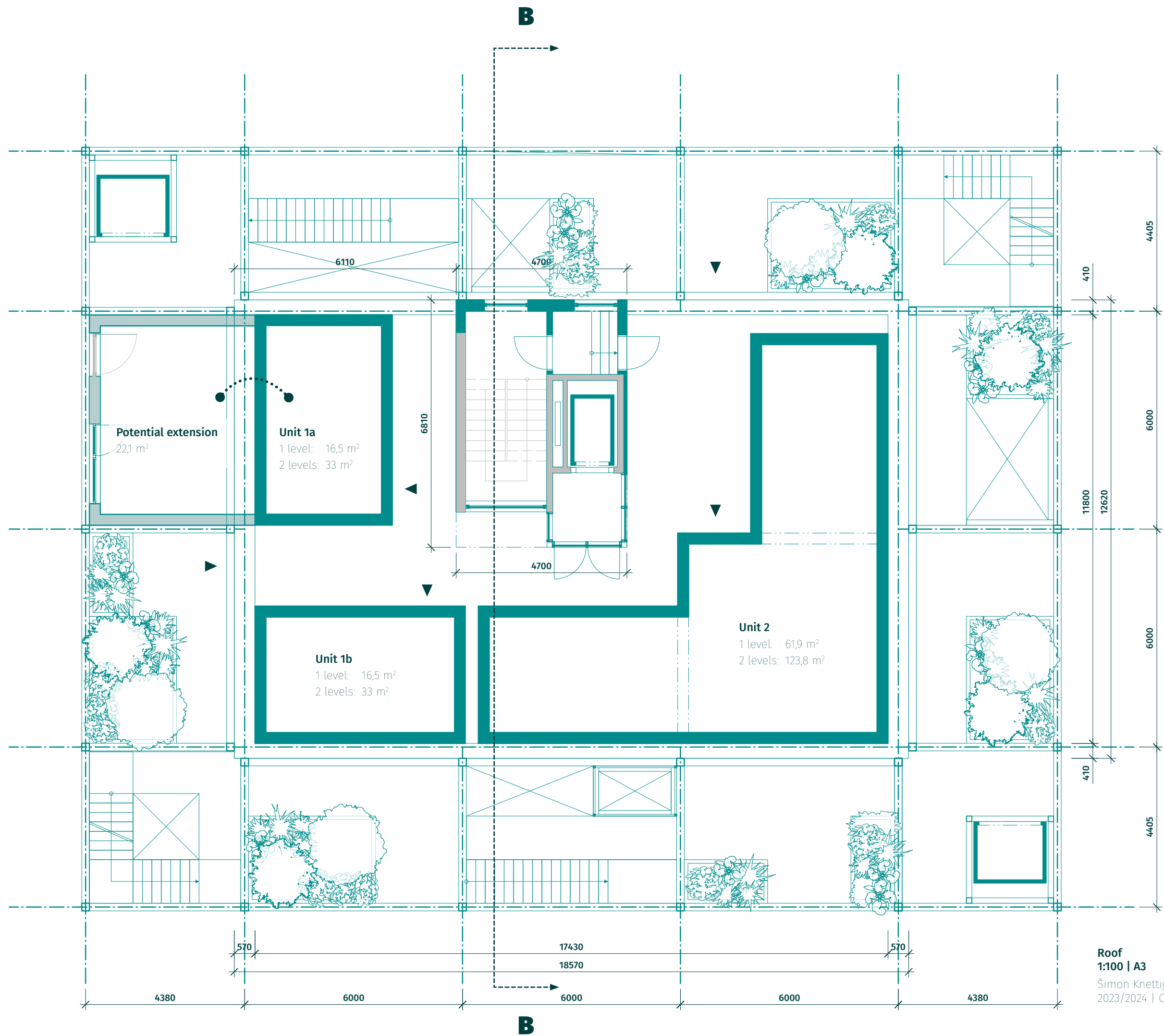


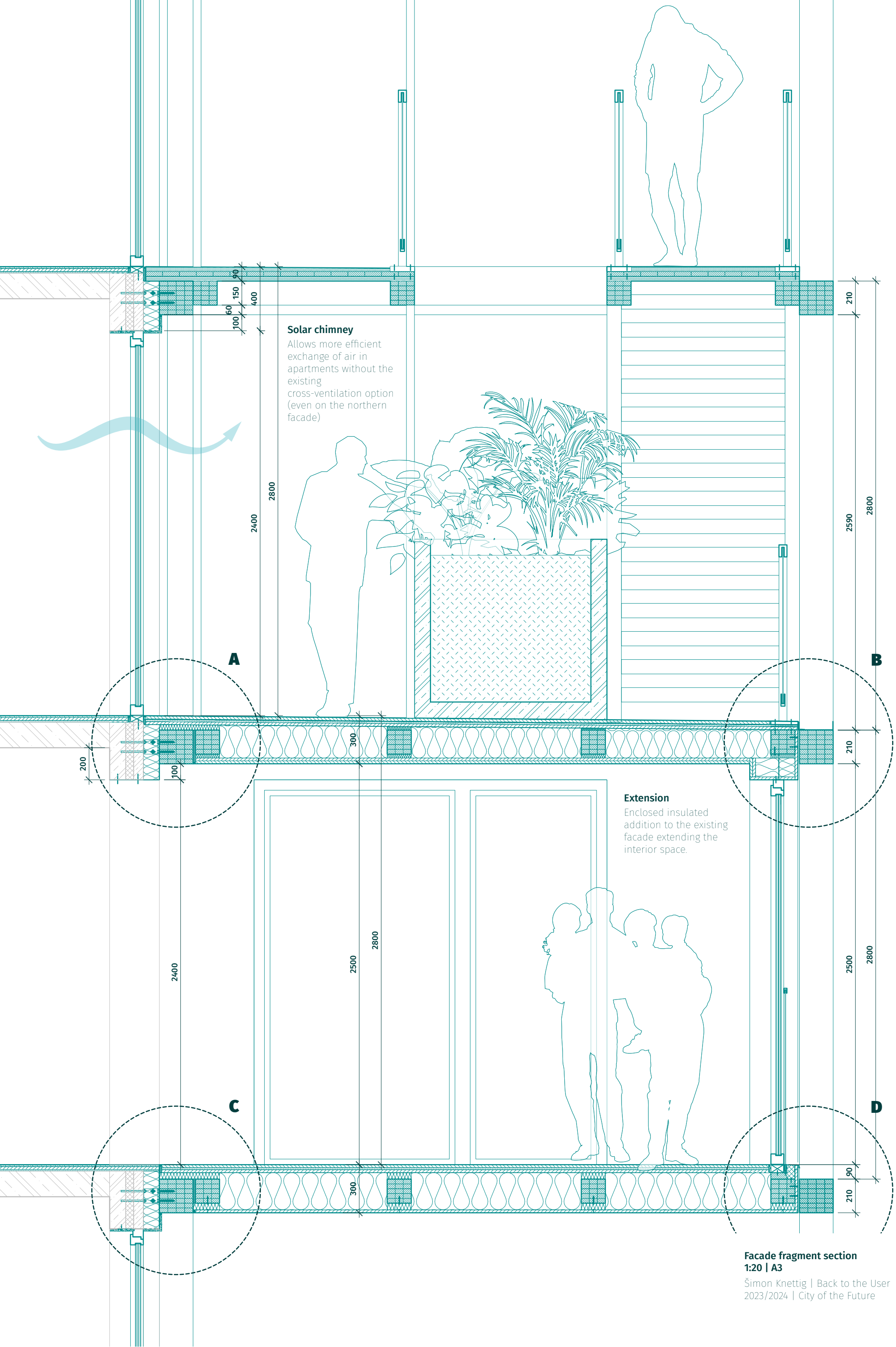


Ground floor
1:100 | A3

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Solar chimney

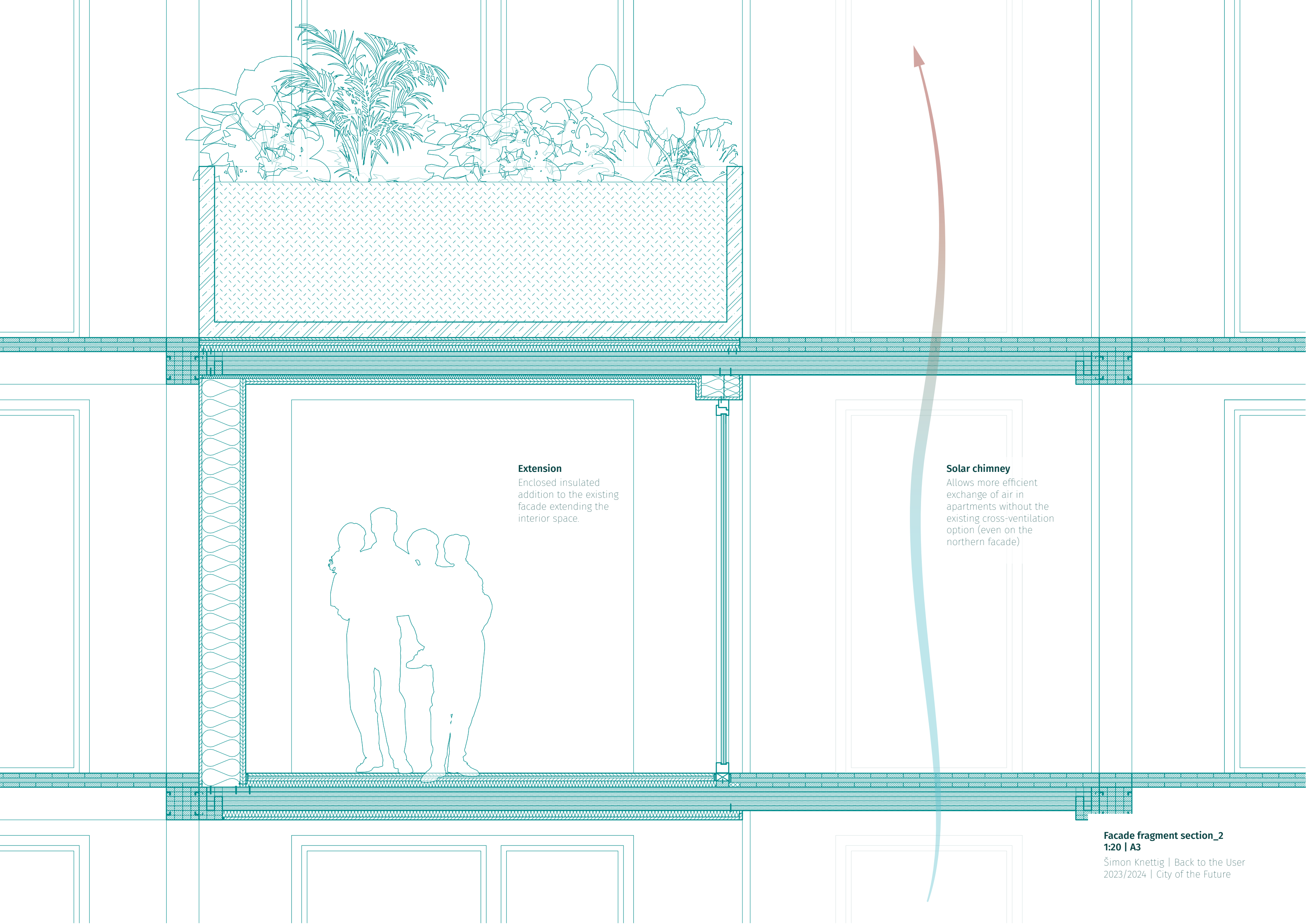
Allows more efficient exchange of air in apartments without the existing cross-ventilation option (even on the northern facade)

Extension

Enclosed insulated addition to the existing facade extending the interior space.

**Facade fragment section
1:20 | A3**

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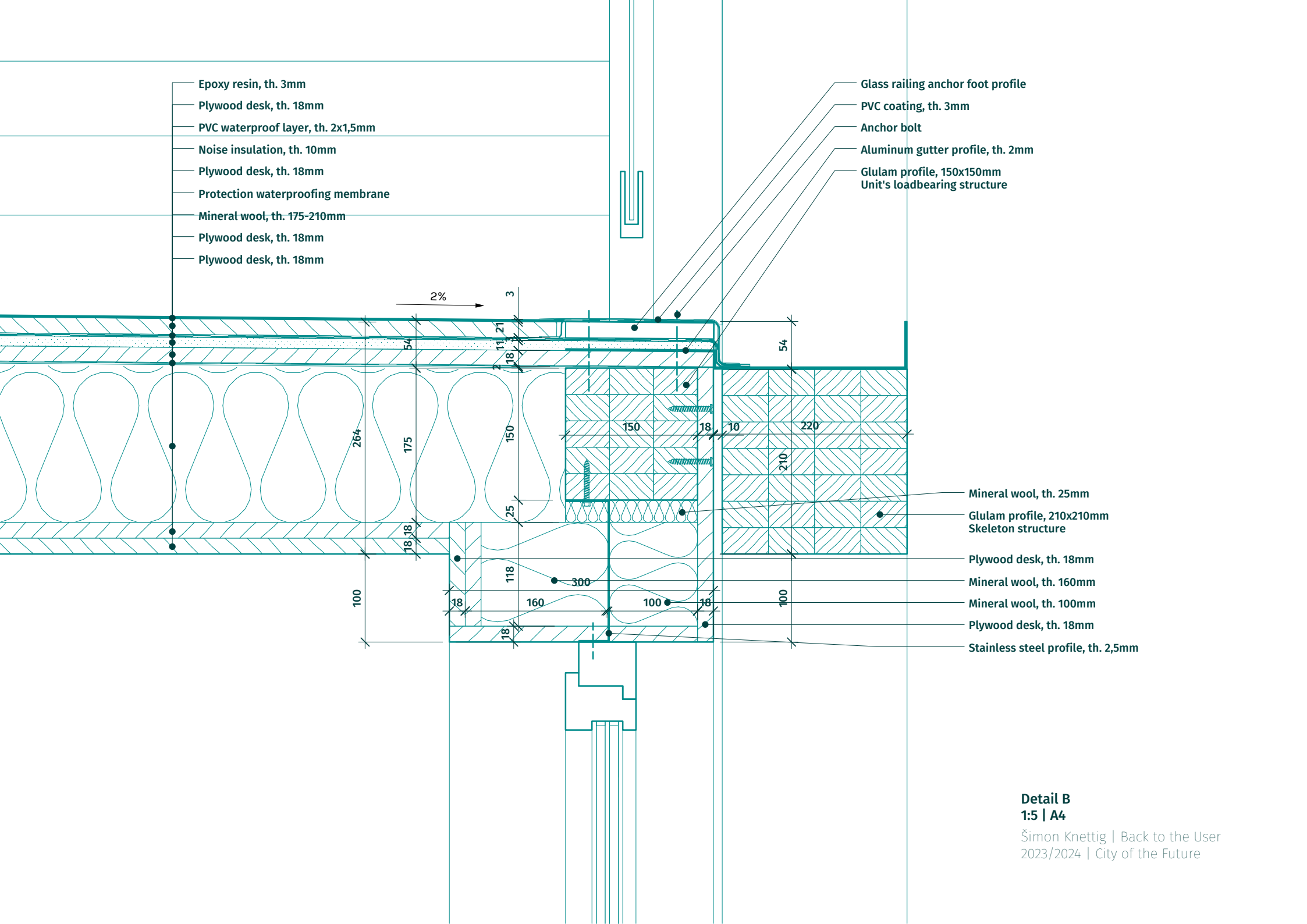
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Solar chimney

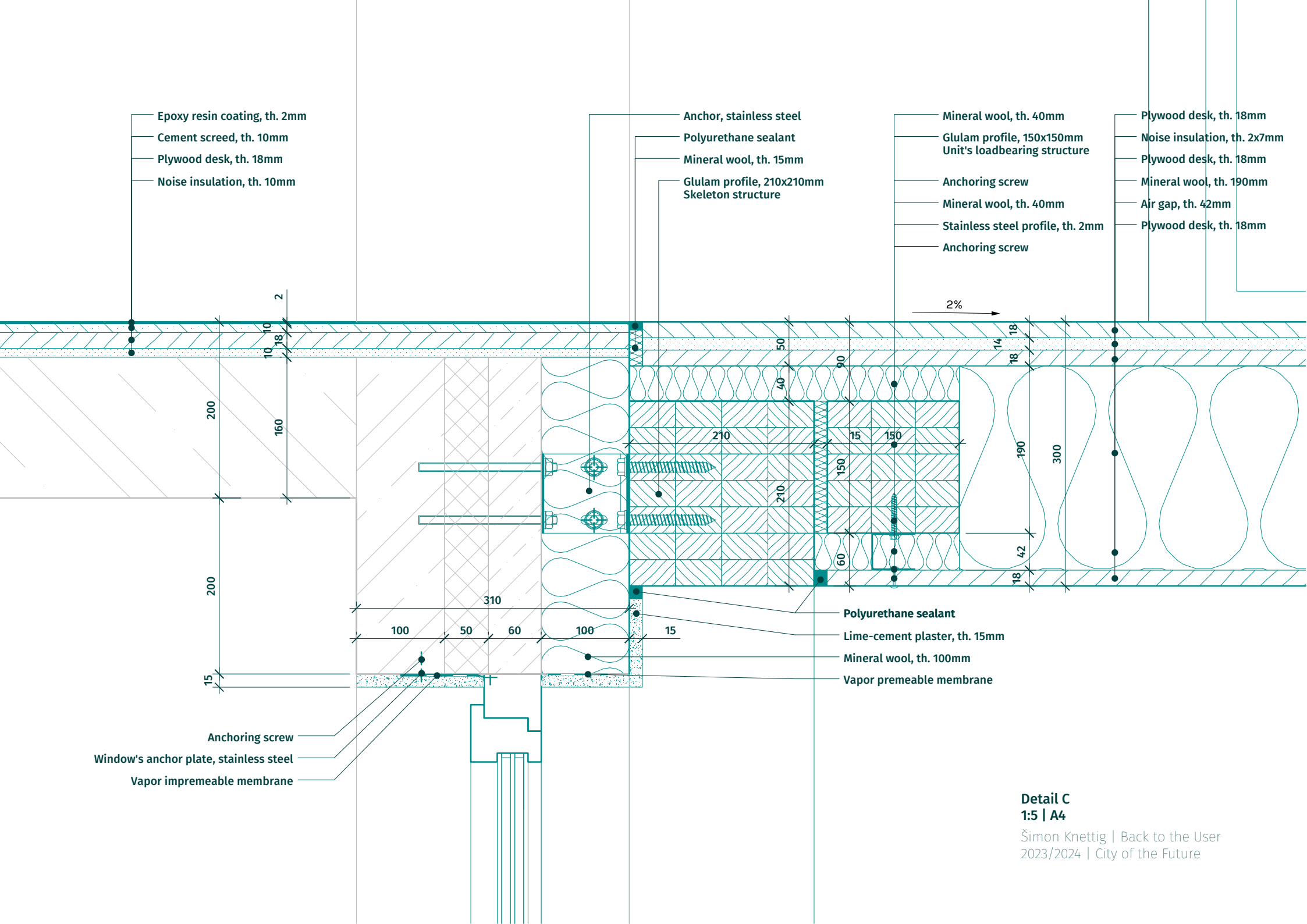
Allows more efficient exchange of air in apartments without the existing cross-ventilation option (even on the northern facade)



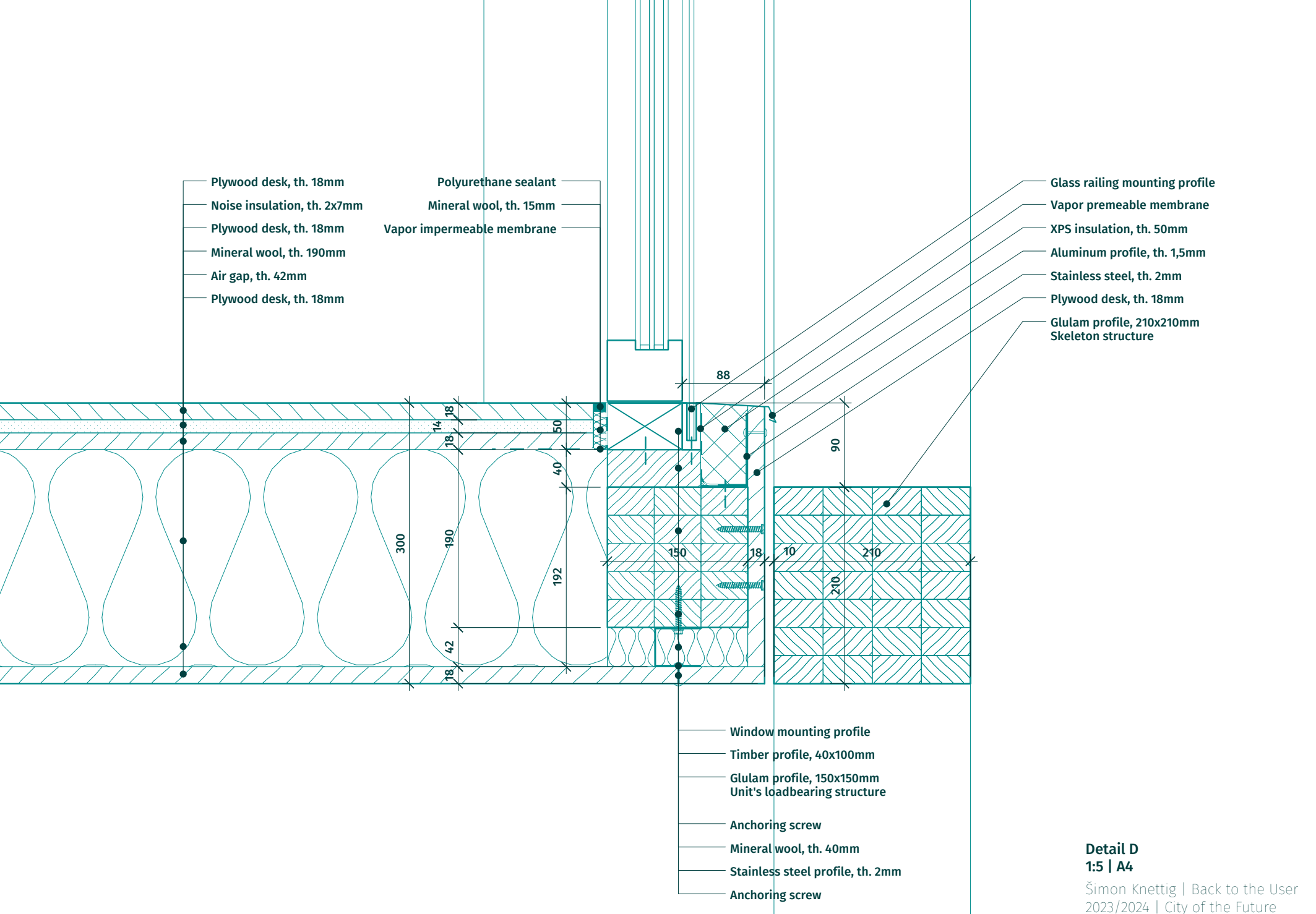


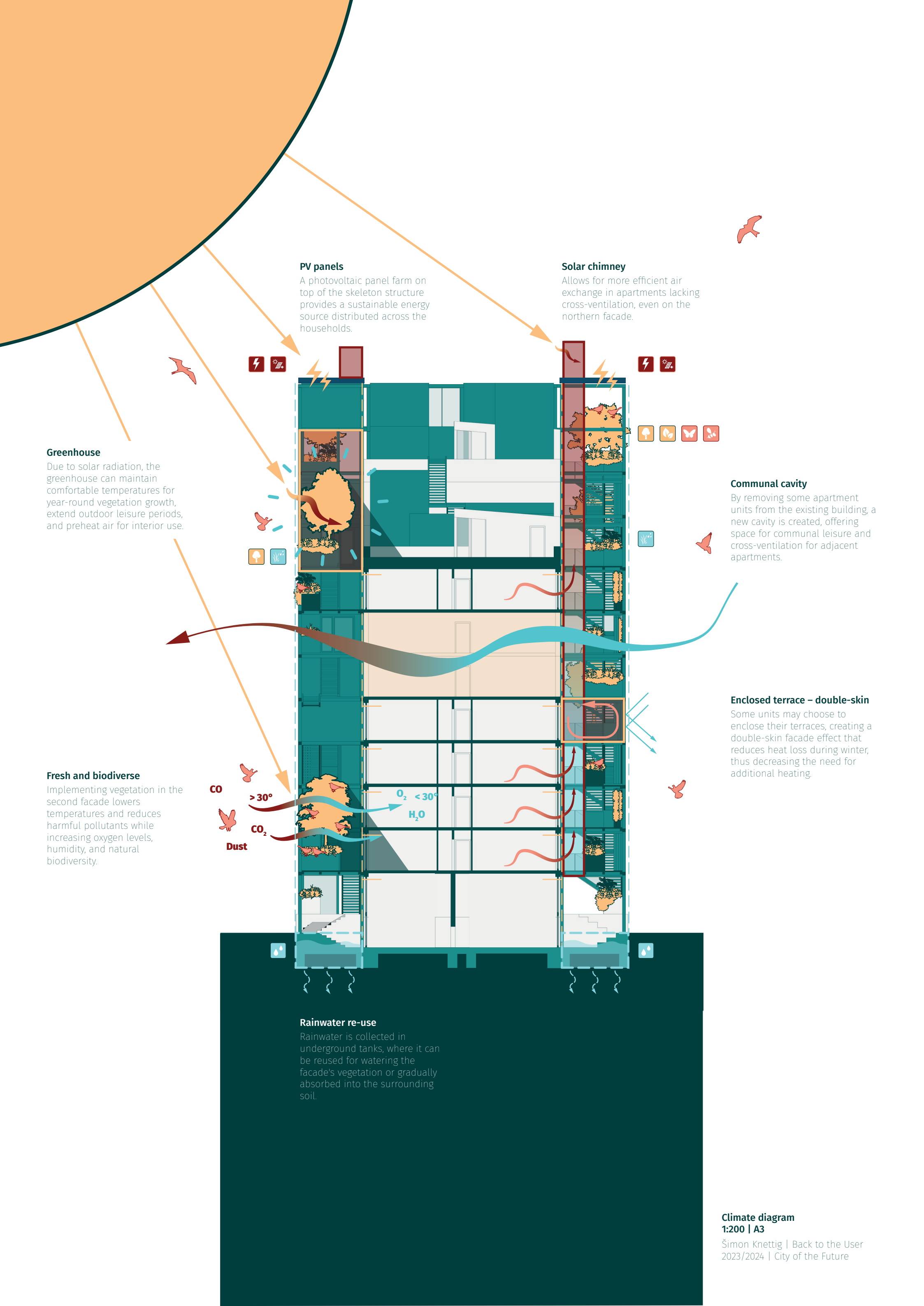
Detail B
1:5 | A4

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Detail C
1:5 | A4





PV panels
A photovoltaic panel farm on top of the skeleton structure provides a sustainable energy source distributed across the households.

Solar chimney
Allows for more efficient air exchange in apartments lacking cross-ventilation, even on the northern facade.

Greenhouse
Due to solar radiation, the greenhouse can maintain comfortable temperatures for year-round vegetation growth, extend outdoor leisure periods, and preheat air for interior use.

Communal cavity
By removing some apartment units from the existing building, a new cavity is created, offering space for communal leisure and cross-ventilation for adjacent apartments.

Fresh and biodiverse
Implementing vegetation in the second facade lowers temperatures and reduces harmful pollutants while increasing oxygen levels, humidity, and natural biodiversity.

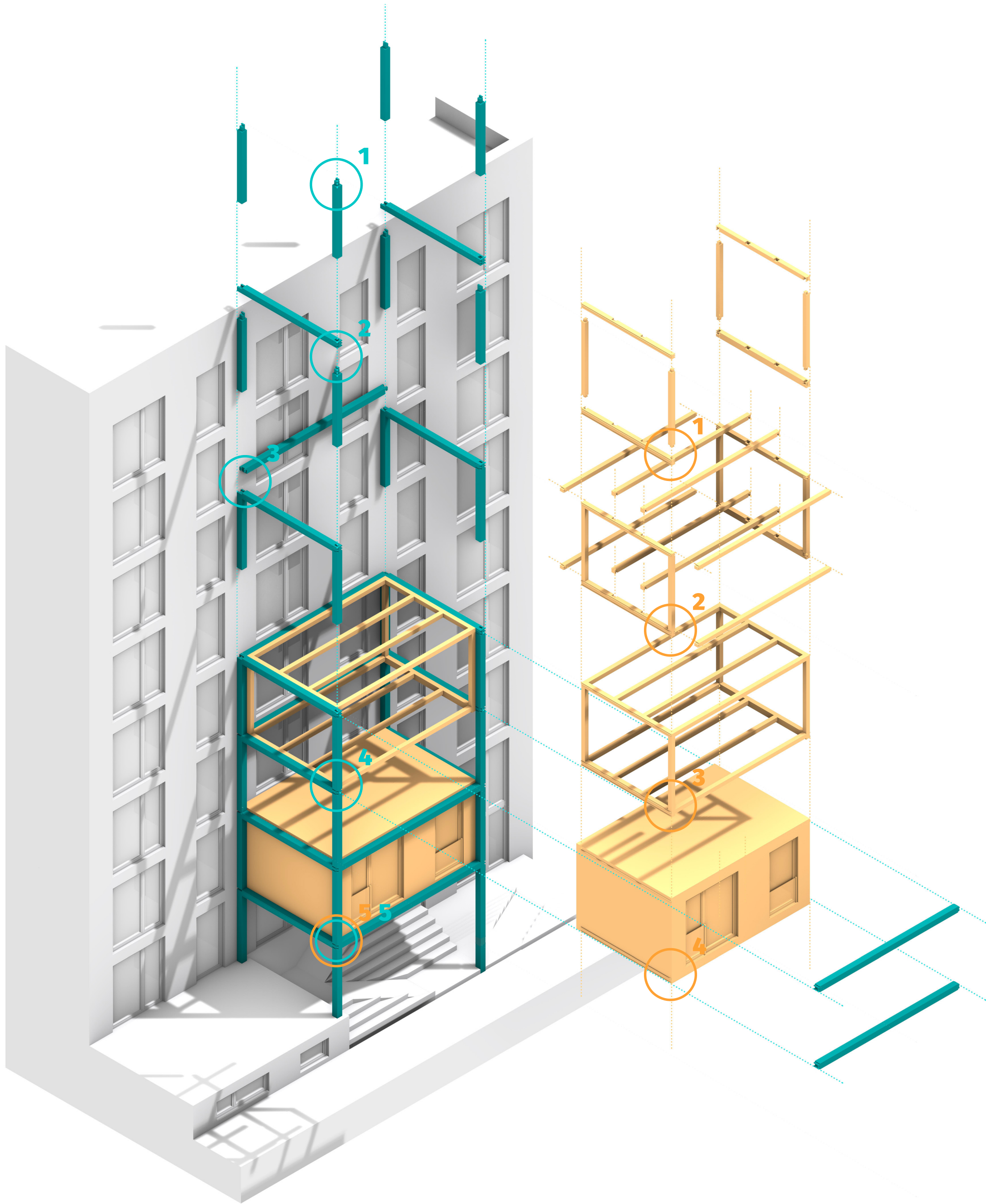
Enclosed terrace – double-skin
Some units may choose to enclose their terraces, creating a double-skin facade effect that reduces heat loss during winter, thus decreasing the need for additional heating.

Rainwater re-use
Rainwater is collected in underground tanks, where it can be reused for watering the facade's vegetation or gradually absorbed into the surrounding soil.

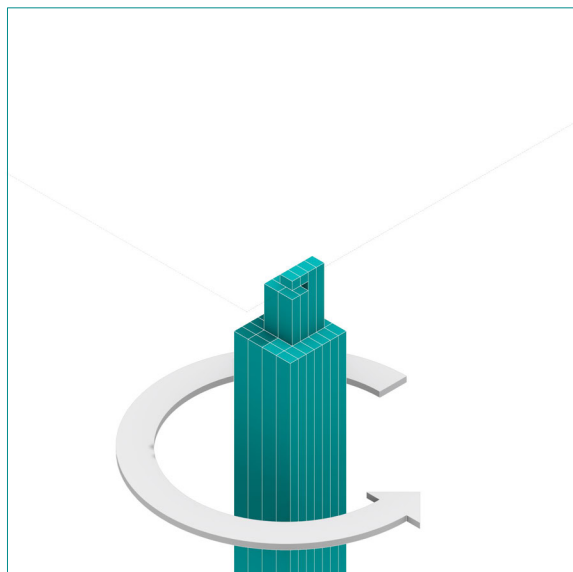
Skeleton assembly

Unit assembly

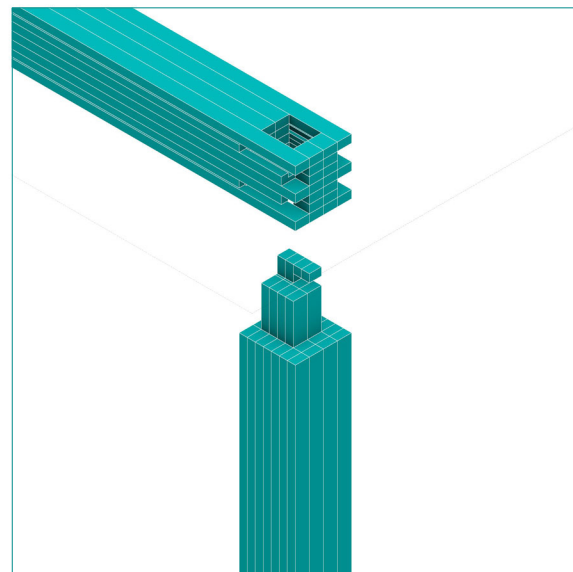
Structural diagram
1:100 & 1:20 | A2
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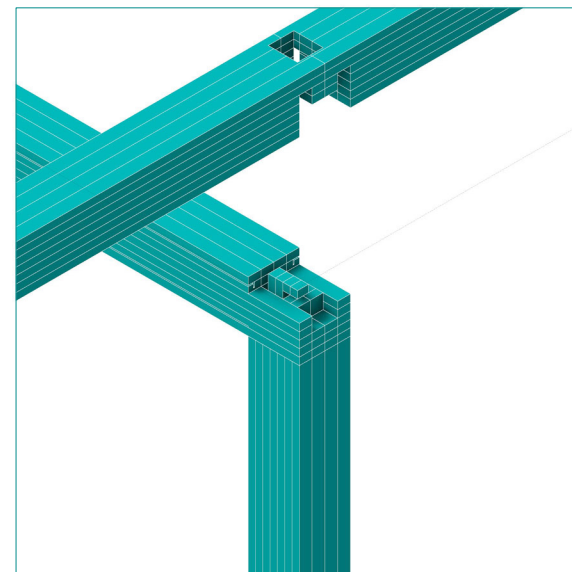
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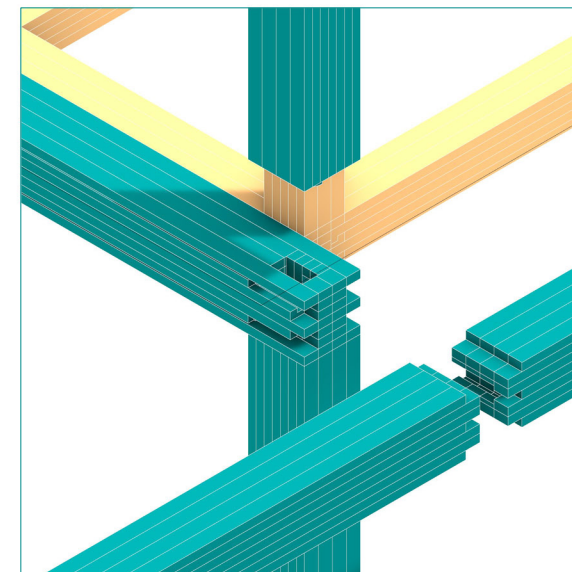
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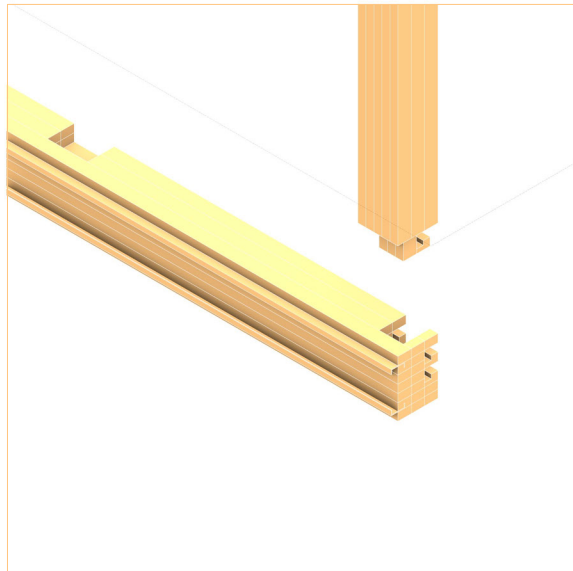
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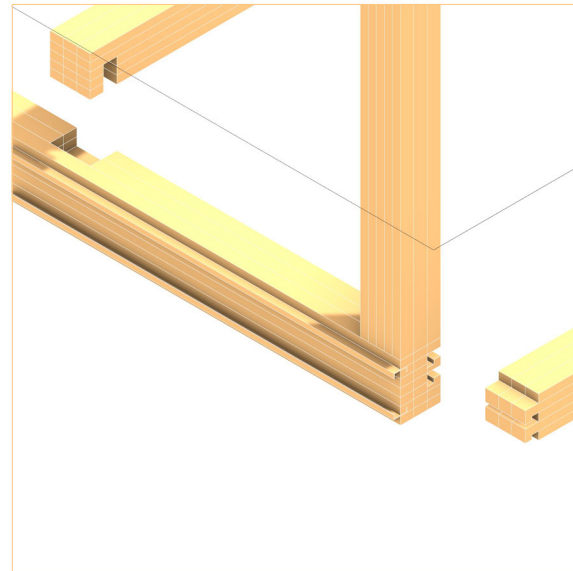
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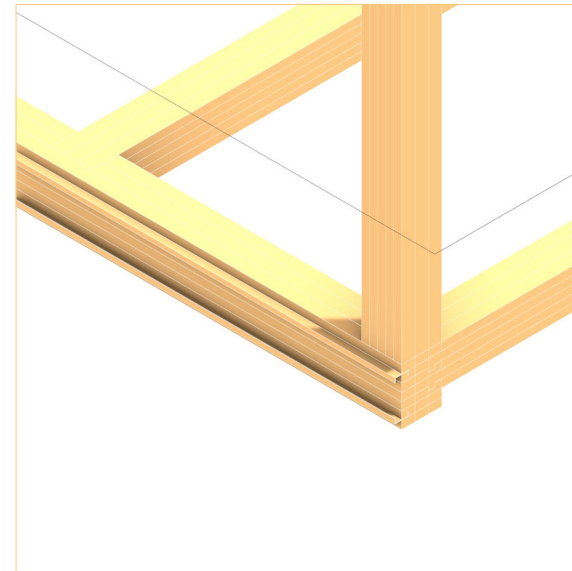
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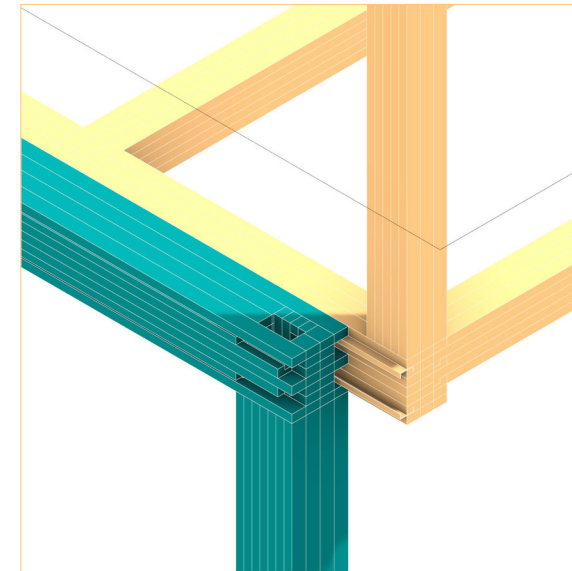
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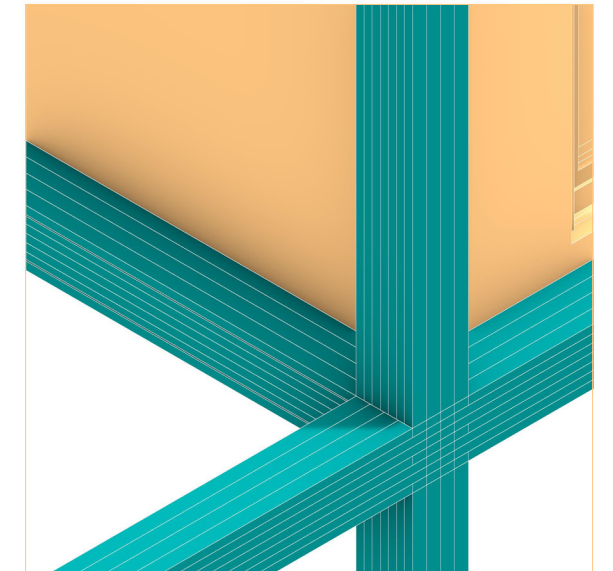
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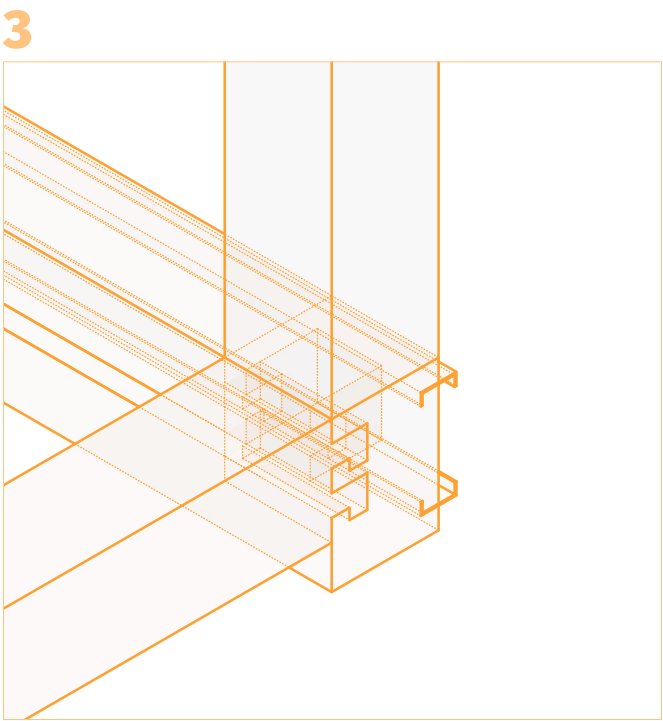
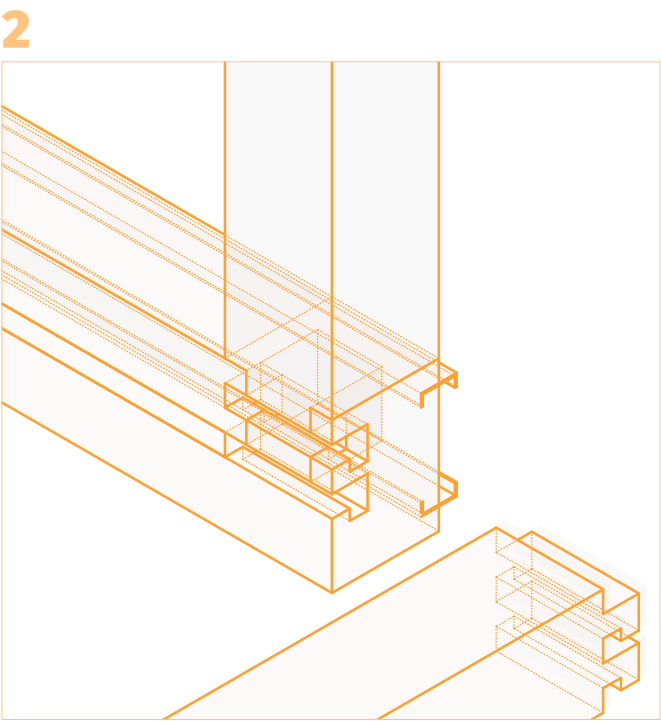
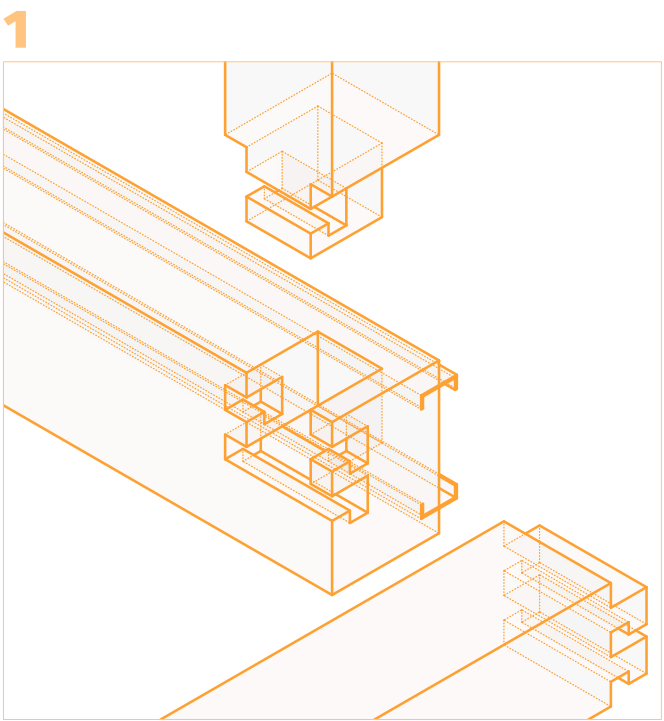
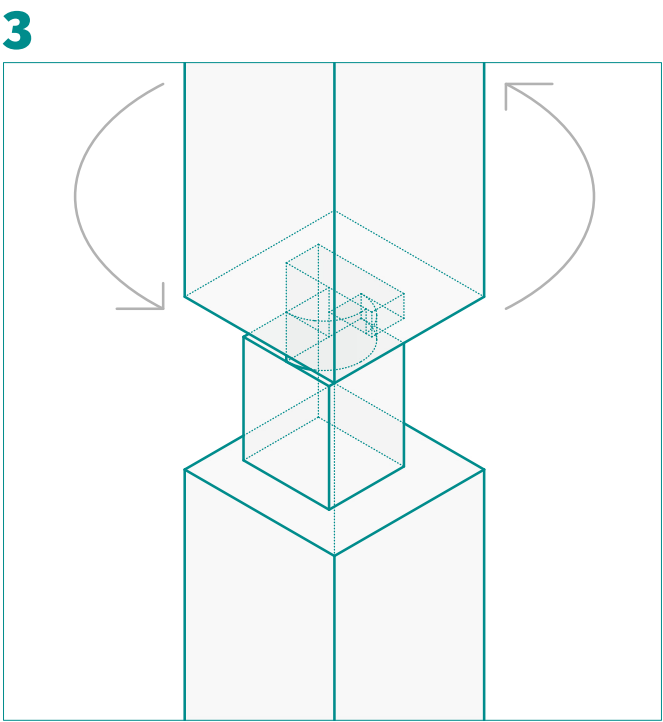
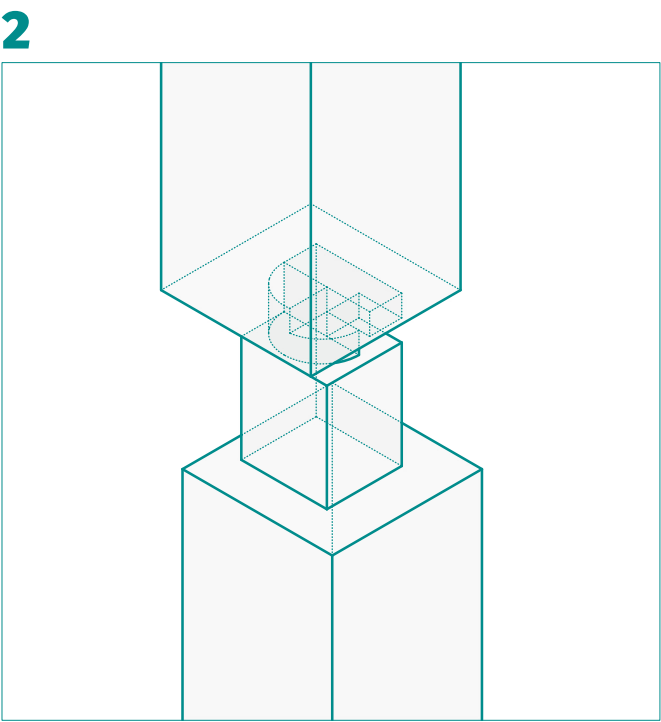
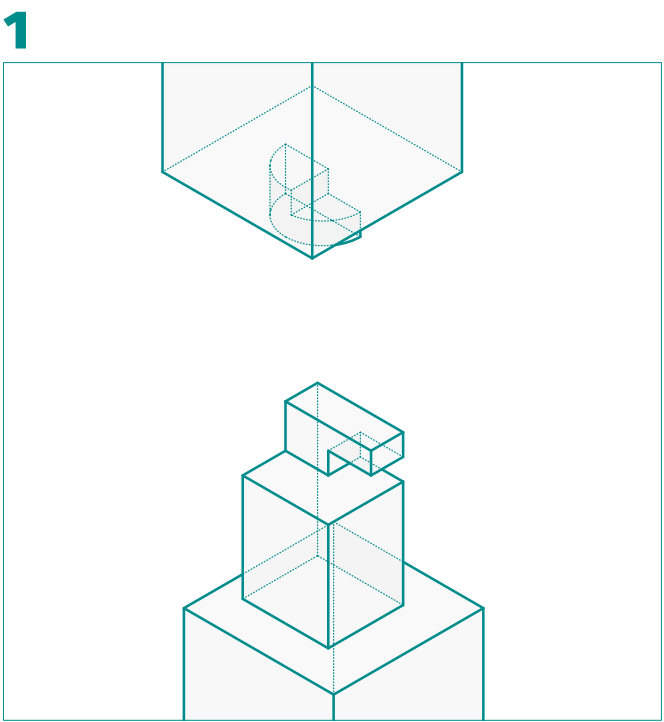
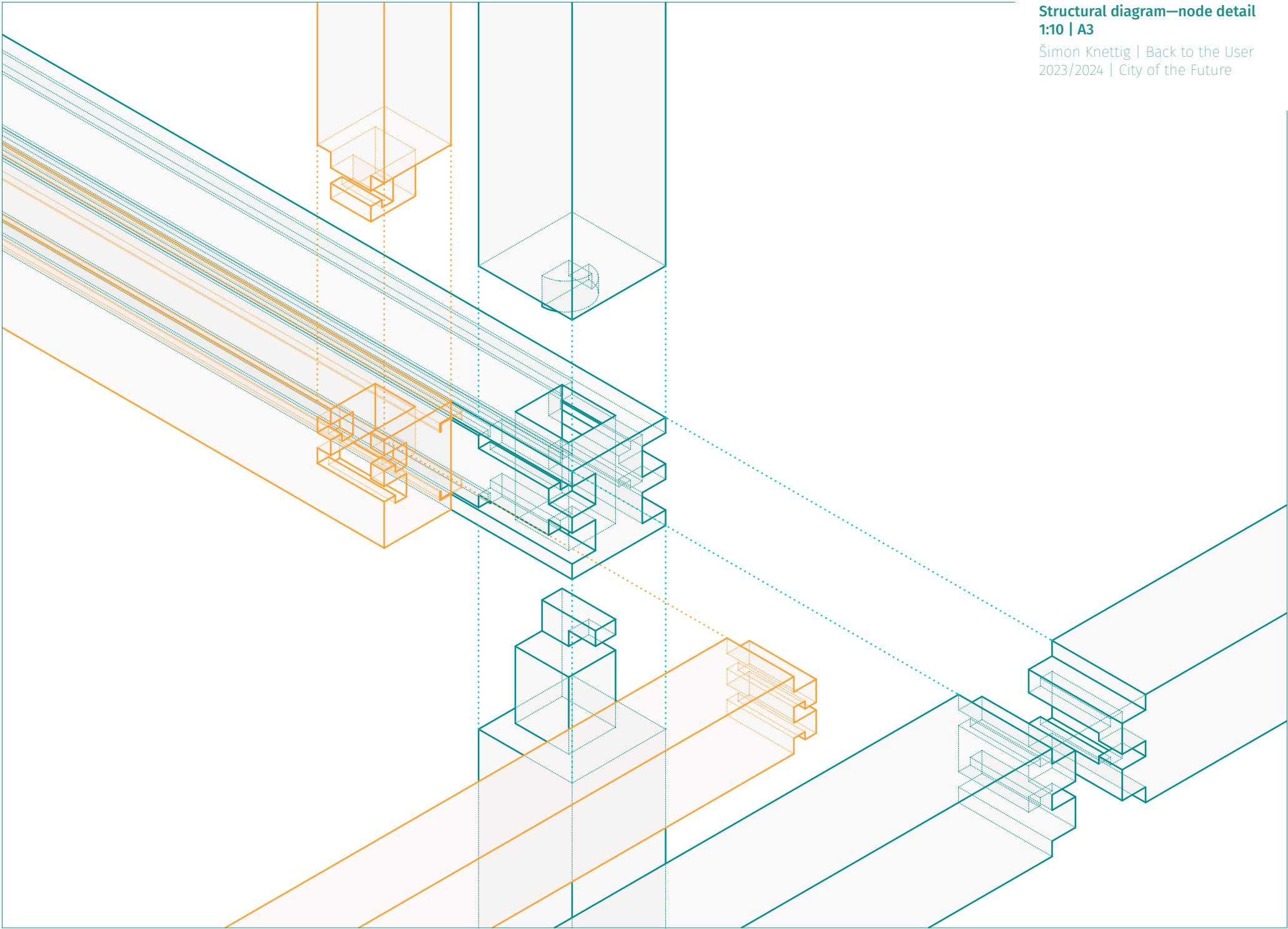


4



5





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Design drawings

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Universal City Studios. Back to the Future. Accessed January 23, 2024. <https://www.catchplay.com/sg/ed-says/article-2217-rchxfa61>.