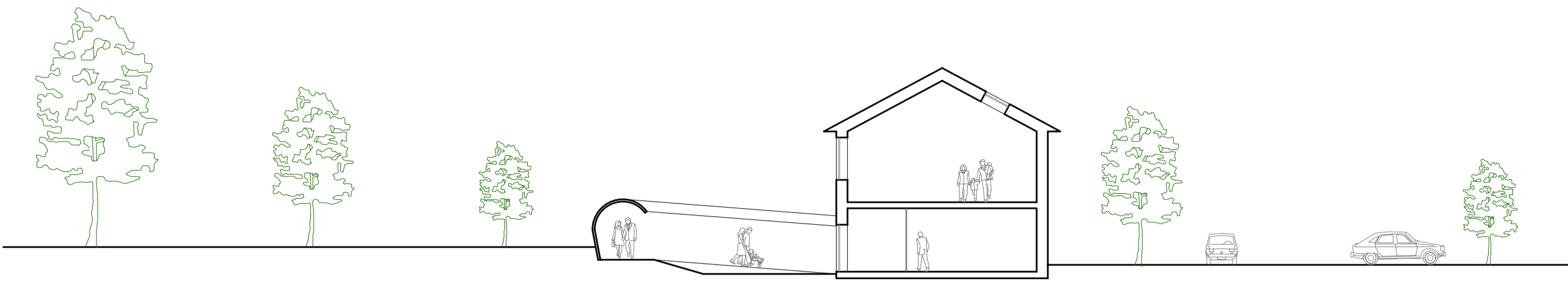
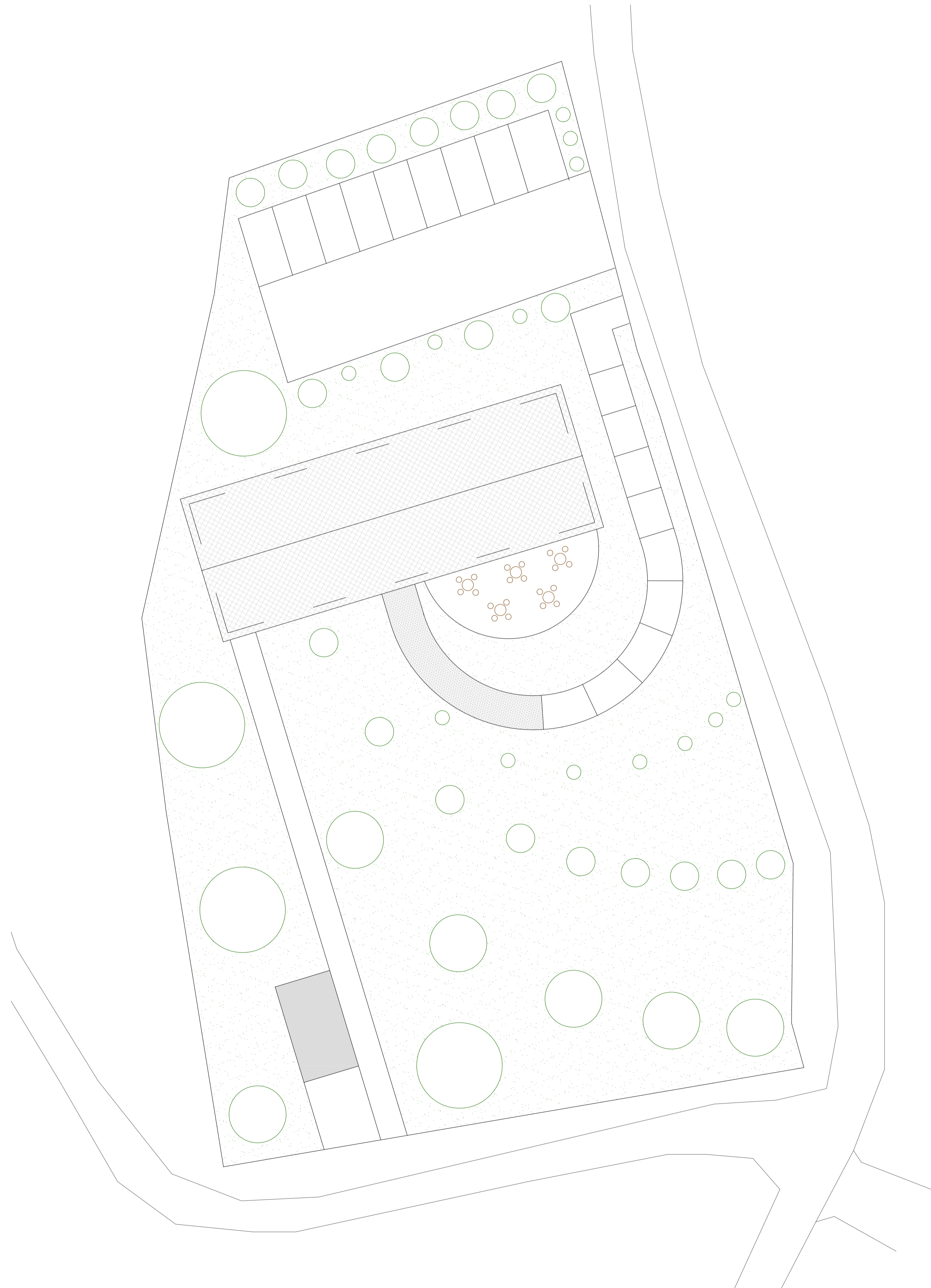


1:200



SITE SECTION



SITE PLAN

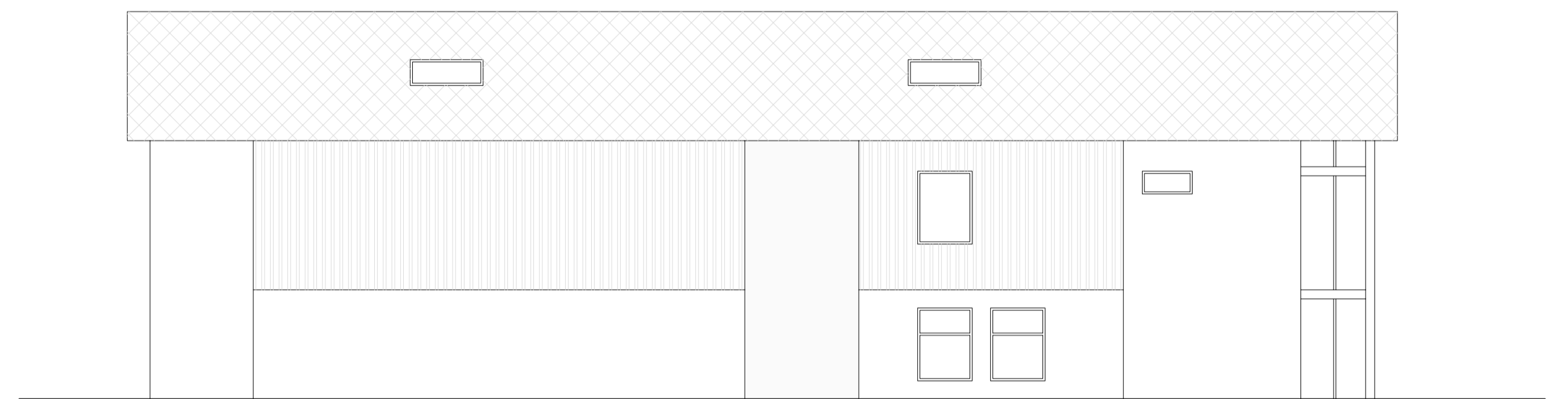
SITE

1:100

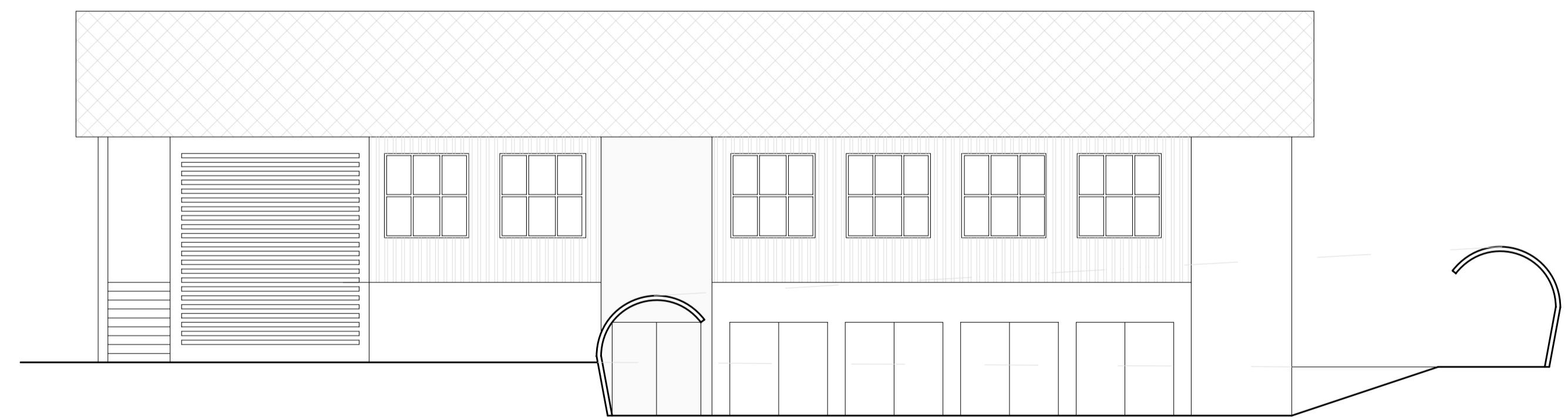


G3: vegard heide
ivan kalc
maria coral ness

FAÇADES



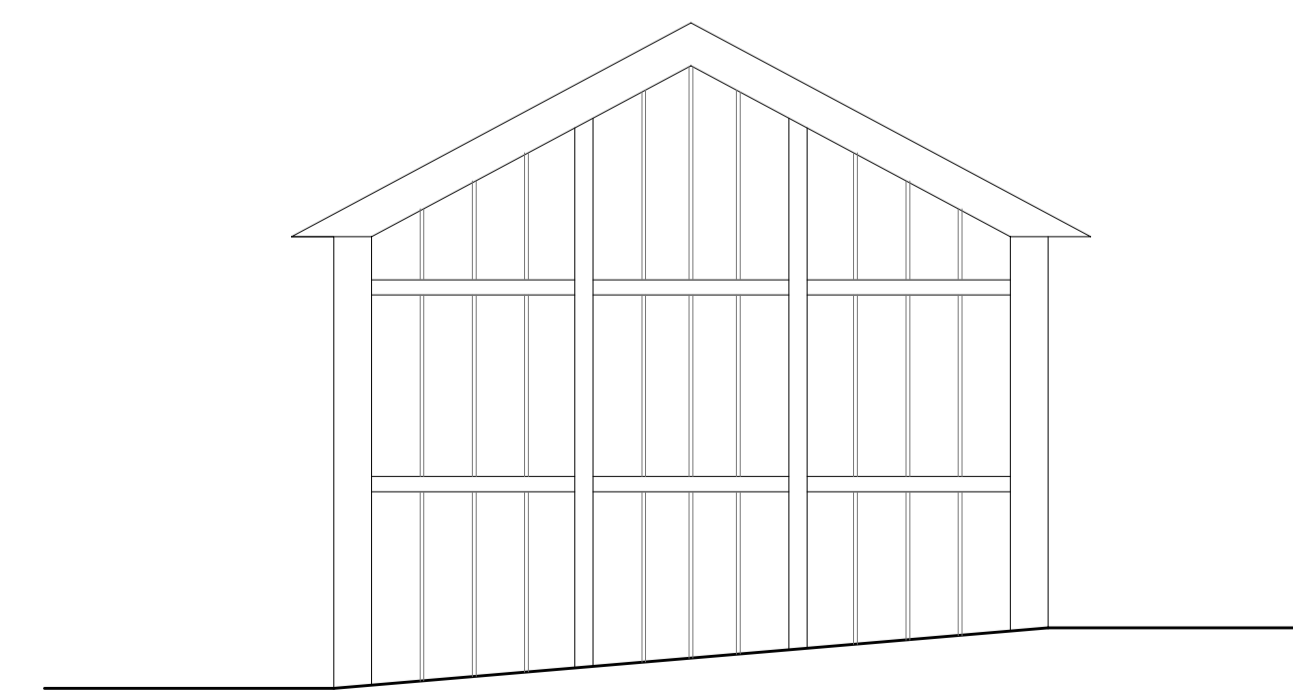
NORTH FAÇADE



SOUTH FAÇADE

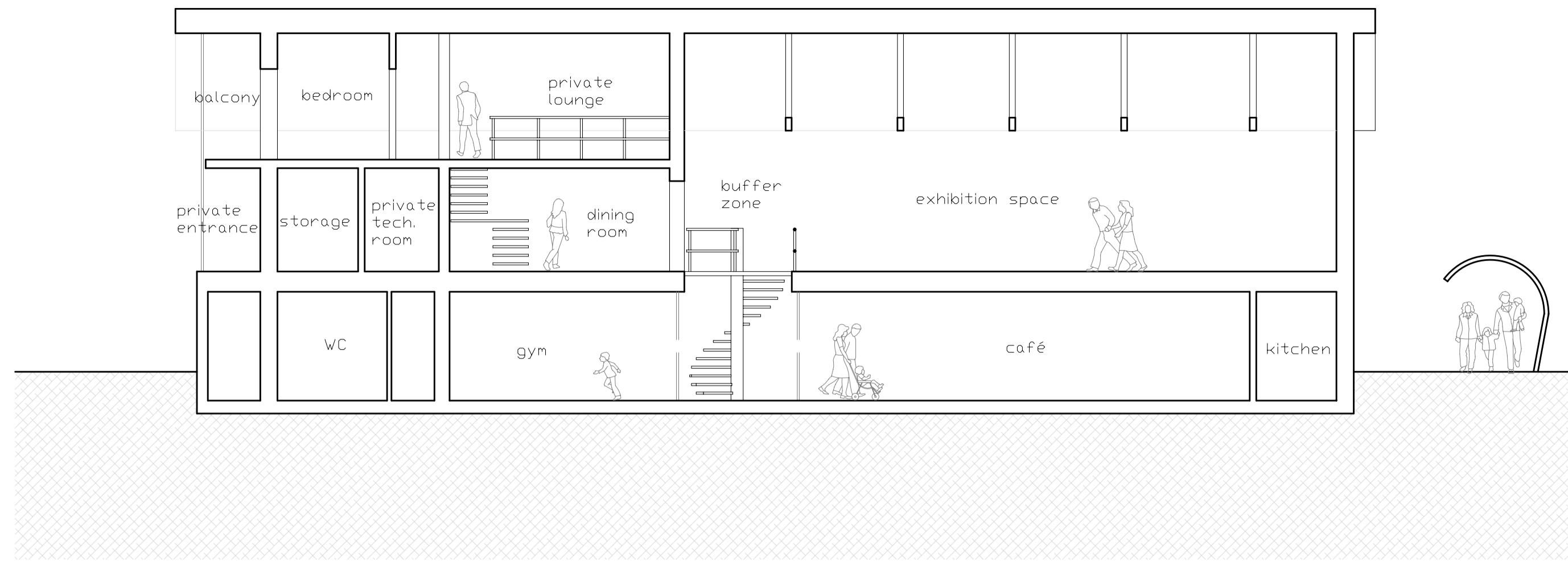


EAST FAÇADE

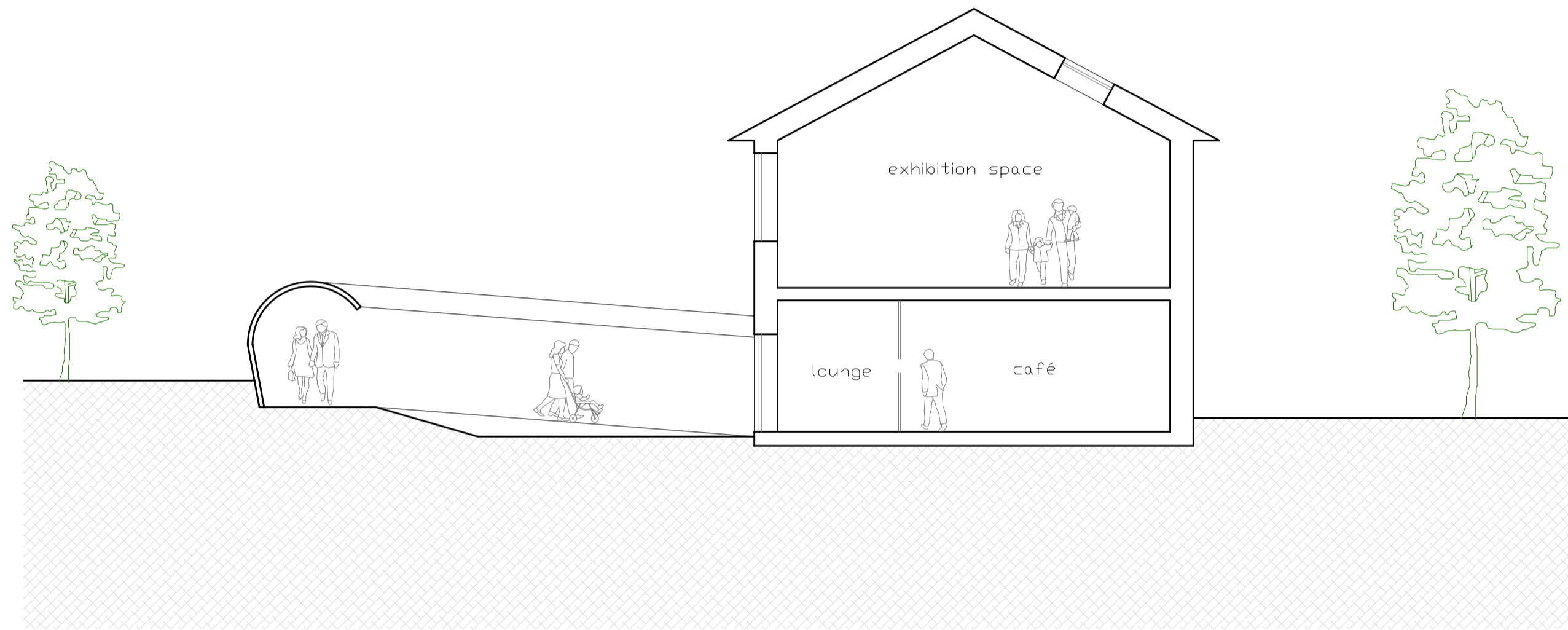


WEST FAÇADE

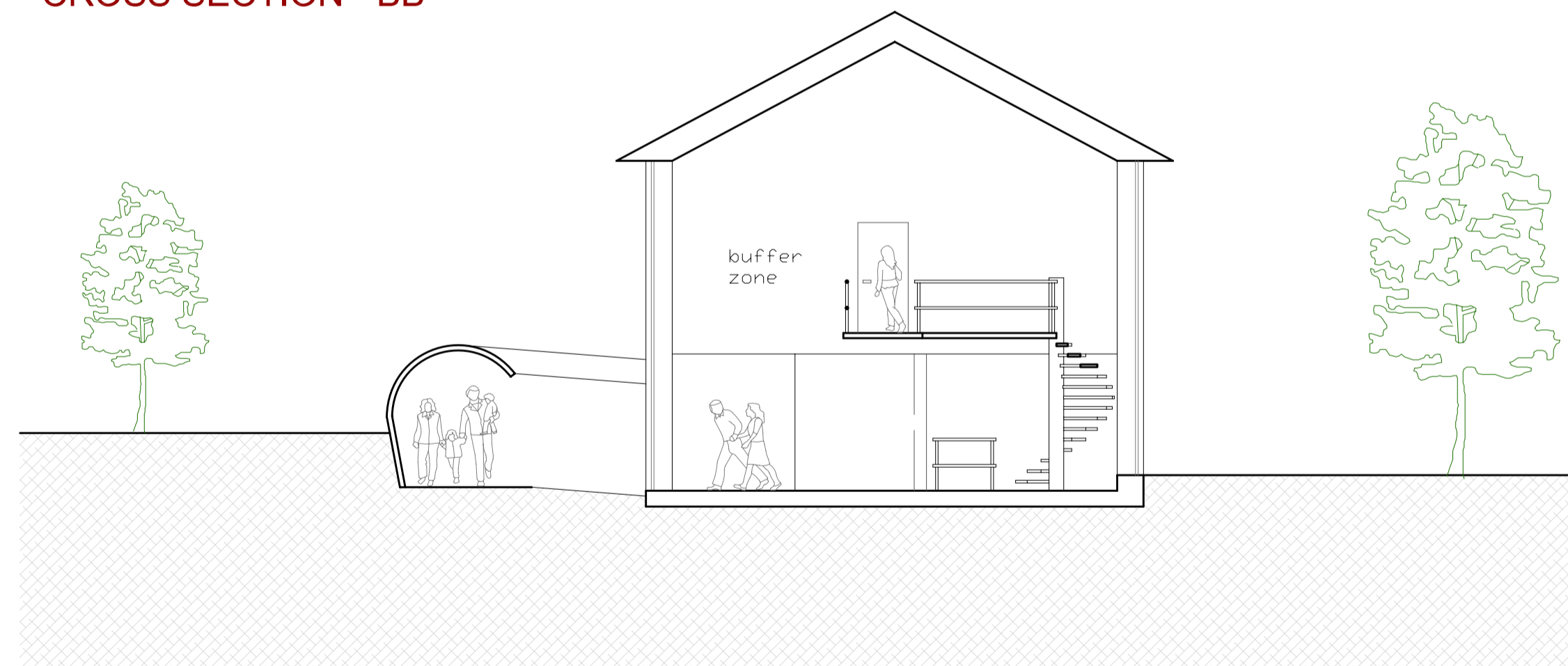
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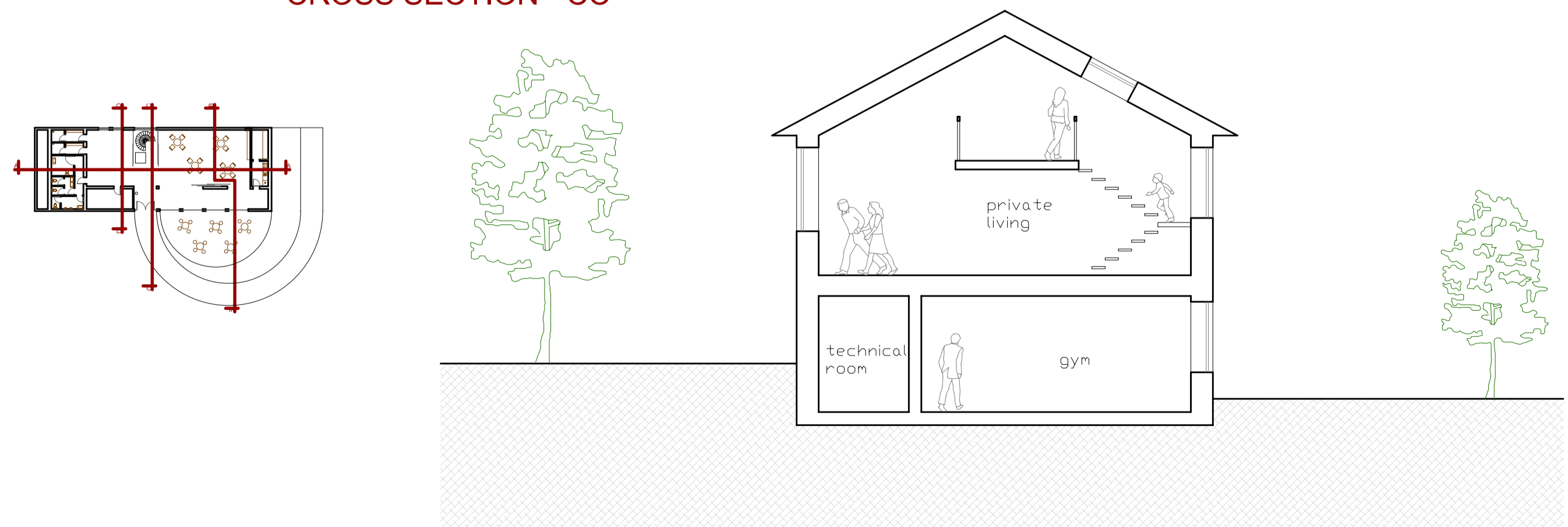
LONGITUDINAL SECTION - AA



CROSS SECTION - BB



CROSS SECTION - CC



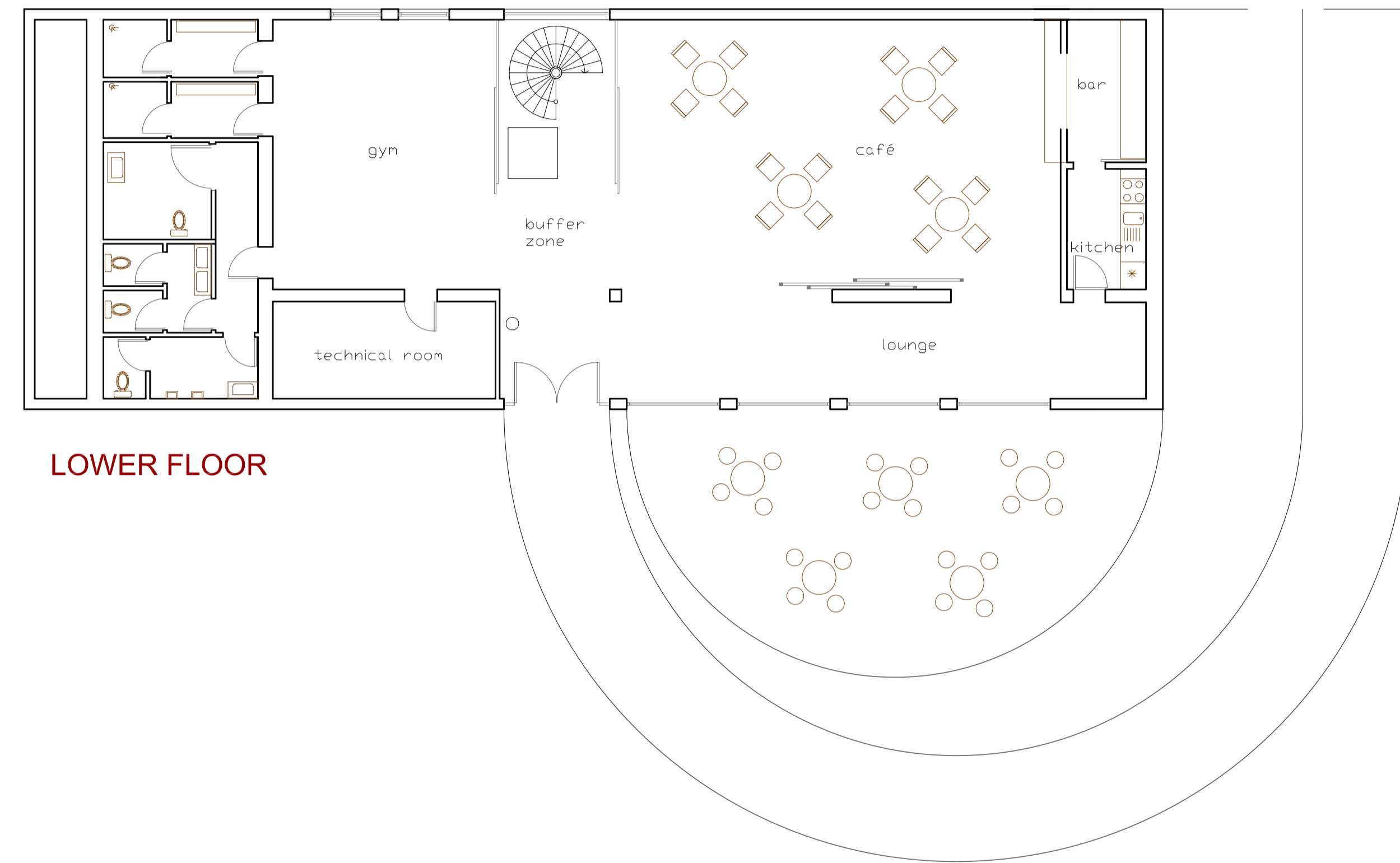
CROSS SECTION - DD

SECTIONS

1:100



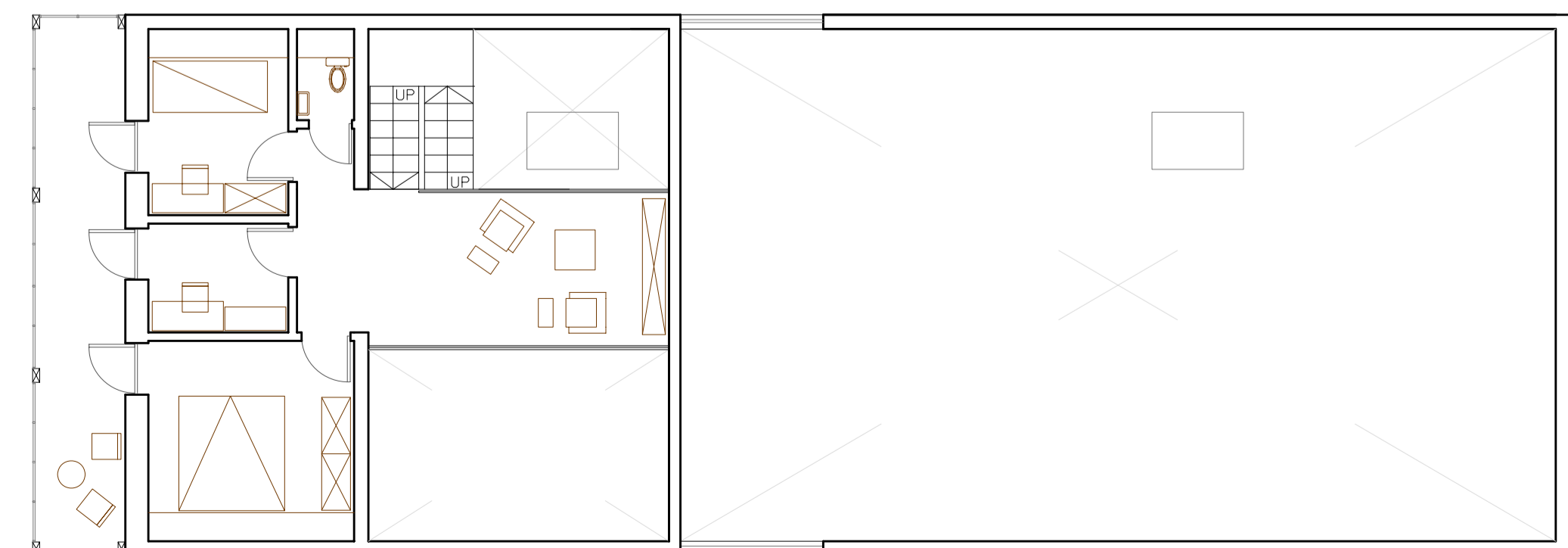
G3: vegard heide
ivan kalc
maria coral ness



LOWER FLOOR



MAIN FLOOR



UPPER FLOOR

PLANS

- SLATE SHINGLES
- 36 x 48 mm BATTENS
- 48 x 48 mm BATTENS
- BREATHING UNDERLAYER Pressed and taped joints.
- 500 mm I-PROFILE TRUSSES
- 200 mm GLAVA EXTREME 33
- PAPER CONVECTION BARRIER
- 300 mm GLAVA EXTREME 33
- PLASTIC VAPOUR BARRIER 0,2 mm. Taped joints.
- EXISTING WOOD BOARDS
- EXISTING 100 X 100 mm BEAMS

- 19 x 148 mm WOOD BOARDS
- 26 x 49 mm HORIZONTAL BATTENS
- 12 mm VERTIKAL BATTENS
- WIND BARRIER, Isola soft.
- 9 mm GU BOARDS
- 148 mm FRAME WITH 150 mm GLAVA EXTREM 33
- PAPER CONVECTION BARRIER
- 150 mm GLAVA EXTREM 33
- 30 mm GLAVA
- EXISTING 75 mm PLANK WALL
- PLASTIC VAPOUR BARRIER 0,2 mm
- INTERIOR WOOD PANEL

EXISTING WINDOWS REINSTALLED

1/3 OF NEW WINDOW OPENS INWARD FOR VENTILATION AND CLEANING

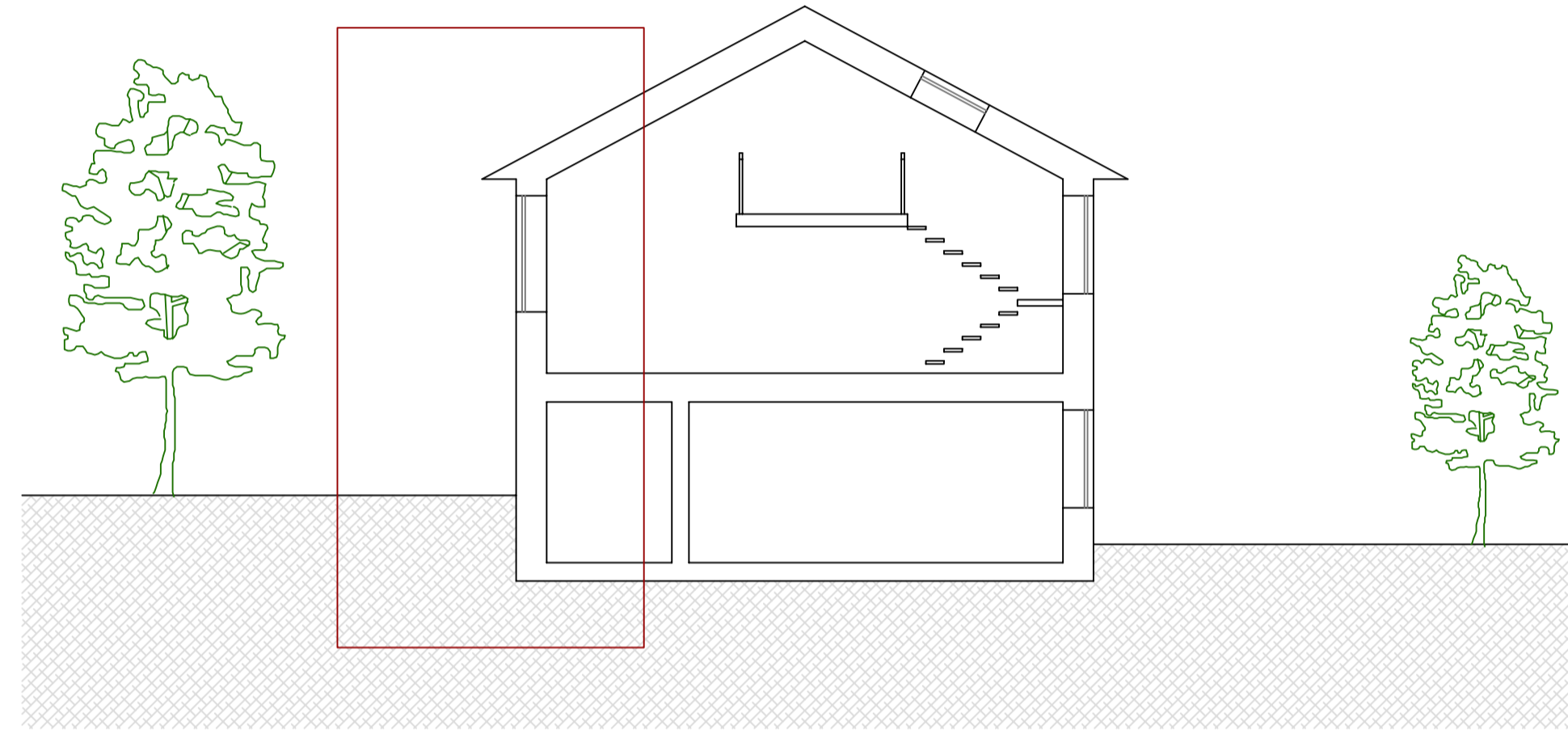
6 mm GLASS ALLOWING A WIEV OF A CROSS-SECTION OF THE WALL

16 mm PLYWOOD CONNECTING OUTER FRAME TO CONCRETE WALL

- 10 mm FIBRECEMENT BOARD
- 150 mm EPS 150 kPa with tongue and groove
- 150 mm EPS 150 kPa with tongue and groove
- EXISTING CONCRETE WALL
- 50 mm EXISTING WOOD-WOOL-CEMENT



G3: vegard heide
ivan kalc
maria coral ness



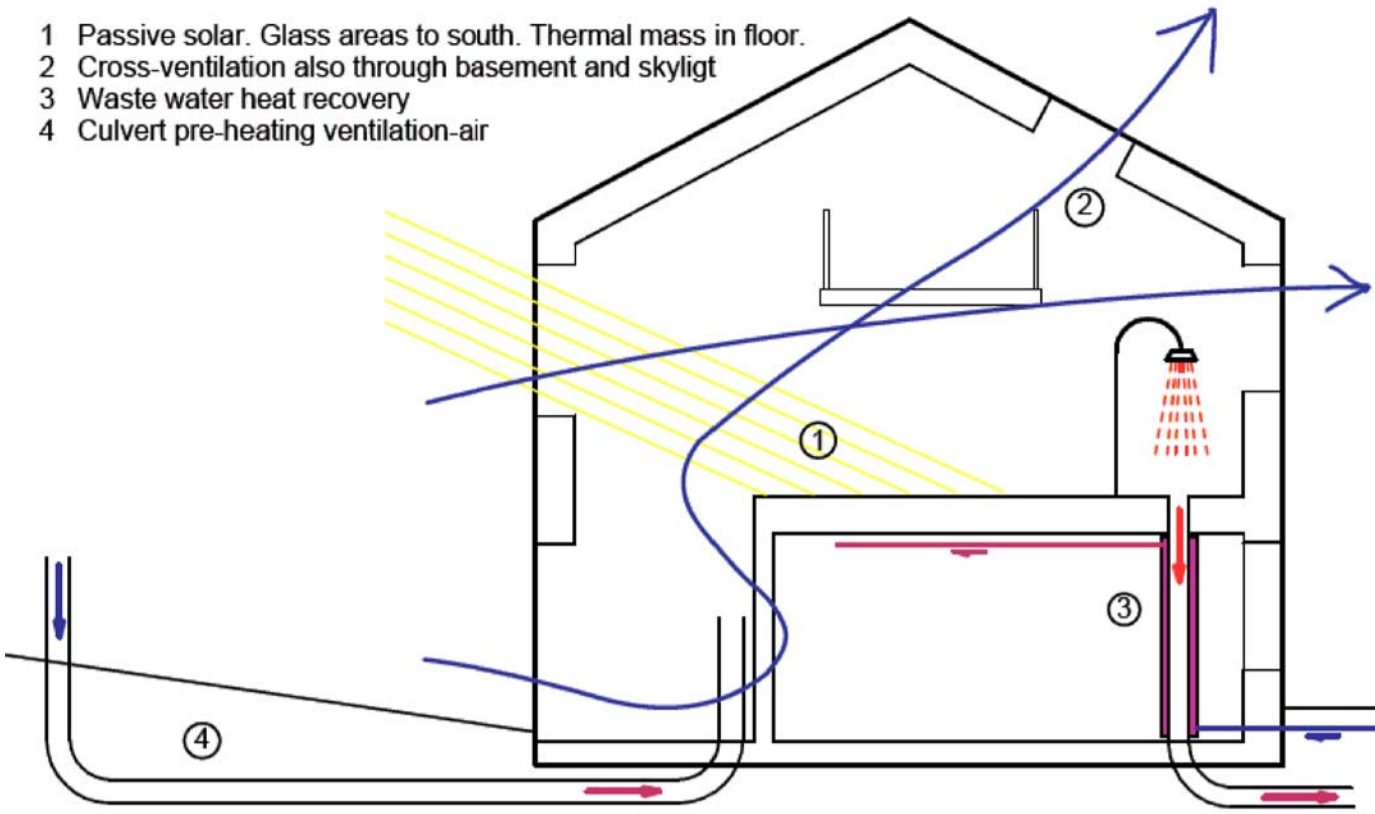
- GEOTEXTILE
- KNOTTPLAST (studded water barrier)
- 150 mm EPS 150 kPa with tongue and groove
- 150 mm EPS 150 kPa with tongue and groove
- EXISTING CONCRETE WALL
- 50 mm EXISTING WOOD-WOOL-CEMENT

NEW CONCRETE INFILL UNDER FOUNDATION

- 120 mm NEW CONCRETE SLAB
- 200 mm EPS 150 kPa
- 0,2 mm PLASTIC MOISTURE BARRIER
- 200 mm EPS 150 kPa
- GRAVEL

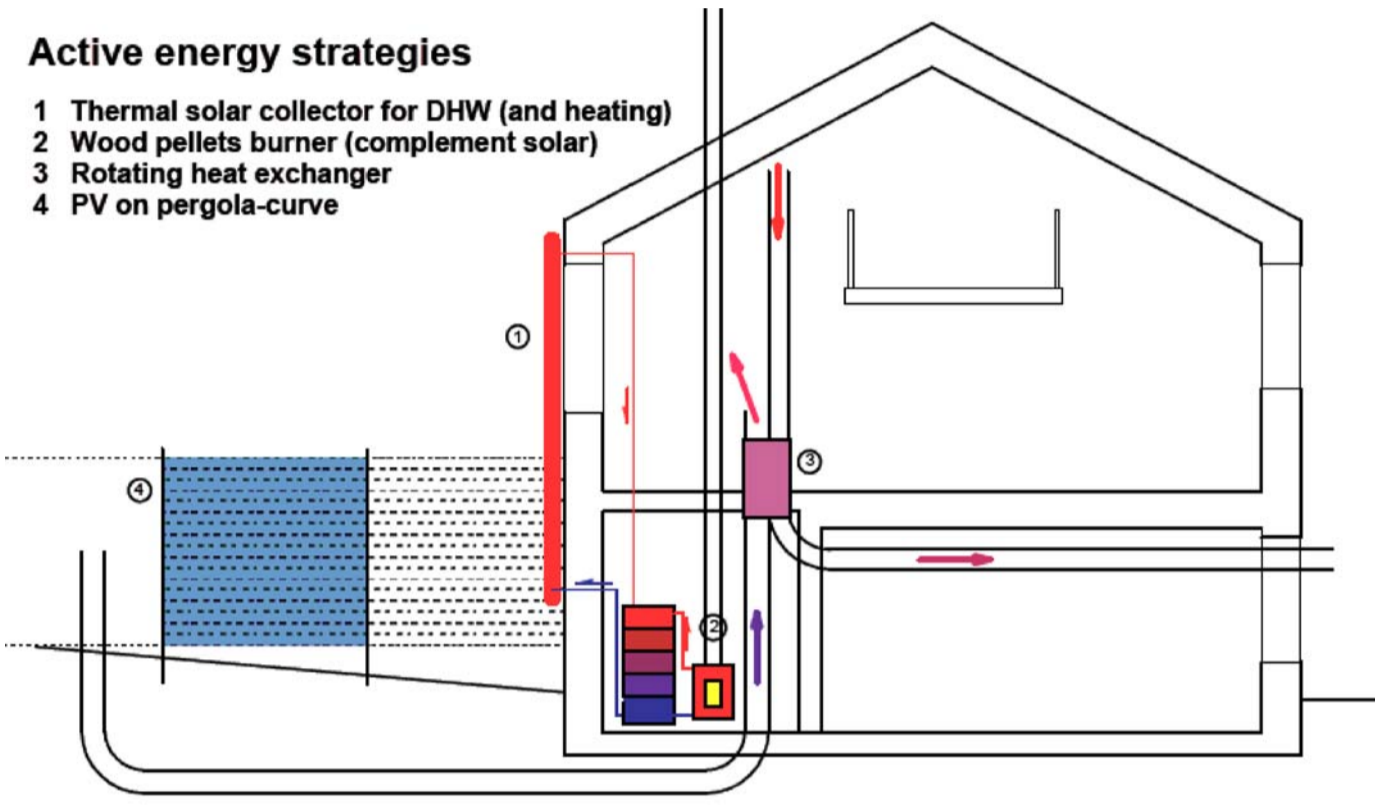
Passive energy strategies

- 1 Passive solar. Glass areas to south. Thermal mass in floor.
- 2 Cross-ventilation also through basement and skylight
- 3 Waste water heat recovery
- 4 Culvert pre-heating ventilation-air

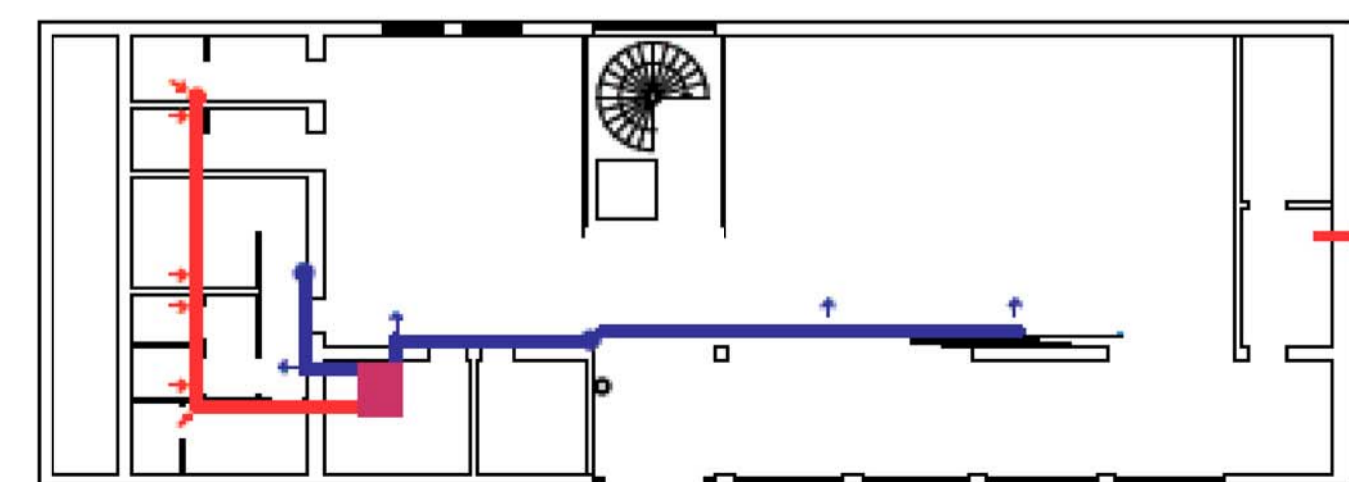
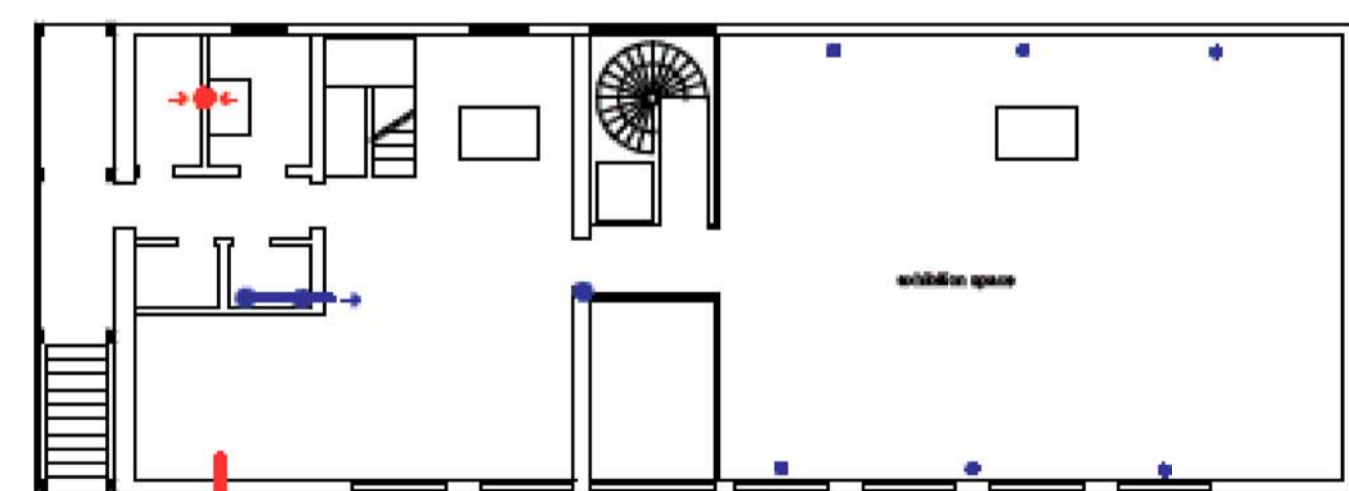
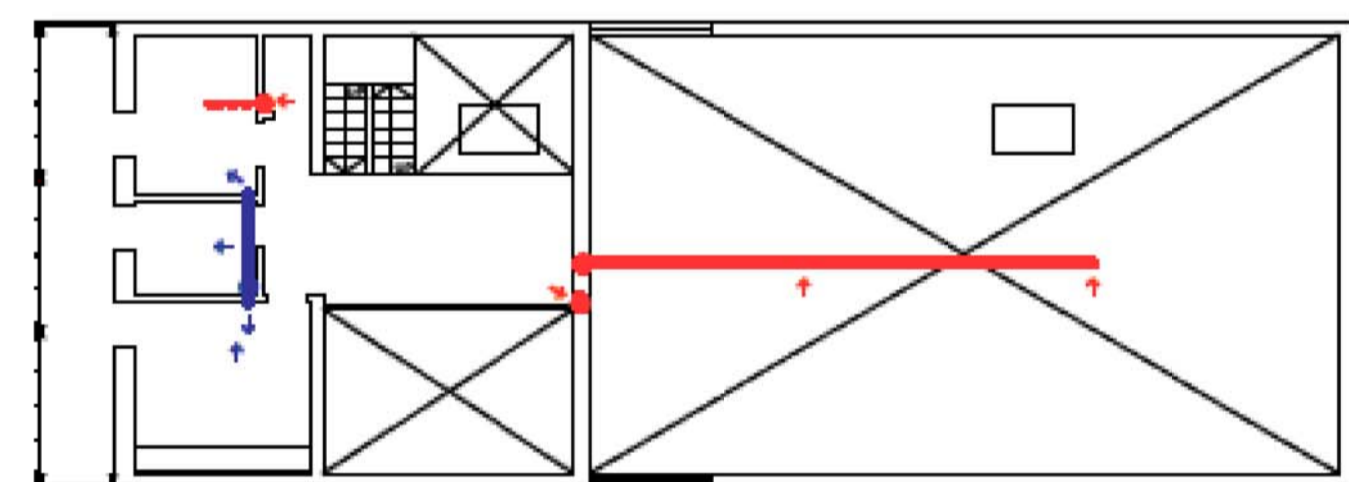


Active energy strategies

- 1 Thermal solar collector for DHW (and heating)
- 2 Wood pellets burner (complement solar)
- 3 Rotating heat exchanger
- 4 PV on pergola-curve



Balanced ventilation



Energy calculations in Simien

Requirements from NS 3700: (and Prosjektrapport 42).

	Calculated	Required maximum
-Heating demand:	14,7 kWh/m2	15 kWh/m2
-Overall heat loss factor	0,36 W/m2*K	0,5 W/m2*K
-CO2-emission	16,3 kg/m2	25 kg/m2

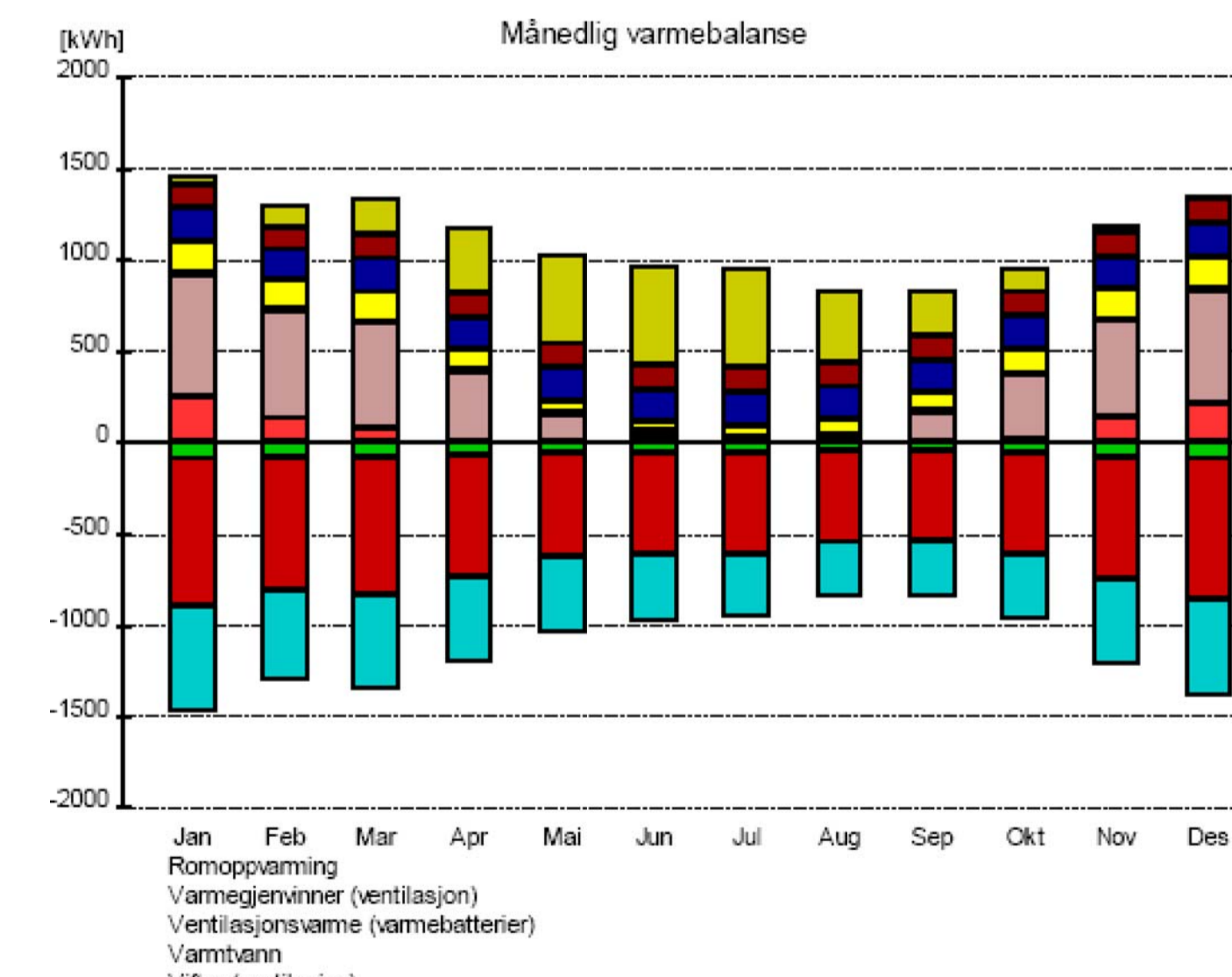
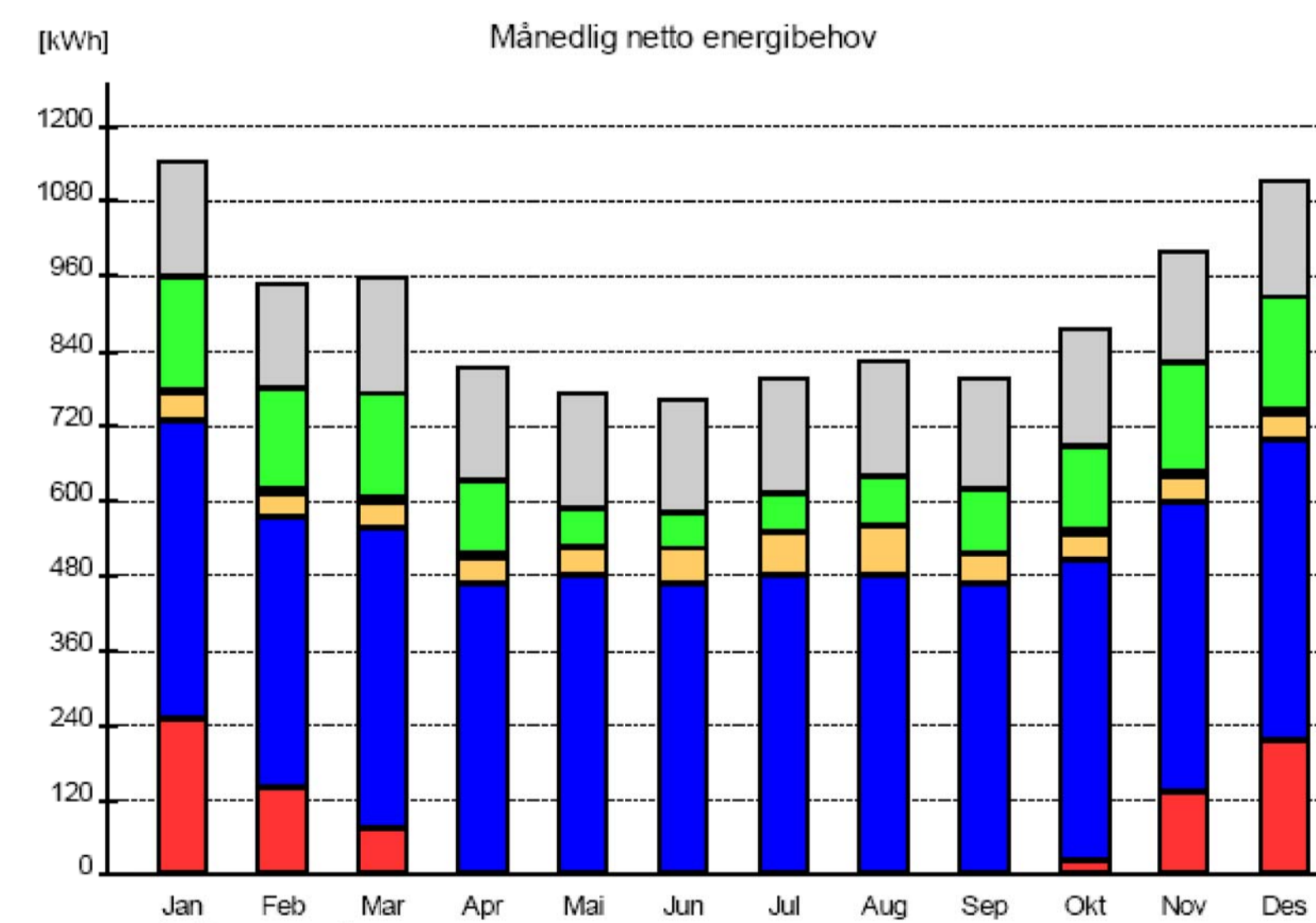
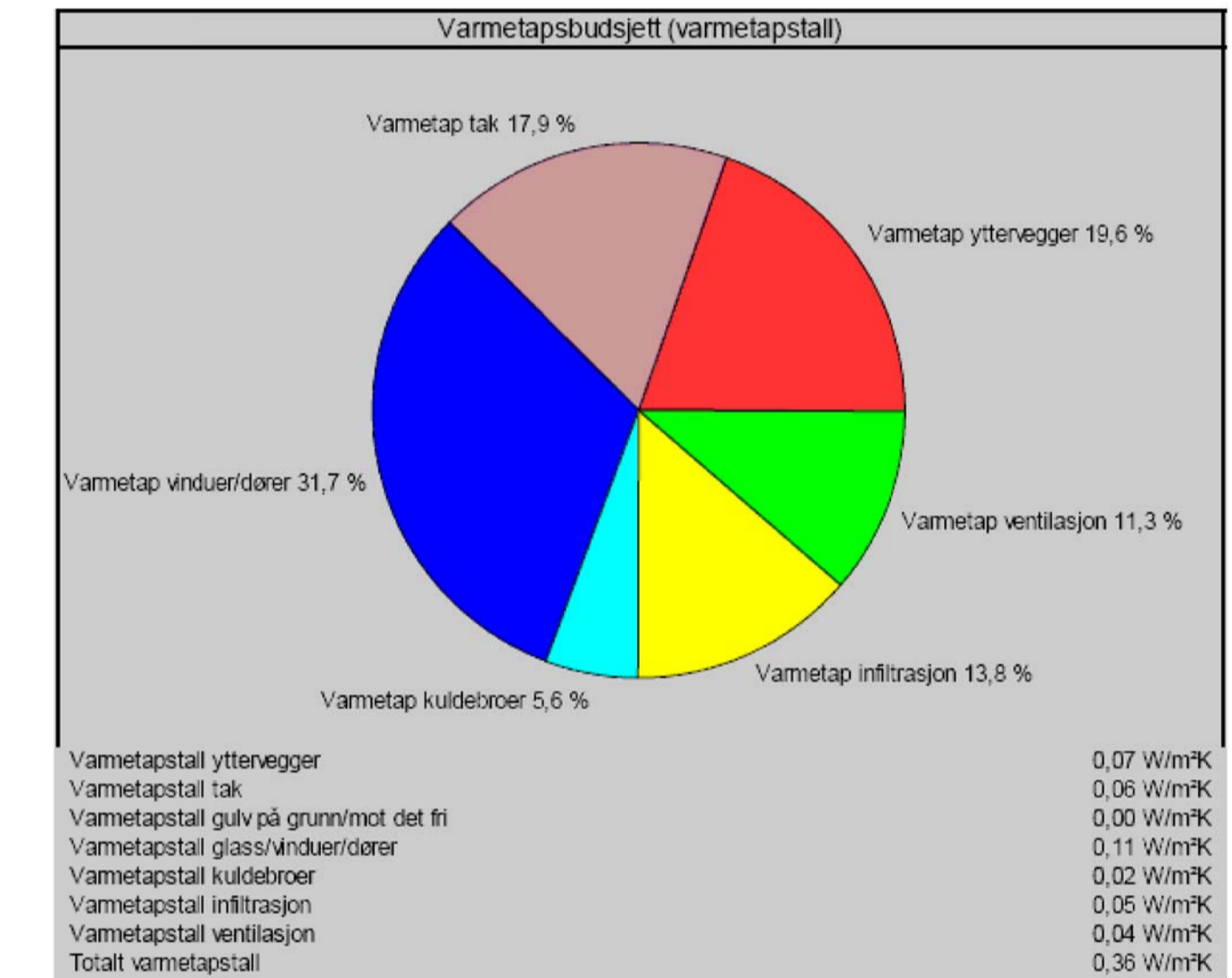
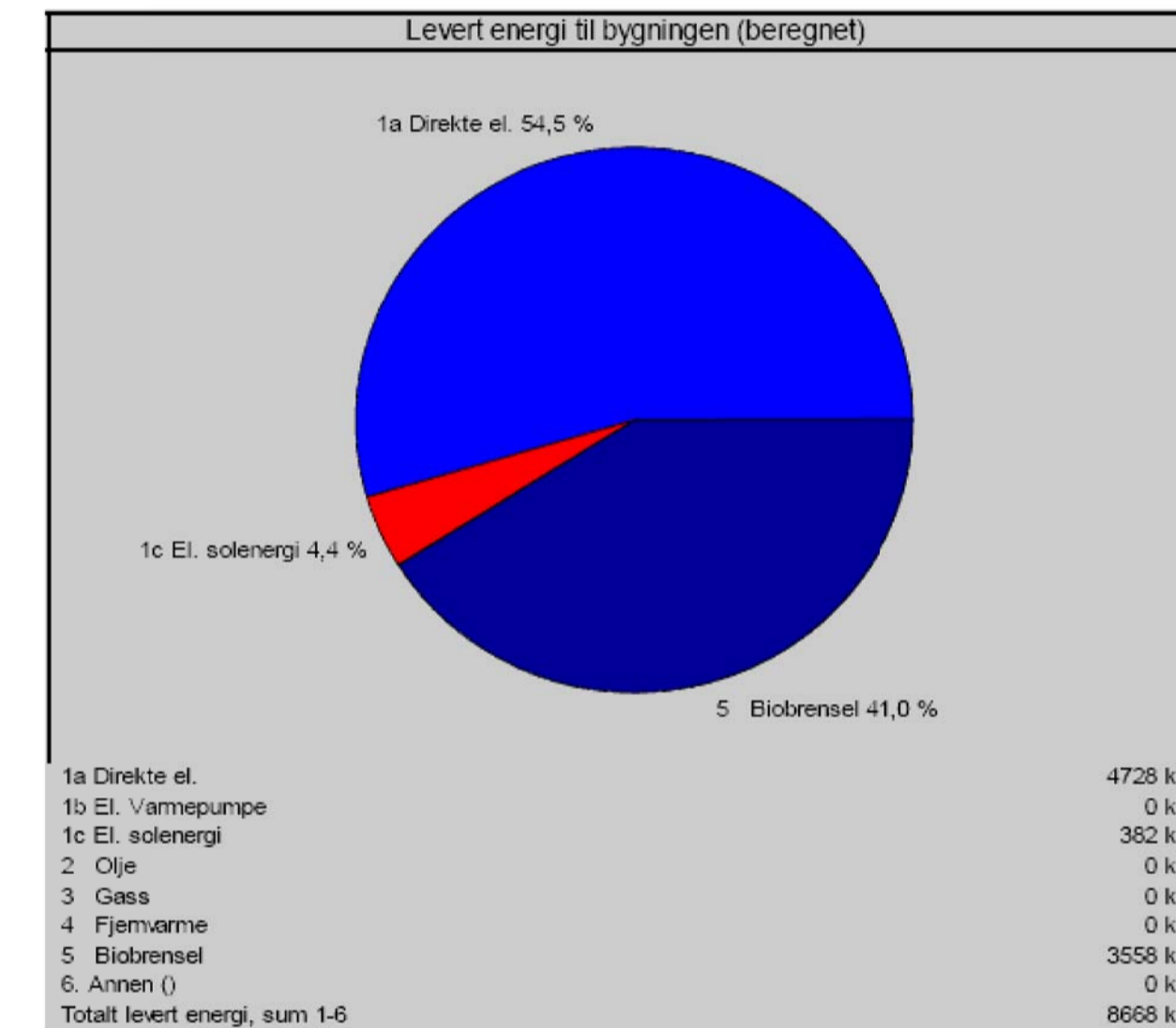
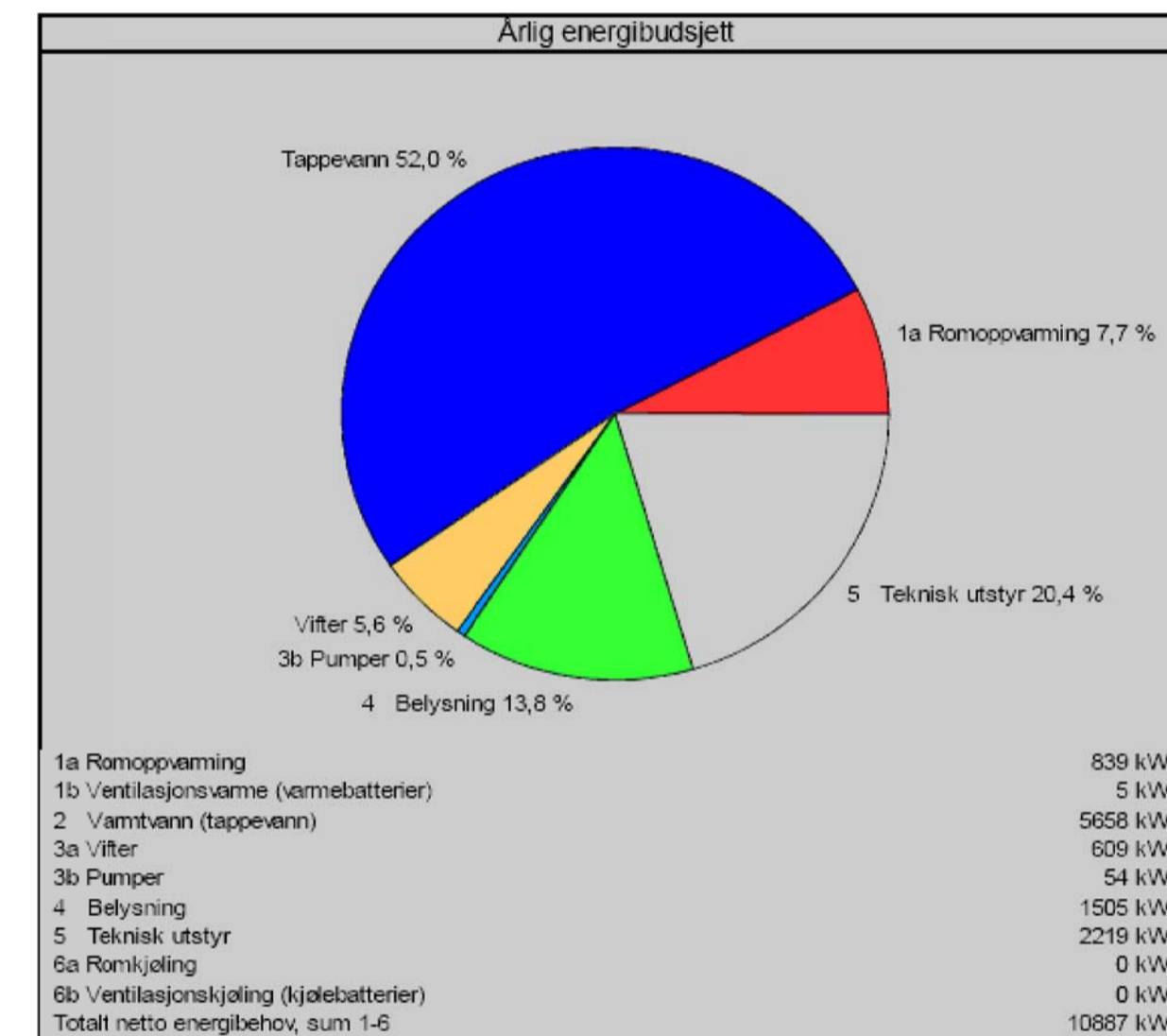
- At least half of the energy used for heating and DHW has to come from non-fossil: In our case this is fulfilled by the biofuel alone (3558 kWh) without counting the contribution from the solar collector.

Net energy demand: 10887kWh 86 kWh/m2

Total electricity consumption: 21700 kWh
 PV on curved pergola covers 10% of this.
 With PV also on south roof 45% is covered.



G3: vegard heide
 ivan kalk
 maria coral ness



- 1a Romoppvarming
- 1b Ventilasjonswarme
- Tappevann
- Vifter
- 3b Pumper
- 4 Belysning
- 5 Teknisk utstyr
- 6a Romkjøling
- 6b Ventilasjonskjøling

Simien: Net energy demand

- Romoppvarming
- Varmegjenvinner (ventilasjon)
- Ventilasjonswarme (varmebatterier)
- Varmtvann
- Vifter (ventilasjon)
- Belysning
- Teknisk utstyr
- Personer
- Sol
- Romkjøling (lokal kjøling)
- Ventilasjonskjøling (kjølebatterier)
- Infiltrasjon (luftlekkasjer)
- Ventilasjon
- Transmisjon (byggningskropp)

Simien: Thermal balance