



CLT DEMO HOUSE PITCH DECK

FEBRUARY 2025

EFFEKT

CLT / GLT

CROSS LAMINATED TIMBER / GLUE LAMINATED TIMBER

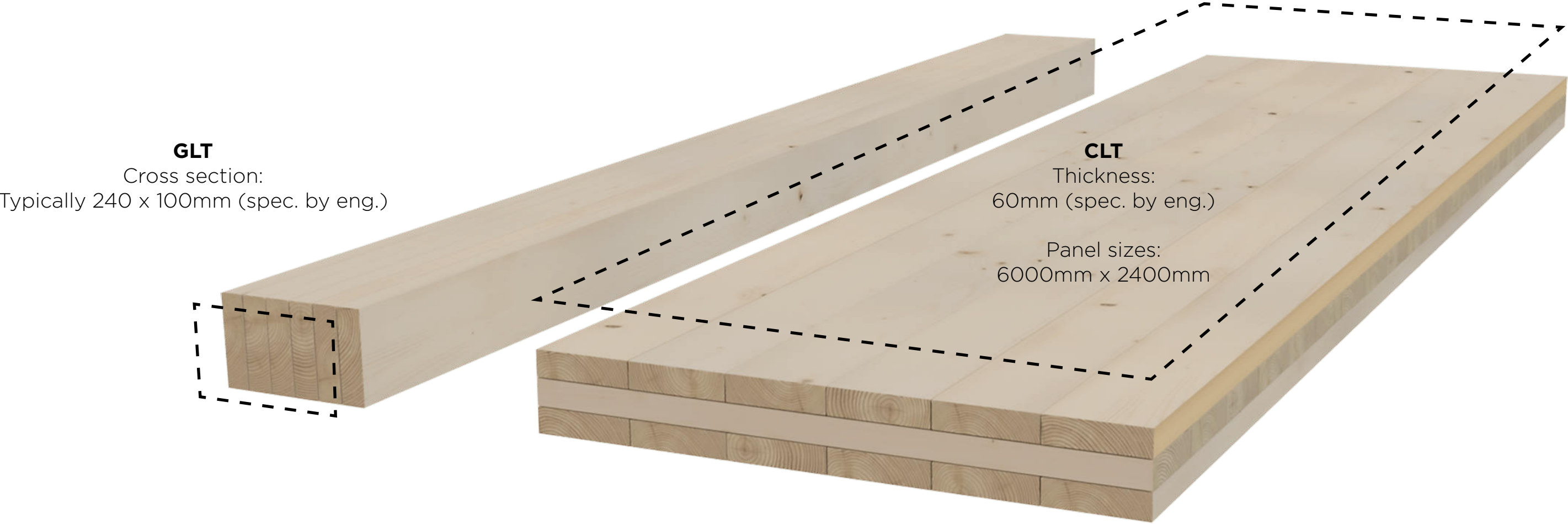
CLT (Cross-Laminated Timber) and GLT (Glue-Laminated Timber, also known as Glulam) are both engineered wood products, but they differ in their structure and primary applications.

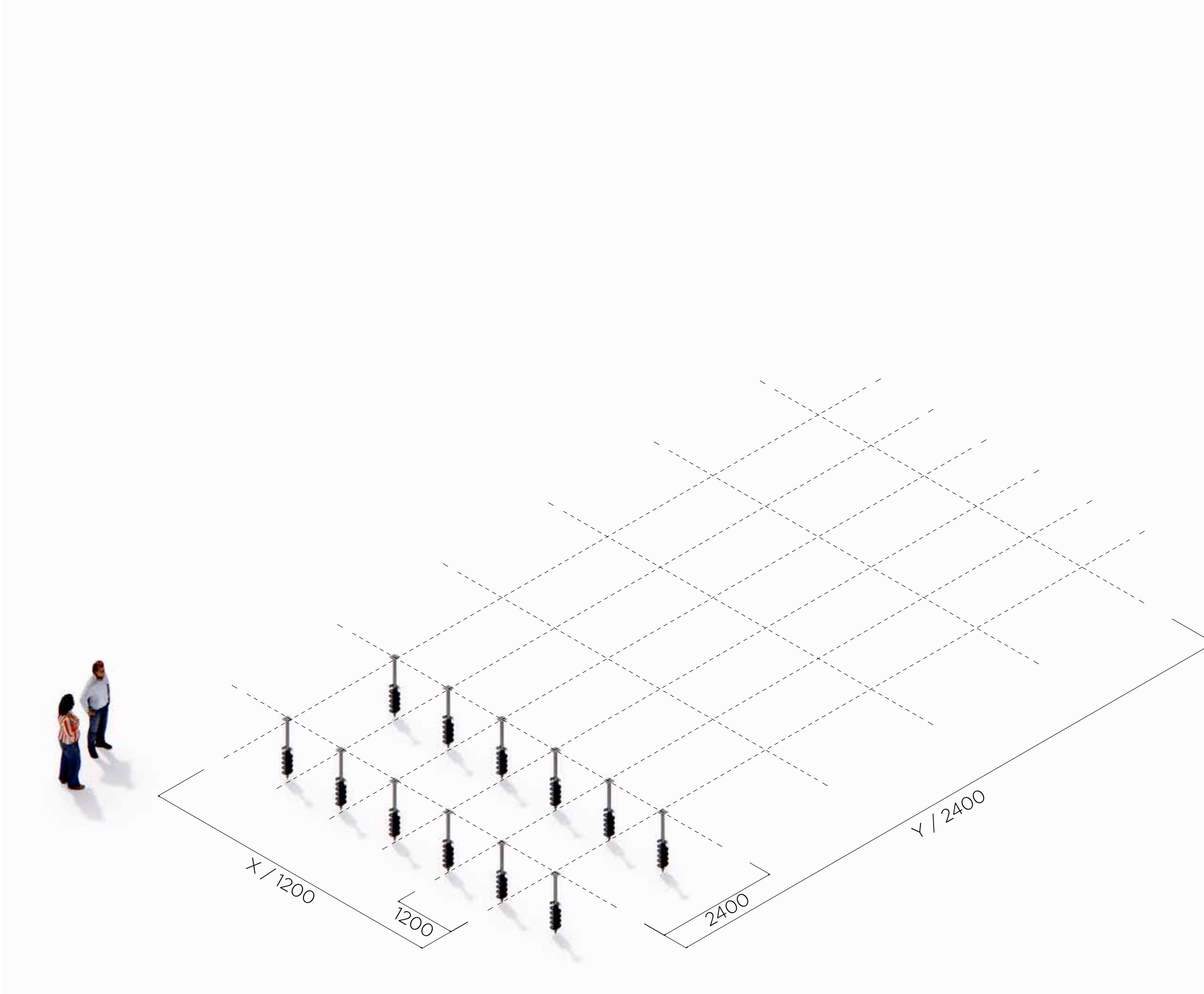
CLT is made by cross-laminating several layers of timber perpendicular to each other. It consists of an odd number of layers glued together, with each outer layer alternated at 90-degree angles. In this project the CLT is primarily used for walls, floors, floor separation and ceilings.

The GLT, on the other hand, is made by bonding and gluing laminates together with the grain running in the same direction. This process allows for the production of larger and longer length members. GLT is used for the load-bearing frame in this project, such as beams and columns.

The hybrid solution:

Working with an interior frame of GLT with a thinner 60mm CLT layer will save up to 50% of the material that is typically used in a standard CLT house. At the same time the building elements can be optimized so that there is close to 0% waste

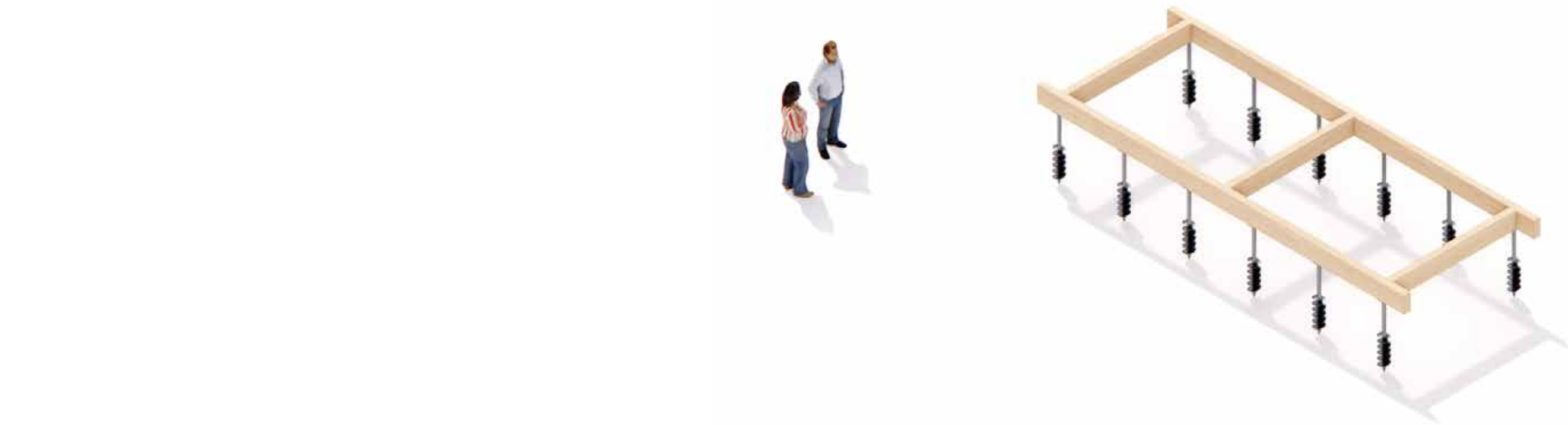




Screw Piles

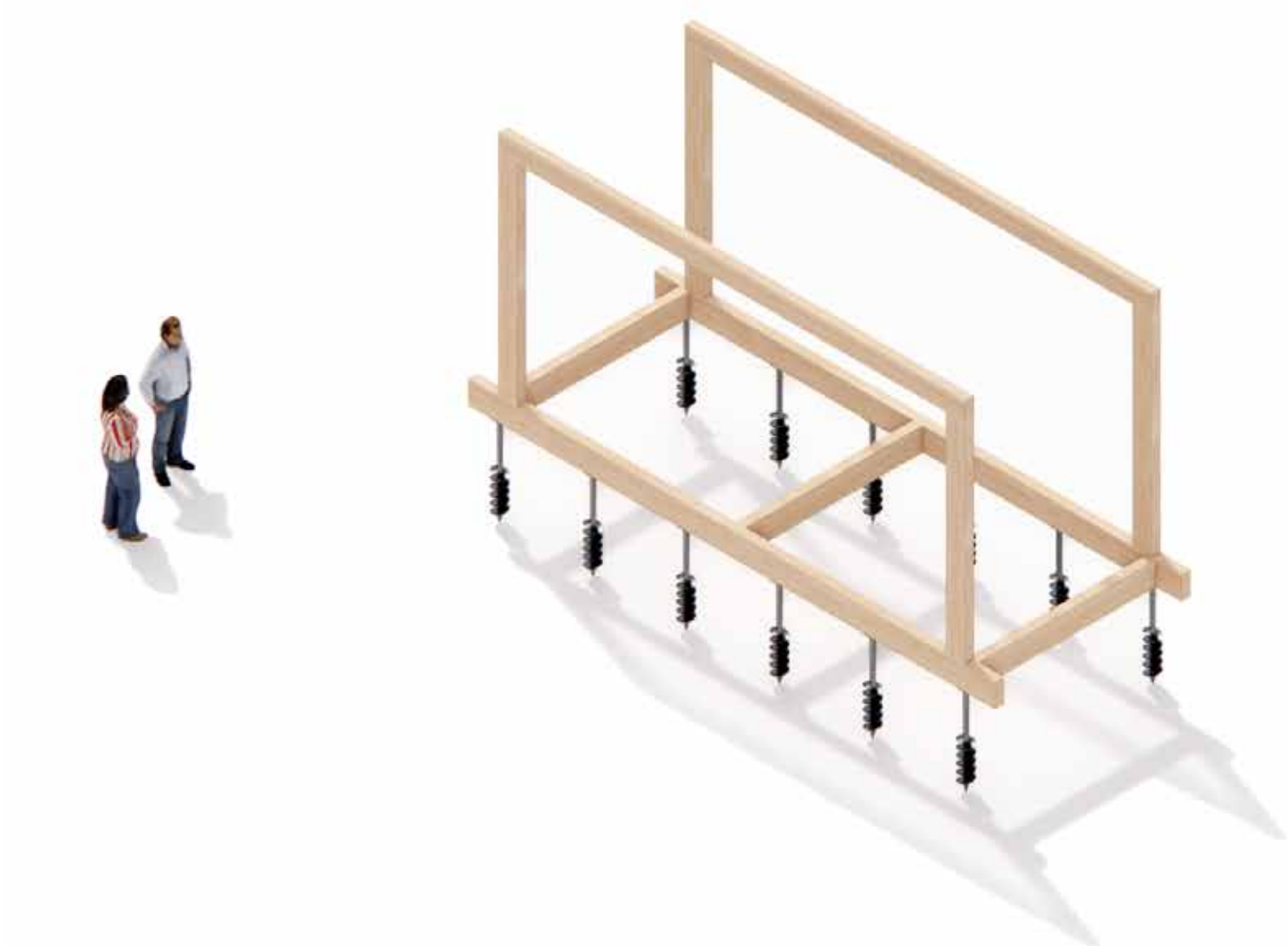
Positioned in a grid dvisible by 1200mm in X / Y directions

- Fast and efficient installation
- Minimal environmental impact
- Effective performance in various soil conditions
 - Can be installed in areas with limited access
- Potential for sustainable construction practices



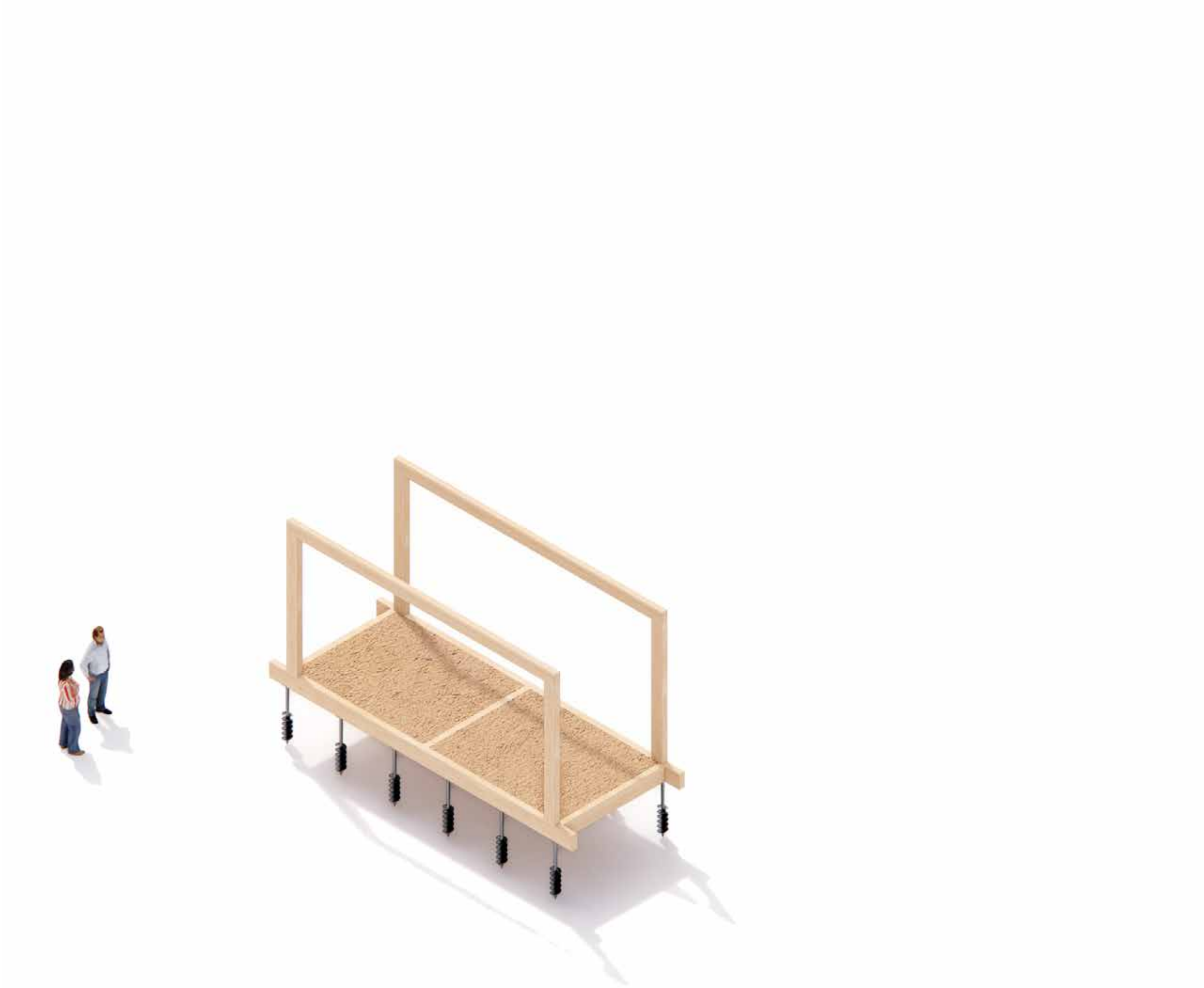
Base Frame

pressure-treated or rot-resistant wood



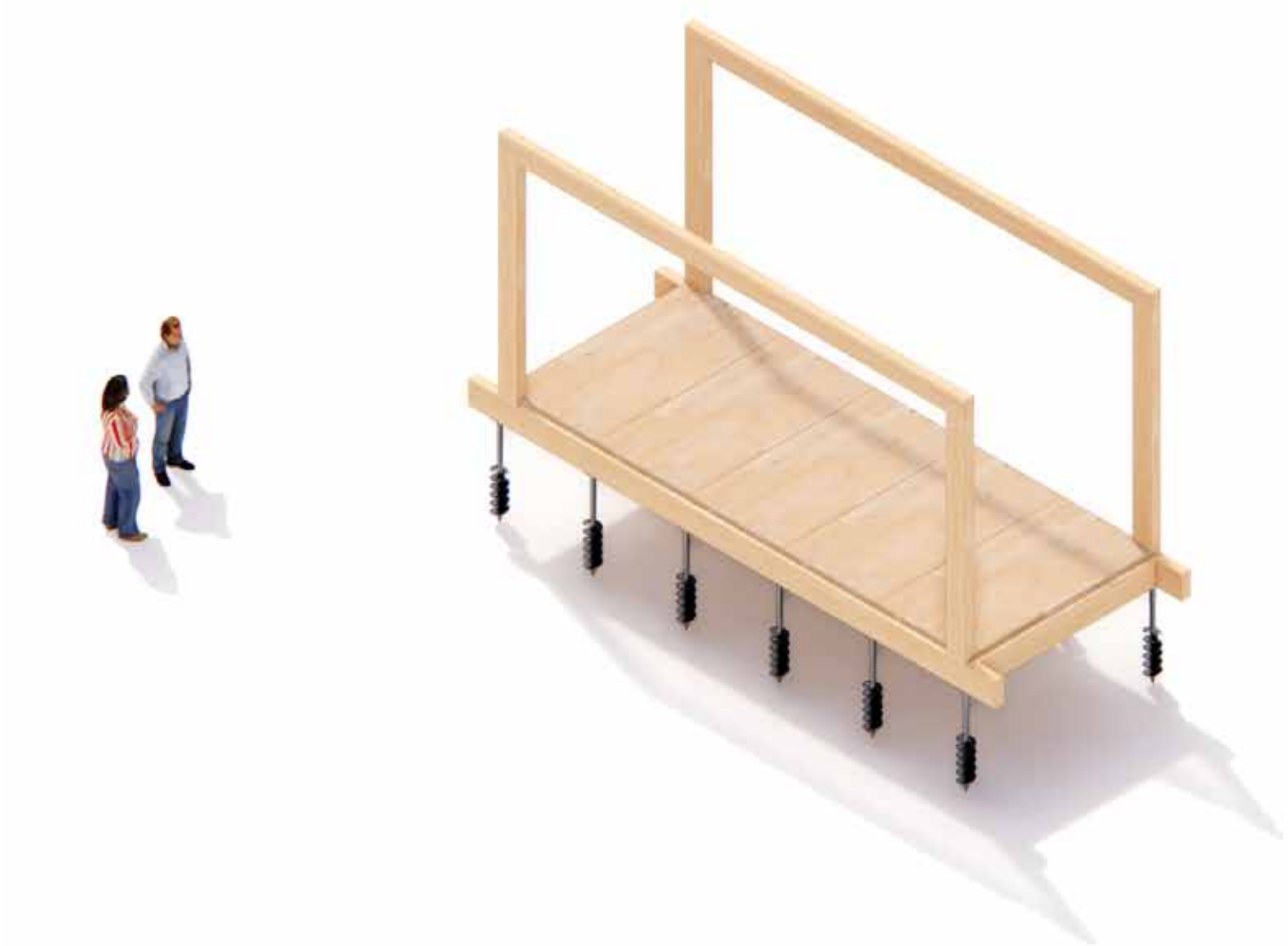
Portal Frames

- Pre-cut GLT columns and beams



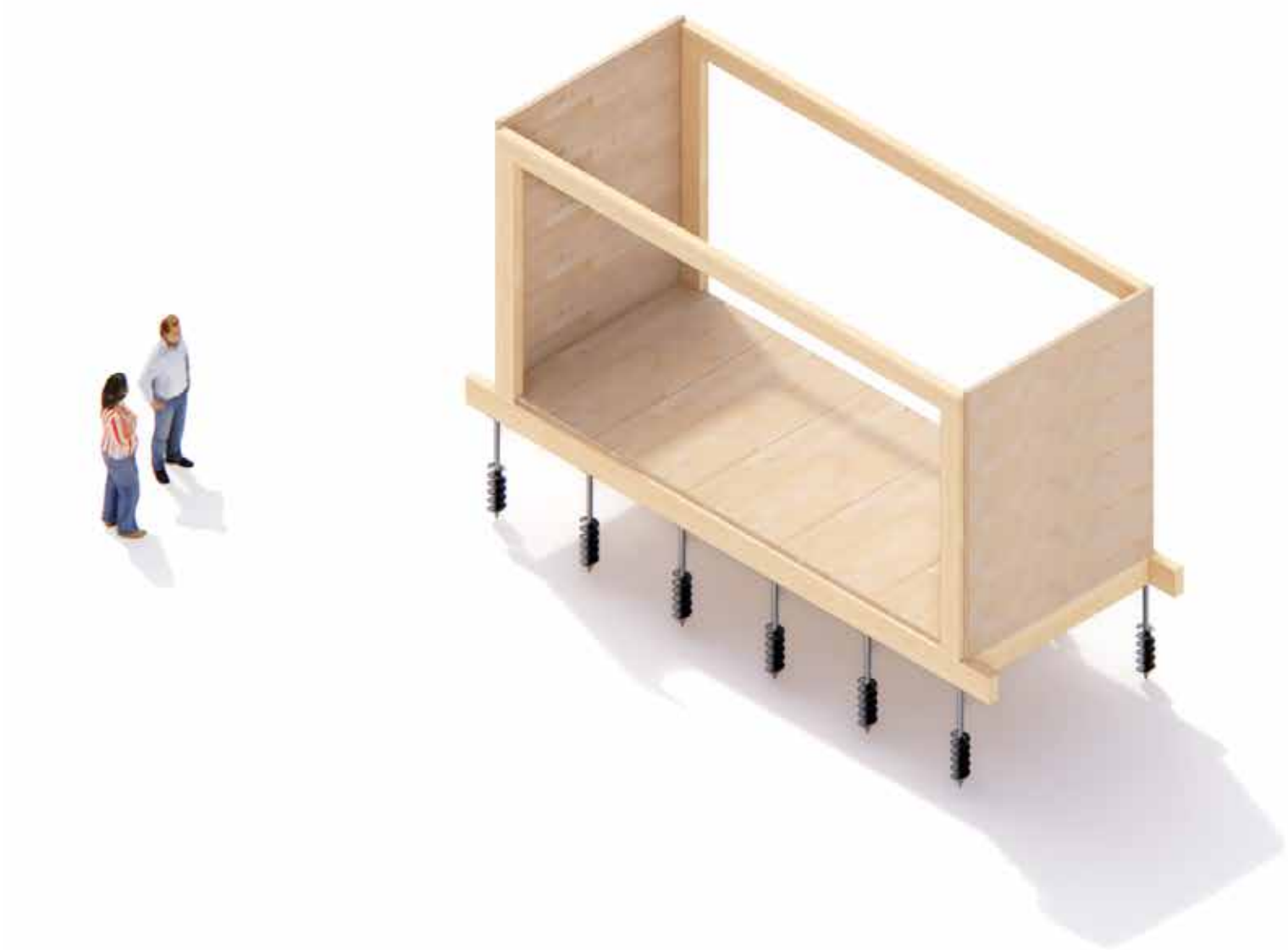
Floor Insulation

Insulation material is fitted between floor joists using batts
Vapor Barriers, air tightness, fire resistance and acoustic performance according to local regulations.



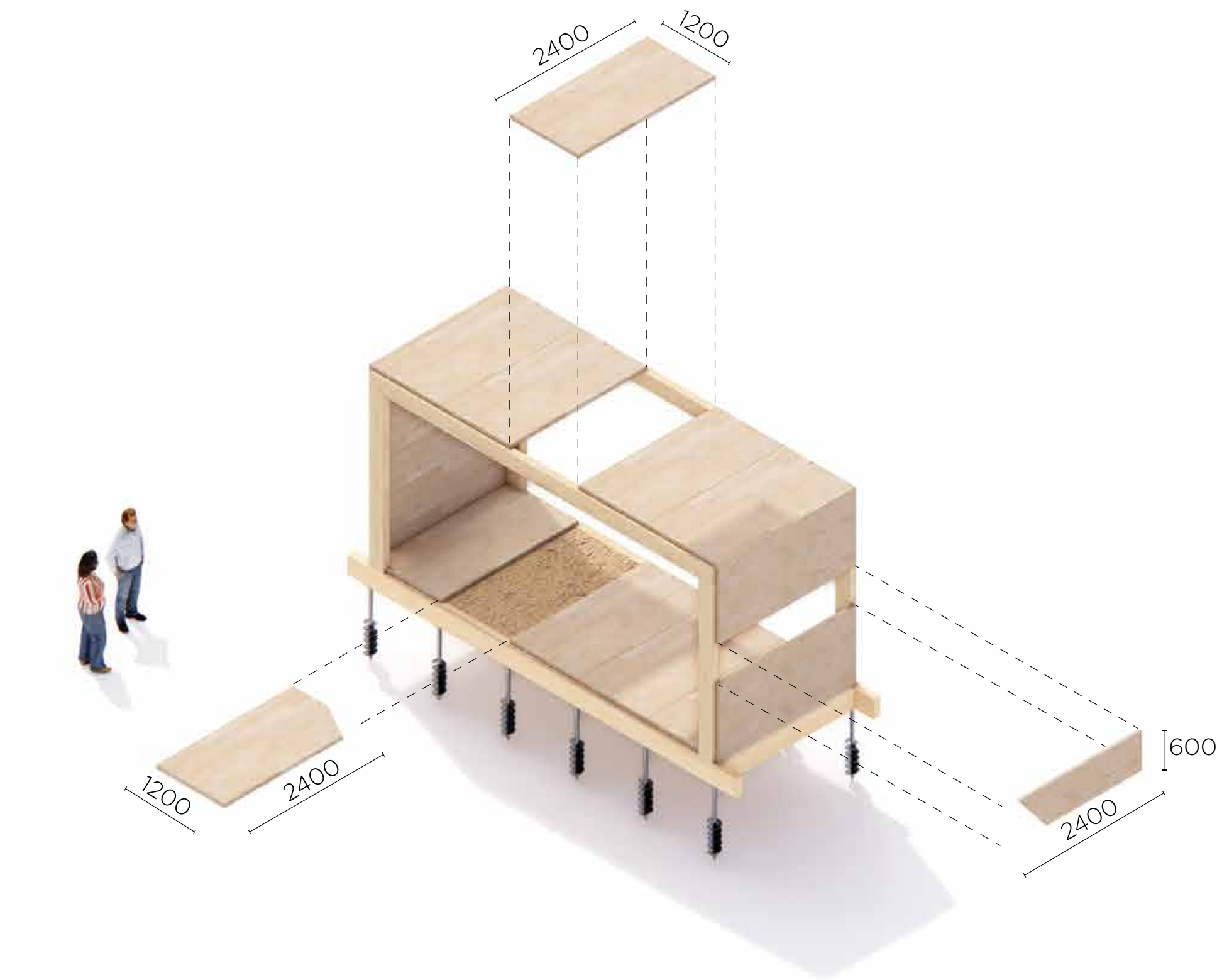
CLT Floor Boards - 1200 x 2400mm

Installed by hand (2 pers.) or light crane



CLT Wall Boards - 1200 x 600mm

Installed by hand (2 pers.) or light crane
rovide final lateral stability

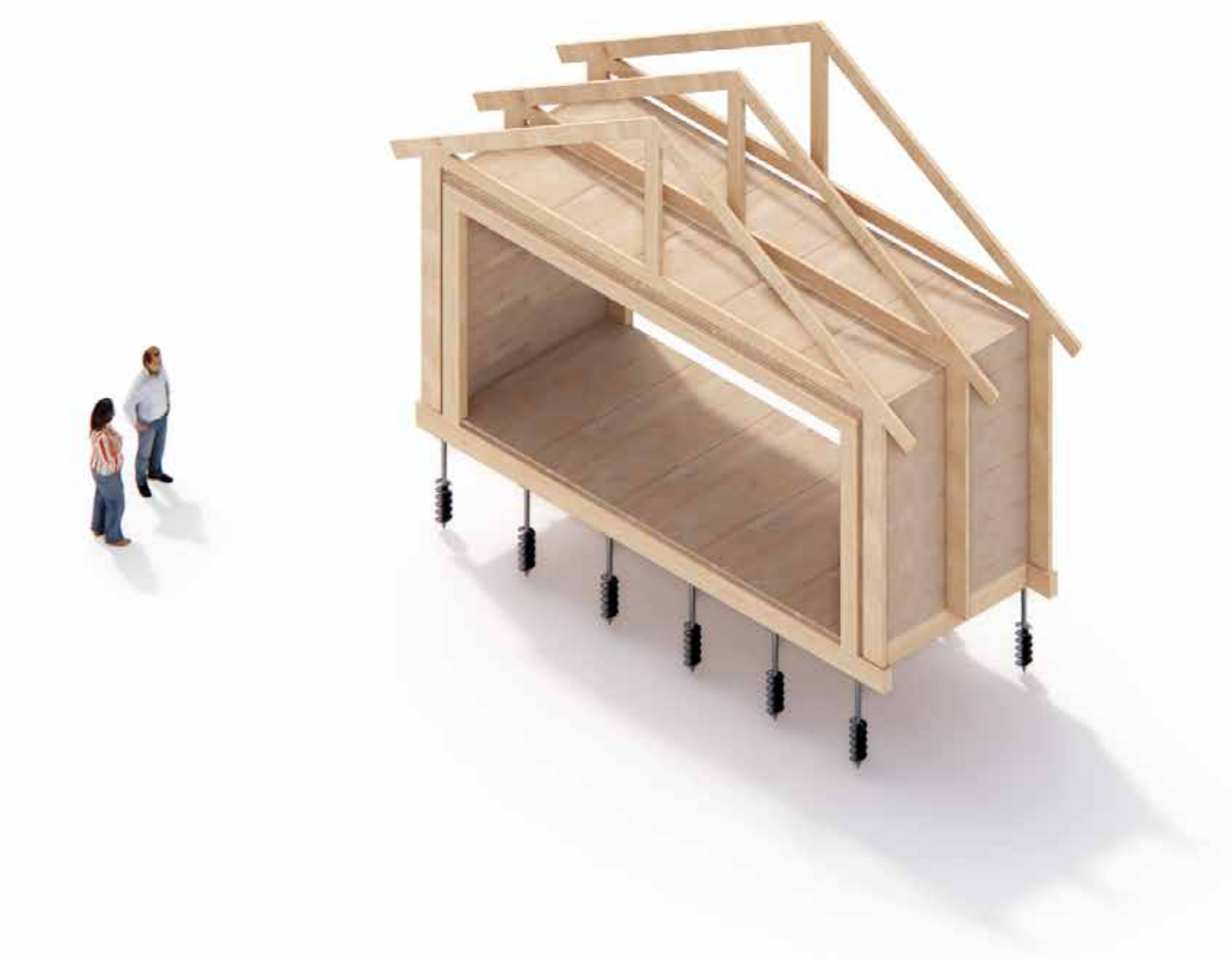


CLT Ceiling Boards - 1200 x 2400mm

Installed by hand (2 pers.) or light crane



External structure can either be placed outside or in-between the insulation layer and holds up the insulation batts, external cladding and roof trusses.



Roof Trusses

Prefabricated roof trusses positioned on top of the portal frame and external wall joists



Wall Insulation

Insulation material is fitted on the outside of the CLT panels and finished with windbreaker Vapor Barriers, air tightness, fire resistance and acoustic performance according to local regulations.



Roof Insulation

Insulation material is fitted on the topside of the CLT panels
Vapor Barriers, air tightness, fire resistance and acoustic performance according to local regulations.



External Cladding

Prefabricated external cladding panels positioned between the external wall joists
Windbreaker and ventilation gaps according to local regulations



Roof Battens

Should be fixed to rafters at a maximum of 600mm apart and must span across a minimum of 3 rafters

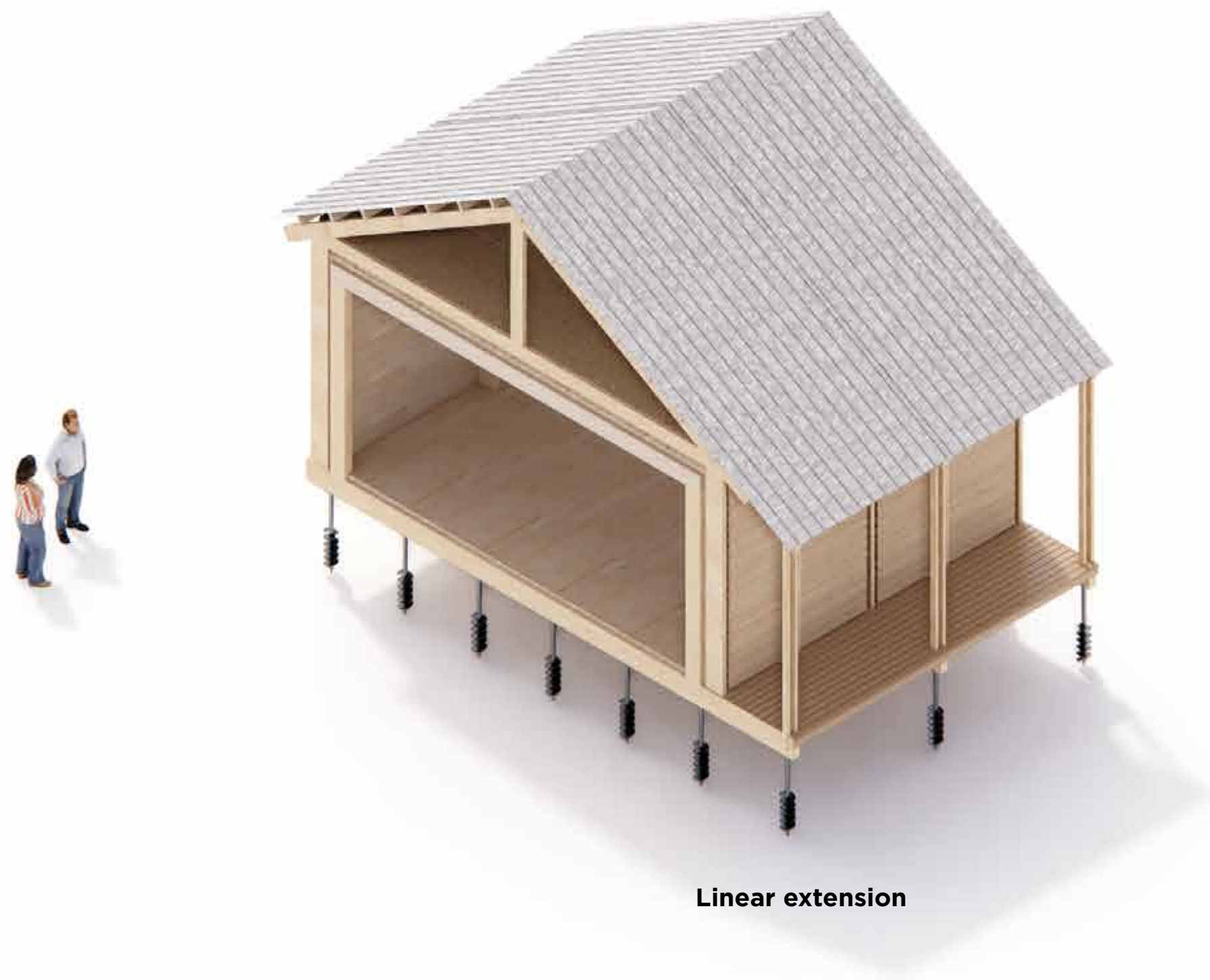


Roof Finish

Steel or aluminium roof cladding - standing seem or corrugated.



External side extension





Linear extension



Linear extension

5 modular wall panels

WIDTH: 1200MM, HEIGHT: Y / INTERIOR CLT PANEL



Wall Module 1: Solid



Wall Module 2: Floor-to-ceiling window, 2400mm



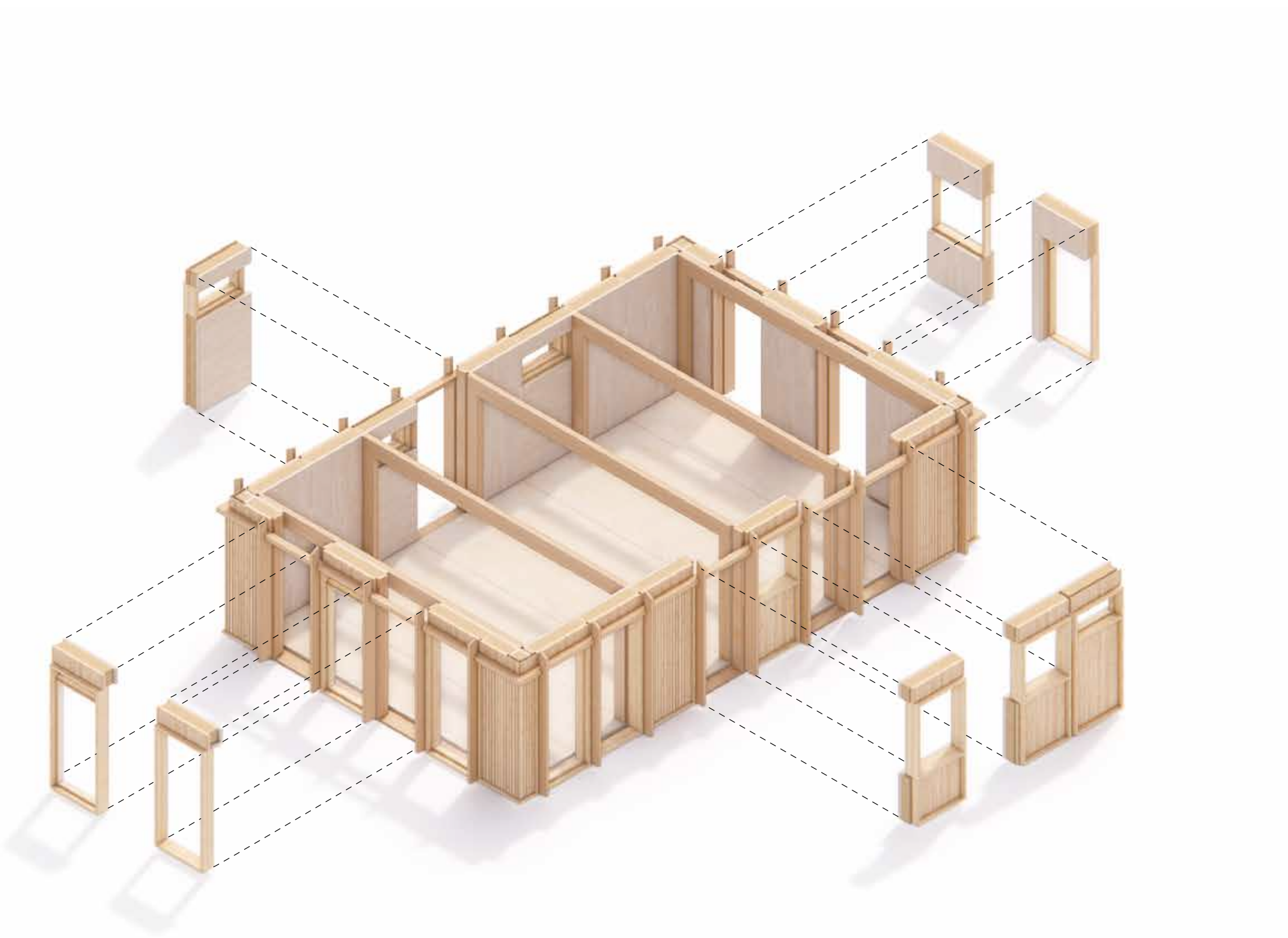
Wall Module 3: 600mm window



Wall Module 4: 1200mm window



Wall Module 5: 1800mm window

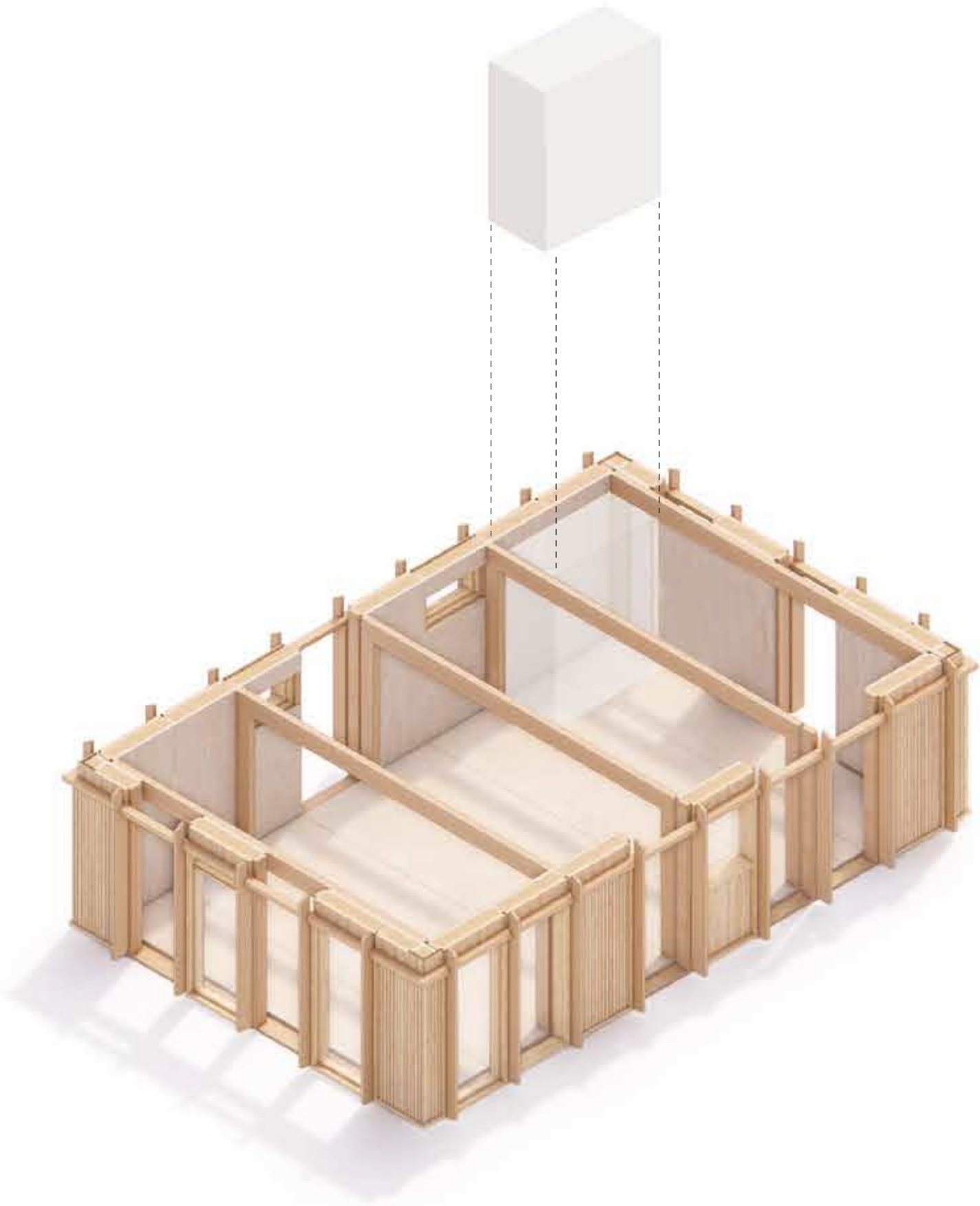


Technical module

PREFABRICATED

The specific contents of a prefabricated technical module can vary based on the location and the intended design of the house.

- 1. The module contains walls, floors, and roof sections
- 2. Shower Cubicle and toilet
- 3. HVAC systems: Heating, ventilation, and air conditioning components may be included, depending on the module’s design
- 4. Electrical systems: Wiring, electrical panels, outlets, and switches are pre-installed in the module
- 5. Plumbing systems: Pipes, fixtures, and connections for water supply and drainage are integrated into the module.
- 6. Utility connections: Provisions for connecting to external power, water, and sewage systems are included

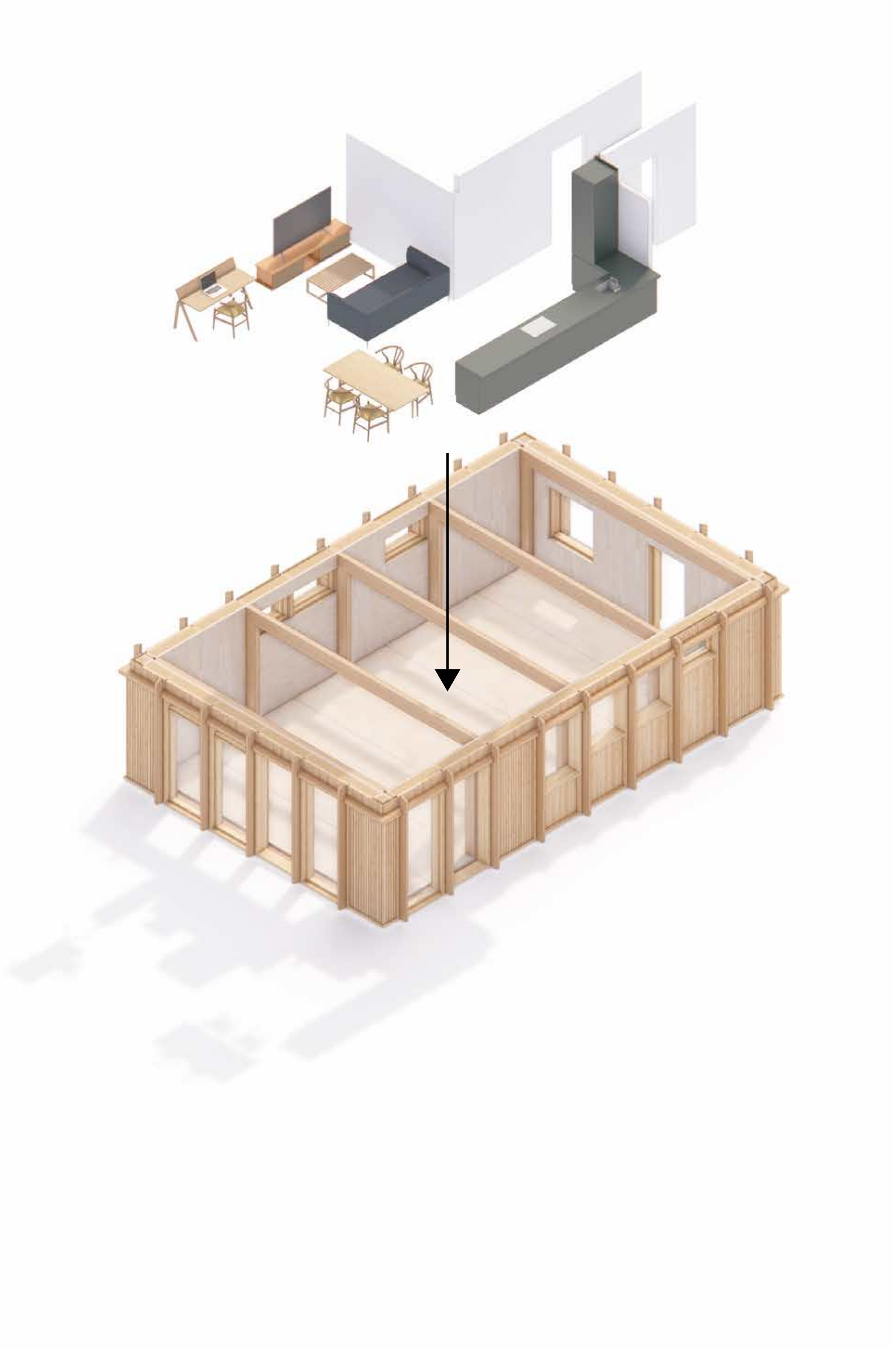


Partition walls and interior

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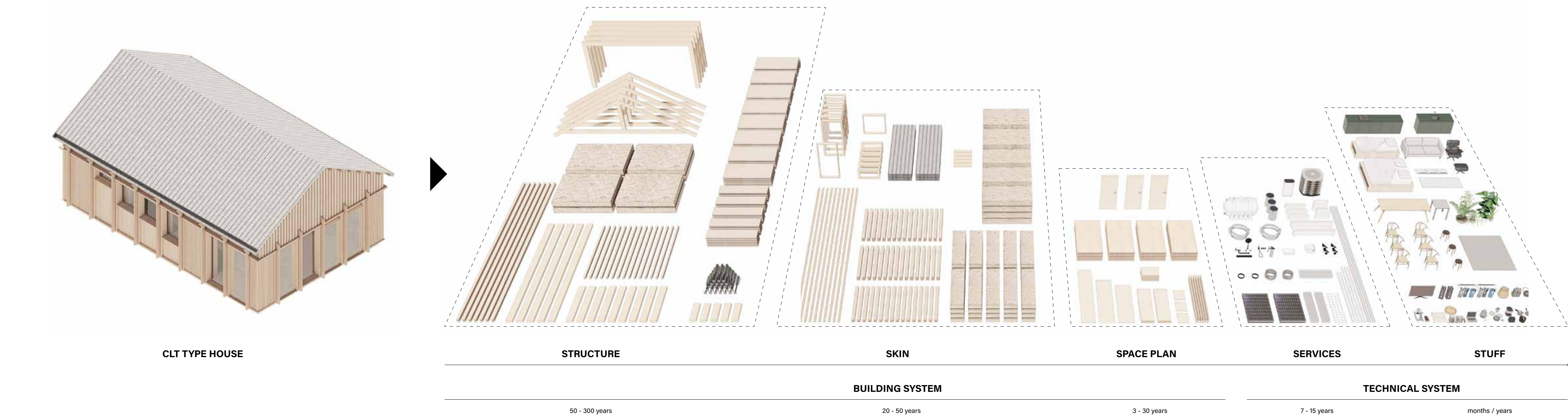
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KIT OF PARTS
YOUR READYMADE HOUSE

Kit of Parts

FLAT / TALL CEILING

- 1. The entire house arrives as numbered, prefabricated components ready for assembly.

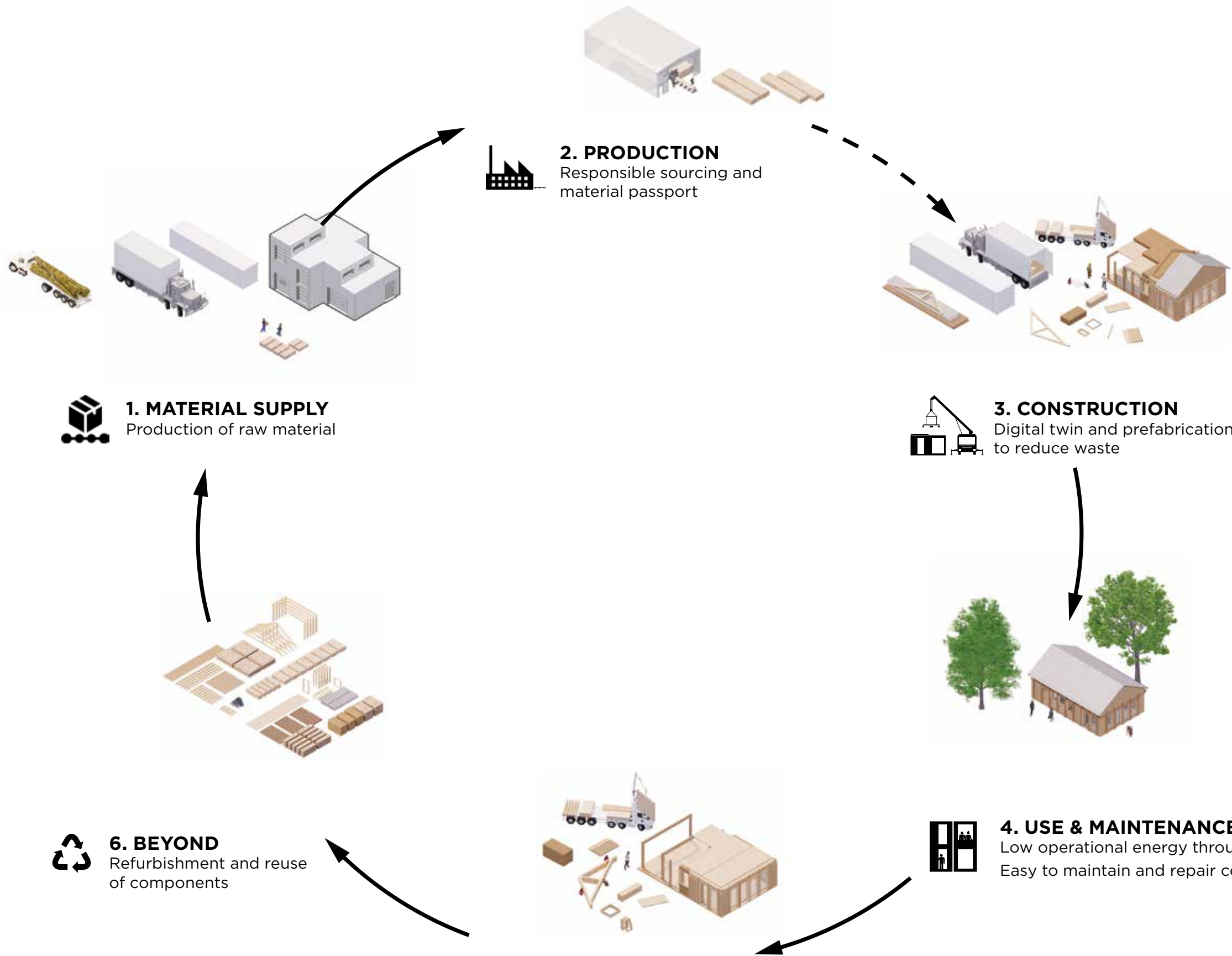


Production process

A CIRCULAR LOGIC

1. The first step is the material Supply Center, where the raw material CLT is typically made in 2,4 x 6,0 m panels. This can either be made by virgin material or Reused timber (CLT2)

2. Second step is the production of the CLT panels: In certain cases this can be done on the construction site



3. The construction site where the 'kit of parts' arrives. In certain cases this can overlap with step 2

5. An important step is the 'end of life' where the majority of the building components should circulate back into the production loop.

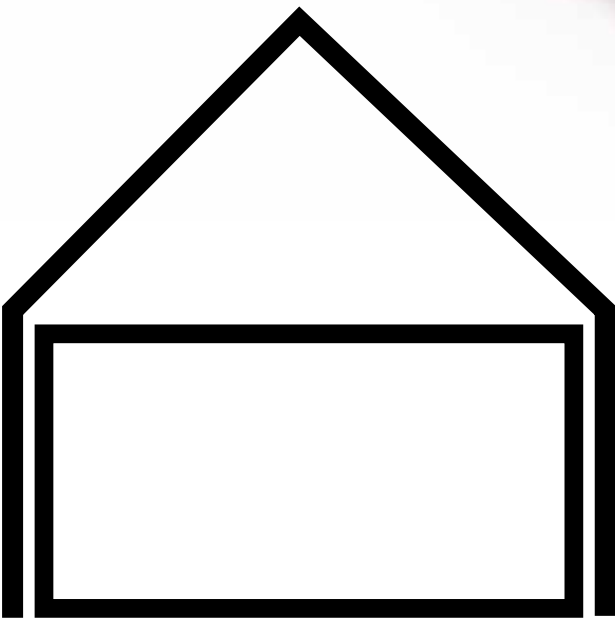
08

DESIGN VOCABULARY

House in a House

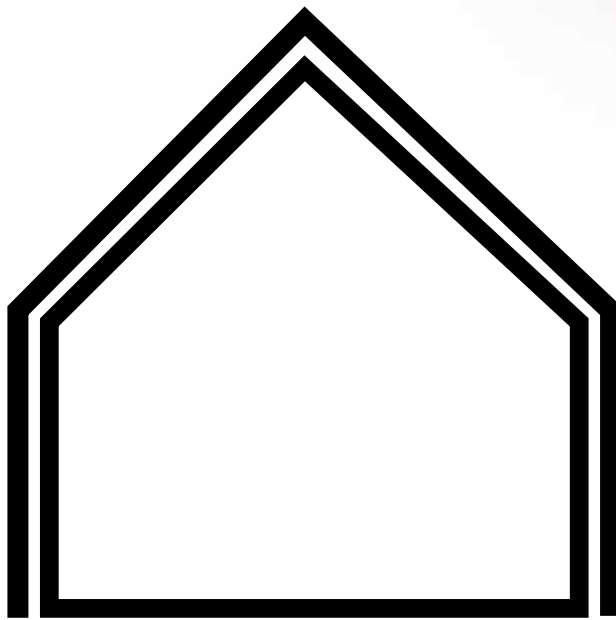
FLAT / TALL CEILING

- 1. The building system essentially consists of two layers:
- 2. An inner layer (lining) composed of the CLT / GLT kit which is a simple enclosure that can be erected in 1 day.
- 3. An outer layer (upholstery) which is made up of the roof and facade that protects the inner layer. This Layer can be made up of any range of materials and design that can adapt to both the surrounding context and the modular system.



Flat ceiling

The 1 - storey option with flat ceiling



Tall ceiling

The 1 - storey option with tall ceilings

House in a House

FLAT / TALL CEILING

- 1. The building system can easily be applied to a 2 storey design - essentially a taller version with an inserted deck.



House in a House - Flat ceiling

The 2 - storey option with flat ceiling
Intermediate slab will contain an inserted deck for acoustics



House in a House - Tall ceiling

The 2 - storey option with tall ceilings
Intermediate slab will contain an inserted deck for acoustics

Roof profiles

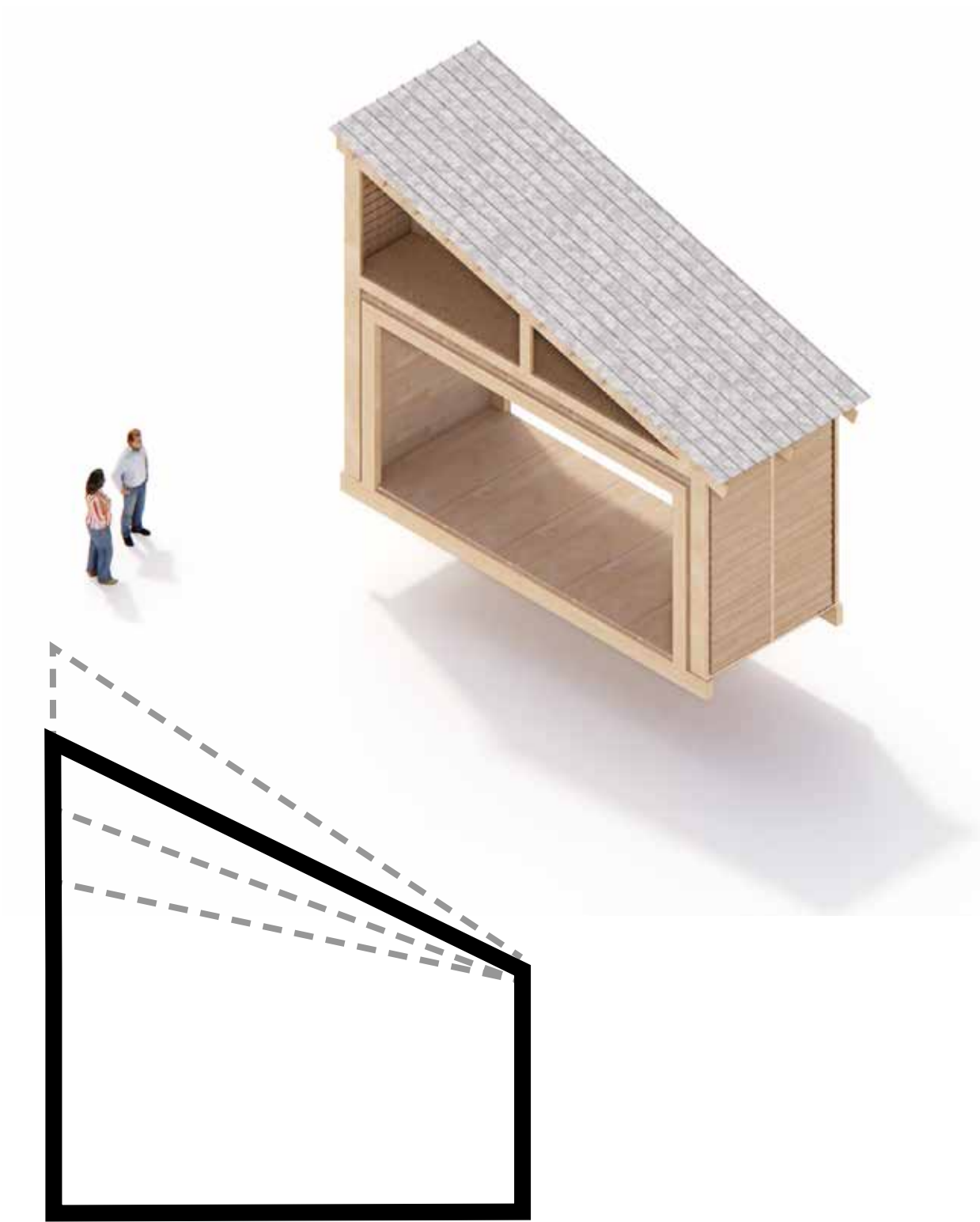
PITCH ROOF / ONE SIDED SLOPE

1. Pitched roofs and single-slope roofs offer numerous benefits for users and builders. These roof designs provide excellent protection against environmental hazards, efficiently shedding water, snow, and debris to prevent damage and leaks. The sloped structure enhances thermal efficiency and energy savings by allowing natural ventilation between the outer layer and the building. Single-slope roofs, in particular, offer a modern aesthetic and cost-effectiveness due to their simple design and reduced material requirements. Both roof types facilitate efficient rainwater management and can be easily adapted for rainwater collection systems. Additionally, these roofing styles can provide extra living or storage space, either through attic conversion in pitched roofs or by maximizing interior space in single-slope designs



Pitched Roof

The pitched roof is one of two standard profiles, which can be varied with a range of slopes and offsets



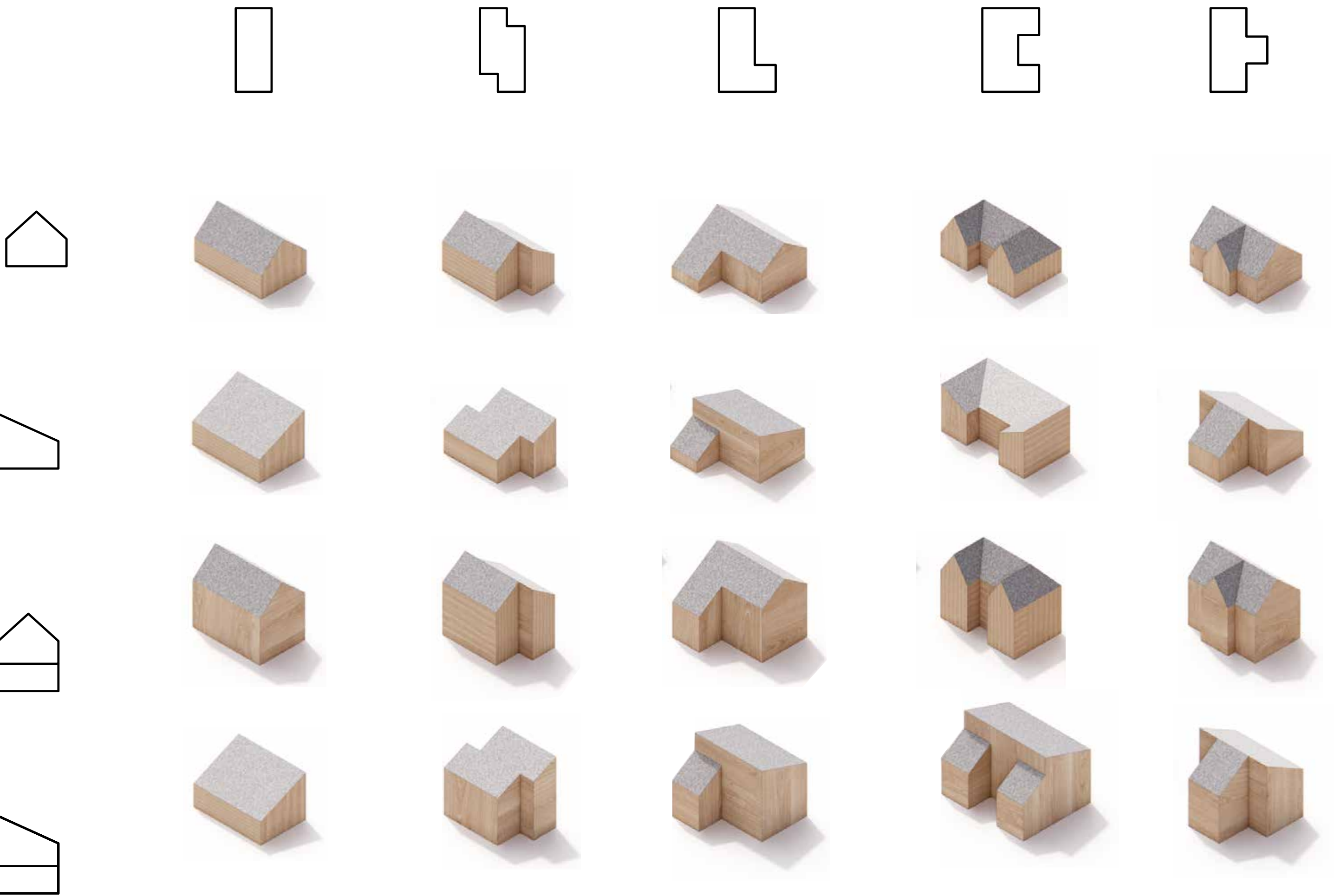
House in a House - Tall ceiling

The one sided roof is the second of the two standard profiles which can be varied with a range of slopes and offsets

Housing catalogue

GABLE PROFILE / FOOT PRINT

1. By combining a custom floor plan outline with a suitable roof profile the system can provide multiple unique building volumes. The inclusion of diverse housing typologies in this catalogues reflects an understanding of modern housing needs, emphasizing designs that encourage density while still accommodating specific community requirements, such as those of rural or remote areas.



Roof Finish

Steel or aluminium roof cladding - standing seem or corrugated.

09

INSPIRATION
EXTERIOR & INTERIOR



Exterior

Modularity, Prefabrication, Natural Wood, Light Roofs, Exposed Structure



Interior

Exposed Structure, Natural Wood, White Partitions, Daylight Rooms

10

DESIGN EXAMPLES
SINGLE FAMILY / DUPLEX

Single Family House

S / M / L

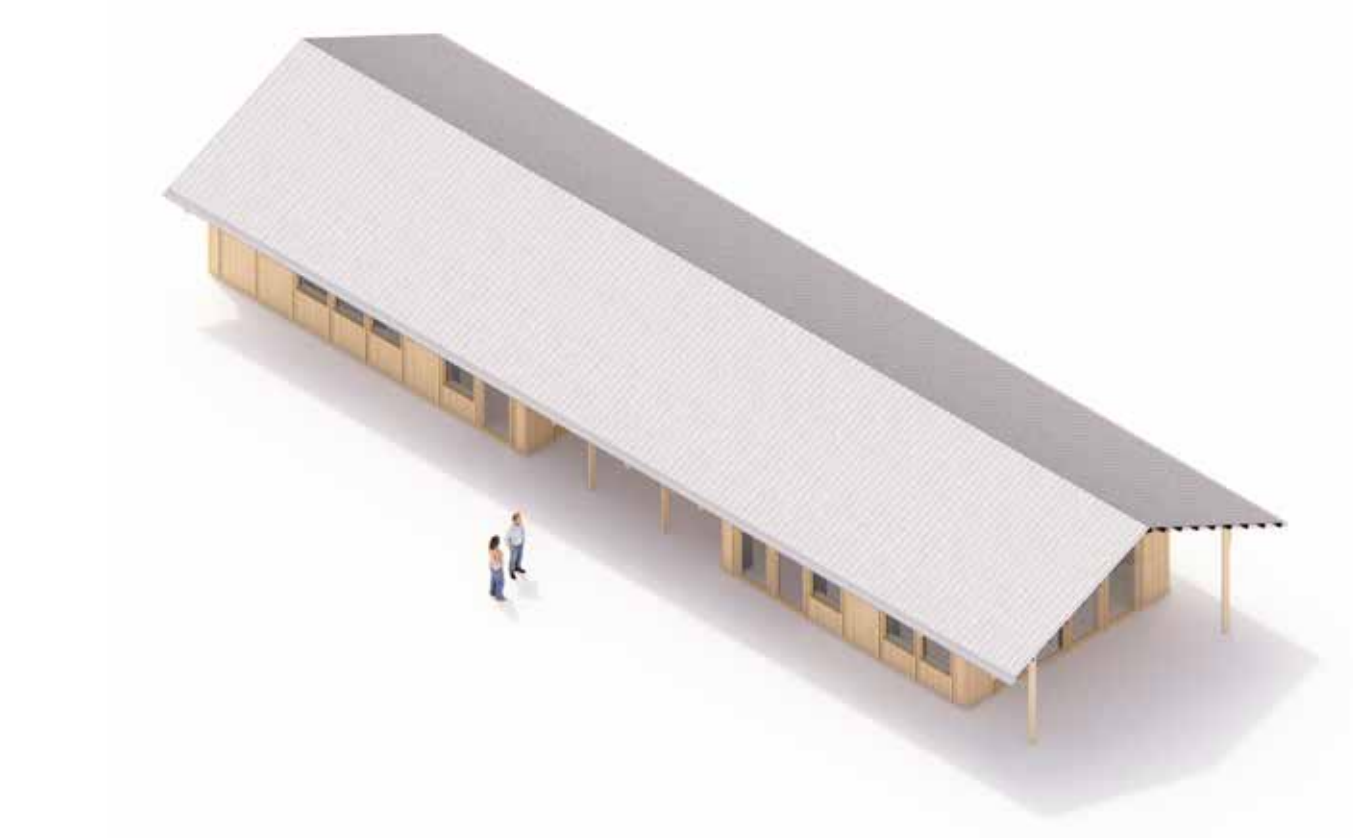
- 1. **Small: 68 m2** 2 bedroom, 1 bathroom for tiny living
- 2. **Medium: 84 m2** 2 bedroom, 1 bathroom for tiny living with a slightly more spacious layout than the small version.
- 3. **Large: 120 m2** 3 bedroom, 2 bathroom split into two volumes under one roof. This version demonstrates the idea of creating valuable external spaces for a house with a small volume. It can be built in two phases which allows for a small family to grow with the property and expand it.



1. Small (68 m2)



2. Medium (84 m2)

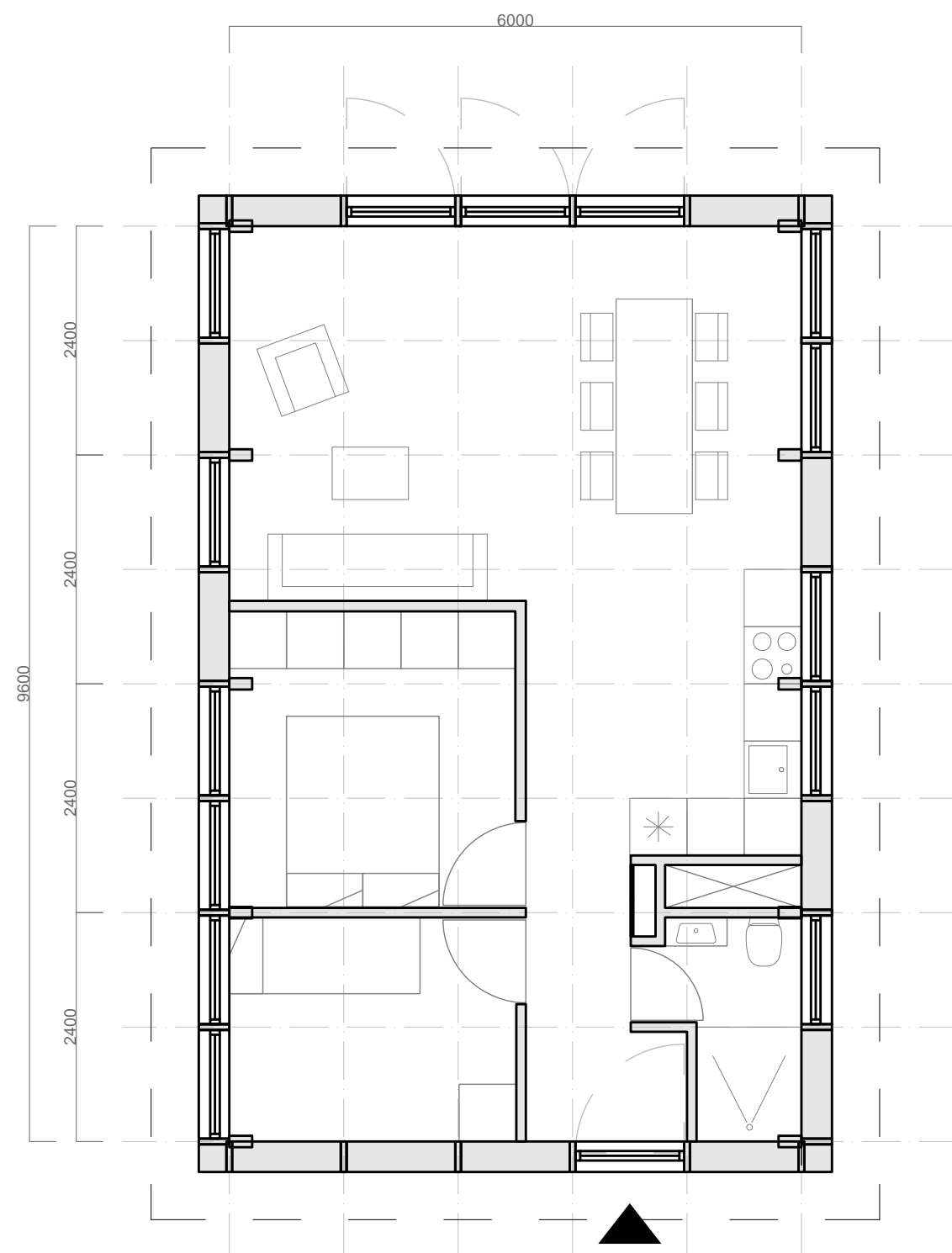


3. Large (120 m2)



Single family house

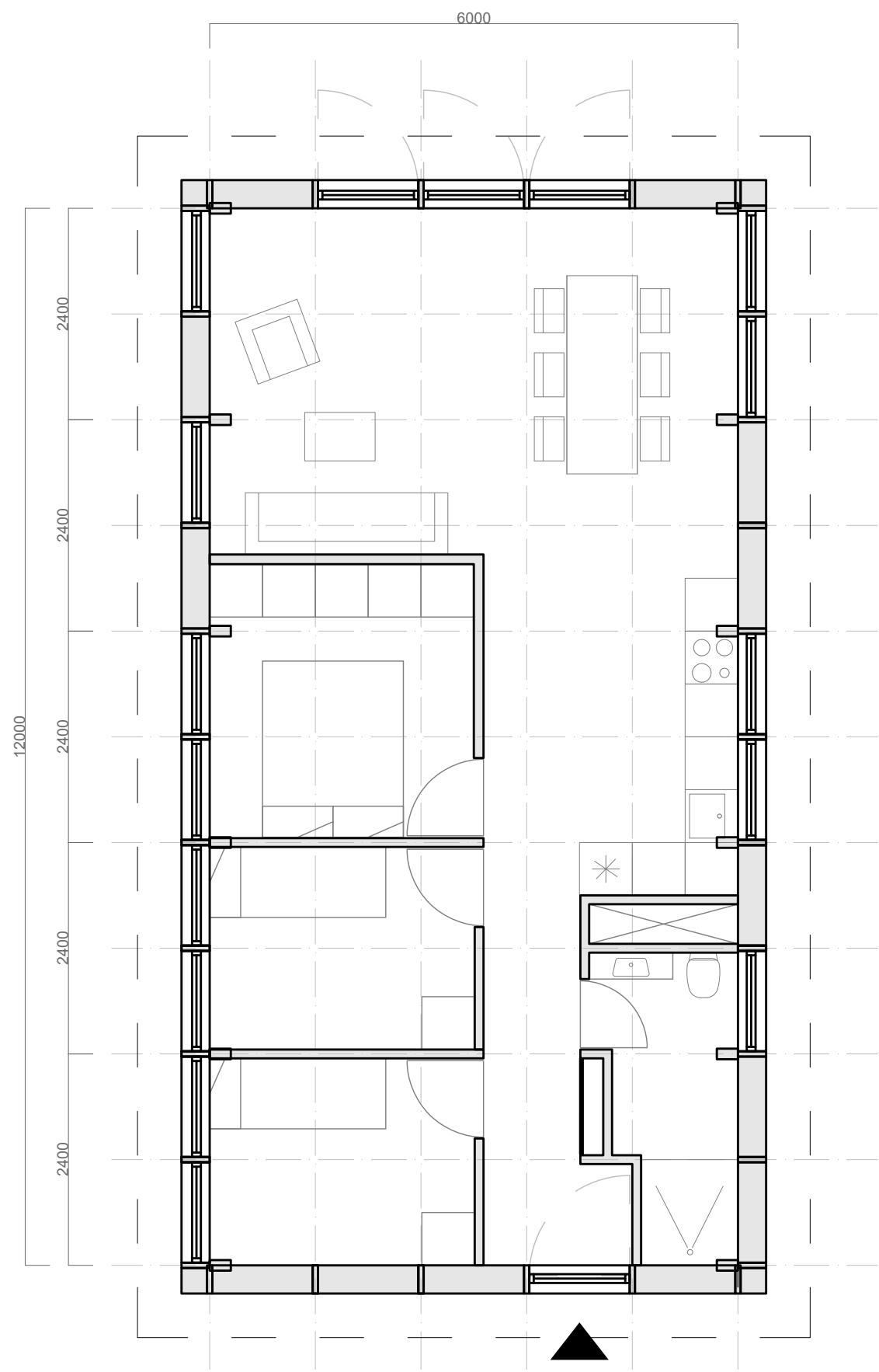
SMALL - 60 M2



Single Family House - 68m2



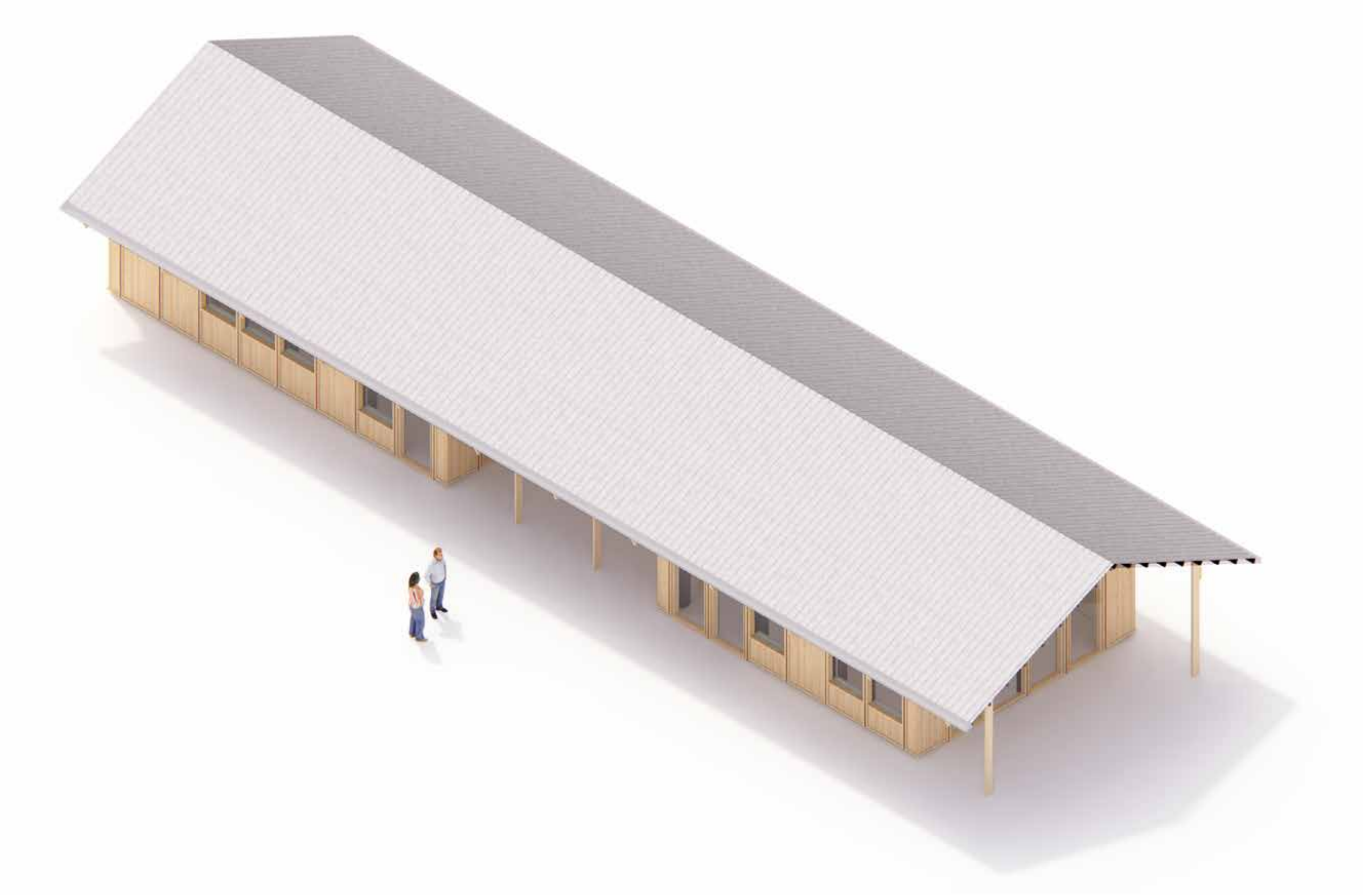
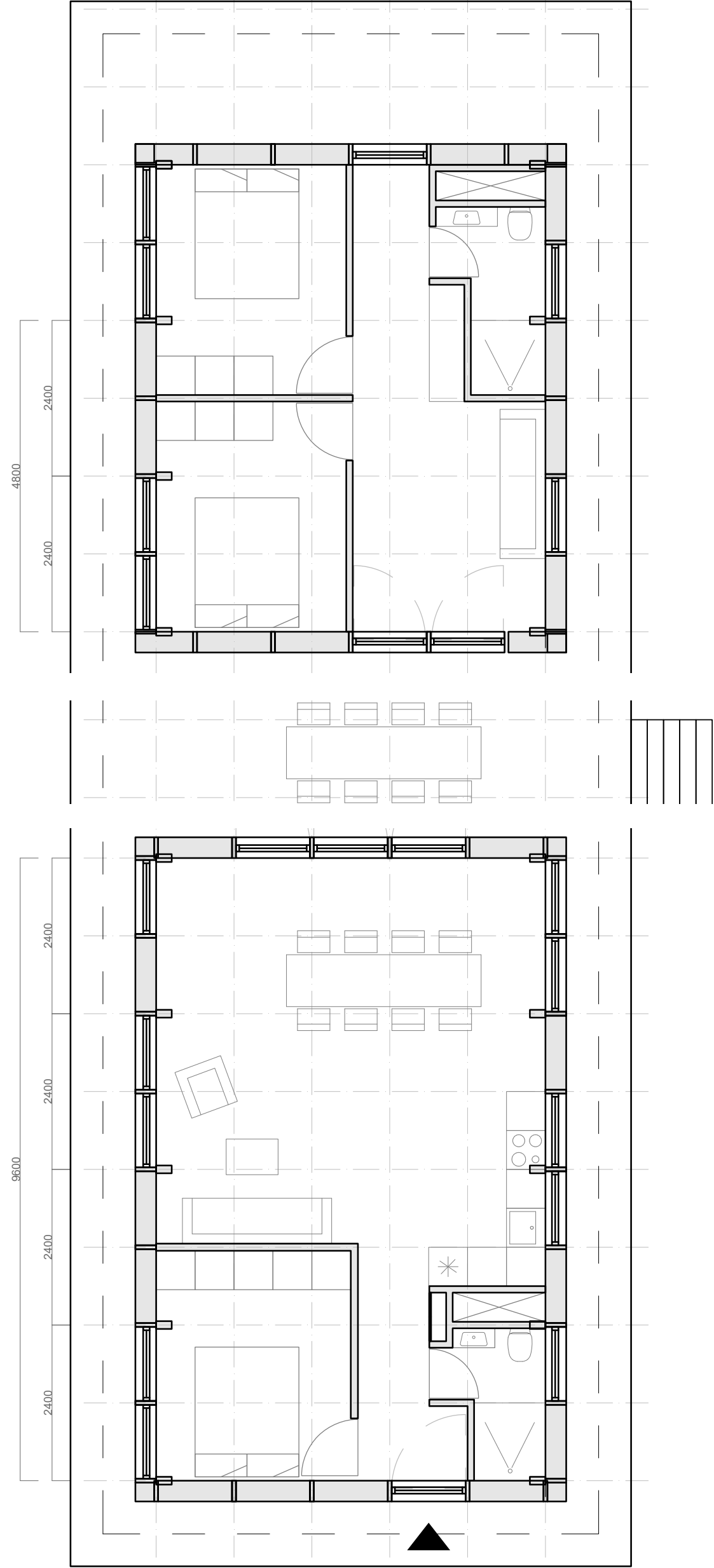




Single Family House - 84 m2





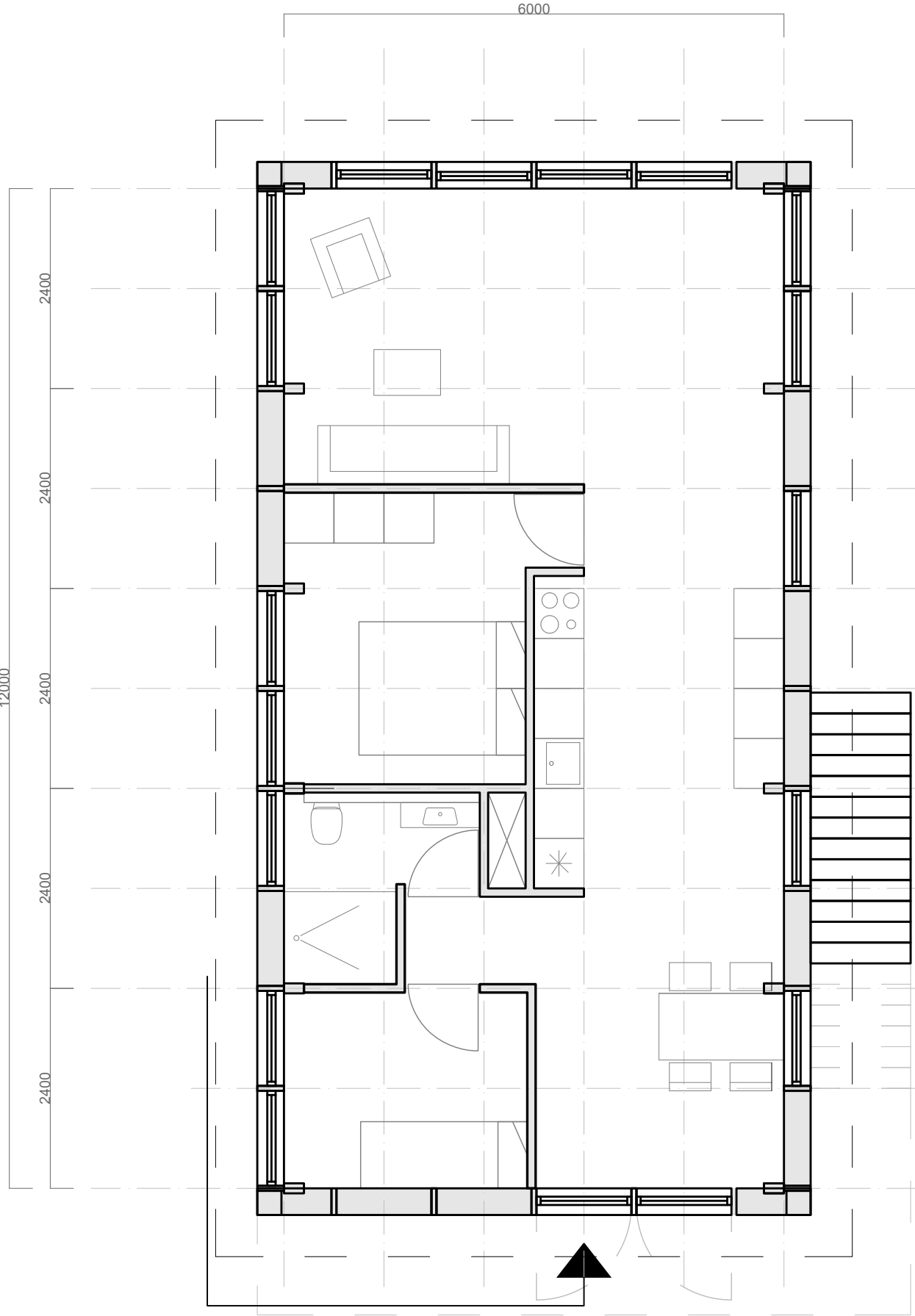


Single Family House - 120 m2

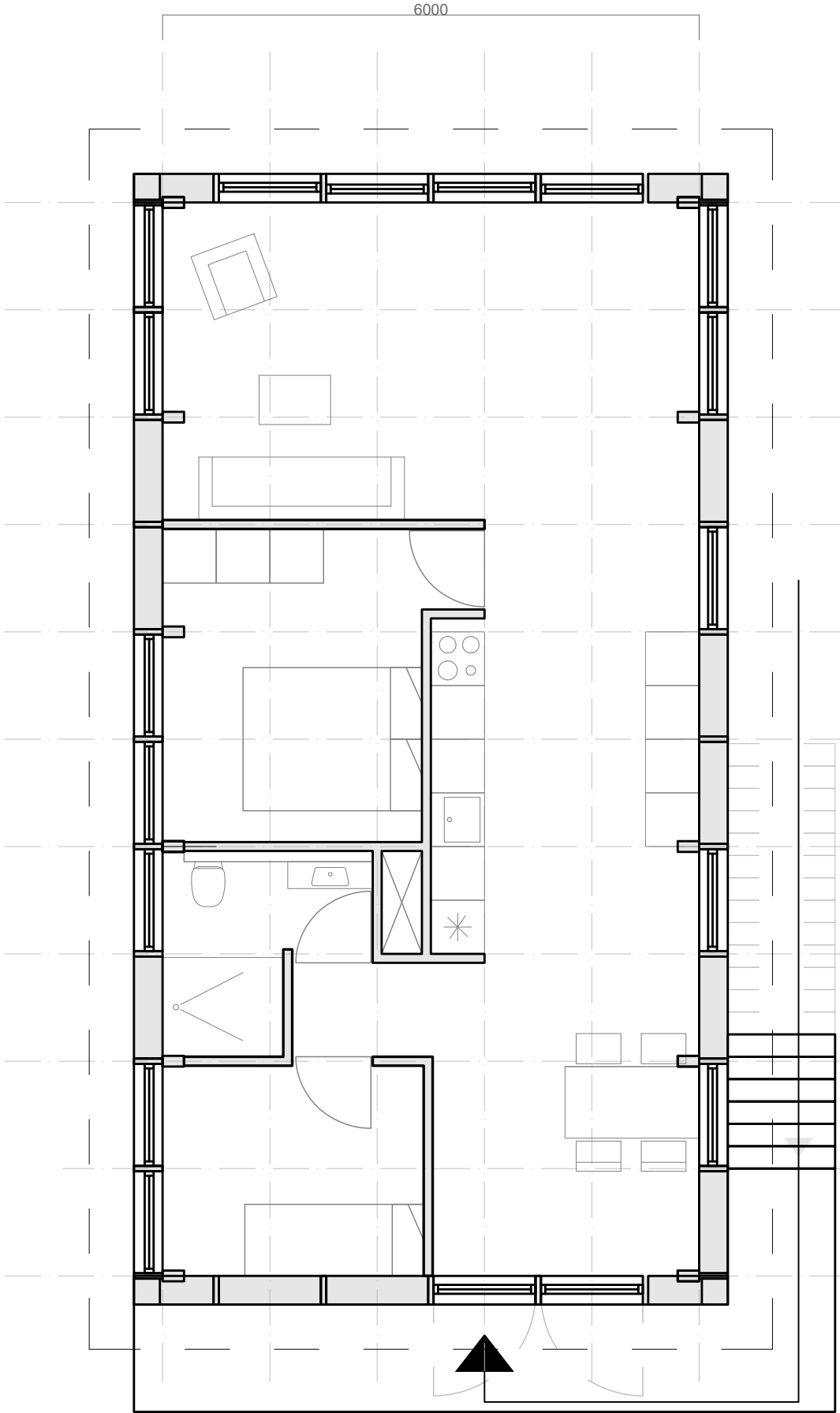


Duplex House

MEDIUM



Ground Floor apartment - 84 m2



1st Floor apartment - 84 m2





We offer 3 delivery options for investors:

1. Turn Key



With our turn key solution your house will arrive fully completed, operational and ready to be installed and connected to the technical infrastructure at the final destination.

2. Flat Pack



With our flat pack solution, your house will be delivered as a kit of parts, complete with a self-assembly manual. This approach minimizes shipping costs and the risk of damage during transit, while also enabling assembly in remote locations.

3. License



With the license solution we deliver only the timber. This allows you to utilize the CLT Hybrid systems trademarks, business processes, and technical solutions in exchange for an initial fee and ongoing royalties based on the m2-development.

We offer 2 services

1. Design as is

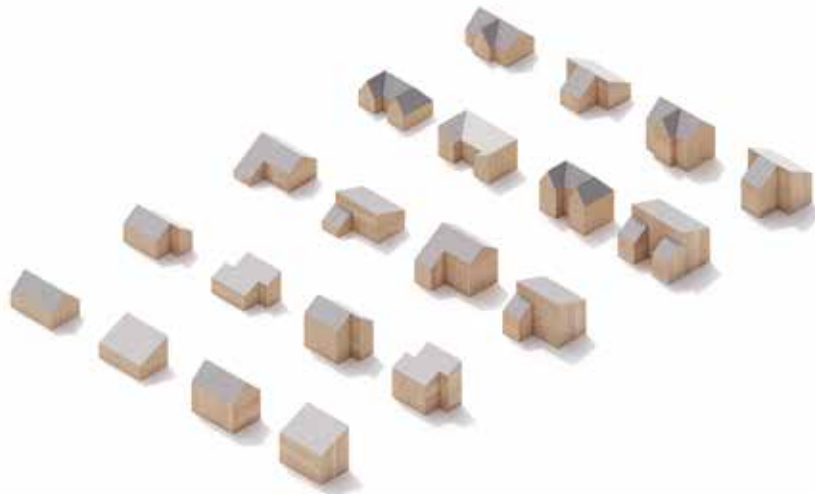


CLT Hybrid Type House

3 sizes:

- Small 68 m2: 2 bedroom, 1 bathroom, kitchen, dining room, living room
- Medium 84 m2: 2 bedroom, 1 bathroom, kitchen, spacious dining room & living room
- Large 120 m2: 3 bedroom, 2 bathroom split into two volumes under one roof. Kitchen, spacious dining room & living room, small living room.

2. Design Customization



CLT Hybrid Custom House

We offer to customize the design of our CLT hybrid system so it matches your needs. The custom design will be based on the same system, but opens up a variety of options.
In addition to this we offer architectural desiogn services such as urban plans, landscapes and exterior spaces that are aligned with the ideas and values that the CLT Hybrid Houses are based on.

Price structure:
- Excluding: VAT, Delivery and off-grid solutions

	1. Design as is	2. Design customization
1. Turn Key	from 2.250 € / m2	from 2.250 € / m2 + 135 € hourly rate
2. Flat Pack	from 1.420 € / m2	from 1.420 € / m2 + 135 € hourly rate
3. License	from 300 € / m2 + 5.000 € license fee/unit	from 300 € / m2 + 135 € hourly rate + 5.000 € license fee/unit

Price structure:
- Excluding: VAT, Delivery, Connection, Local Advisory

	1. Design as is	2. Design customization
1. Turn Key	from 1.650 € / m2	from 1.650 € / m2 + 135 € hourly rate
2. Flat Pack	from 1.000 € / m2	from 1.000 € / m2 + 135 € hourly rate
3. License	from 200 € / m2	from 200 € / m2 + 135 € hourly rate