



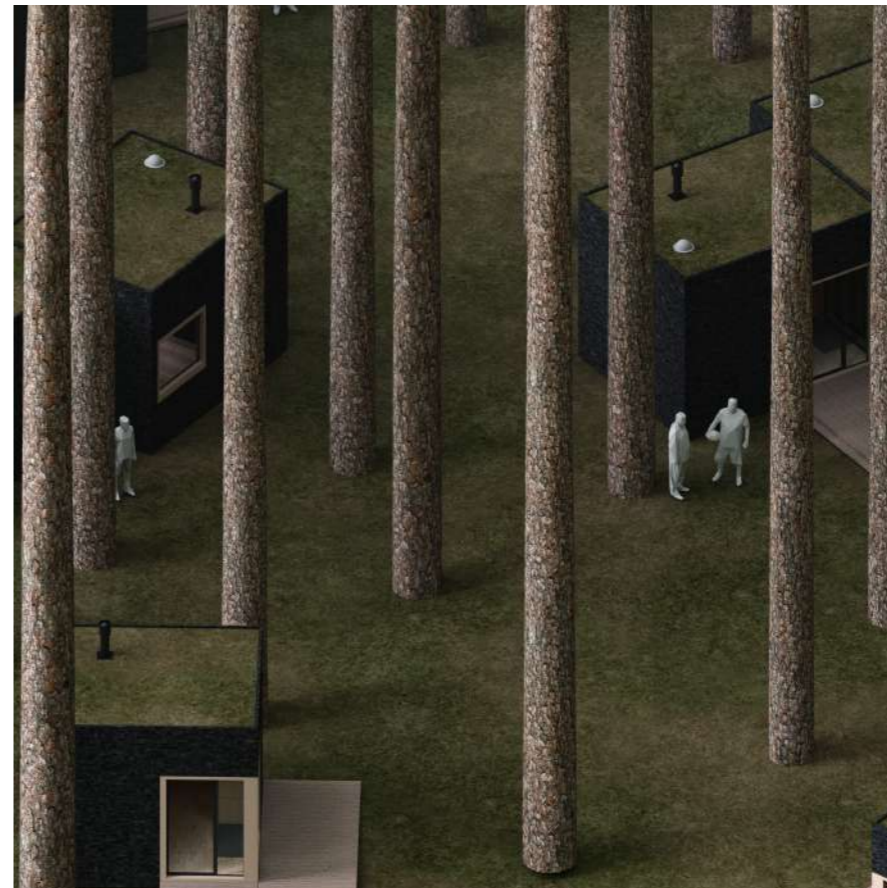
TINYHOUSE

Architectural Challenge 2021

9176173538

RYTERNA MODUL ARCHITECTURAL
CHALLENGE 2021: TINY HOUSE

LOCATION: somewhere in the forests of Eastern Europe
MOTTO: simple and cozy

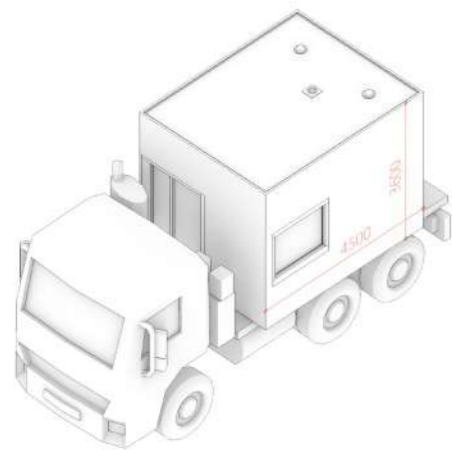


MOBILITY

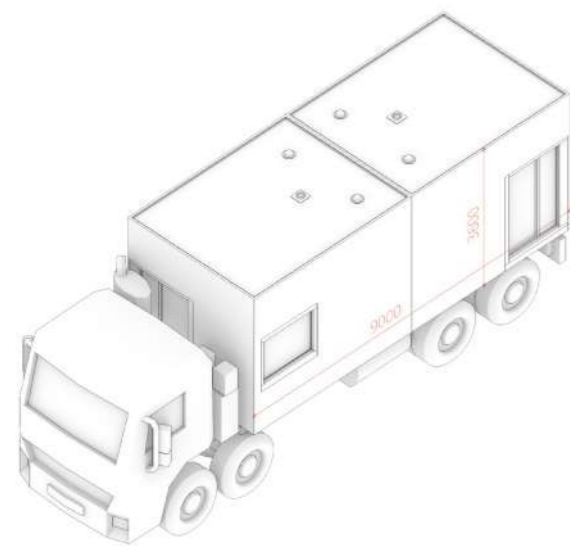
SMALLER = MORE MOBILE

Smaller module makes it easier to maneuver on the road or among trees in the forest. You can transport several modules at once if the size of the truck is big enough.

TRANSPORTATION



small truck - one modul



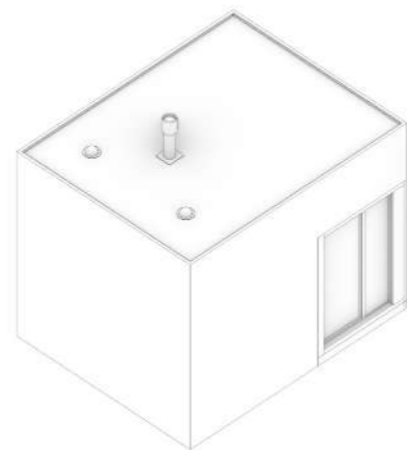
large truck - two moduls

FUNCTIONALITY

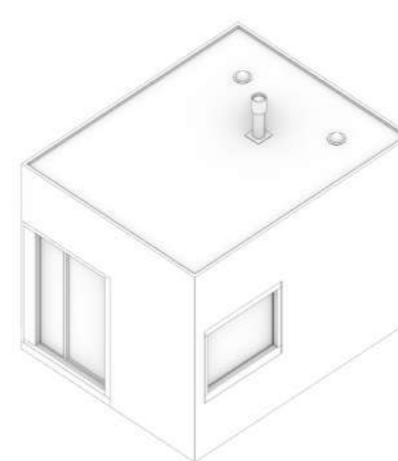
ONE MODUL - HALF FUNCTIONS

One module contains several functions. The combination of two modules gives a fully functional house. The number of combinations allows you to adapt the house to different needs.

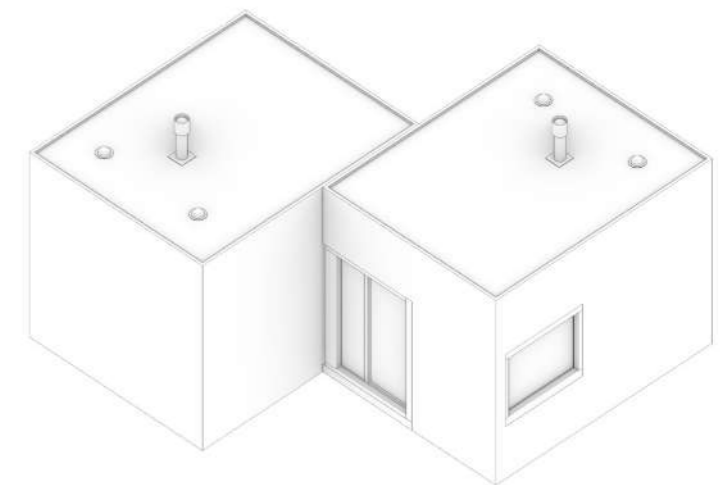
FUNCTION A



FUNCTION B



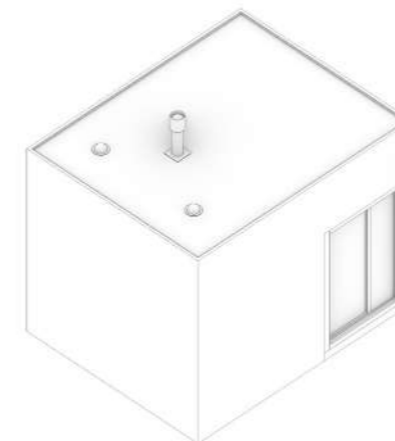
FULL FUNCTIONAL HOME



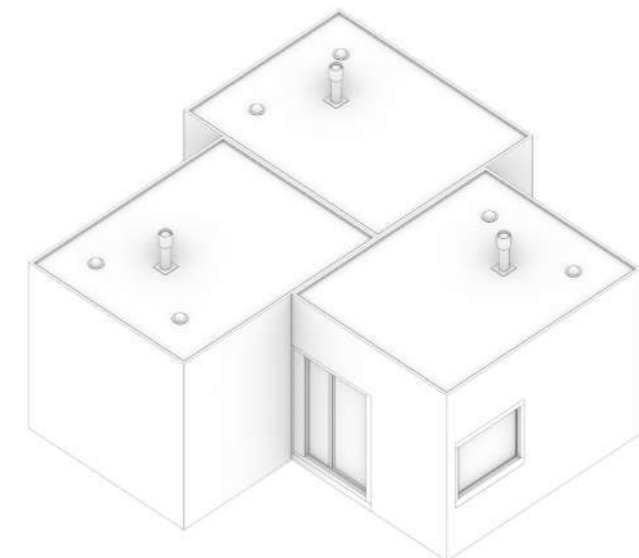
OPTIONS

Some functions could be realized as stand-alone modules or one may combine them into groups of three if necessary. It depends on the needs of the «village» and the number of residents.

STAND-ALONE MODUL



TRIPLE MODUL BUILDING



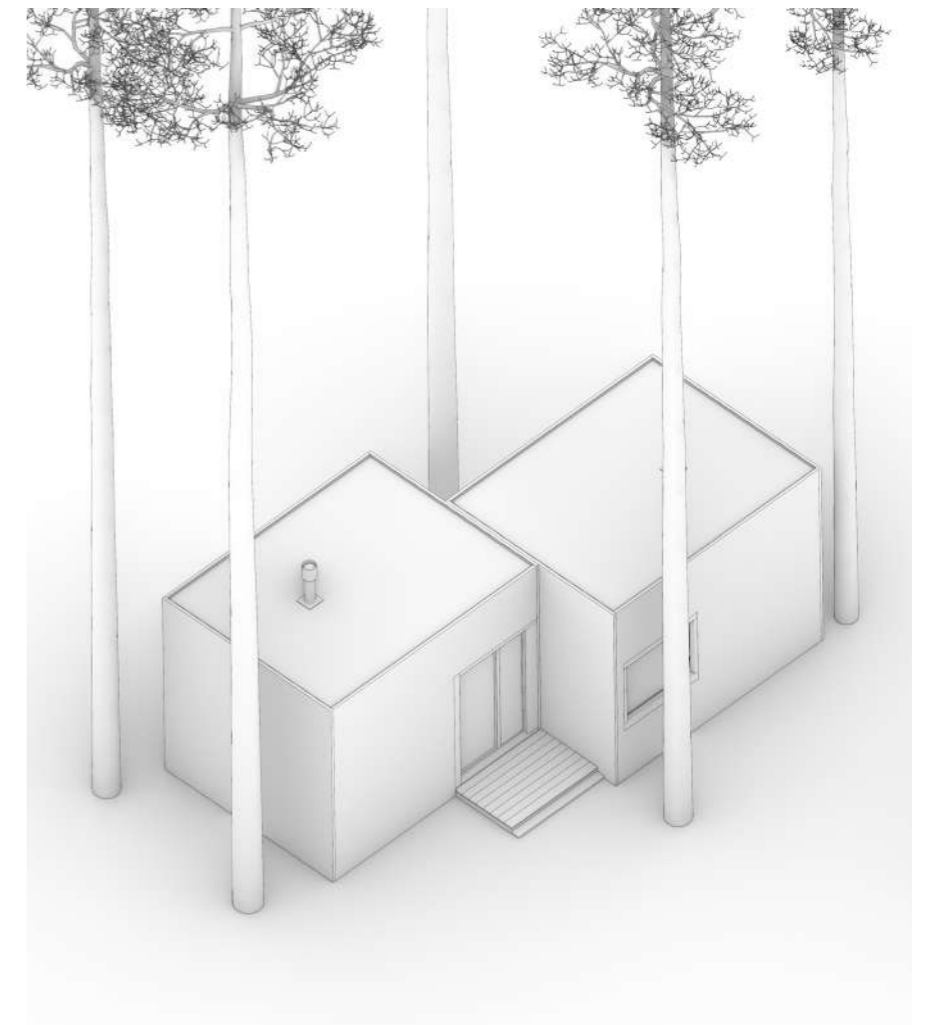
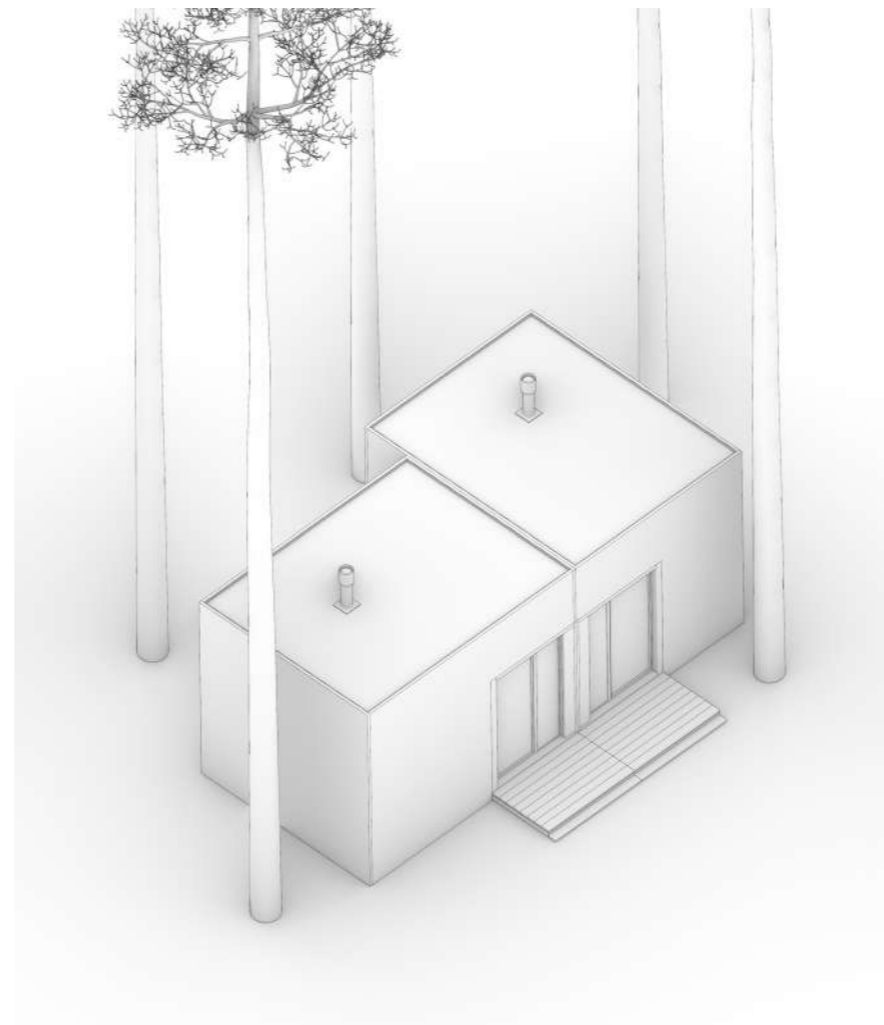
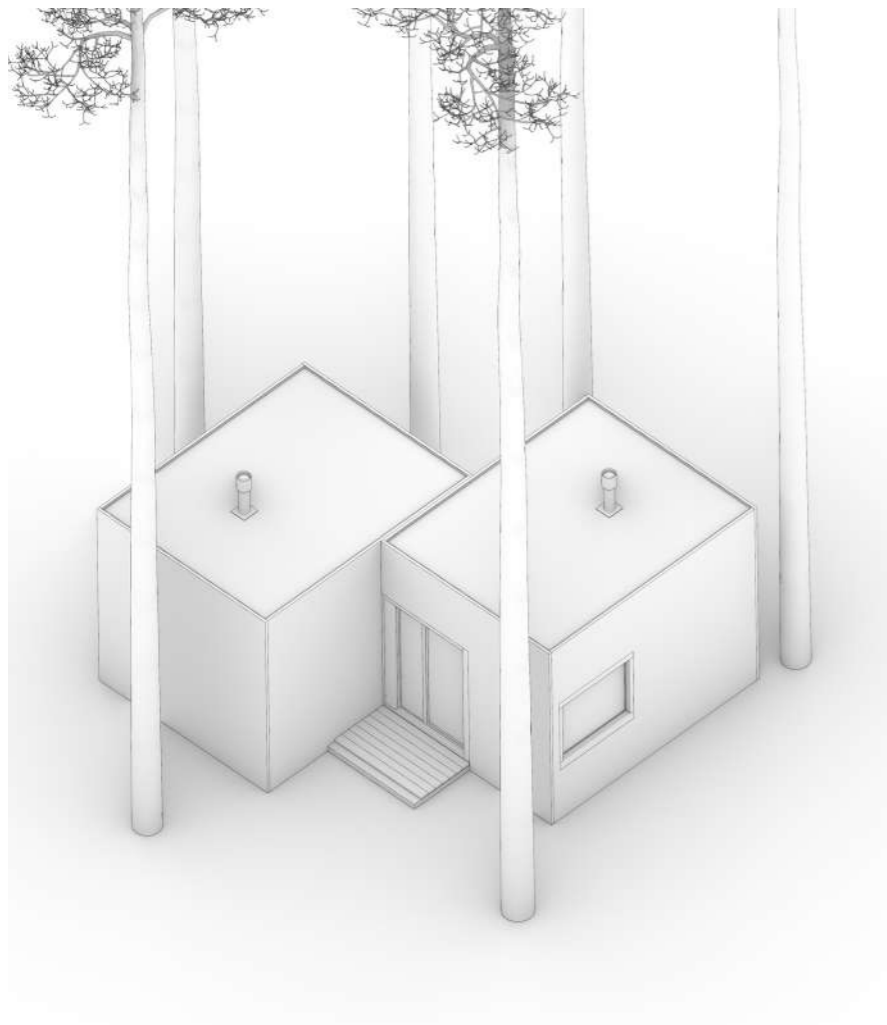
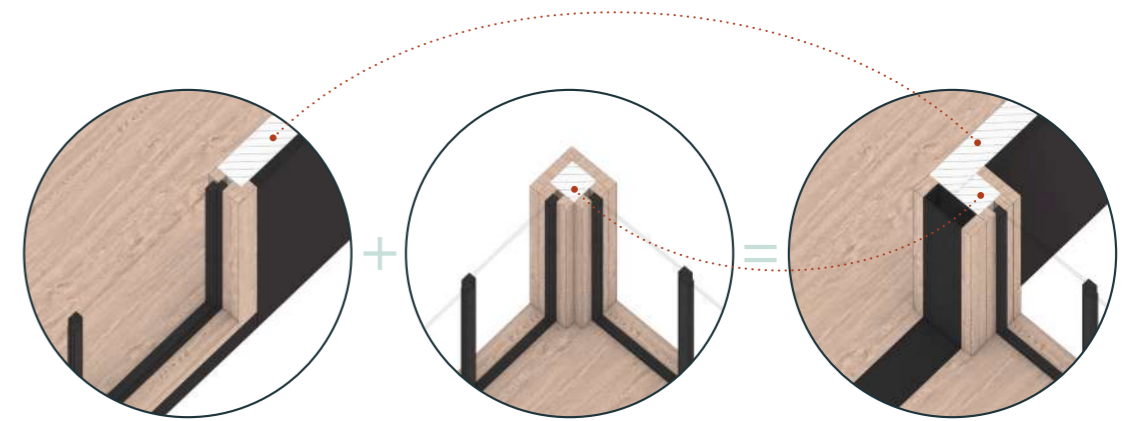
FLEXIBILITY

FLEXIBILITY OF COMBINATIONS

The module configuration provides three different ways to combine them. Depending on the site and the position of trees, you choose the combination that suits best in order to preserve trees and reveal views from windows to nature.

MODULES CONNECTION JOINT

To connect the modules, you need to remove the door block and replace it with a metal frame which will tie the modules together and give additional rigidity to the structure without changing the metal frame of the module itself.



THE BASE

MAIN SOLUTIONS

The module is divided into two zones according to the amount of natural light: dark zone and light zone. The dark one is more suitable for sleeping, relaxing and semi-private space. The bright zone is for work and activities.

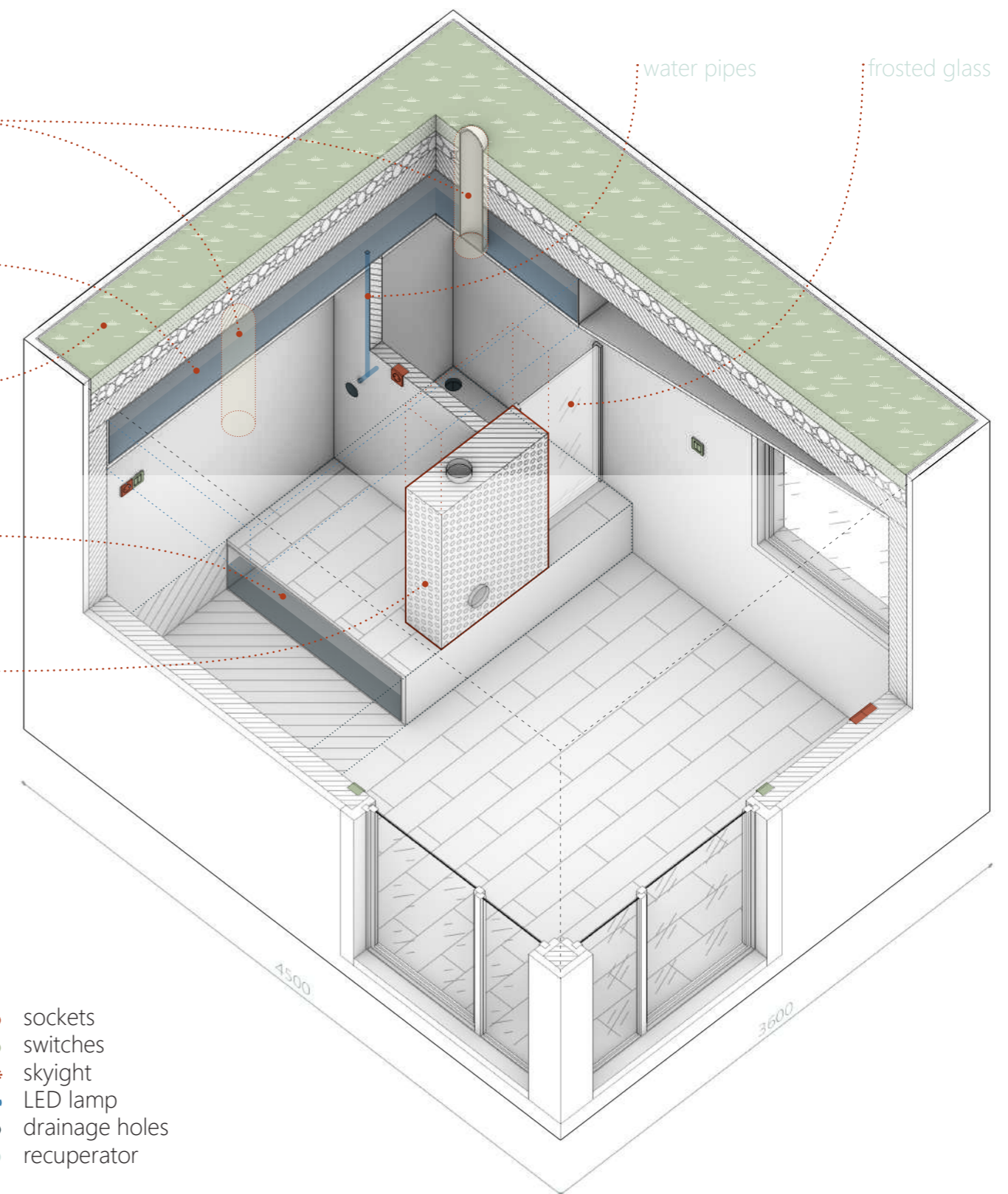
Natural light in the light zone comes from large windows and doors. For the dark time of the day, there are two LED lamps on ceiling. Natural light in the dark zone is provided by the skylights. Skylights have built-in LED illumination for the dark time of the day. For convenience, the main lamps are connected to two switches at the same time

The module has two built-in water tanks. The one is for collecting rainwater. The other is for biofiltration of used water. To save water in modules where there is a toilet and a sink, the used water from the sink goes to the toilet cistern for further use.

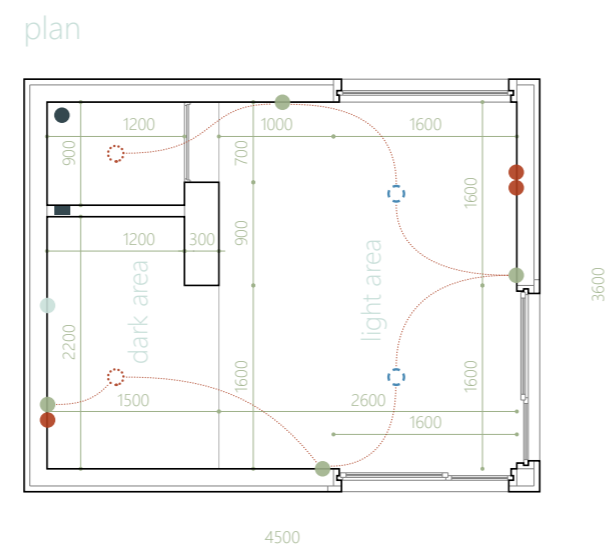
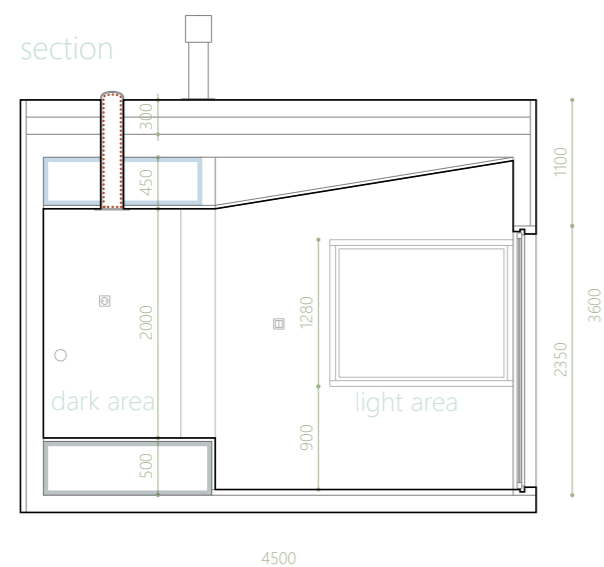
A green roof is a natural filter for rainwater. It also helps to keep the house warm. It helps the house become a part of the surrounding nature. And it can also become an additional place of rest if you attach a ladder to the house.

All communication outputs that are not used for certain functions are covered with dummy plugs.

- skylight (natural light for dark zone)
 - built-in rainwater collection tank
 - green roof (natural filter for rainwater)
 - built-in septic tank (biofiltration of grey water)
 - wall with high thermal mass (accumulates heat during the kindling)
- page 20



- sockets
- switches
- skylight
- LED lamp
- drainage holes
- recuperator



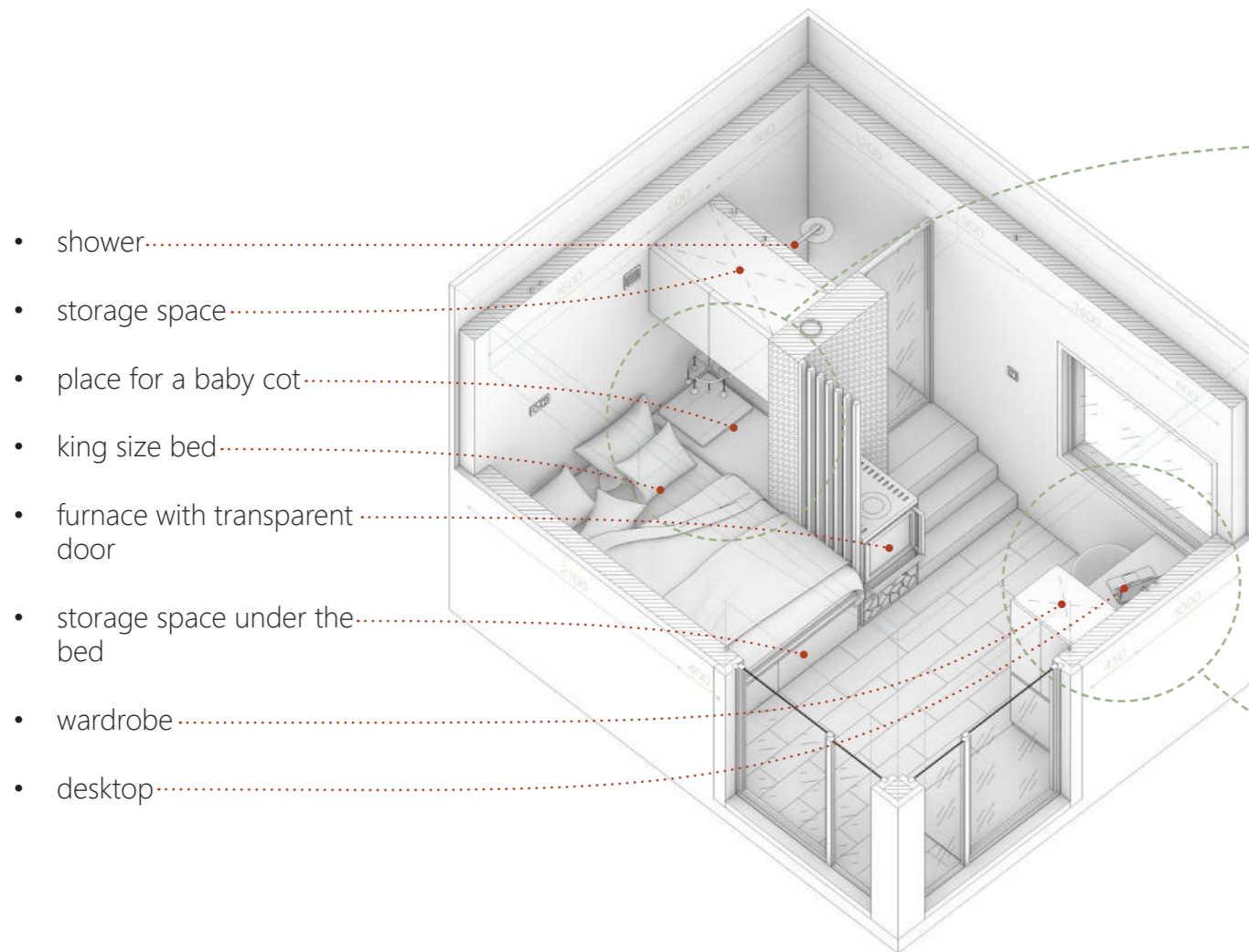
9176173538



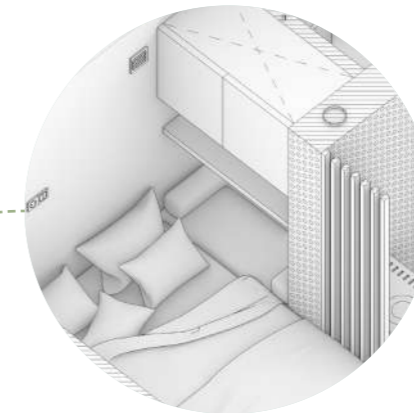
LIVING MODUL A

DOUBLE BED

The module is designed for family or life partners vacation. There is a large bed, a lot of storage space for clothes and things, solid fuel stove with the ability to cook and heat food, shower and some space for exercise or yoga practice next to the windows. There is an opportunity for a comfortable travel with a baby or pet. It is possible to organize a workspace and/or a cozy place for watching a movie lying on the bed.

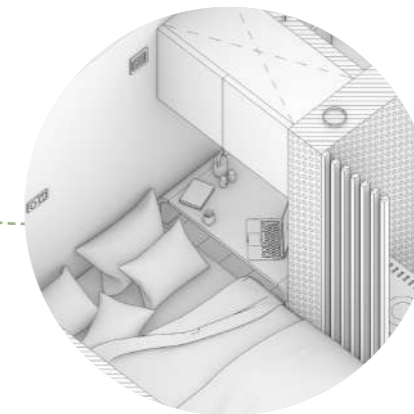


VARIATIONS



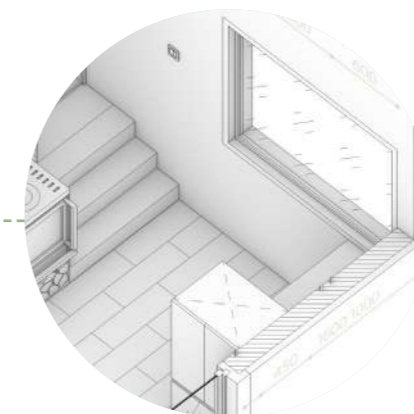
PET BED

For people who travel with pets (cat, dog) and want their pet to have a separate place.



BEDSIDE TABLE

For people who prefer spending morning with TV series and have breakfast in bed. You can use a projector to watch a movie on a niche wall.



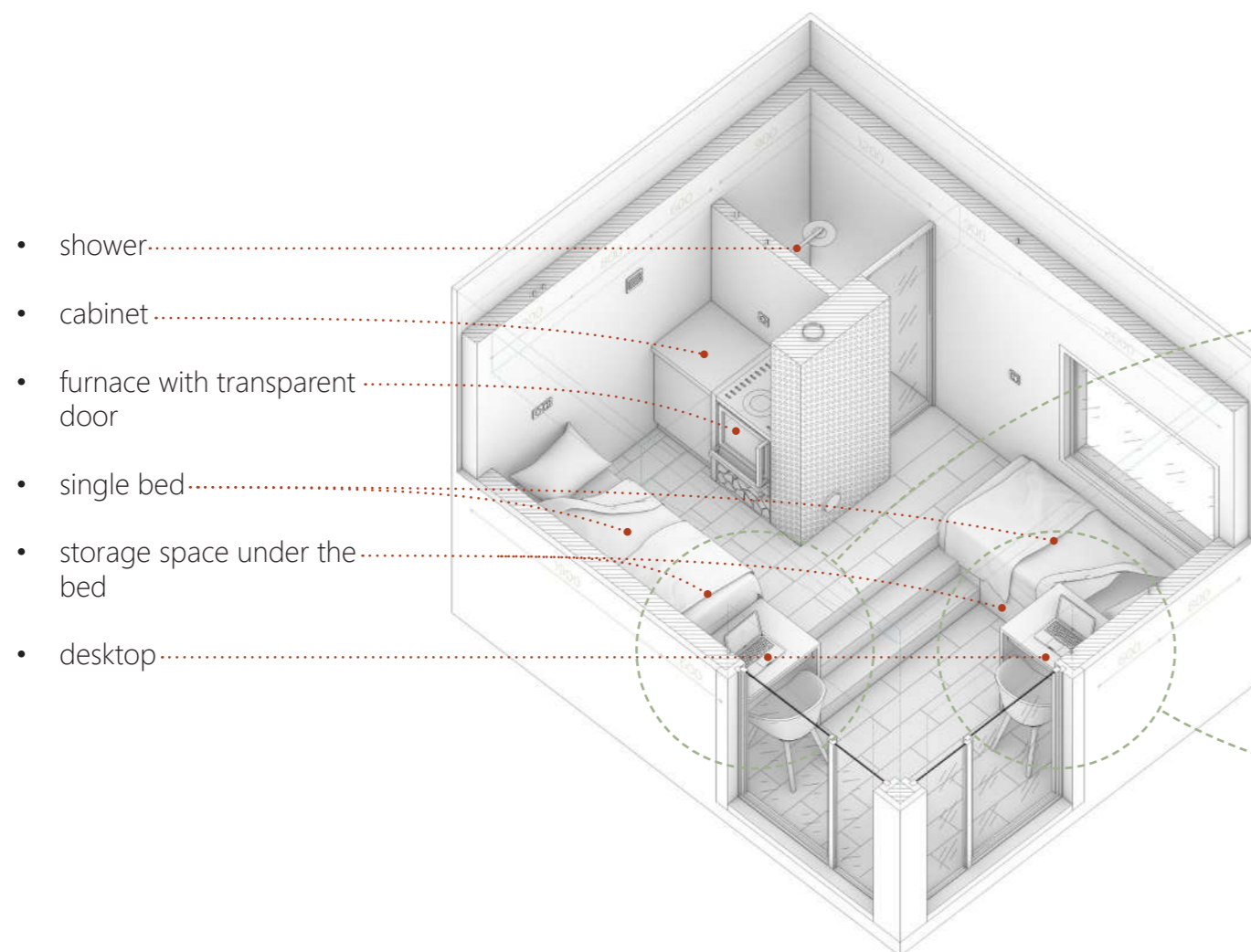
MINI BAR

For people who like to enjoy expensive alcoholic beverages.

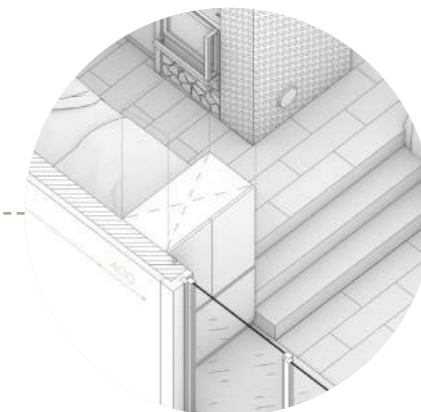
LIVING MODUL B

SEPARATED BEDS

The module is designed for the vacation of two people. There are two separate beds, storage space for clothes and things, solid fuel stove with the ability to cook and heat food, shower and some space for exercise or yoga practice next to the windows. You can sit on the steps and observe nature through the window. It is possible to organize two workspaces or replace them with additional storage space.

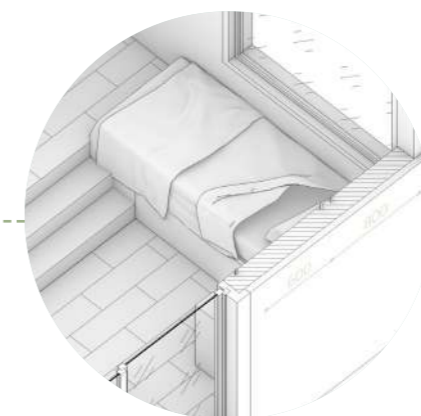


VARIATIONS



WARDROBE

Replacement option: wardrobe instead of desktop.



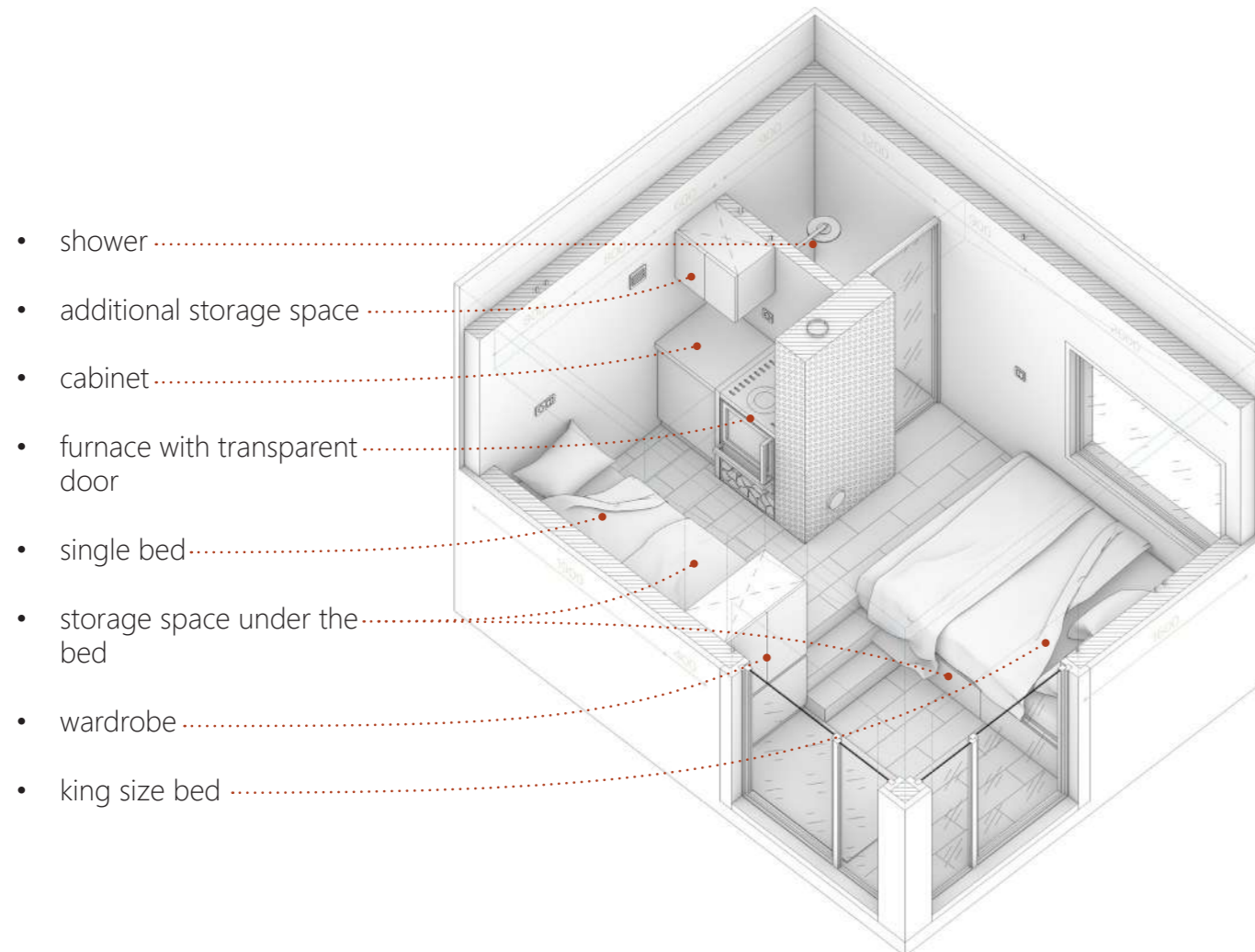
BEDSIDE TABLE

Replacement option: bedside table instead of desktop.

LIVING MODUL C

FOR THREE PEOPLE

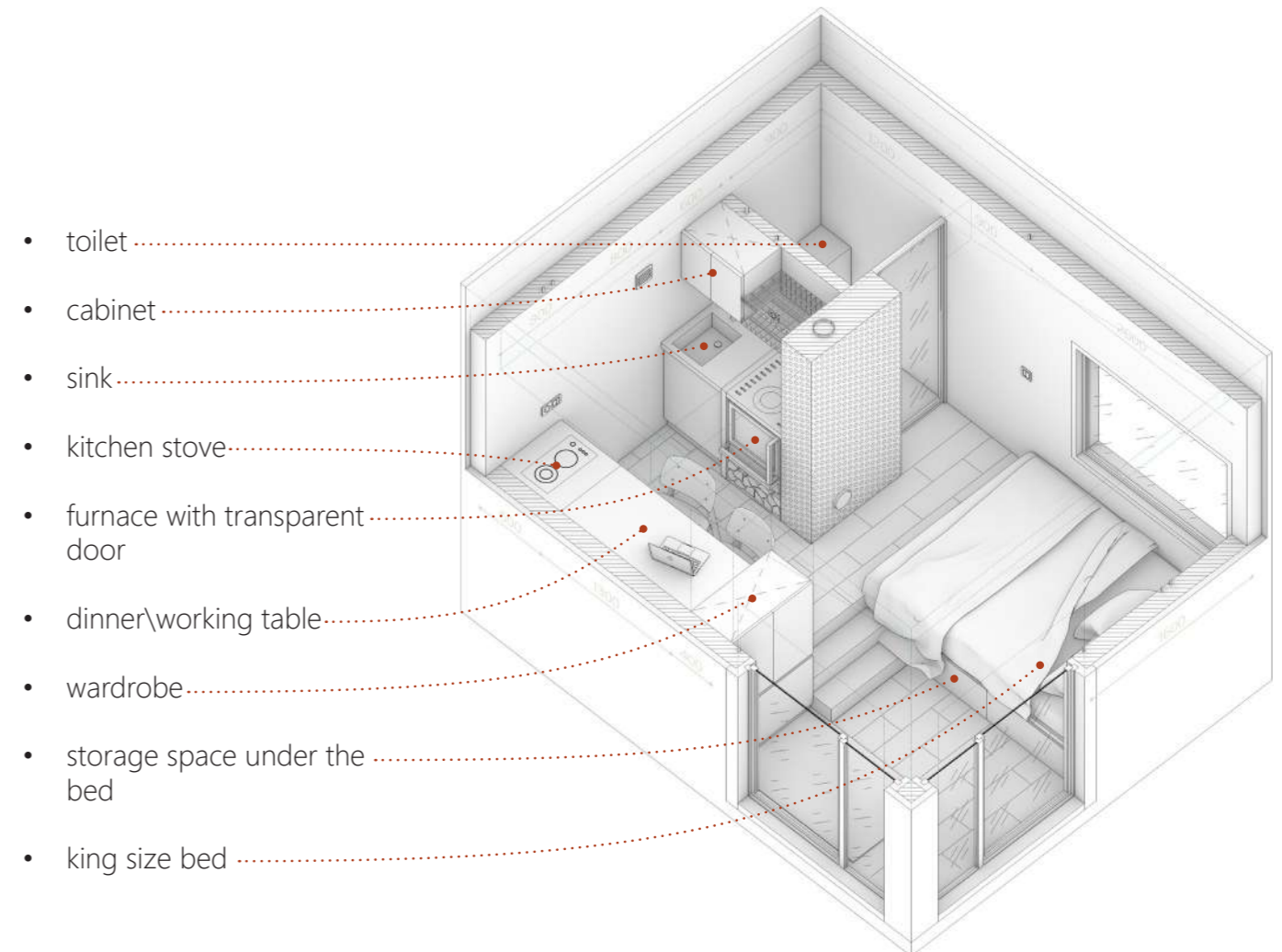
The module is designed for short-term vacation of three people. There are one big bed and one regular bed, storage space for clothes and things, solid fuel stove with the ability to cook and heat food, shower and some space for exercise next to the windows. Since there is little space and convenience for three people, this module is proposed to be used for a short rest period or just to spend the night in it.



LIVING MODUL D

STAND-ALONE MINI HOUSE

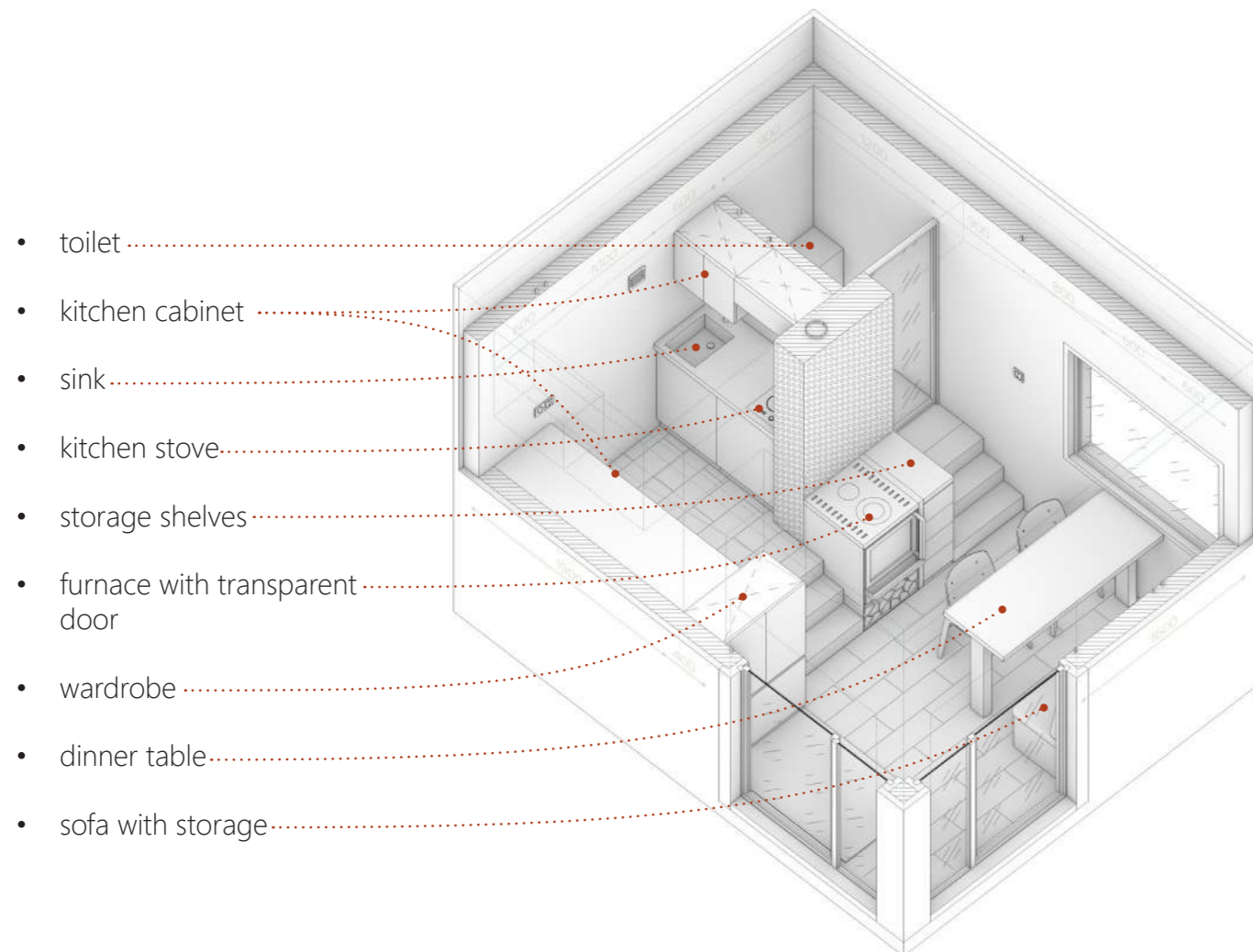
A complete house for a family or life partners short-term vacation. There are all the necessary functions: large bed, small kitchen, dinner/working table, solid fuel stove with the ability to cook and heat food, storage space for clothes and a toilet. For such a module, a sauna is required in the «village», since there is no shower in it.



KITCHEN MODUL A

BIG KITCHEN

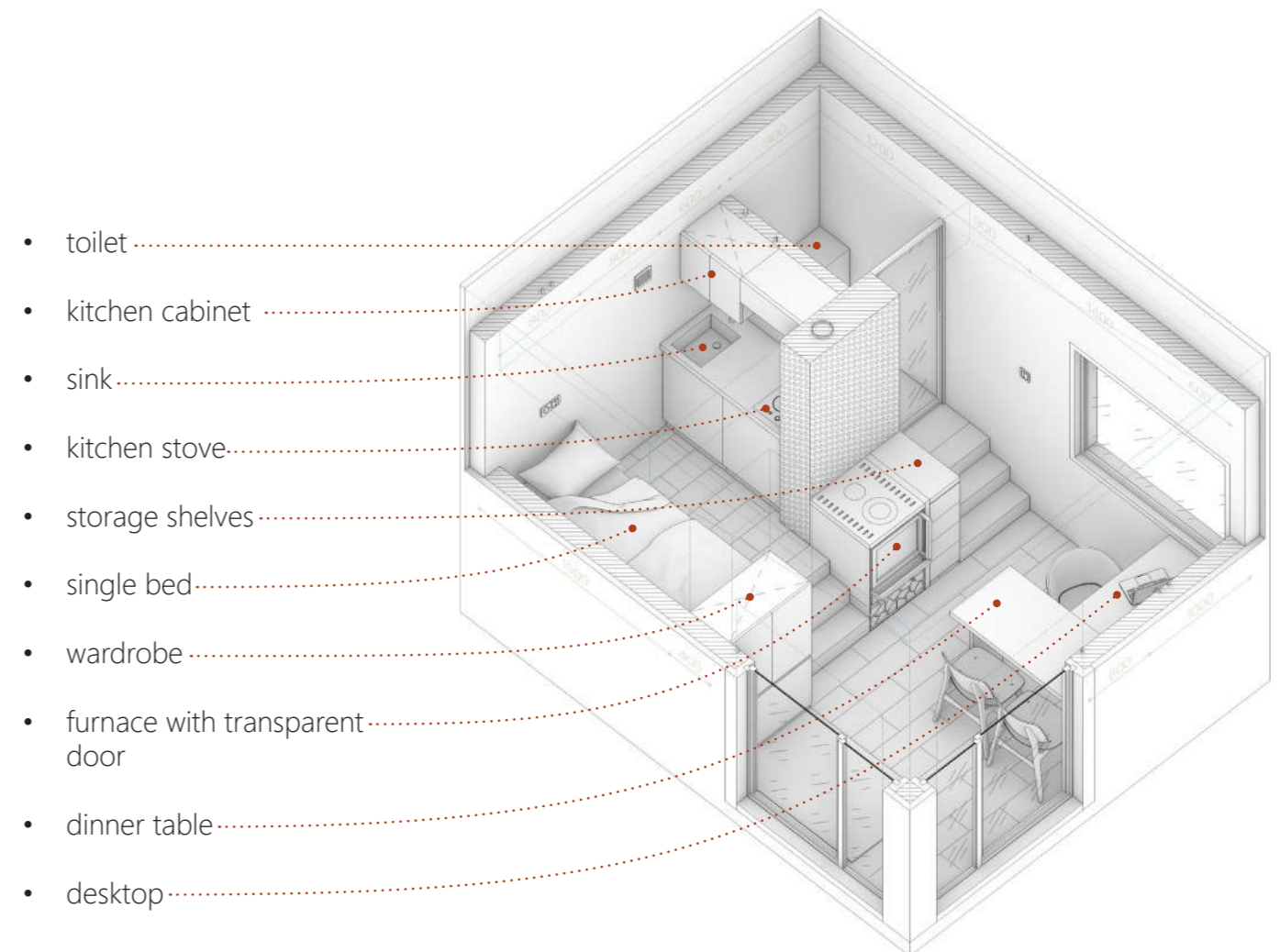
Standard kitchen module. Accommodates five kitchen cabinets, top storage boxes, several additional storage shelves, a toilet, solid fuel stove with the ability to cook and heat food, a four-seater dining table and a sofa on which you can recline or relax.



KITCHEN MODUL B

KITCHEN WITH EXTRA BED

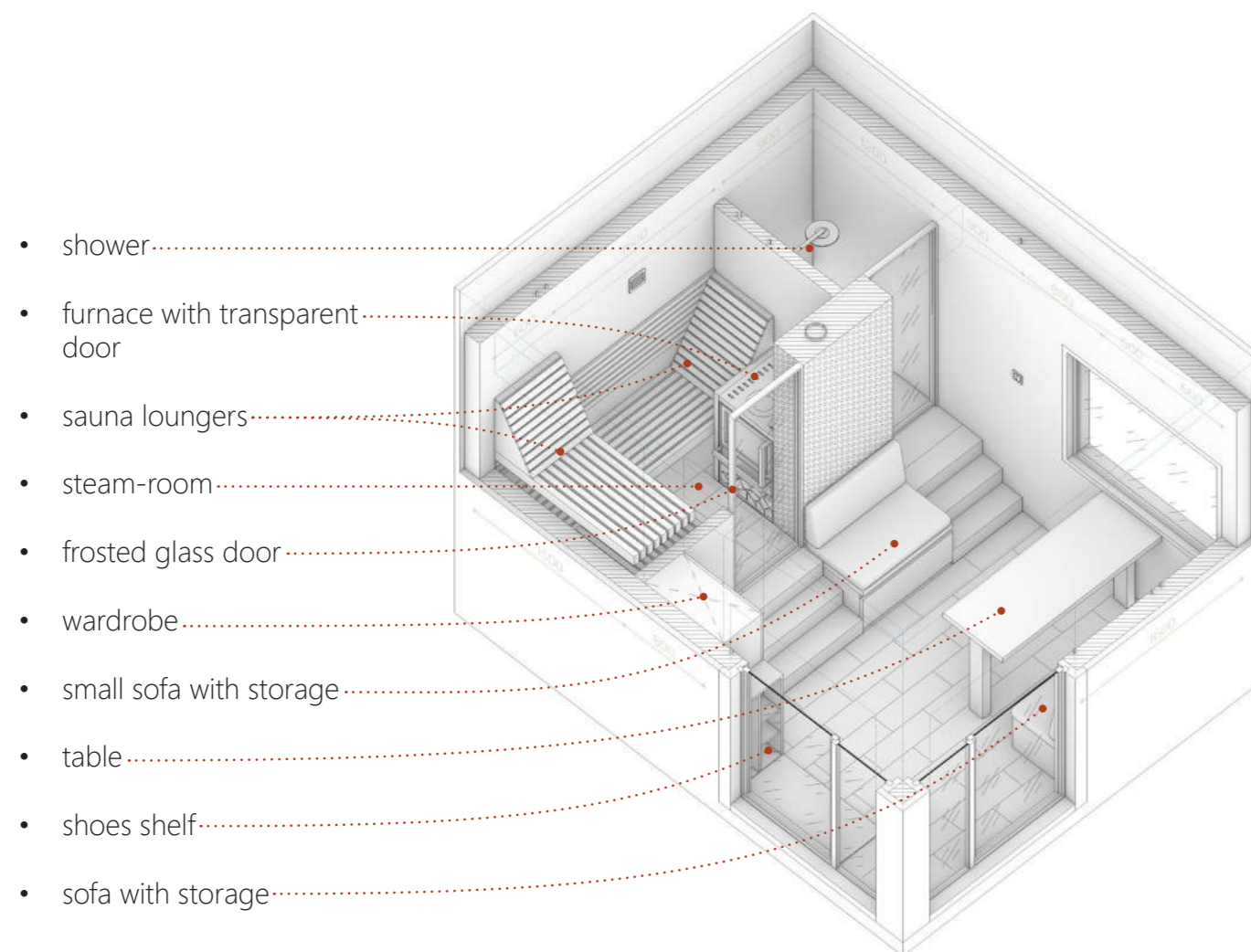
Small kitchen module with extra bed. Accommodates two kitchen cabinets, top storage box, several additional storage shelves, a toilet, solid fuel stove with the ability to cook and heat food, a three-seater dining table combined with a desktop.



SAUNA MODUL

STAND-ALONE MINI SAUNA

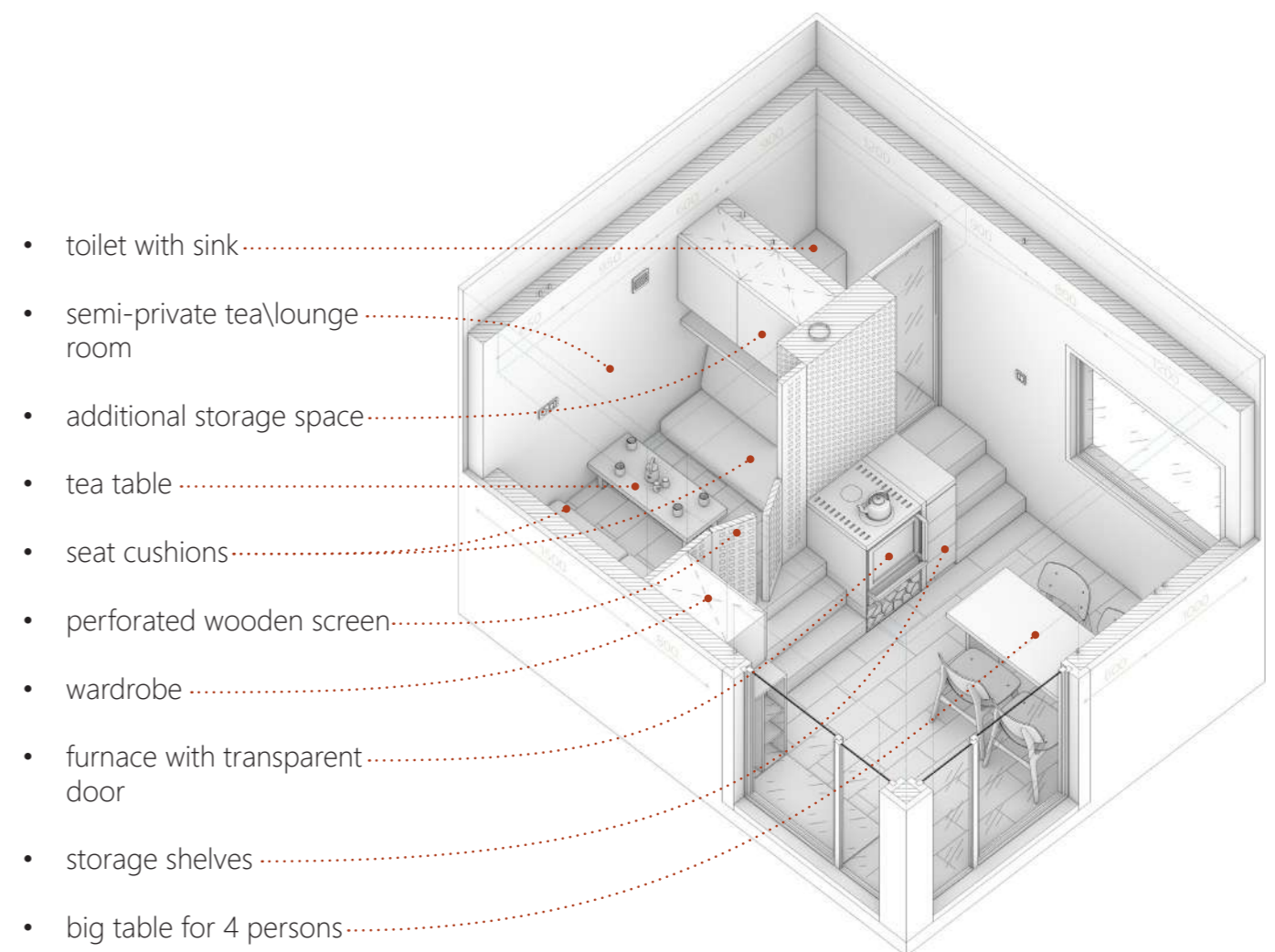
Sauna module with a relaxation area after the steam room. The steam room is designed for two reclining people or three sitting people. A door with frosted glass leads to the steam room as well as to the shower. After a steam room, you can relax on the sofa in front of the table with a cup of tea, or sit next to a stone wall and warm your back. At the entrance there is a large wardrobe for clothes and a shelf for shoes.



PUBLIC MODUL

FOR GROUP ACTIVITY

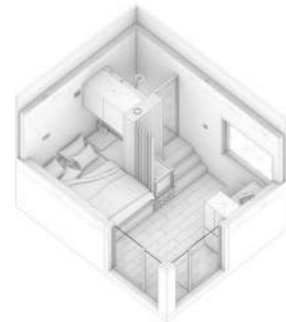
The module is designed for resting a group of more than three people. It is divided into two zones: a semi-private room with cushions on the floor and a tea table for a very relaxing rest, and an area with a four-seater large table for playing cards, board games or just chatting. It can be stand-alone or combined into groups of up to three modules, depending on the needs of the «village» and the number of residents.



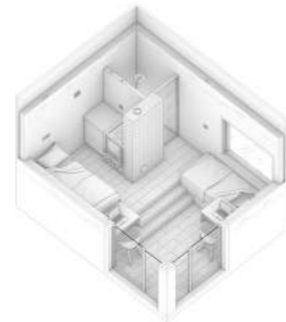
COMBINATIONS

MODULES

Matrix of module combinations and their possible options.



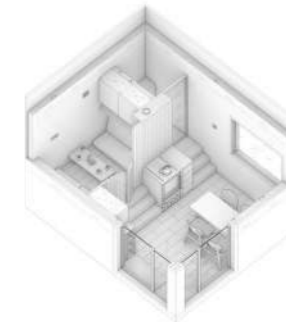
LIVING MODUL A



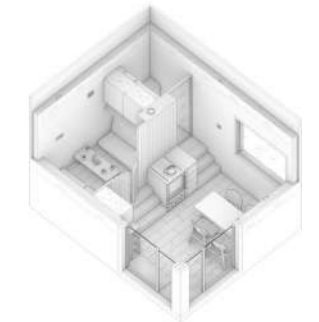
LIVING MODUL B



LIVING MODUL C

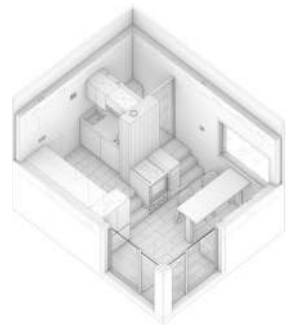


PUBLIC MODUL



PUBLIC MODUL (X2)

KITCHEN MOD. A



- 2 sleeping places (1 bed)
- big kitchen
- four-seater dinner table
- 1 toilet
- 1 shower

OPTIONS:

- + working place / mini bar
- + baby bed / pet bed / bedside table with projector niche

- 2 sleeping places (2 beds)
- big kitchen
- four-seater dinner table
- 1 toilet
- 1 shower

OPTIONS:

- + 2 working places / extra storage

- 3 sleeping places (2 beds)
- big kitchen
- four-seater dinner table
- 1 toilet
- 1 shower

- lounge room
- big kitchen
- 2 four-seater dinner tables
- 2 toilets

- 2 lounge rooms
- big kitchen
- 3 four-seater dinner tables
- 3 toilets

KITCHEN MOD. B



- 3 sleeping places (2 beds)
- working place
- small kitchen
- three-seater dinner table
- 1 toilet
- 1 shower

OPTIONS:

- + working place / mini bar
- + baby bed / pet bed / bedside table with projector niche

- 3 sleeping places (3 beds)
- working place
- small kitchen
- three-seater dinner table
- 1 toilet
- 1 shower

OPTIONS:

- + 2 working places / extra storage

- 4 sleeping places (3 beds)
- working place
- small kitchen
- three-seater dinner table
- 1 toilet
- 1 shower

The background of the entire image is a close-up, high-resolution photograph of a light-colored wood grain. The grain patterns are intricate, showing various textures such as straight lines, wavy lines, and circular knots. The color palette is a range of natural wood tones, from pale beige to a slightly darker tan. The lighting is even, highlighting the natural texture and grain of the wood.

COMBINATIONS

Five types of function combinations

FAMILY LIVING AND RESTING

KITCHEN A + LIVING A

9176173538



LIVING AND WORKING FOR THREE PEOPLE

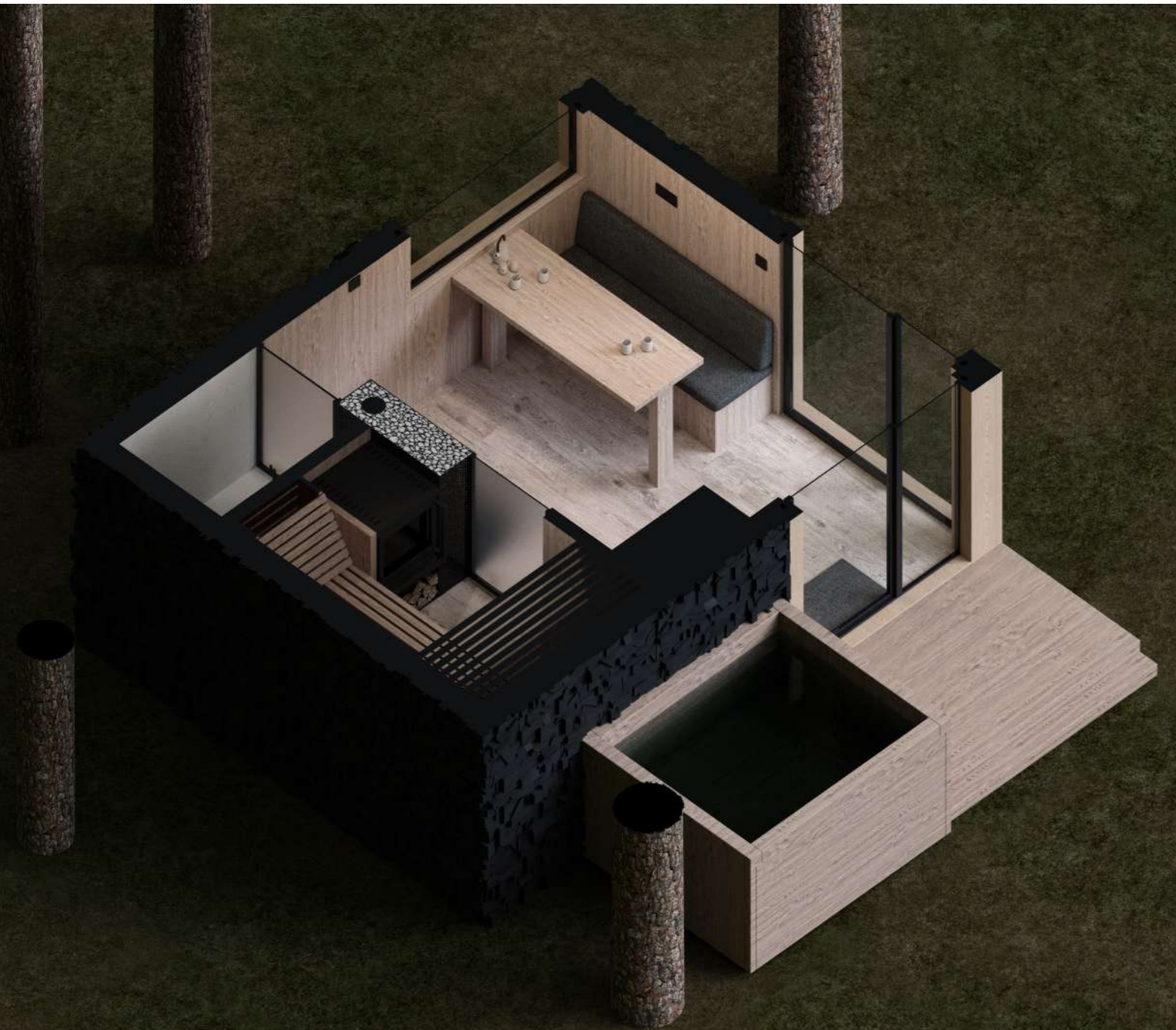
KITCHEN B + LIVING B

9176173538



TINY HOUSE FAMILY LIVING

LIVING D



MINI SAUNA

SAUNA



9176173538



GROUP ACTIVITY

KITCHEN A + PUBLIC + PUBLIC

9176173538

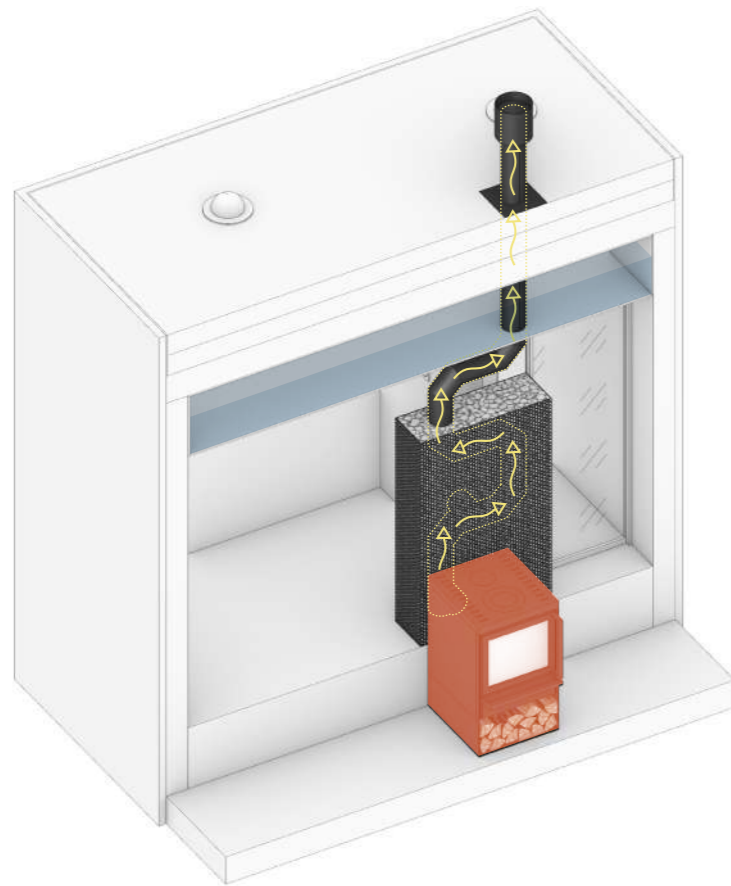
SUSTAINABILITY

Heating and facade solutions

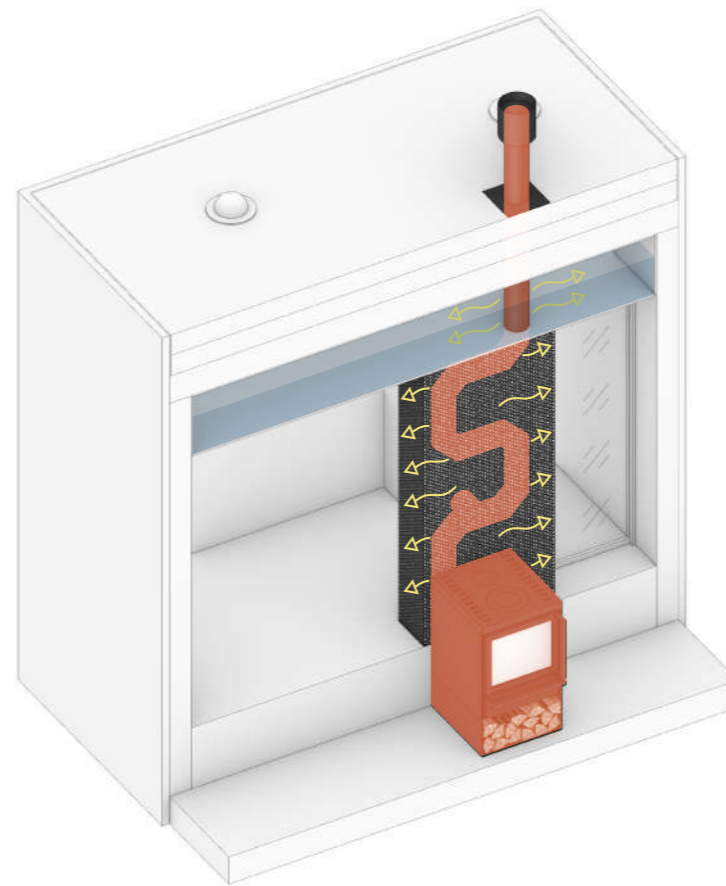
HEATING SOLUTIONS

FIREWOOD OR PRESSED LOGS AS FUEL

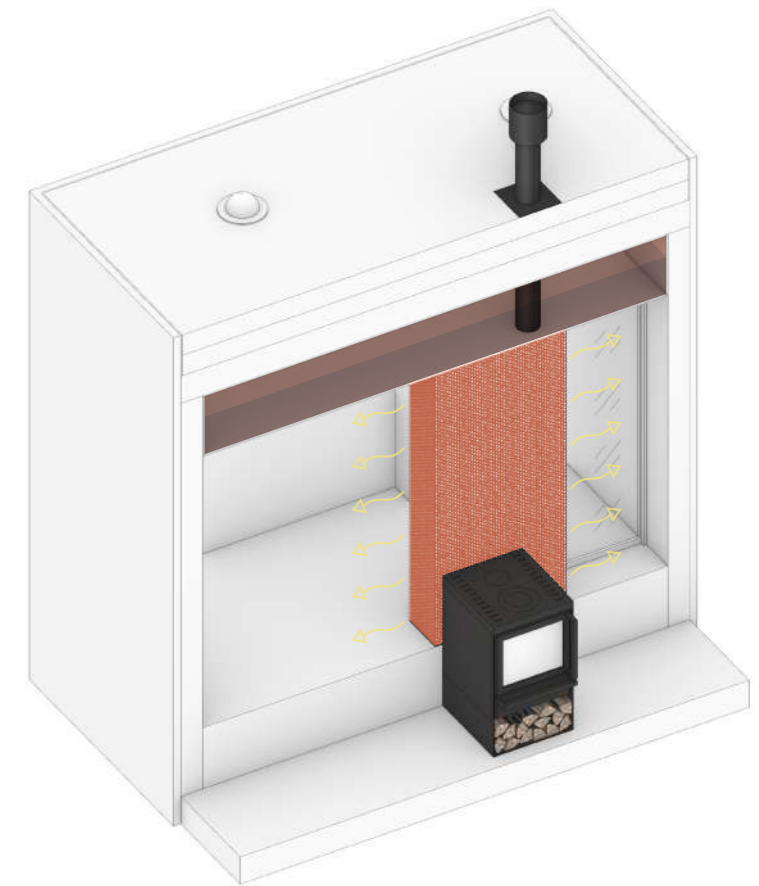
A wood-burning stove is used for heating. The transparent door allows you to admire the flame in the evenings. During the kindling, you can cook food and heat water on the stove. Firewood or pressed logs used as fuel. They are renewable materials and allow you to heat your home without using electricity.



When the stove is fired up, the heat passes through the curved chimney to the outside. The chimney through the rainwater tanker heats up the water, so you always have water available while kindling.



A wall with a large thermal mass stores heat during kindling. Any material with a high thermal mass can be used for the wall (concrete, brick, sand in a metal box, or pebbles in a perforated metal box (as shown in the diagram).



Throughout the night, the wall gives off the accumulated heat. This helps to maintain a comfortable temperature until the morning without additional firing up the stove.

FACADE SOLUTIONS

WASTE FROM LUMBER PRODUCTION

Waste from lumber production is used as the main material for facades. There is a lot of waste from the production of lumber. Some of it is used for further processing, but they can be used for cladding. This results in a very textured and interesting facade.



Getting waste from the production of lumber of different types of wood, color and shapes. Mounting the pieces on metal (or any other) sheet.



Firing the sheet to protect wood from precipitation and insects. This also gives the entire facade surface one color.



Installing the sheet on the metal frame of the module and done. The facade can be installed directly on the module during production or installed in sheets on the site.

9176173538

