

Concept

The goal is to design an economical, simple weather-proofing system that preserves the local atmosphere and the values of the barn, and that can be easily constructed and dismantled. The existing c.80m² area of the barn is currently a space with no ceiling, and walls finished in horizontal wooden boards. It is a place for community events. Taking into account the above technical requirements, and in addition to maintaining the barn's ambience, we defined a number of important principles:

- The enclosing material should be made as a mobile structure, preferably using environmentally friendly and locally sourced materials
- The atmosphere of the barn is to be assured by preserving the interior, again primarily by not concealing the boarded wall finishes
- The primary goal is to improve the airtightness so that heated air does not escape from the building
- The thermal insulation is to be installed on the outside of the structure, using vapour-permeable construction, so that the existing building materials (made of natural materials) are not damaged
- By creating a slab, the volume of space to be heated and conditioned is greatly reduced, and allows the roof surface to be omitted from the programme of weather-proofing works (being itself difficult to seal and heat)

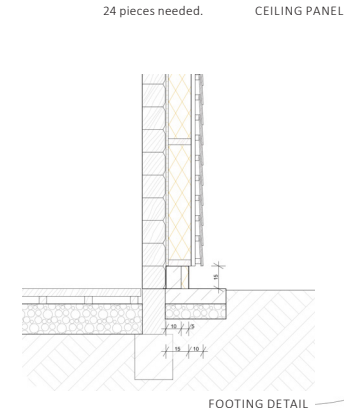
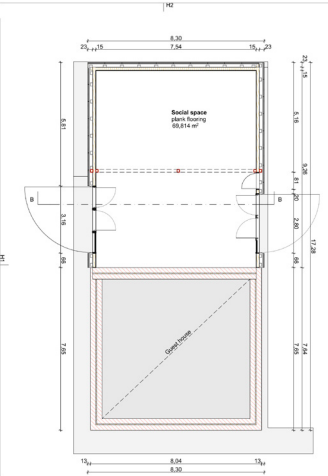
Structure

Based on the above, we have prepared a proposal that leaves the internal wall surfaces visible, and enables the installation of a uniform thickness of panel insulation to the outside. These panels can be built and dismantled quickly, and can enrich the local character of the building. In the interior, similar panels are to be used on the same principle of construction. The cladding of the panels is to be in various finishes – natural materials which allow the incorporation of local traditions and artistic ideas, with some parts pierced with glass and polycarbonate to allow the hidden structure of the barn to be seen, and to allow light to enter. At the huge gates, the new construction is placed within the plane of the existing timber-framed wall, and will thus not obstruct their opening and closing. This also presents an opportunity to create smaller and better-insulated doors.

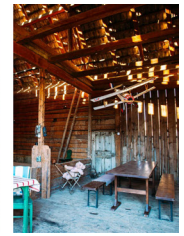
Elements of the system:

1. Vertical, thermally insulated panels to the full height of the wall
2. Vertical panels for the barn doors with polycarbonate "glazing" and smaller door openings
3. Interior water-colored panels and a guide rail – with integrated glazing, lighting and ventilation options.

FLOOR PLAN



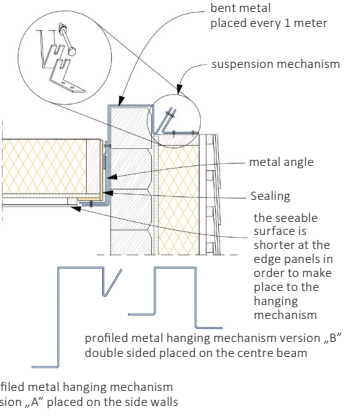
Footings
The recommended placement of 15-20 cm XPS thermal insulation in the plinth strip, which is not sensitive to moisture, the panels must be placed on 10-15 cm high prefabricated (movable) concrete elements (point-like base bodies thermally insulated from the building side and between them).



- 1-3 cm inner cover
- 2.5 cm slat frame
- 1 layer vapour barrier covering or OSB covering
- 20 cm 20/5 pallet frame up to 60 cm if necessary, filled with wood fibre or rock wool thermal insulation
- 1 layer hermetically spliced vapour-permeable roofing membrane

Fixing of the slab and wall panels

The wall panels connect to the slab panels with a special bent metal form which is placed every 1 m on the top of the walls but without any direct connection. The metal forms are connected to each other on the inner side with another metal angle which hold the slab panels. On the outer side they are screwed to the counter parts of them placed on the top of the new insulated wall panels so the whole structure could be built up without any destruction.



Slab panels

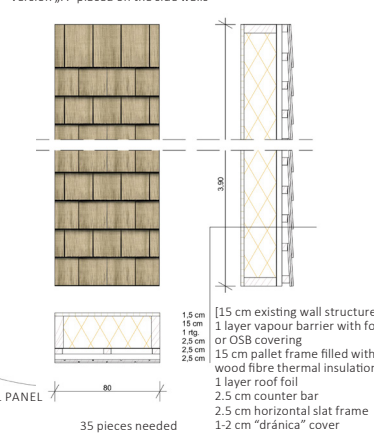
The panels are 60-80 cm wide and 360 cm long. For the placement of the floor panels, it is recommended to hang steel rails (within the heat-insulating envelope) from the tie beams/master beam. The rails receive elements with a design similar to the wall panels with a felt seal, the structural size of the panels will be thicker due to the need for very high thermal insulation, and must be thickened according to later static siting. A pluggable electrical network can be placed in the individual panels with protective piping. The openings made in the panels must be sealed in a vapour-tight manner.

24 pieces needed.

CEILING PANEL

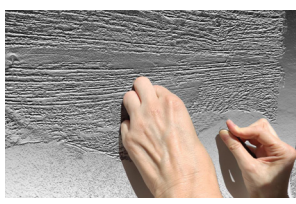


DOOR PANEL
The panels have the same structure as general insulated wall panels, the sealing between the panels and in the wall opening is the same (wooden felt or wool). Doors fixed to the pallet frame can be placed on the underside of the panels. A 4-cm-thick, water-clear polycarbonate cover must be placed above the doors (the door field can also be made of this), so the amount of light admitted by the door surface can be ensured. **Planned** 15/5 pallet frame, door and polycarbonate sheet in between, sealed airtight, with cover strip on both sides

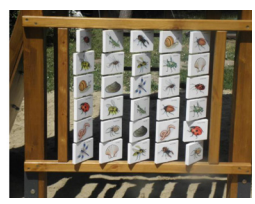


Vertical panels: The panels are 80 cm wide and 390 cm high. A 5/15 pallet frame runs on both sides, with vapour barrier film covering on the inner side, straw filling between the pallet frame or a wood fibre thermal insulation panel, and a vapour-permeable roof foil covering is made on the outside with ventilated laths and vertical Dránica covering. When two panels are joined, a felt or wood fibre insulating felt seal must be placed, and the covering must be designed in such a way that the joint is offset from the joint of the basic structure.

Recommendation from the artists



In order to make the pattern of the satirized surfaces tangible and visible, the boards of the old barns would appear texture. For visually impaired visitors, the entire building could help them perceive the space and provide information about its nature.



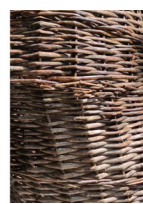
Rotatable/turnable/movable panels placed at one or two points on the building, which reveal something interesting about barns, interactive game (for adults, for a child).



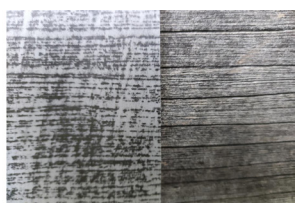
Bat fossil: as an archaeological find, found in a barn bat skeleton, bird skeleton, pressed herbs or sinking the remains of an old tool into a clay slab.



A panel from a crocheted tablecloth that shows the local crocheting traditions.

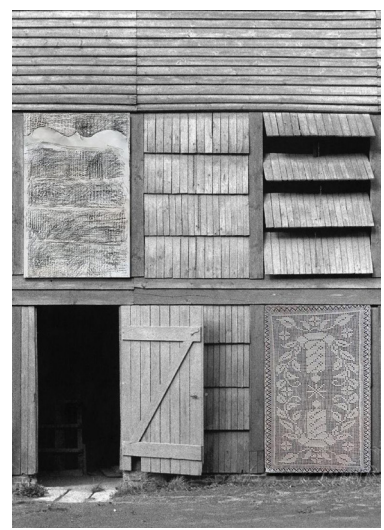


Wall panel made with basket weaving technique



The covered original wall panels can be made visible using the frottage technique

Mood and visualisation



Elevations

