

Wood Architecture Design Studio, 2021

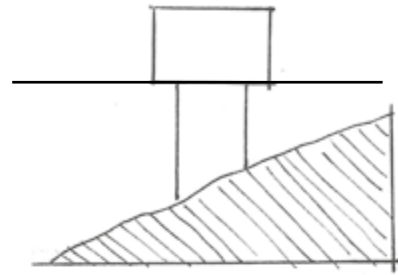
WRAP+ NORTH SLOPE

15.12.2021

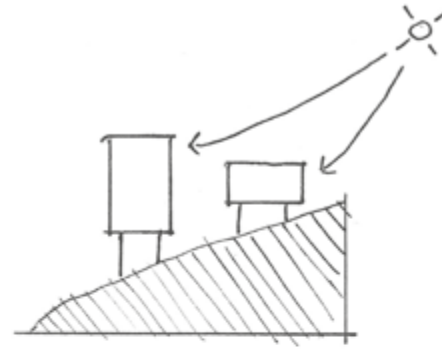
Emma Mannila

Johanna Olfen

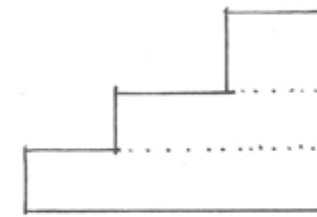
Qi Qi



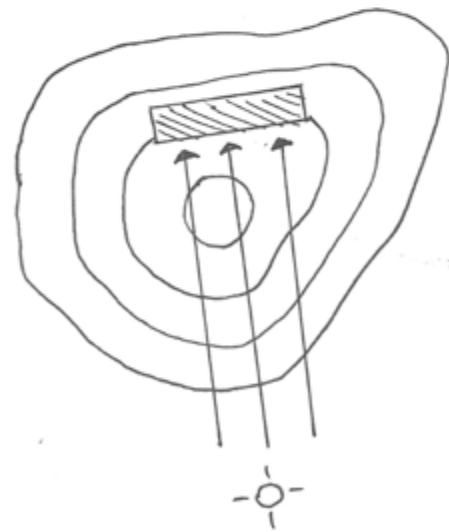
lifted from the ground (50cm)
transportation + common space



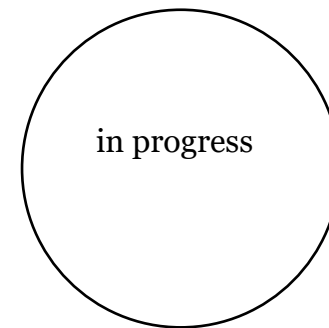
natural light
for every unit



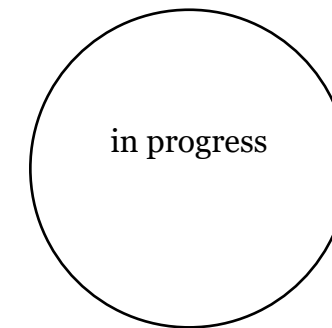
not more than 1-3 levels



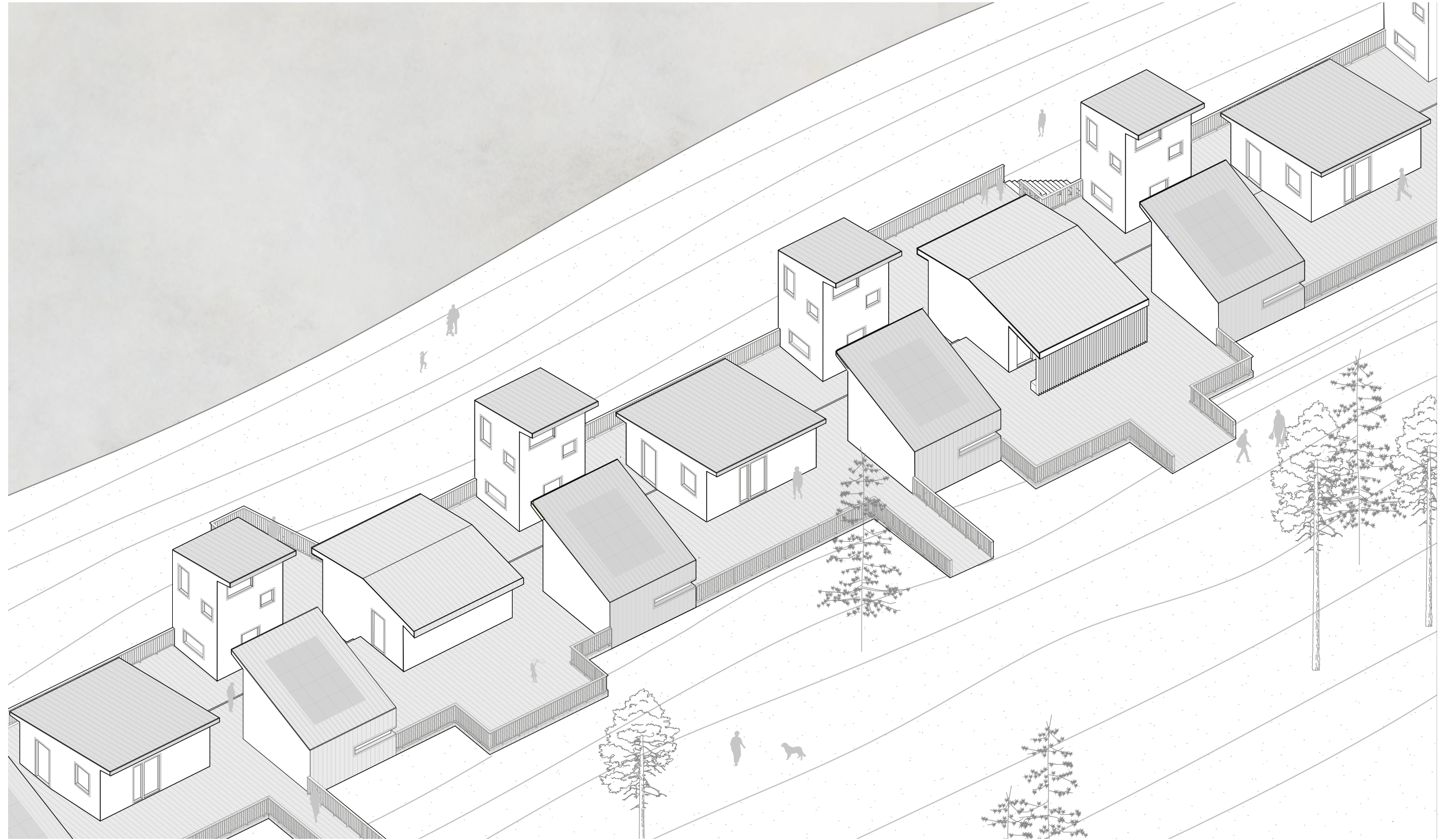
north-south orientation

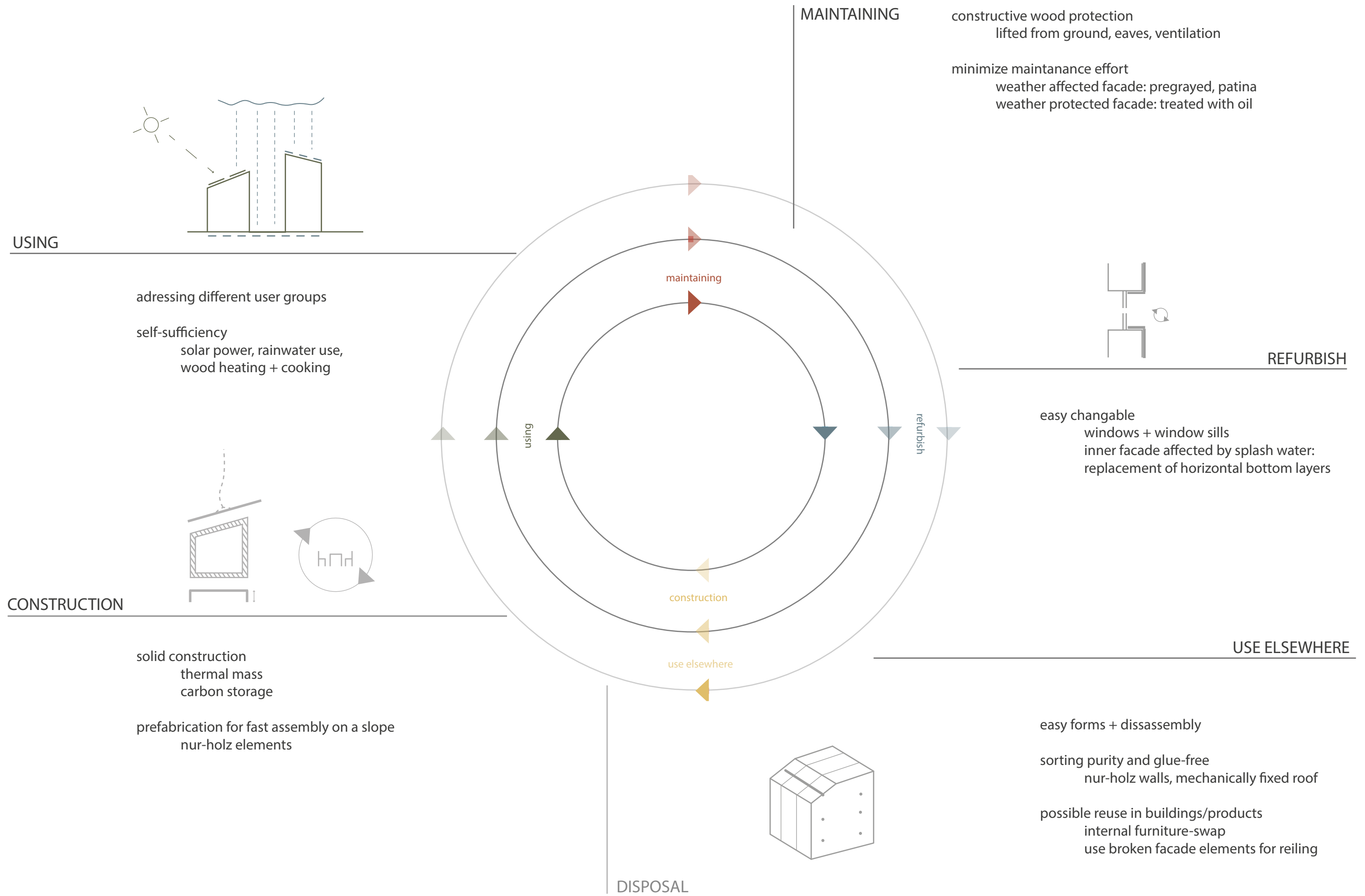


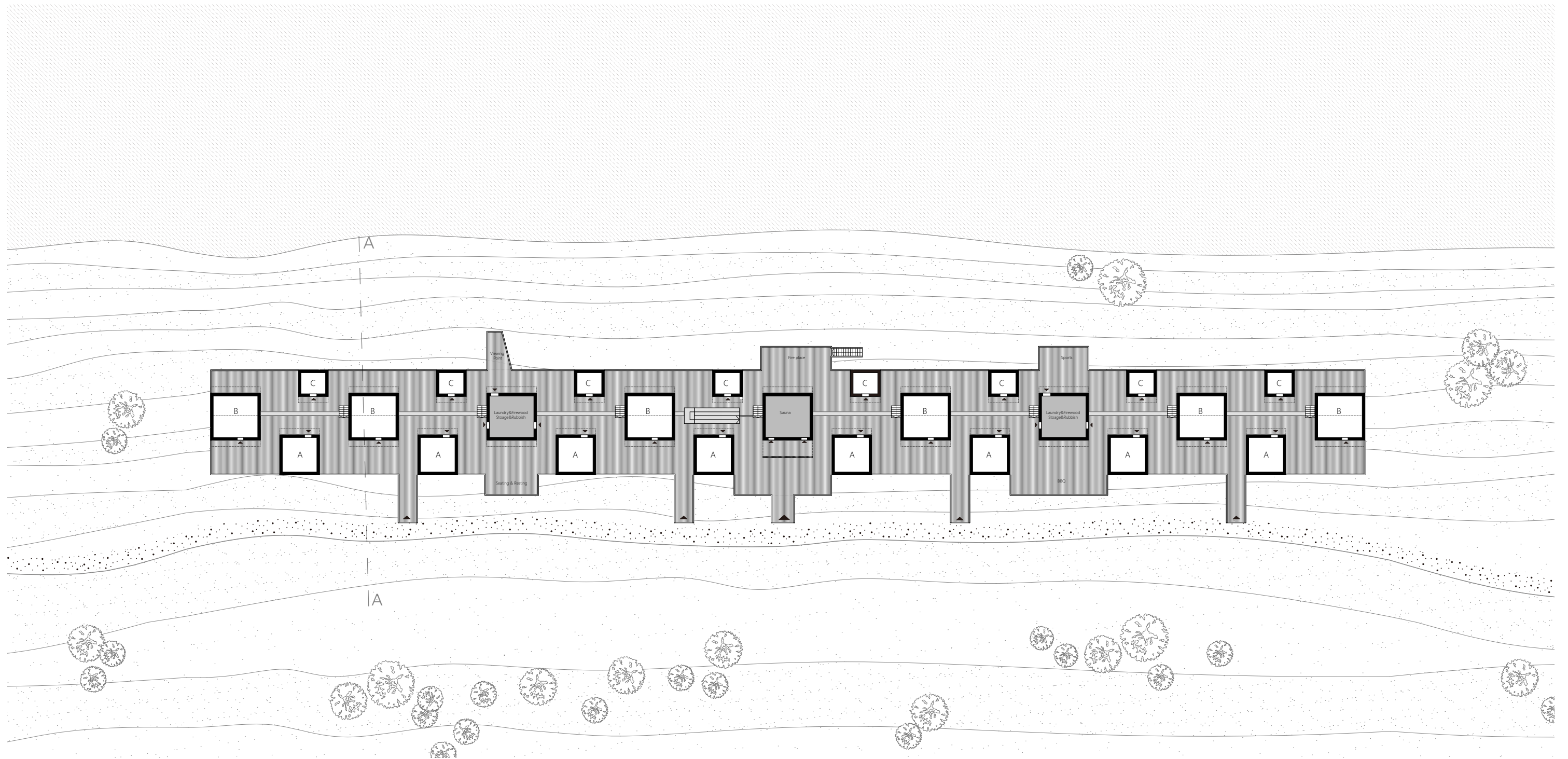
build ecological

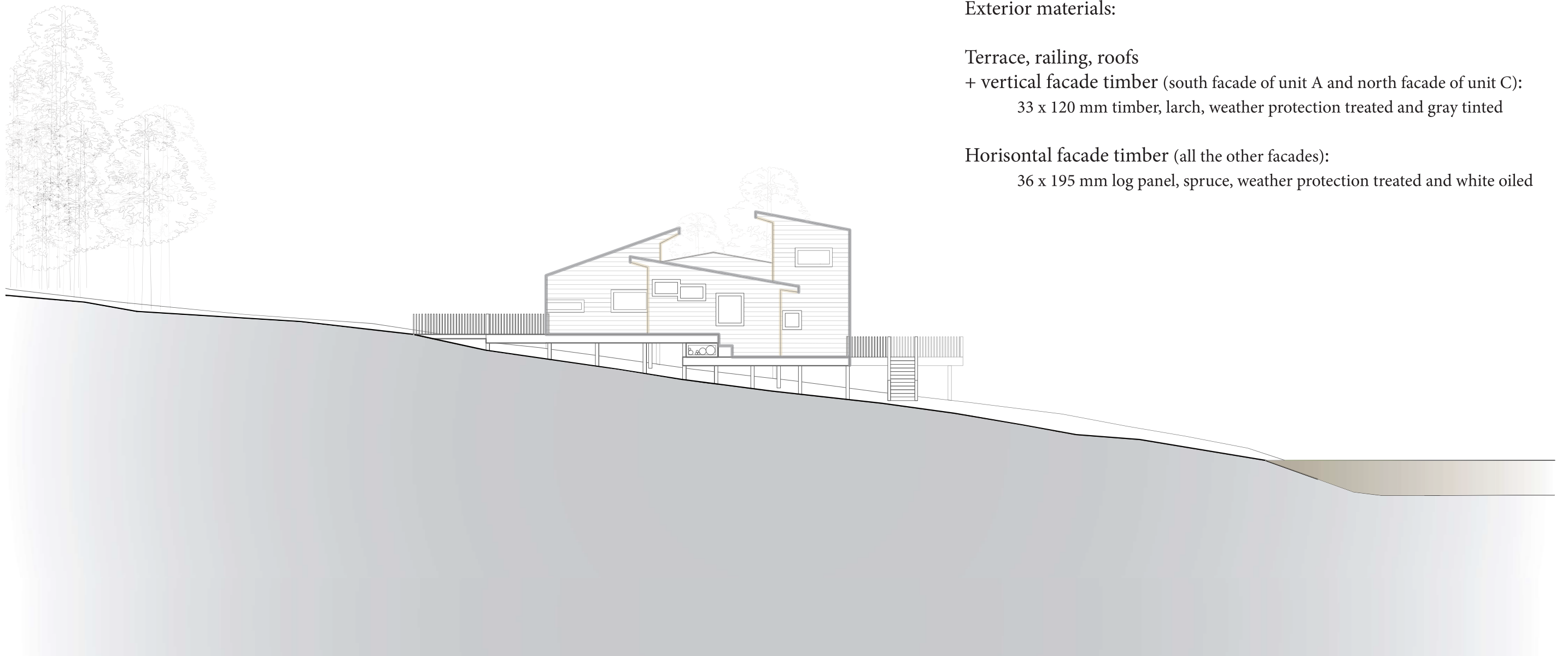


wrapping









Exterior materials:

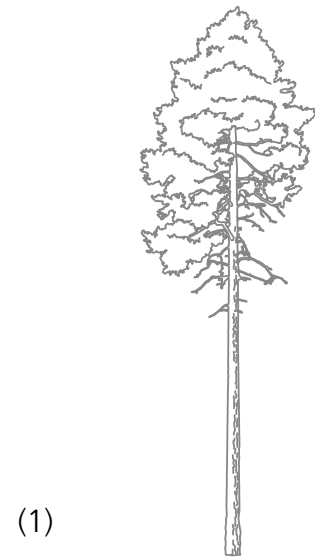
Terrace, railing, roofs

+ vertical facade timber (south facade of unit A and north facade of unit C):
33 x 120 mm timber, larch, weather protection treated and gray tinted

Horizontal facade timber (all the other facades):

36 x 195 mm log panel, spruce, weather protection treated and white oiled

1: Life cycle of nur-holz element



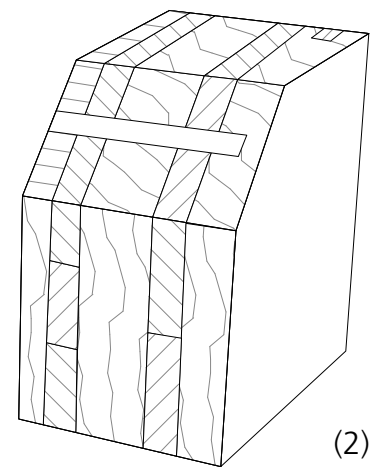
(1)

Forest	slowly grown spruce/fir/beech (1) sustainably managed black forest
Logging	beaten outside growth phase axe + chainsaw
Transport	transportation within region selected sawmills, splitted into timber
Drying	few months of drying 10-12%, open roof in fresh air, no extra energy

Production manufacturing with cnc, sanding (2),
residues used in factory's energy circle

Packaging multiple elements in plastic /
covered by reusable tarp

Transport Ger to Fin: truck, ferry, truck



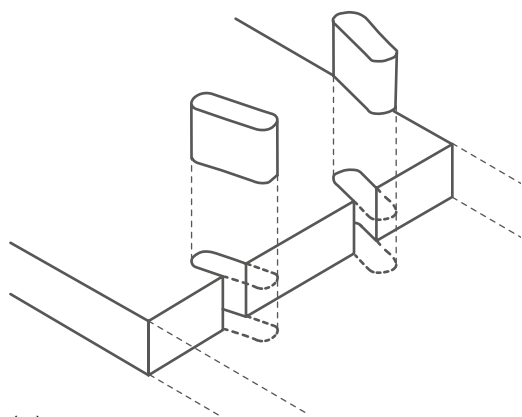
(2)

Construction prefabrication (openings, slots, holes)
allows construction within days

In Use saving heat energy + insulation
carbon storage of 2t CO2/cbm

Demolition standard elements, loosen screws

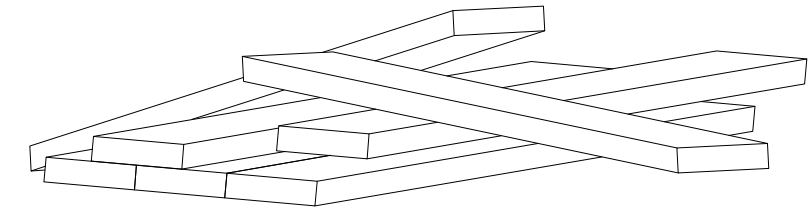
Reusing reuse elements or fragments,
connect fragments to other products (3)



(3)

2: Life cycle of terrace timber

(33x120mm, gray tinted larch)



(4)

Use Terrace, railing, roof and the northeast and southeast facades

Properties Larch is particularly resistant to weathering and fading even
without any treatments. UV radiation turns larch also naturally gray
in 1-2 years. With treatments we make it last even longer.

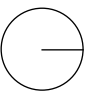
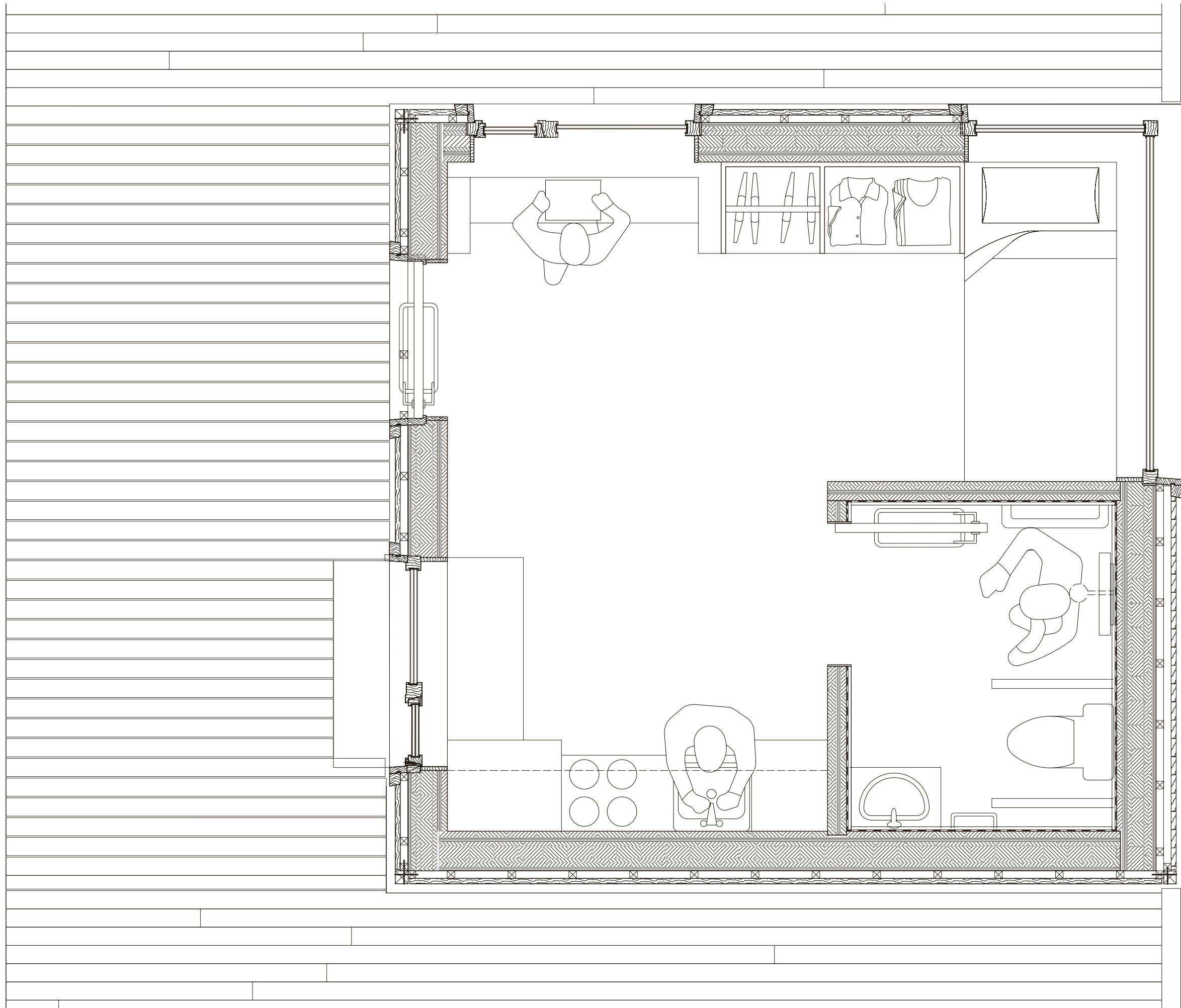
Procurement Larch is growing well in Finland, but its market is relatively small.
Local larch is also growing fast, so it is not quite as durable as, for
example, Siberian larch.

We strive to procure the timber as sustainably as possible, and
when we need relatively small pieces, for example, recycled larch is
also an option if possible. The gray color of recycled larch would
also be one good thing for us.

Maintenance Regular maintenance and retreatment contribute to the
preservation of the timber. We prefer ecological treatment agents.

Demolition Well-maintained wood is more suitable for reuse. Also ecological
treatment agents and glueless joints facilitate the reuse and
recycling of parts.





roof construction

- 208mm nur-holz CLT
- Vapour barrier
- 150mm wool insulation, eaves between
- Water proof membrane
- 30mm battens
- 30mm counter battens
- 33/200 larch timber

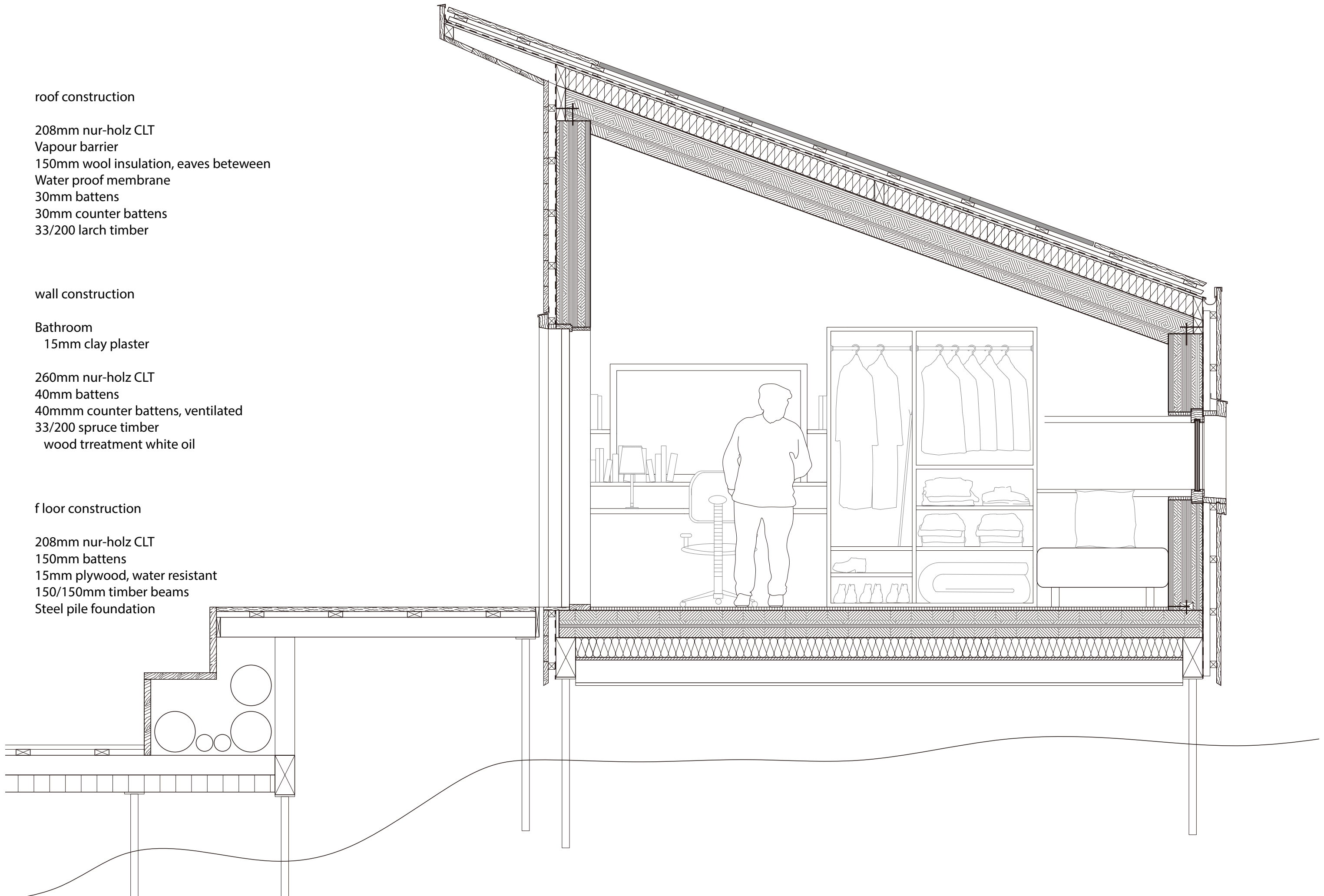
wall construction

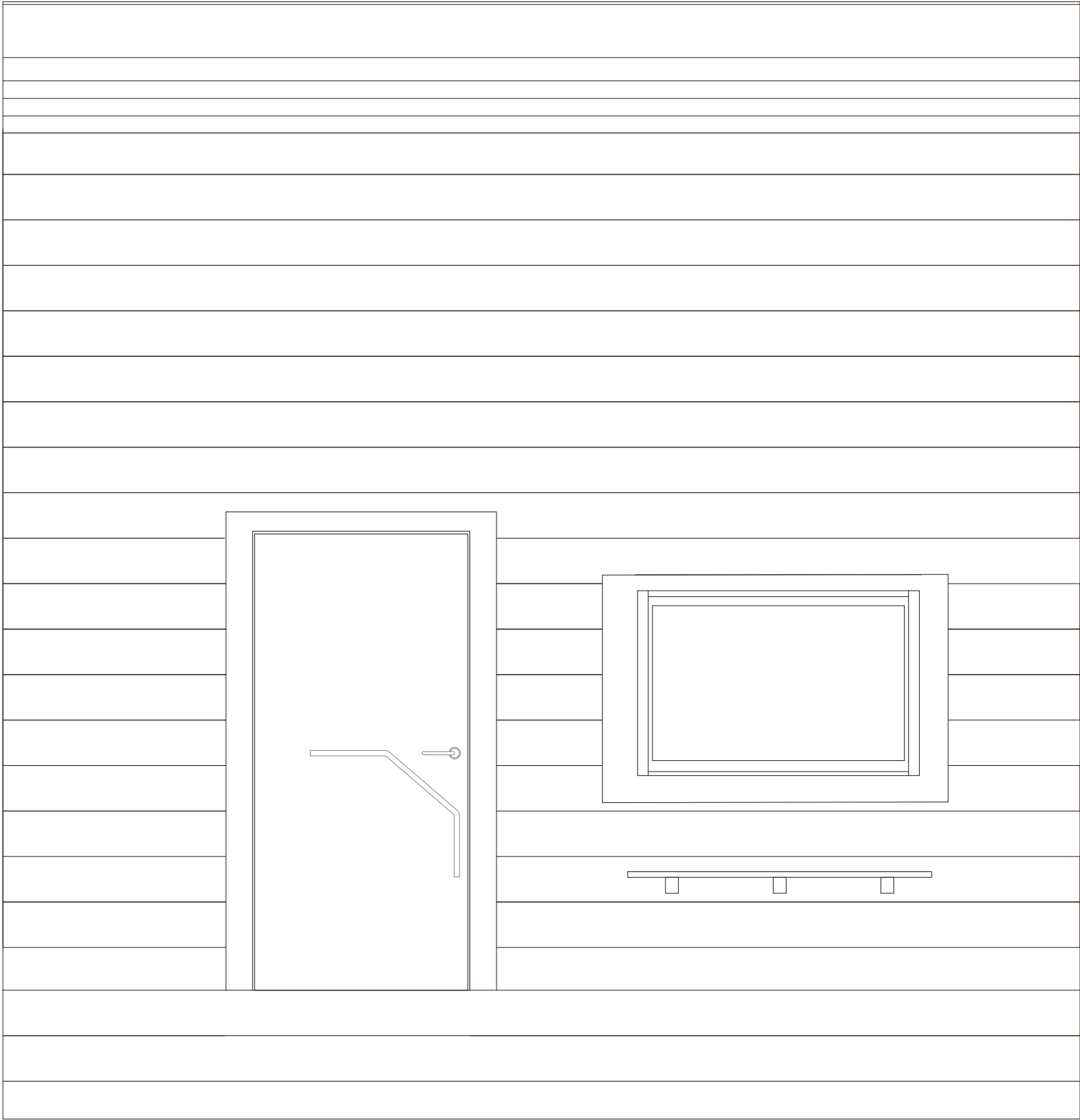
- Bathroom
- 15mm clay plaster

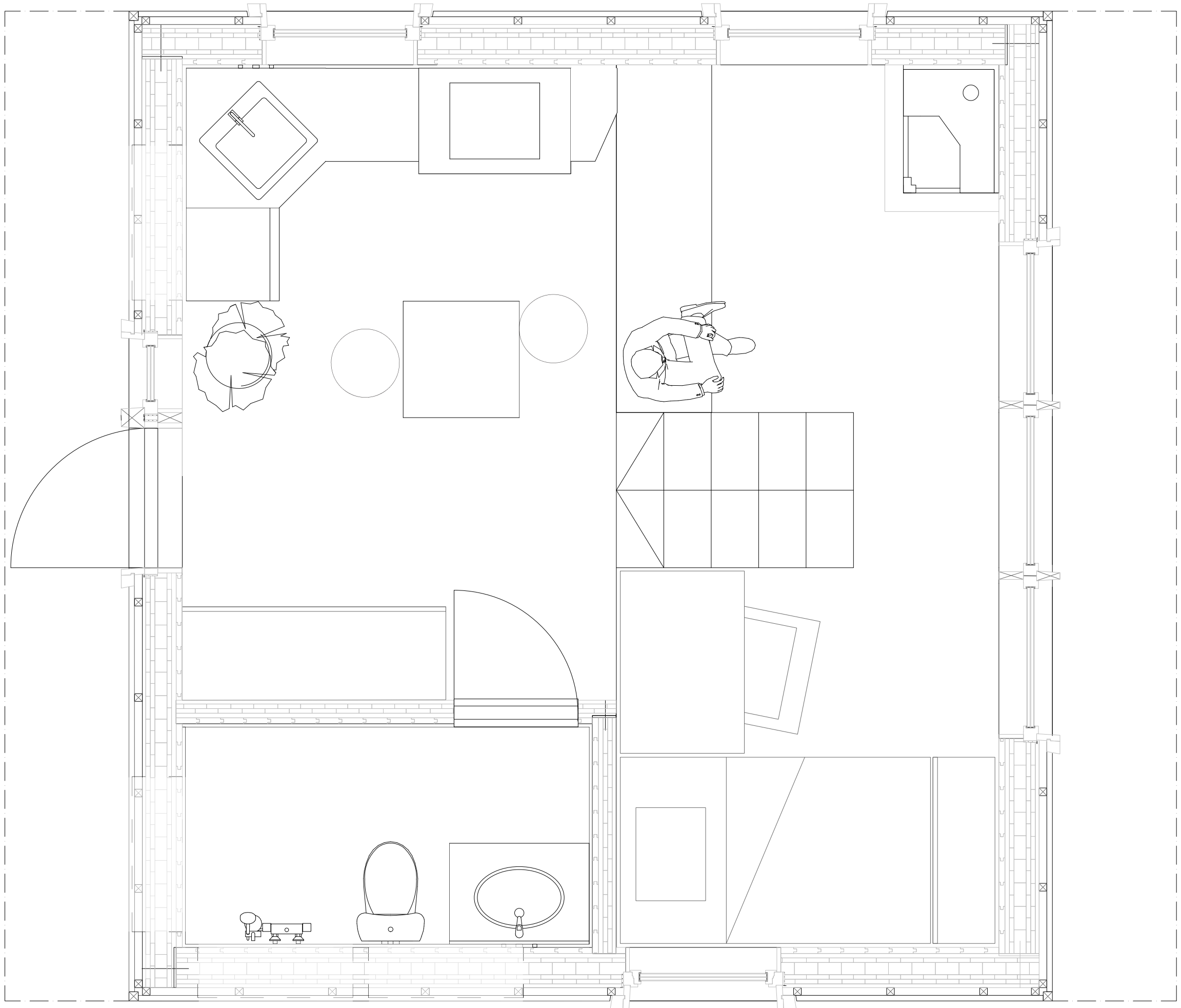
- 260mm nur-holz CLT
- 40mm battens
- 40mm counter battens, ventilated
- 33/200 spruce timber
- wood treatment white oil

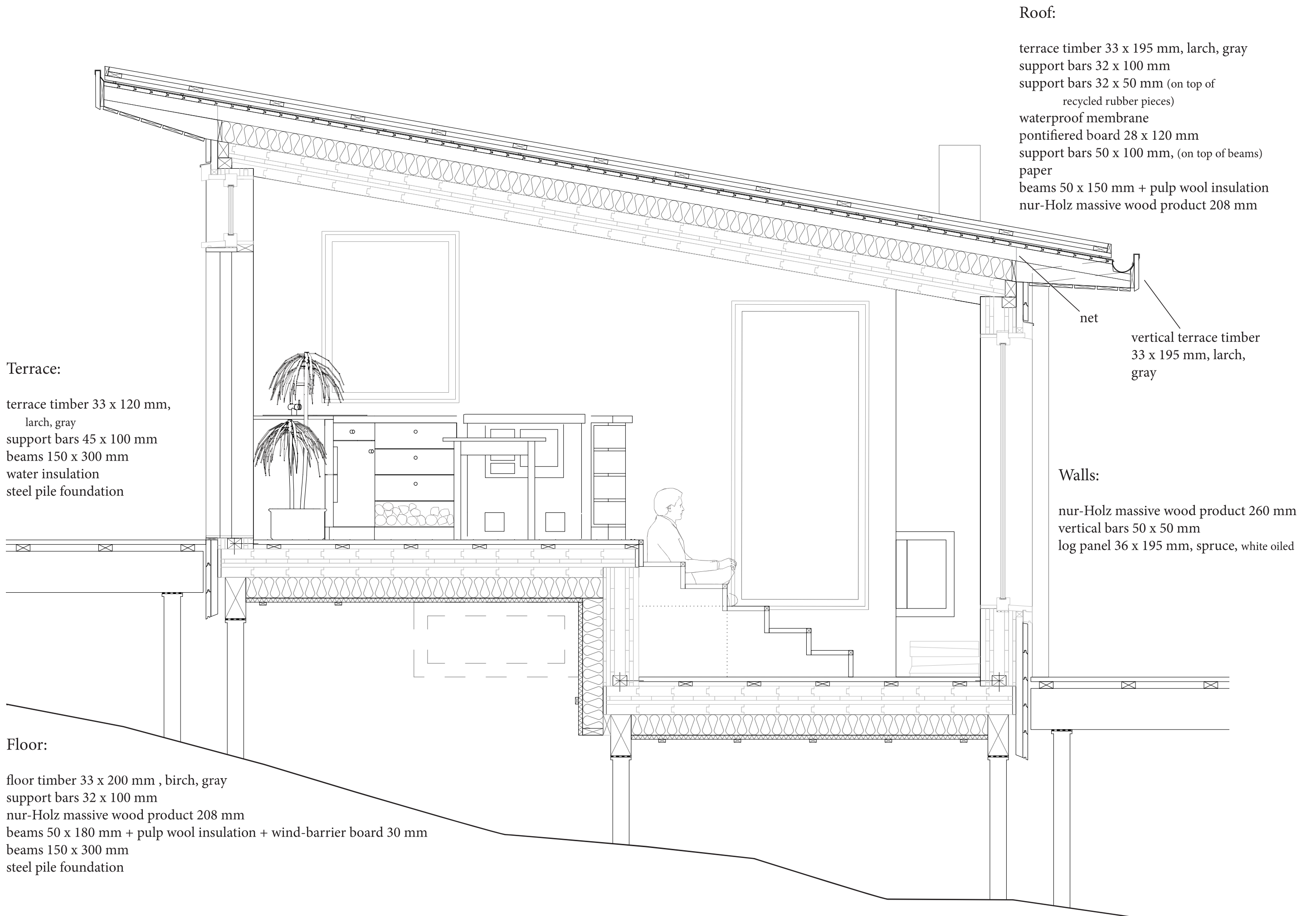
floor construction

- 208mm nur-holz CLT
- 150mm battens
- 15mm plywood, water resistant
- 150/150mm timber beams
- Steel pile foundation









Roof:

- terrace timber 33 x 195 mm, larch, gray
- support bars 32 x 100 mm
- support bars 32 x 50 mm (on top of recycled rubber pieces)
- waterproof membrane
- pontifired board 28 x 120 mm
- support bars 50 x 100 mm, (on top of beams)
- paper
- beams 50 x 150 mm + pulp wool insulation
- nur-Holz massive wood product 208 mm

Terrace:

- terrace timber 33 x 120 mm, larch, gray
- support bars 45 x 100 mm
- beams 150 x 300 mm
- water insulation
- steel pile foundation

net

vertical terrace timber 33 x 195 mm, larch, gray

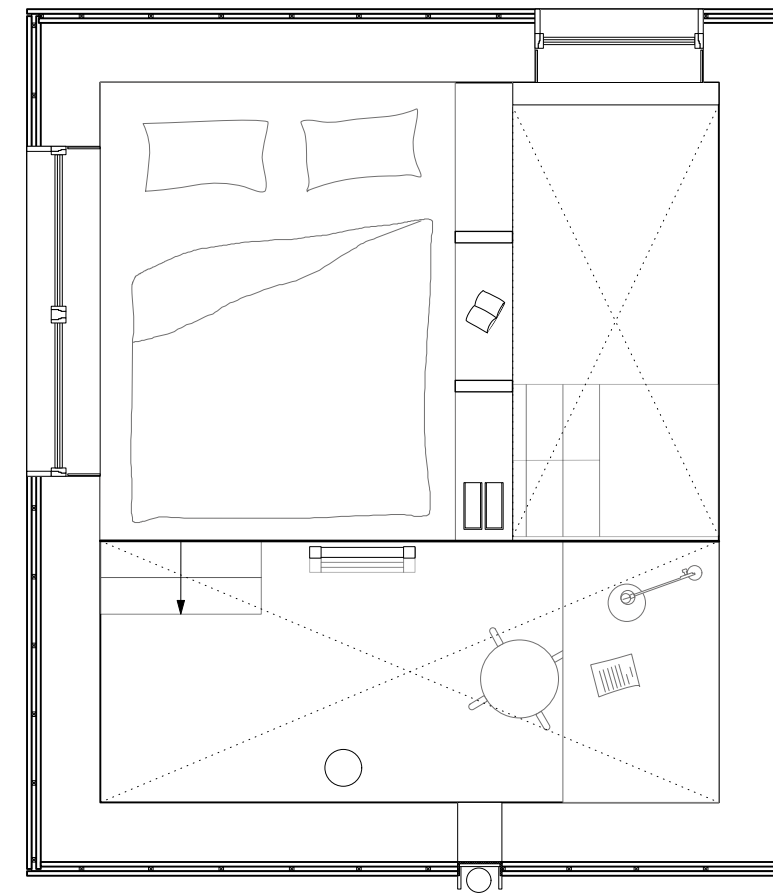
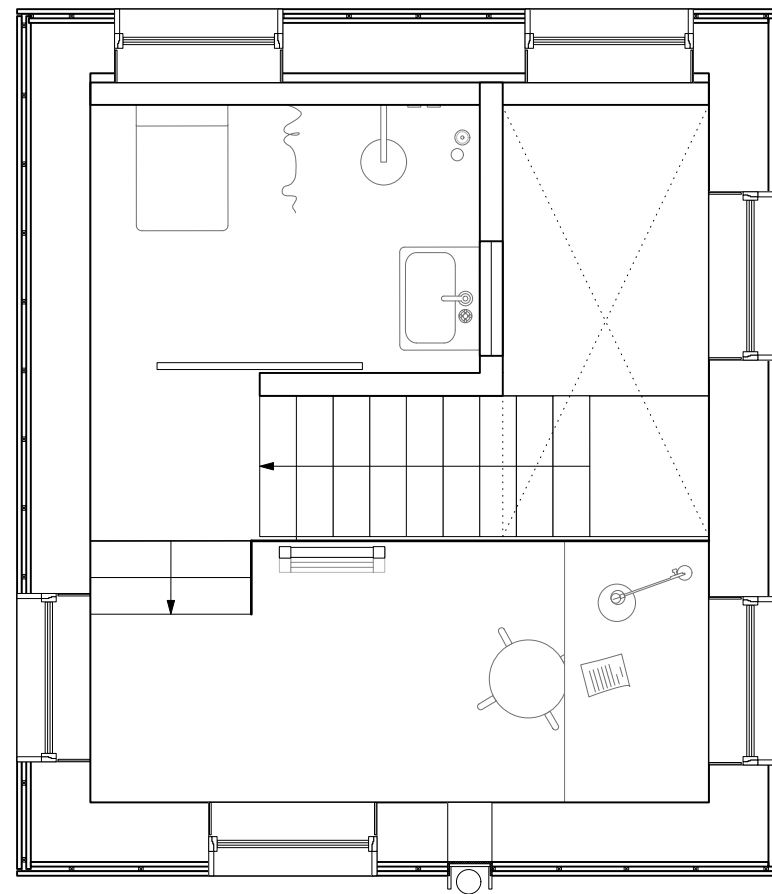
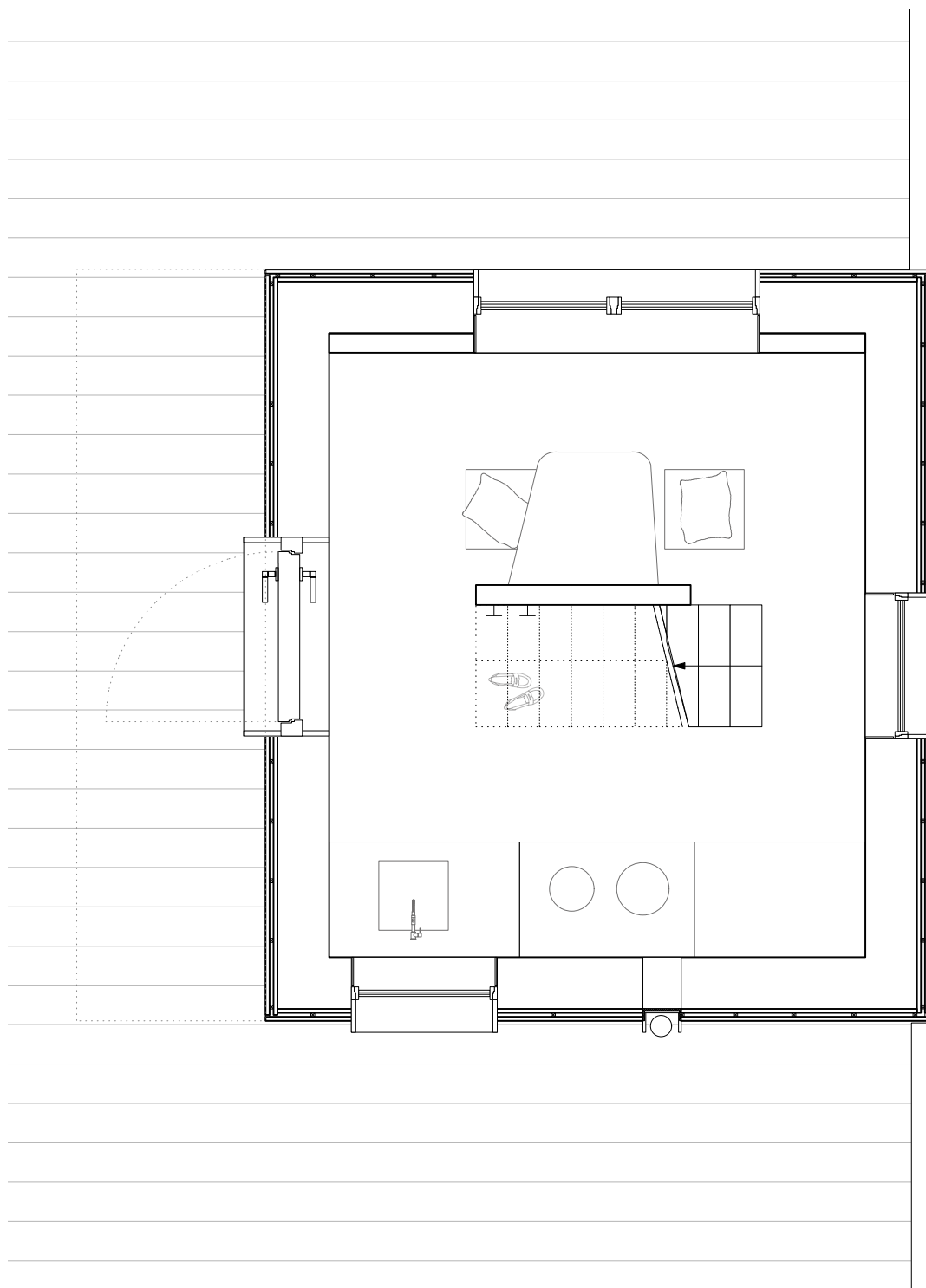
Walls:

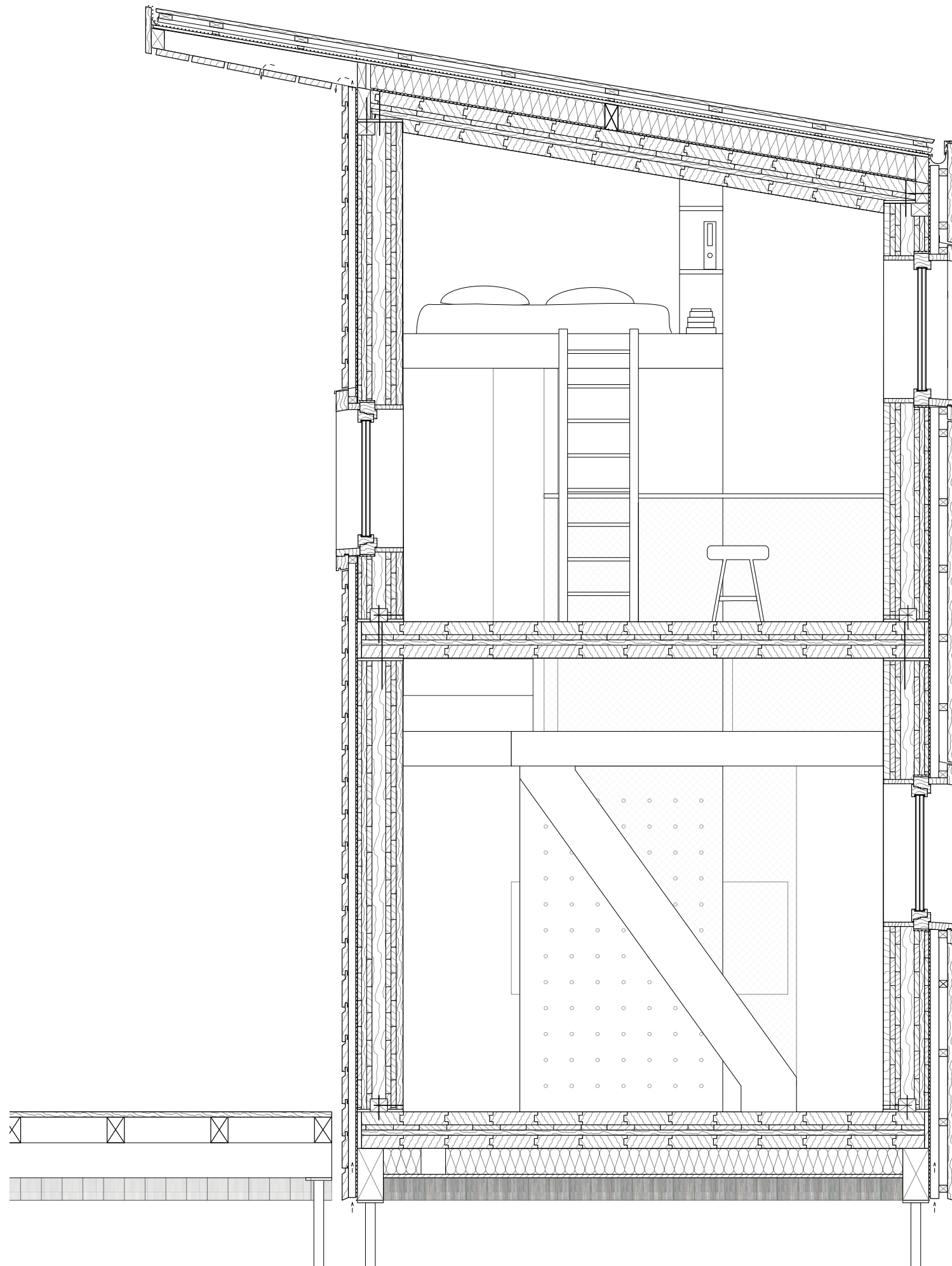
- nur-Holz massive wood product 260 mm
- vertical bars 50 x 50 mm
- log panel 36 x 195 mm, spruce, white oiled

Floor:

- floor timber 33 x 200 mm, birch, gray
- support bars 32 x 100 mm
- nur-Holz massive wood product 208 mm
- beams 50 x 180 mm + pulp wool insulation + wind-barrier board 30 mm
- beams 150 x 300 mm
- steel pile foundation







roof construction

- 208mm nur-holz CLT
- vapour barrier
- 150mm pulp wool insulation
- 50/150 mm eaves
- roof water proofing membrane as water bearing layer
- recycled rubber pieces as water protection for wood
- 40mm battening
- 40mm counter battening, ventilated
- 33/12mm vertical larch timber pregrayed

wall construction (inside)

- 20mm bathroom clay plaster + casein filler)
- 260mm nur-holz CLT
- pinewood boards in cross layers (horizontal/diagonal) wood screws from hardwood
- facade underlayer
- 50mm battening, ventilated
- 36/195mm horizontal spruce panels tongue and groove wood treatment white oil

floor + foundation

- 80/100mm wall mounting with screws
- 208mm nur-holz CLT
- 150mm pulp wool insulation
- 15mm plywood, water resistant
- 150/150mm timber beams
- steel pile foundation

rainwater system

- 50mm cover plate fixed with recycled rubber pieces
- 90mm rainwater gutter integrated to ventilated facade
- 50mm battening
- 50mm counter battening, ventilated

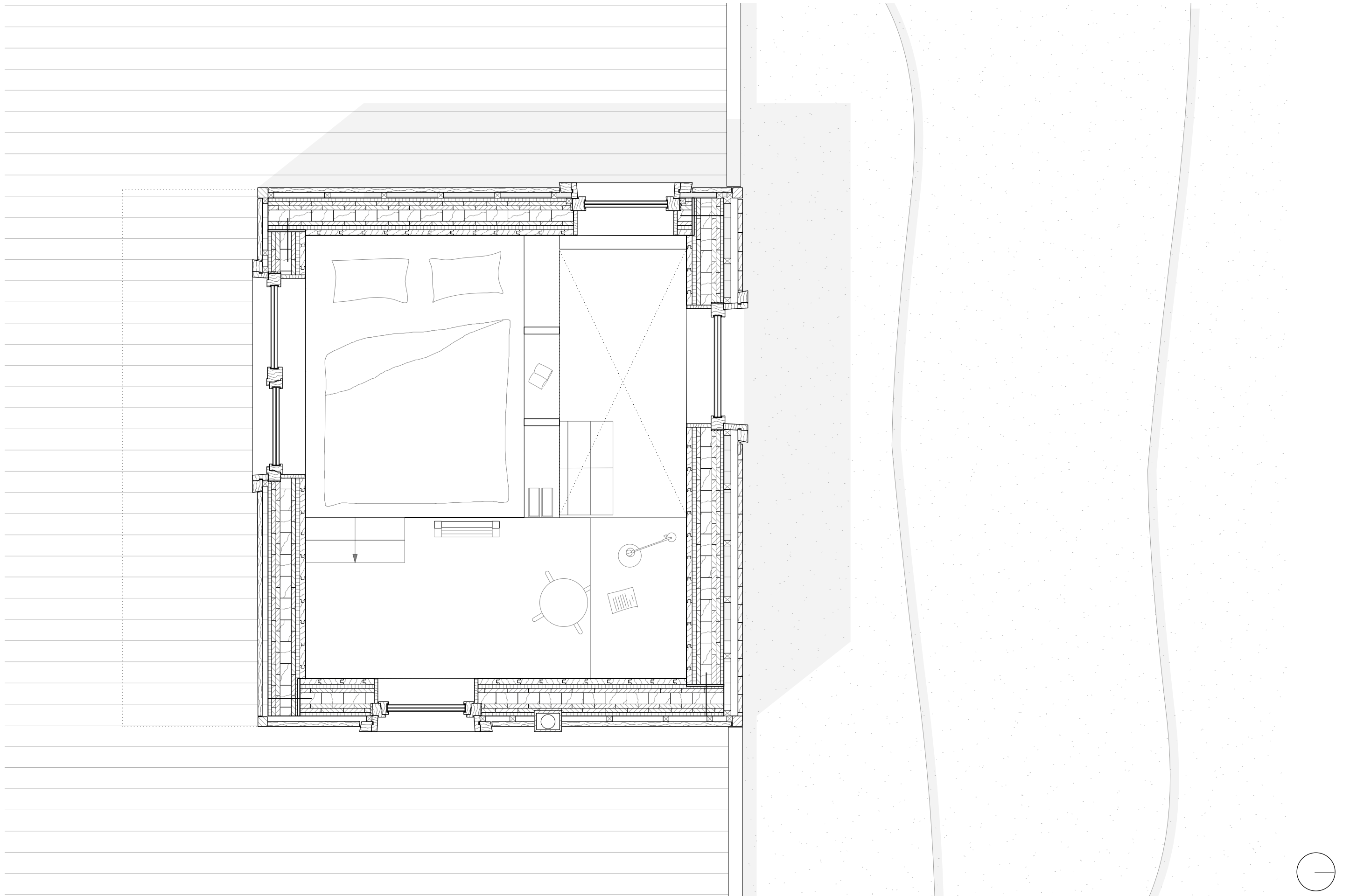
window construction (replacable)

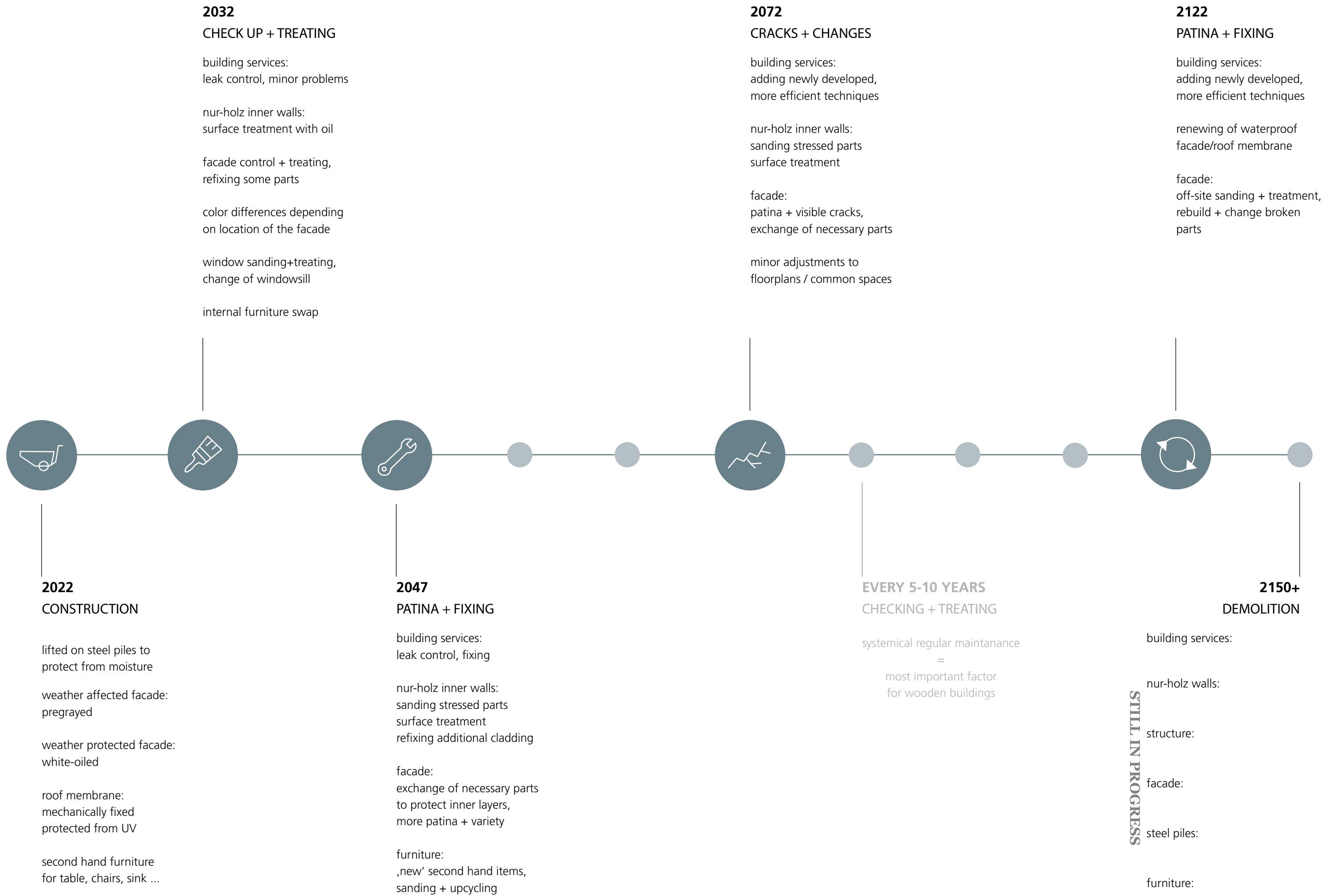
- 2mm cover plate drip nose
- 70/80mm framing wood
- 35/100mm framing wood larch, replacable
- 100/100mm window frame fixed glazed or openable
- triple glazing safety glass with 18+18mm cavities
- 35/120mm window sill, 4° larch, replacable
- 70/80mm framing wood larch, drip nose

wall construction (outside)

- 260mm nur-holz CLT
- pinewood boards in cross layers (horizontal/diagonal) wood screws from hardwood
- 50mm battening, ventilated
- 50mm counter battening
- 33/12mm vertical larch timber pregrayed









STILL IN PROGRESS