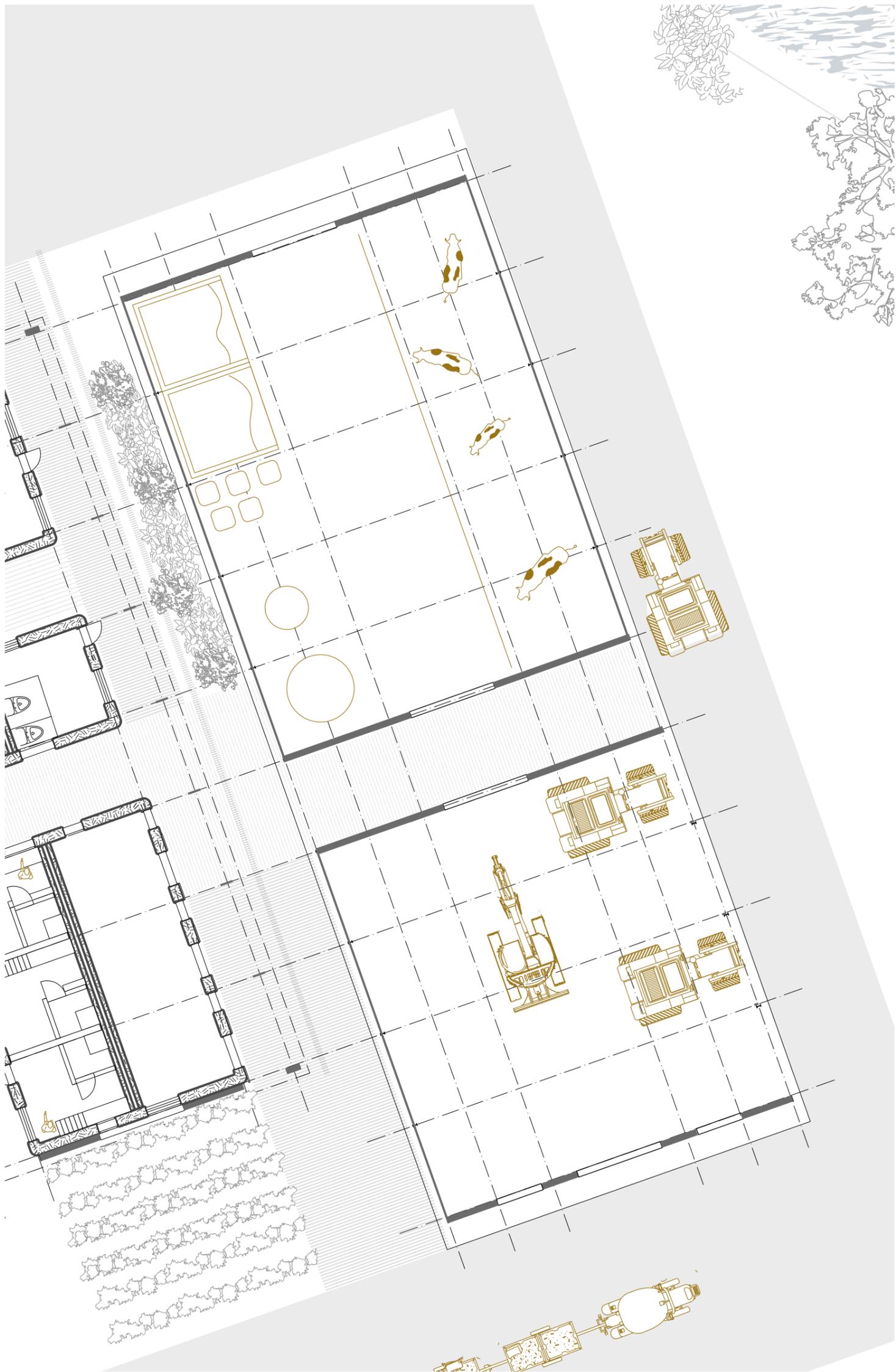
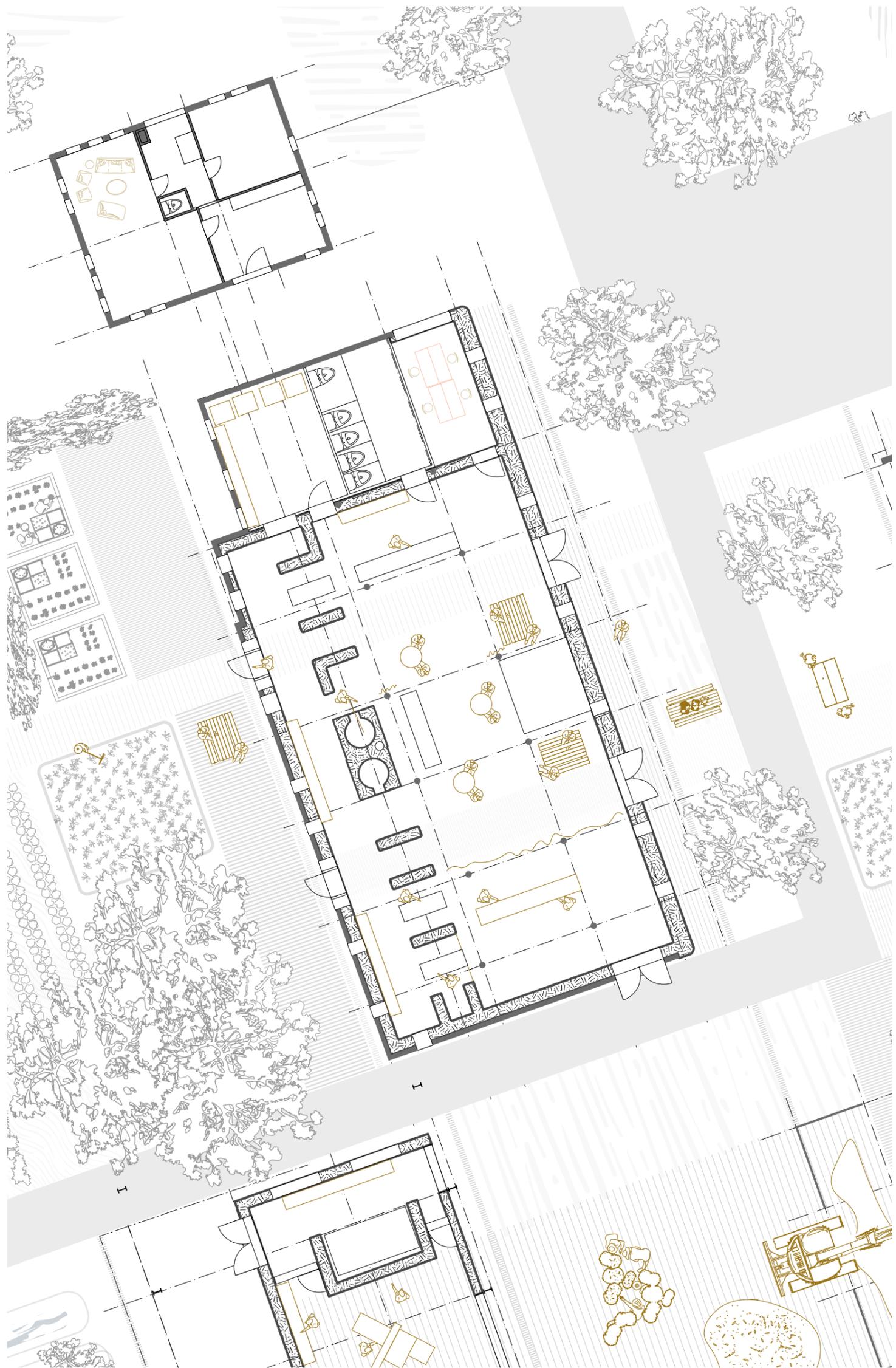


plan view 1:500 farmyard



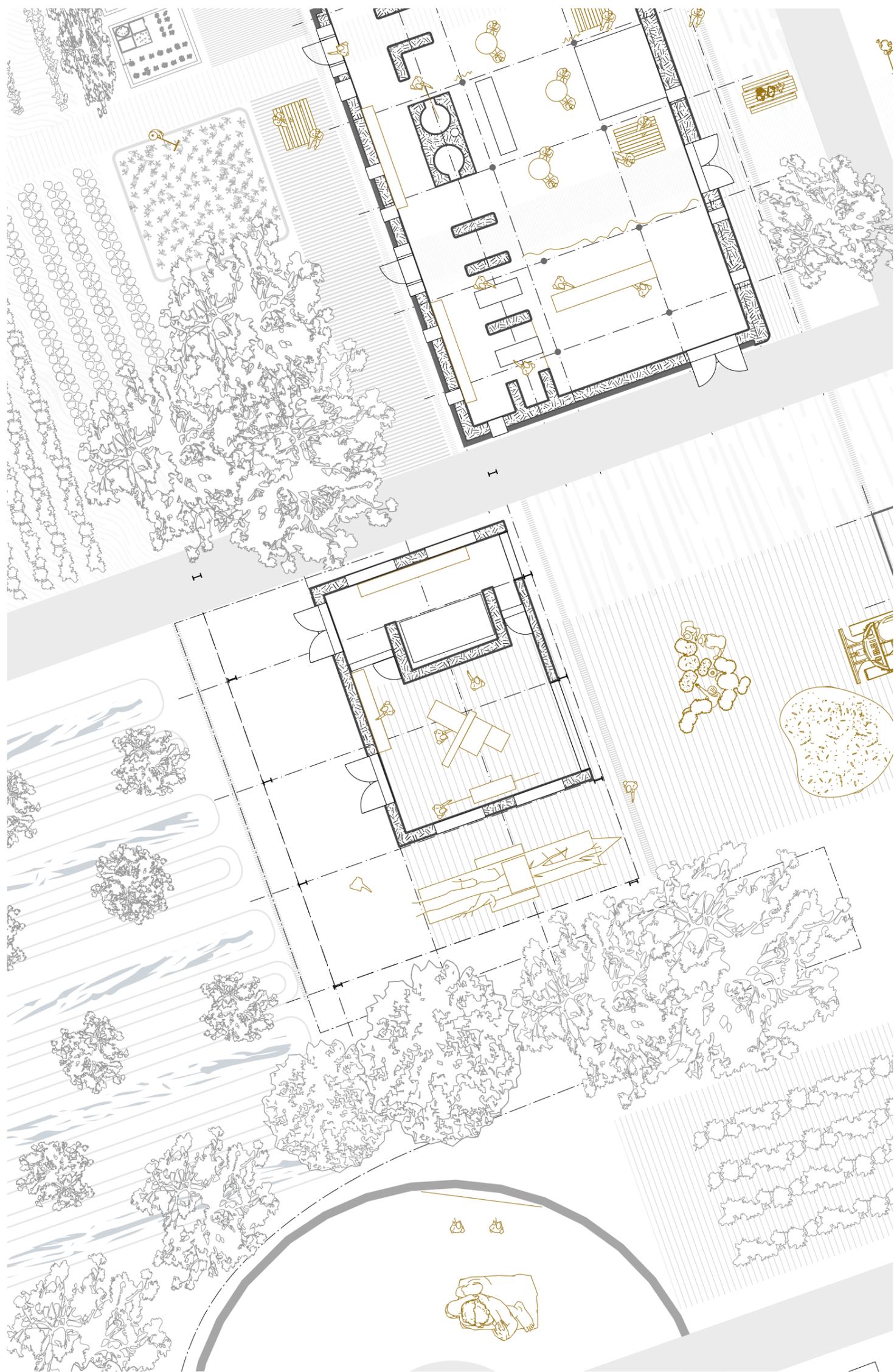
*plan view 1:200 farming*



*plan view 1:200 bakery*



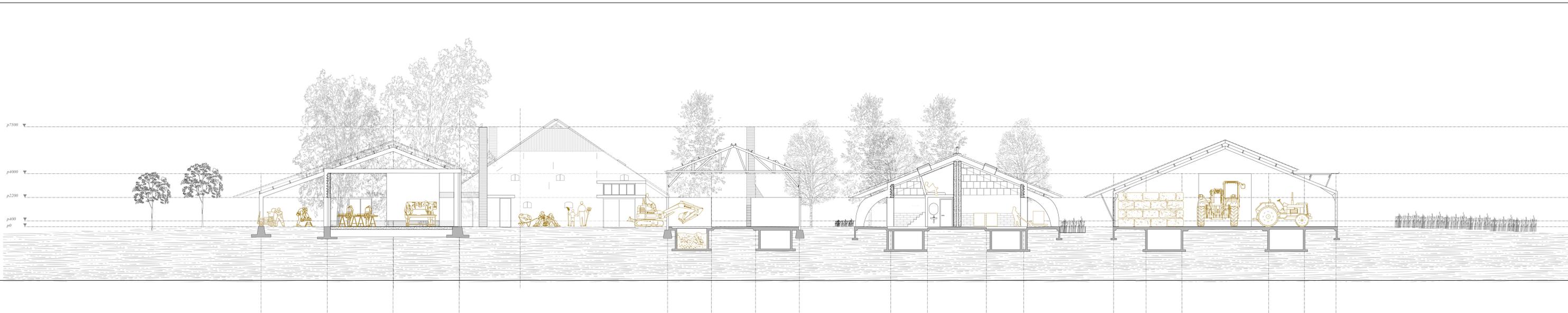
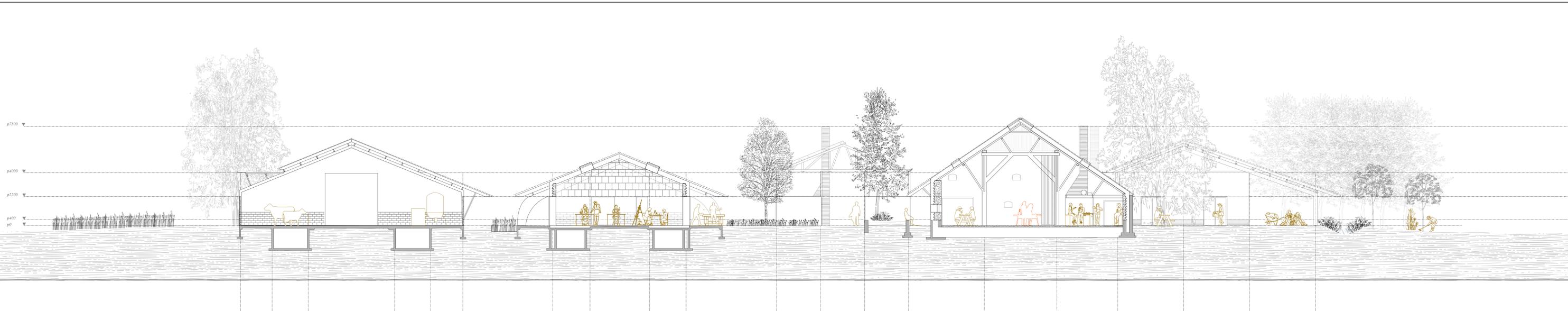
*plan view 1:200 pavilion*

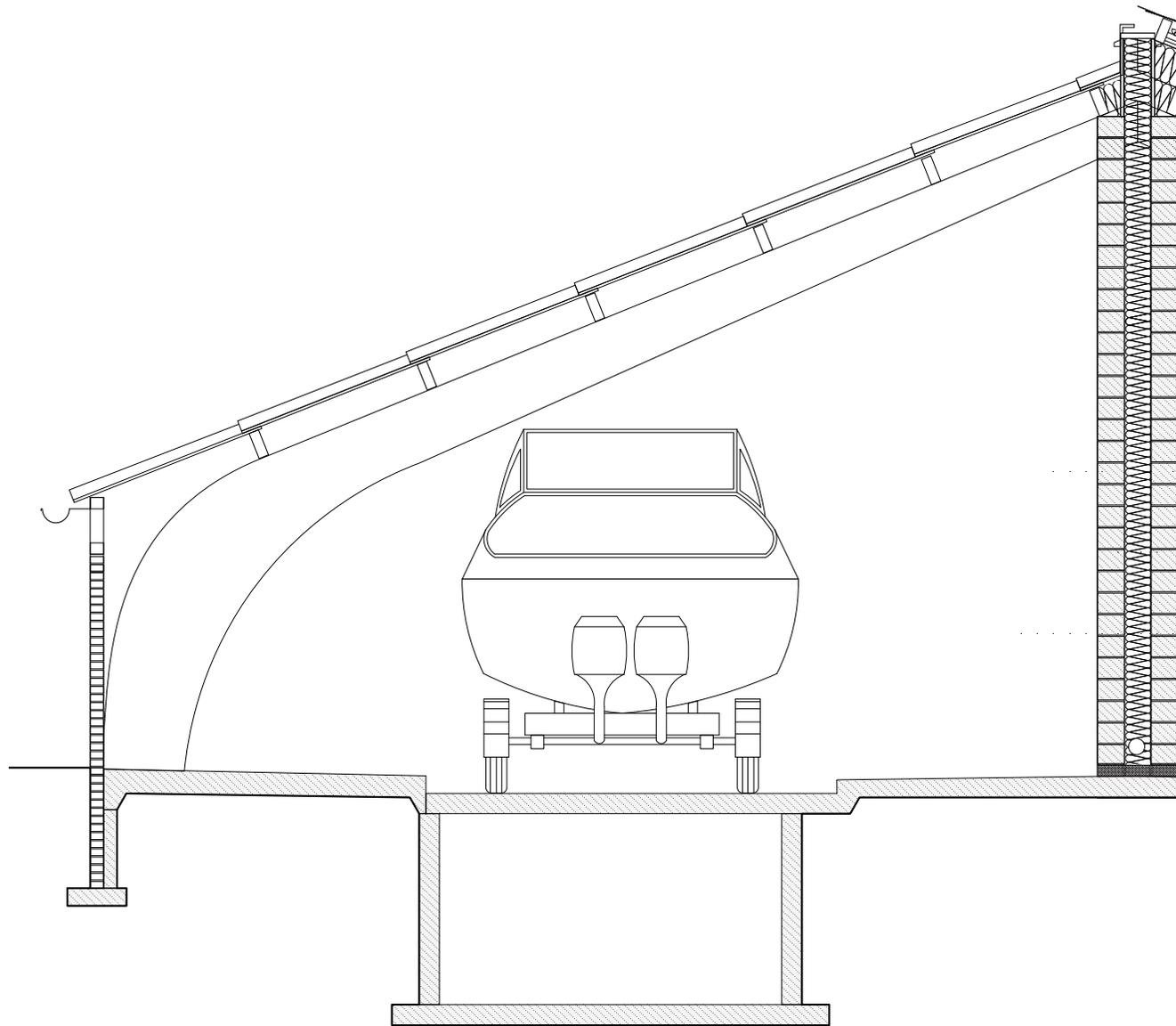


*plan view 1:200 workshop*

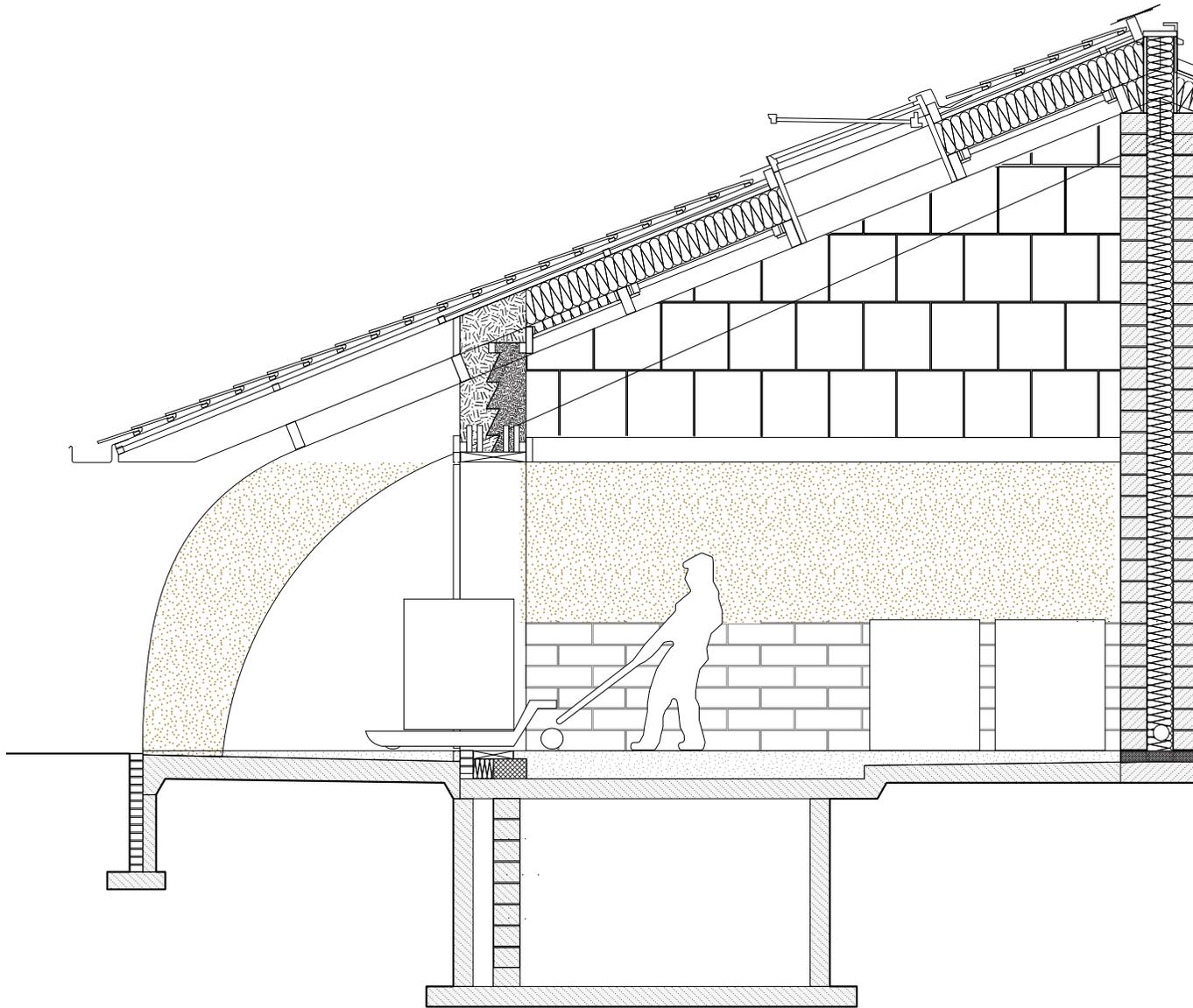


*plan view 1:200 education and living*

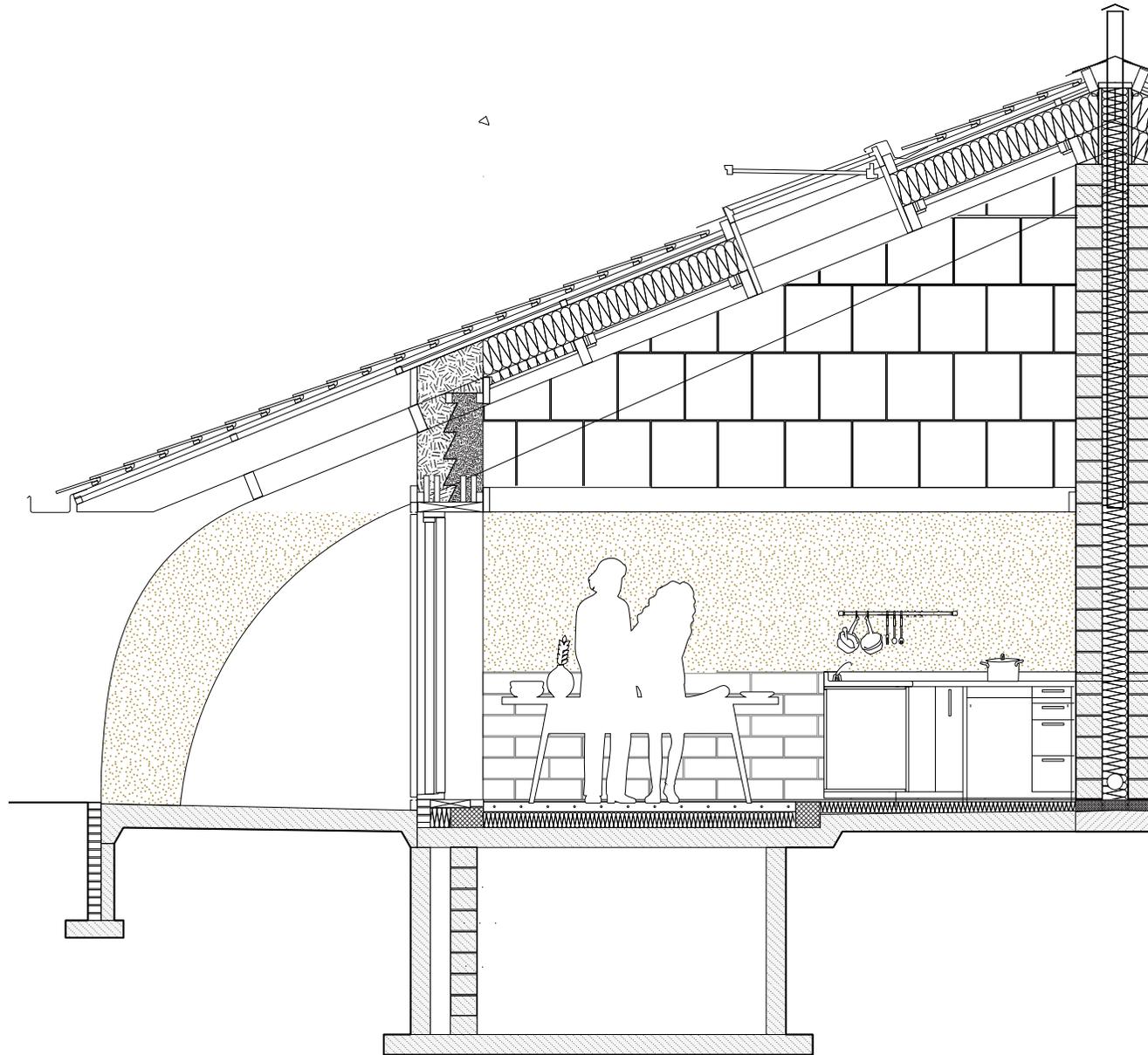




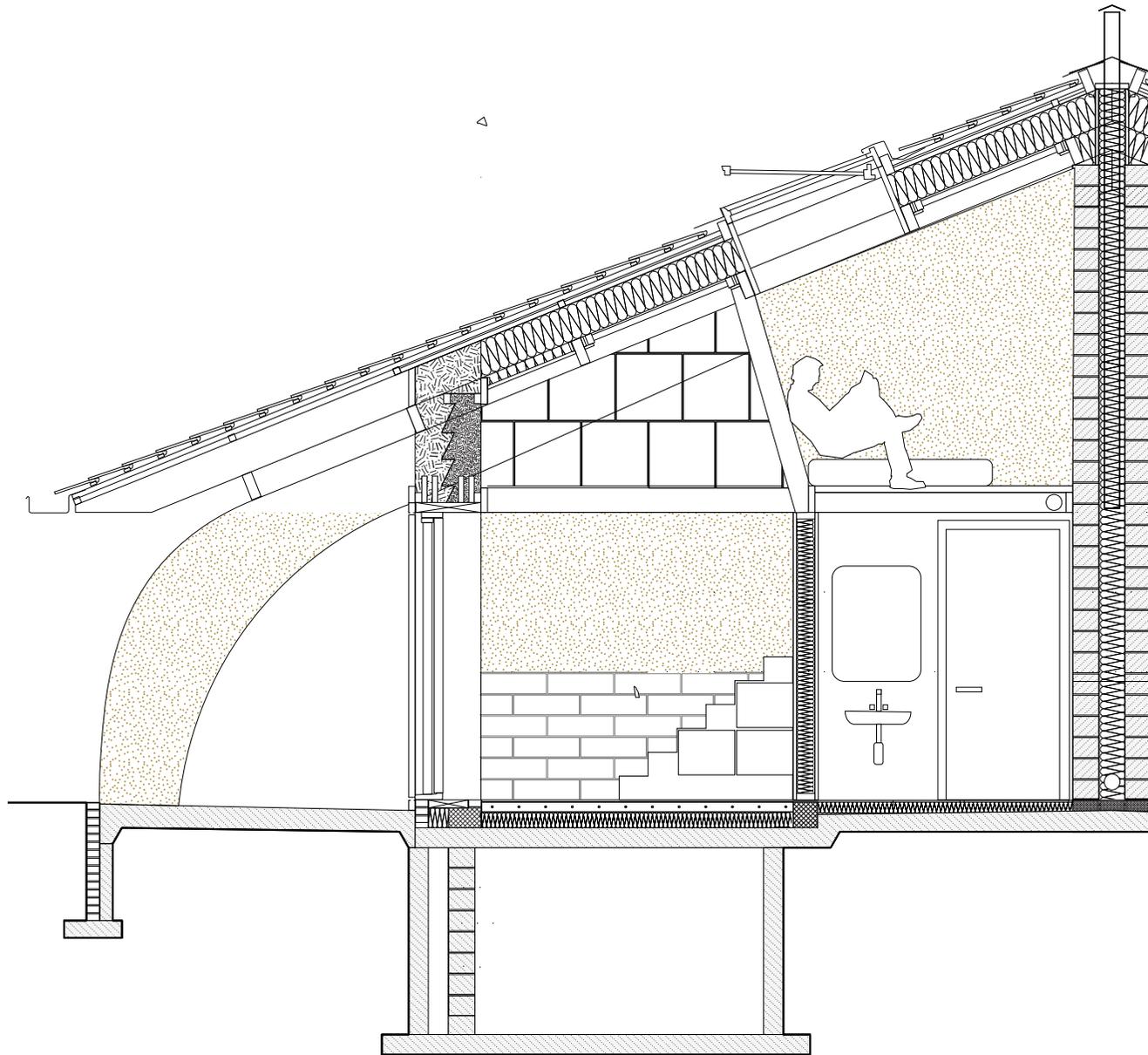
*Technical section 1:50 | Current*



*Technical section 1:50 | Step 1*

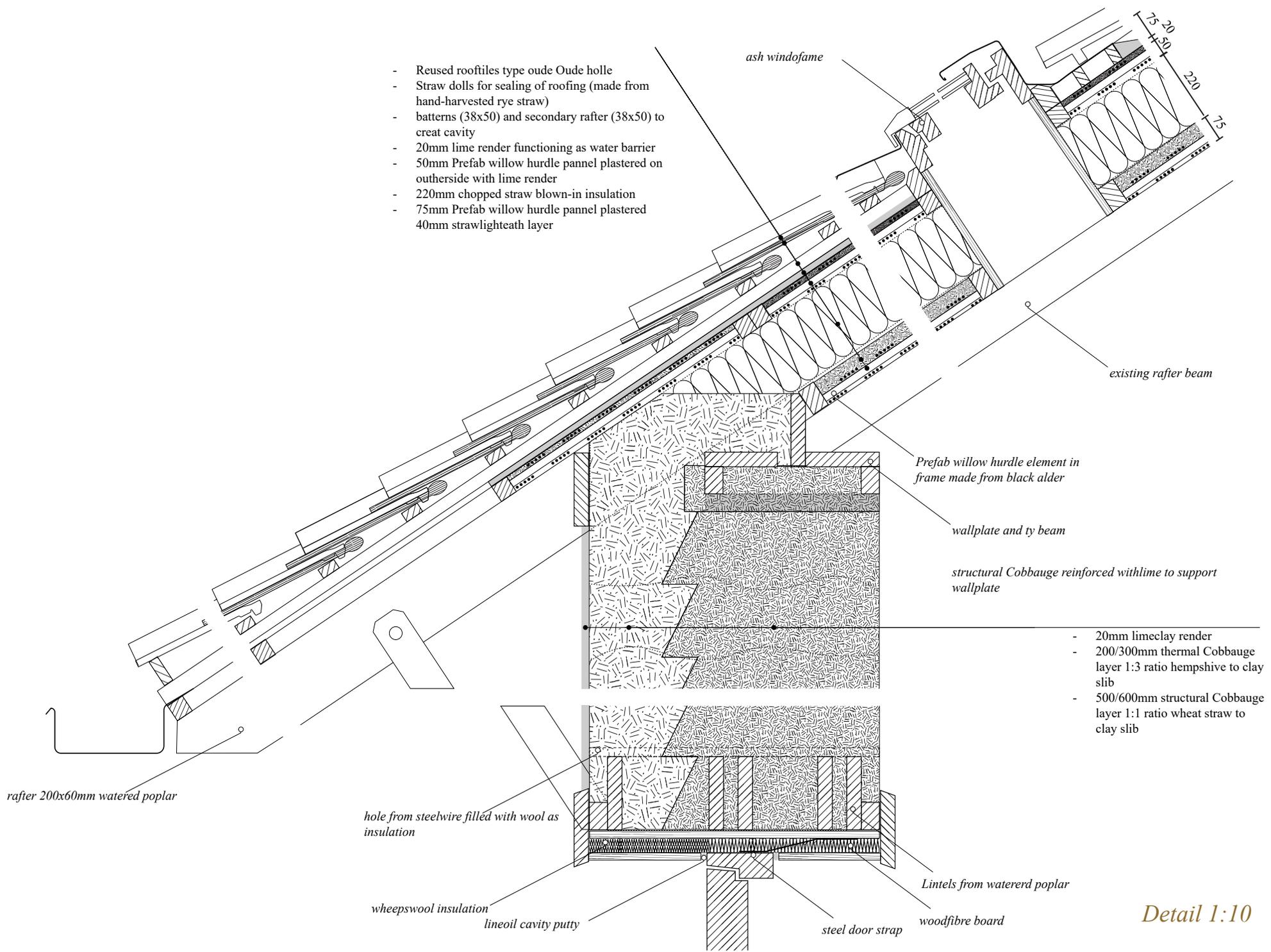


*Technical section 1:50 | Step 2*



*Technical section 1:50 | Step 3*

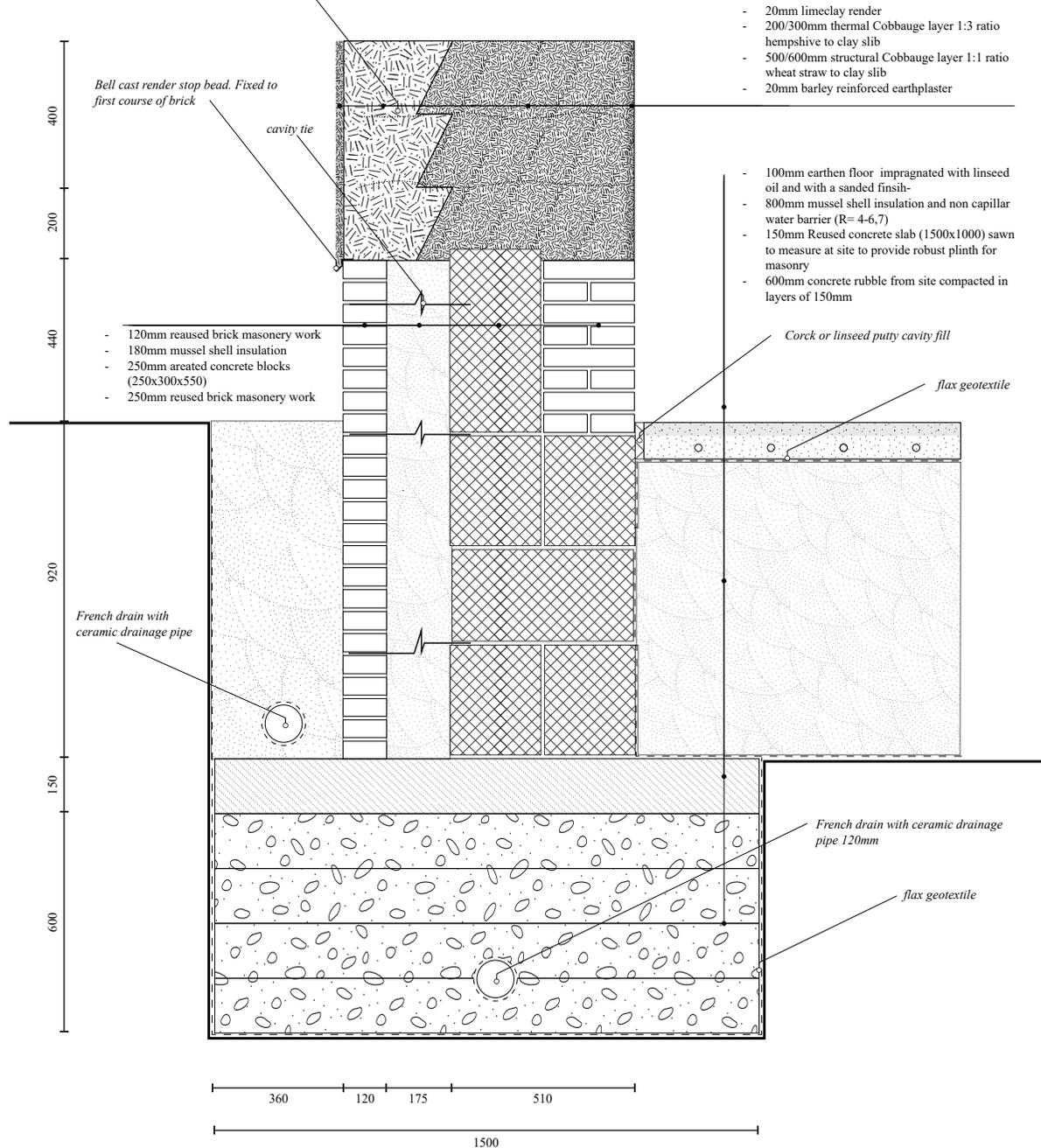
- Reused roof tiles type oude Oude holle
- Straw dolls for sealing of roofing (made from hand-harvested rye straw)
- battens (38x50) and secondary rafter (38x50) to create cavity
- 20mm lime render functioning as water barrier
- 50mm Prefab willow hurdle pannel plastered on outside with lime render
- 220mm chopped straw blown-in insulation
- 75mm Prefab willow hurdle pannel plastered on outside with lime render
- 40mm strawlighteath layer



- 20mm limeclay render
- 200/300mm thermal Cobbauge layer 1:3 ratio hempshive to clay slib
- 500/600mm structural Cobbauge layer 1:1 ratio wheat straw to clay slib

*Detail 1:10*

Dotted grey lines indicate 200mm sub-lifts (3 per full lift). Each sub-lift to have hemp straw reinforcement laid perpendicular to wall



Detail 1:10



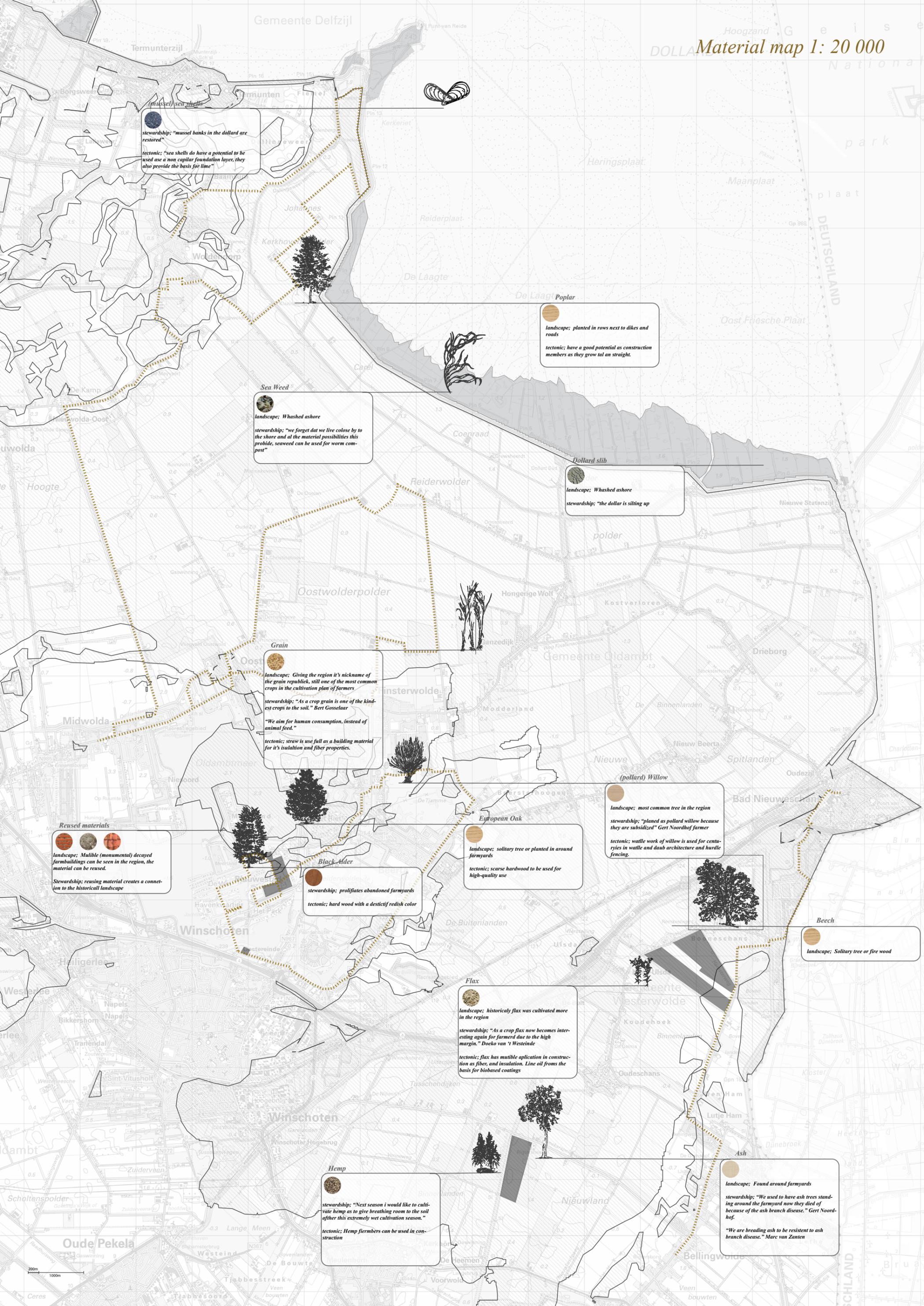












**Mussel sea shells**  
stewardship: "mussel banks in the dollard are restored"  
tectonic: "sea shells do have a potential to be used as a non capilar foundation layer, they also provide the basis for lime"

**Poplar**  
landscape: planted in rows next to dikes and roads  
tectonic: have a good potential as construction members as they grow tal an straight.

**Sea Weed**  
landscape: Whashed ashore  
stewardship: "we forget dat we live colose by to the shore and al the material possibilities this provide, seaweed can be used for worm compost"

**Dollard slib**  
landscape: Whashed ashore  
stewardship: "the dollar is silting up"

**Grain**  
landscape: Giving the region it's nickname of the grain republiek, still one of the most common crops in the cultivation plan of farmers  
stewardship: "As a crop grain is one of the kind-est crops to the soil." Bert Gosselaar  
"We aim for human consumption, instead of animal feed."  
tectonic: straw is use full as a building material for it's insulation and fiber properties.

**Reused materials**  
landscape: Multiple (monumental) decayed farmbuildings can be seen in the region, the material can be reused.  
Stewardship: reusing material creates a connection to the historical landscape

**Black Alder**  
stewardship: proliferates abandoned farmyards  
tectonic: hard wood with a destictif redish color

**European Oak**  
landscape: solitary tree or planted in around farmyards  
tectonic: scarce hardwood to be used for high-quality use

**(pollard) Willow**  
landscape: most common tree in the region  
stewardship: "planned as pollard willow because they are subsidized" Gert Noordhof farmer  
tectonic: wattle work of willow is used for centuries in wattle and daub architecture and hurdle fencing.

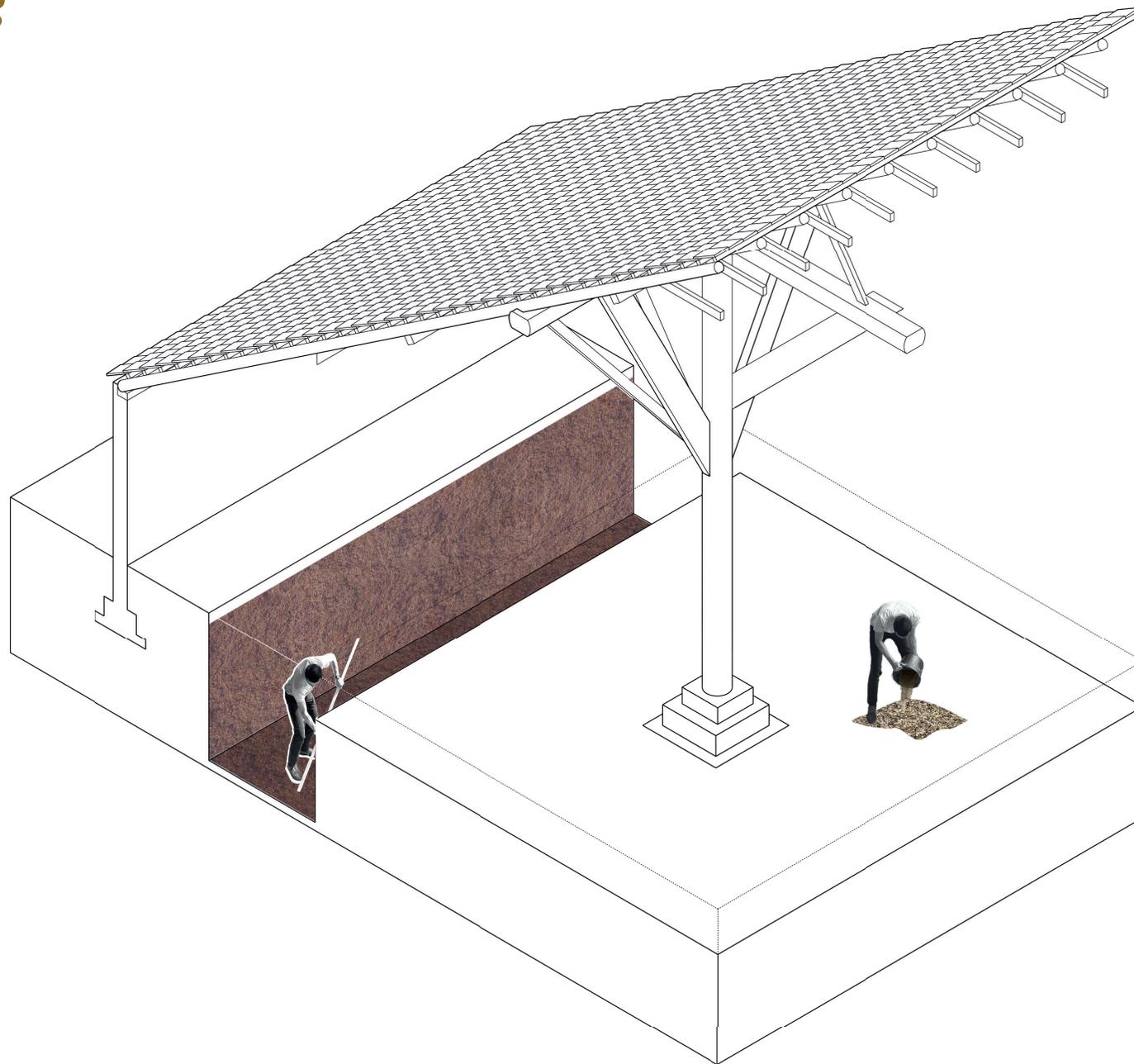
**Beech**  
landscape: Solitary tree or fire wood

**Flax**  
landscape: historically flax was cultivated more in the region  
stewardship: "As a crop flax now becomes interesting again for farmerd due to the high margin." Doeko van 't Westeinde  
tectonic: flax has mutible application in construction as fiber, and insulation. Line oil froms the basis for biobased coatings

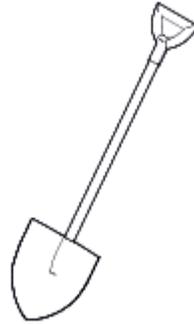
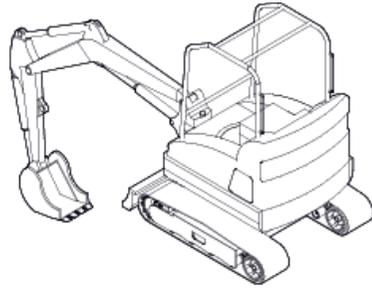
**Hemp**  
stewardship: "Next season i would like to cultivate hemp as to give breathing room to the soil after this extremely wet cultivation season."  
tectonic: Hemp fiernbers can be used in construction

**Ash**  
landscape: Found around farmyards  
stewardship: "We used to have ash trees standing around the farmyard now they died of because of the ash branch disease." Gert Noordhof.  
"We are breeding ash to be resistant to ash branch disease." Marc van Zanten

# *Digging*



## *Tools*



## *Instructions*

*Construction can start in autumn using the existing structure as shelter. Start by digging a trench for the foundation, by hand or with a small digger. The excavated soil needs to be put aside. It needs to be tested on clay and sand content and can potentially be used later in the process. A biobased geotextile membrane is used to reinforce the trench and separate the foundation from the soil. Meanwhile, the base layer for the floor made from cockle or mussel shells is poured and tamped. The shells both act as insulation and as a non-capillary water barrier.*

### *Regional materials - non seasonal*

### *Cultivated materials - seasonal*

### *Re-used materials - non seasonal*



*Cockle shells*



*Biobased geotextile (hemp)*

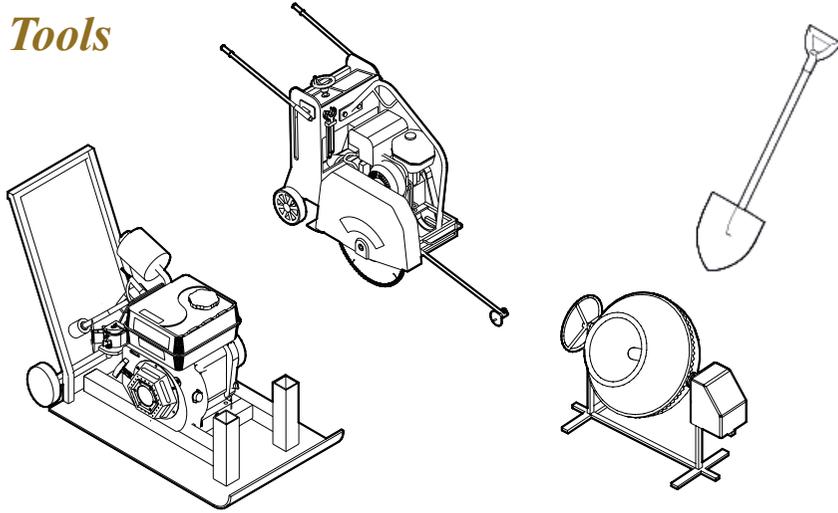


*Mussel shells*

*Foundations*



## *Tools*



## *Instructions*

The existing concrete pavement is cut into slabs of 1000x1500mm with a concrete saw. The residu concrete rubble will be compacted in layers of 150mm, using a vibrating plate. A ceramic French drain also needs to be installed in the first layer to keep the foundations dry. The 1000x1500mm slabs are installed on top of the rubble and form the top layer of the foundation, to provide a solid base for the brick plinth. The bricks are reused from the site or other farm yards. Bricks that are not suitable for construction can be used as pavement. The inner wall of the plinth is constructed out of aerated concrete blocks preventing any coldbridging. The cavity between the aerated concrete and the outer brick wall needs to be filled with cockle/mussel shells as insulation.

### *Regional materials - non seasonal*



*Clay*



*Sand*

### *Cultivated materials - seasonal*



*Cockle shells*



*Straw*



*Mussel shells*

### *Re-used materials - non seasonal*

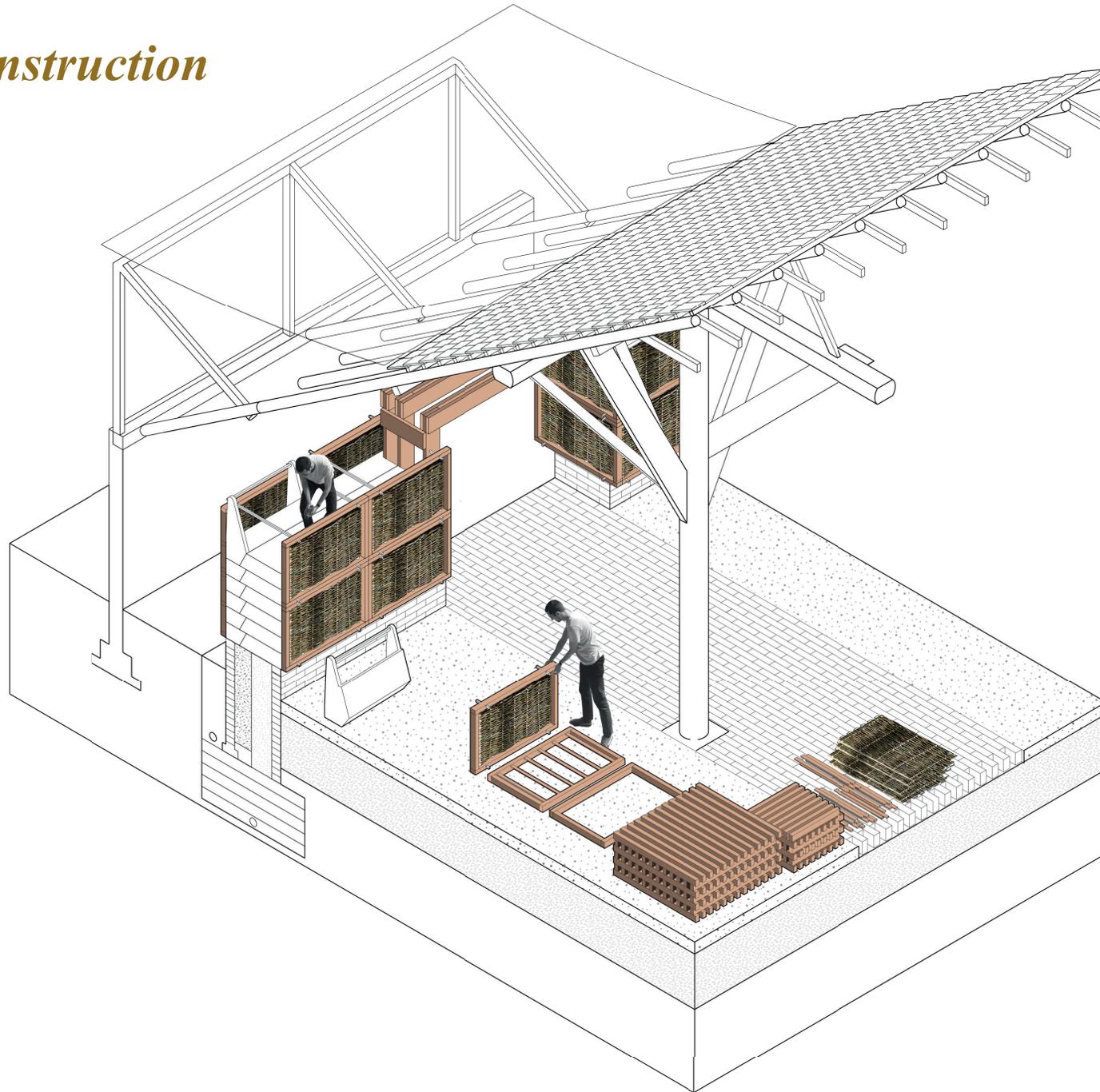


*Re-used concrete*

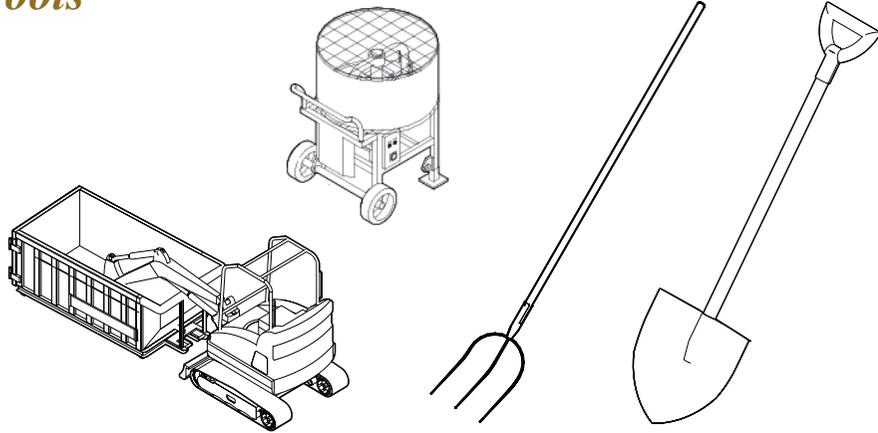


*Re-used brick*

# *Wall construction*



## Tools



## Instructions

From late May until August, the wall can be constructed. The drying requires a high temperature. To make room for the wall the battens are cut off. A temporary tarp construction is made to be to work in dry conditions. The wall is constructed with a CobBauge technique and can be divided into three layers; A constructive cob layer, light earth insulation, and a lime-based clay plaster. To start the process a formwork needs to be put in place. It's made from black alder and wattle work and can be constructed during winter. The wattle work makes it easier for the clay to dry, and for construction workers to be able to see any gaps or inconsistencies. The formwork panels are connected with steel rods and a secondary formwork is placed for the constructive layer. The mix consists of A 1:1 ratio of straw and clay. The mix can be made manually or using a small digger and container.

### Regional materials - non seasonal



Clay



Sand



Black Alder

### Cultivated materials - seasonal



Hemp



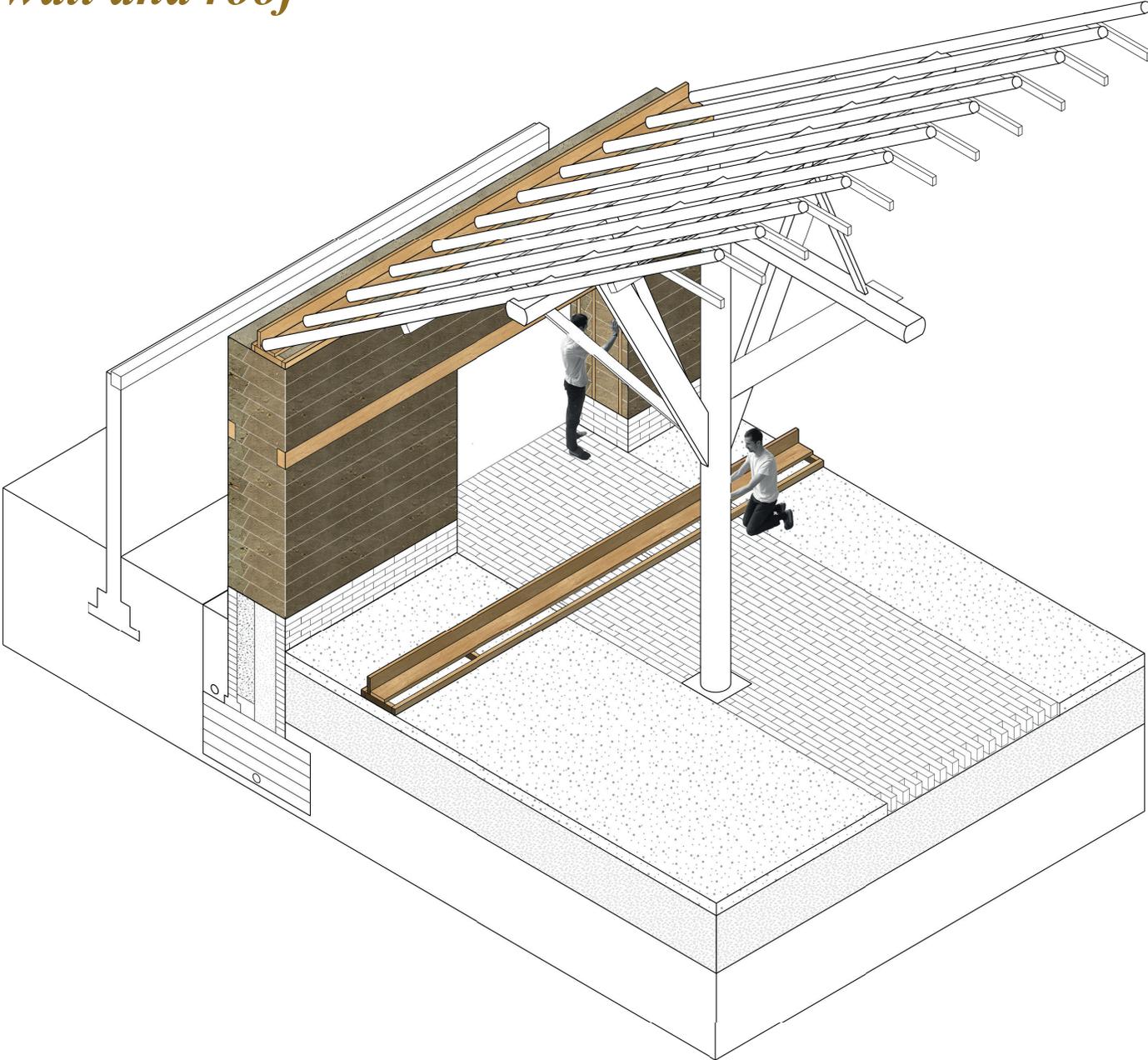
Straw



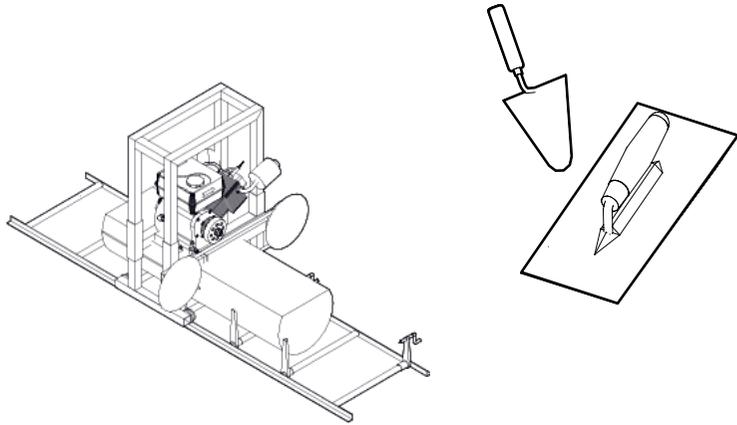
Pollard Willow

The next step is to remove the secondary formwork. Using a vertical mixer the light earth mix consisting of 3 parts hemp shive and 1 part clay slib can be made. It is possible to use different fibres, for example, cattail, reeds or seaweed. The mix can be poured after taking out the secondary formwork. When tempering prevent any gabs and don't put to much pressure on as it needs to be as airy as possible. Lastly, hemp fibres are put in perpendicular to the wall to bond the two layers. Now the secondary formwork can be placed in for the second layer of structural cob. It has to dry at least one week before the formwork can be removed leaving a rough finish witch can be plastered. Ideally, you work with two complete layers of formwork witch can be stacked on top of each other.

*Joining wall and roof*



## *Tools*



## *Instructions*

*The construction of the Roof starts in August. The wall plate is made from poplar that is watered for one year. The wood is processed on-site with a portable sawmill. To support the wall plate the top layer of the wall is reinforced with lime to provide a solid base. Meanwhile, the whole left from the steel rods of the formwork can be sealed with sheep wool. The rough finish of the wall can be cut off when deemed necessary for aesthetic reasons. This is most convenient when the formwork is just removed since the wall hasn't dried out completely.*

### *Regional materials - non seasonal*



*Poplar*

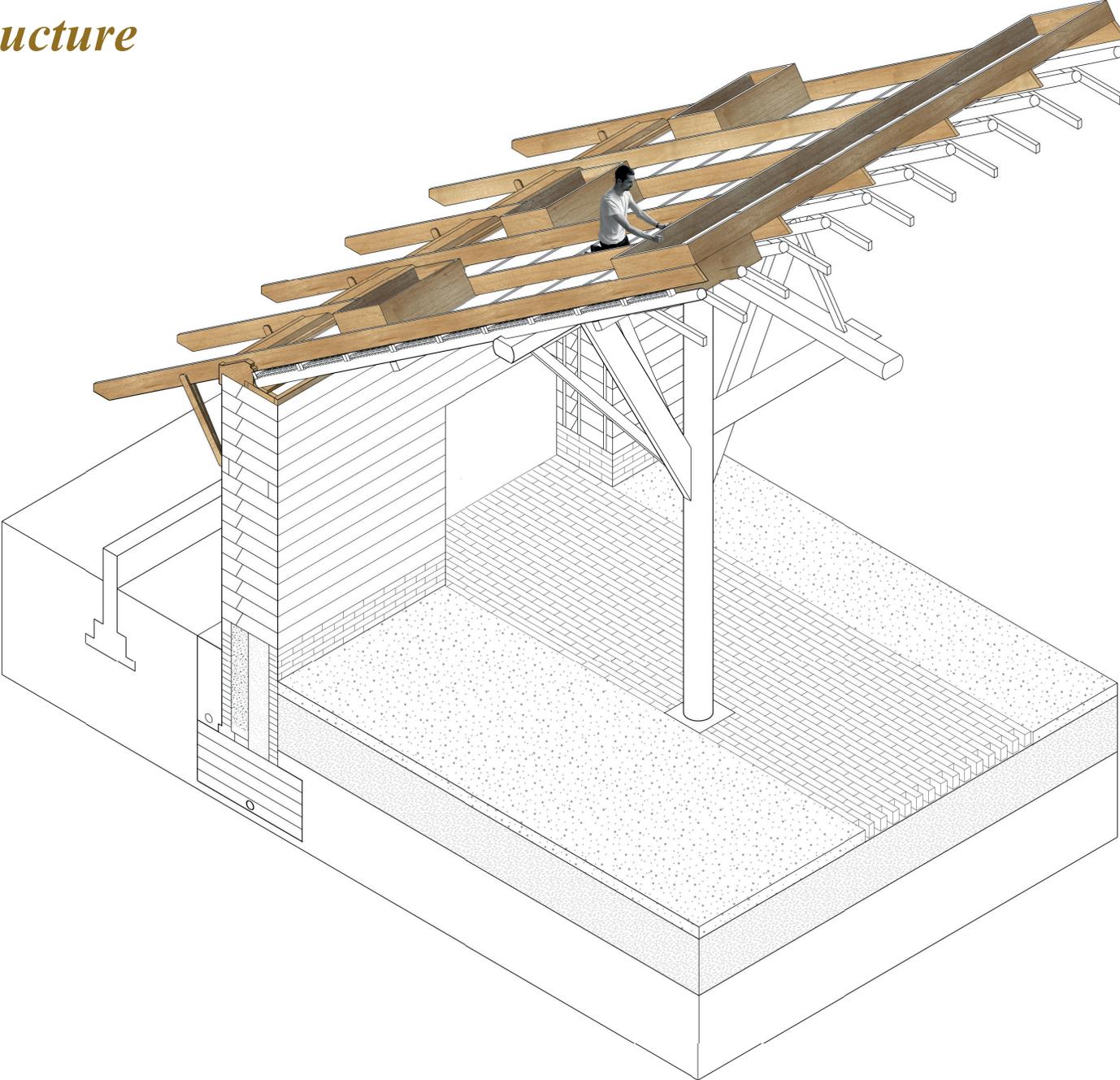


*Ash*

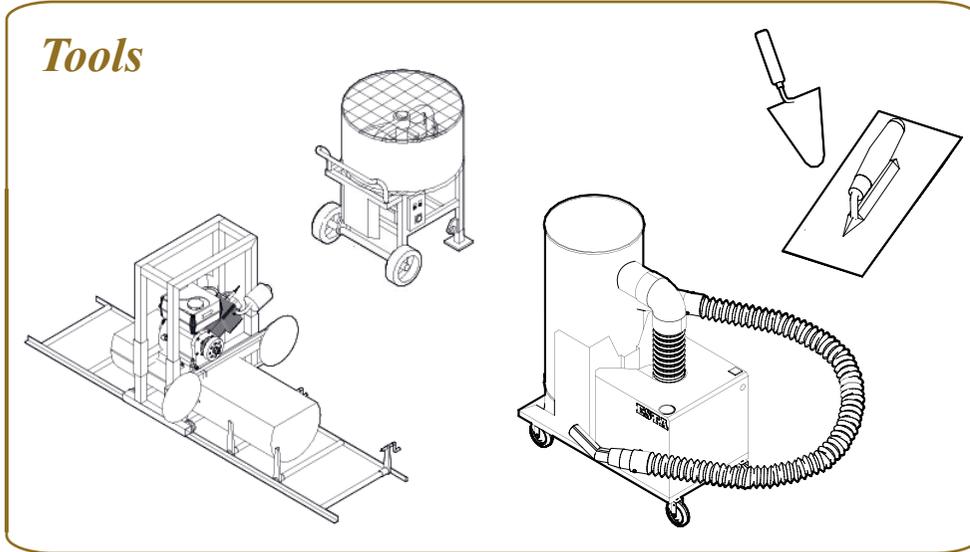
### *Cultivated materials - seasonal*

### *Re-used materials - non seasonal*

*Roof structure*



## *Tools*



## *Instructions*

The first layer of the roof is made of willow formwork panels. They are plastered with a 40mm light earth render to seal off the layer. A new grid of rafters made of watered poplar is then put in to place. Including the frameworks for the window, which are made out of ash. On top of this comes a layer of willow hurdles specifically made for the roof. They are plastered with a lime render, which functions as a water barrier, after the lime render has dried out the cavity between the willow hurdles is filled with straw flake insulation. Followed by the battens that are screwed on top.

### *Regional materials - non seasonal*



*Poplar*



*Clay*



*Sand*

### *Cultivated materials - seasonal*



*Hemp*

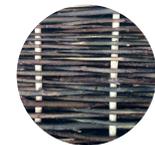


*Straw*

### *Re-used materials - non seasonal*

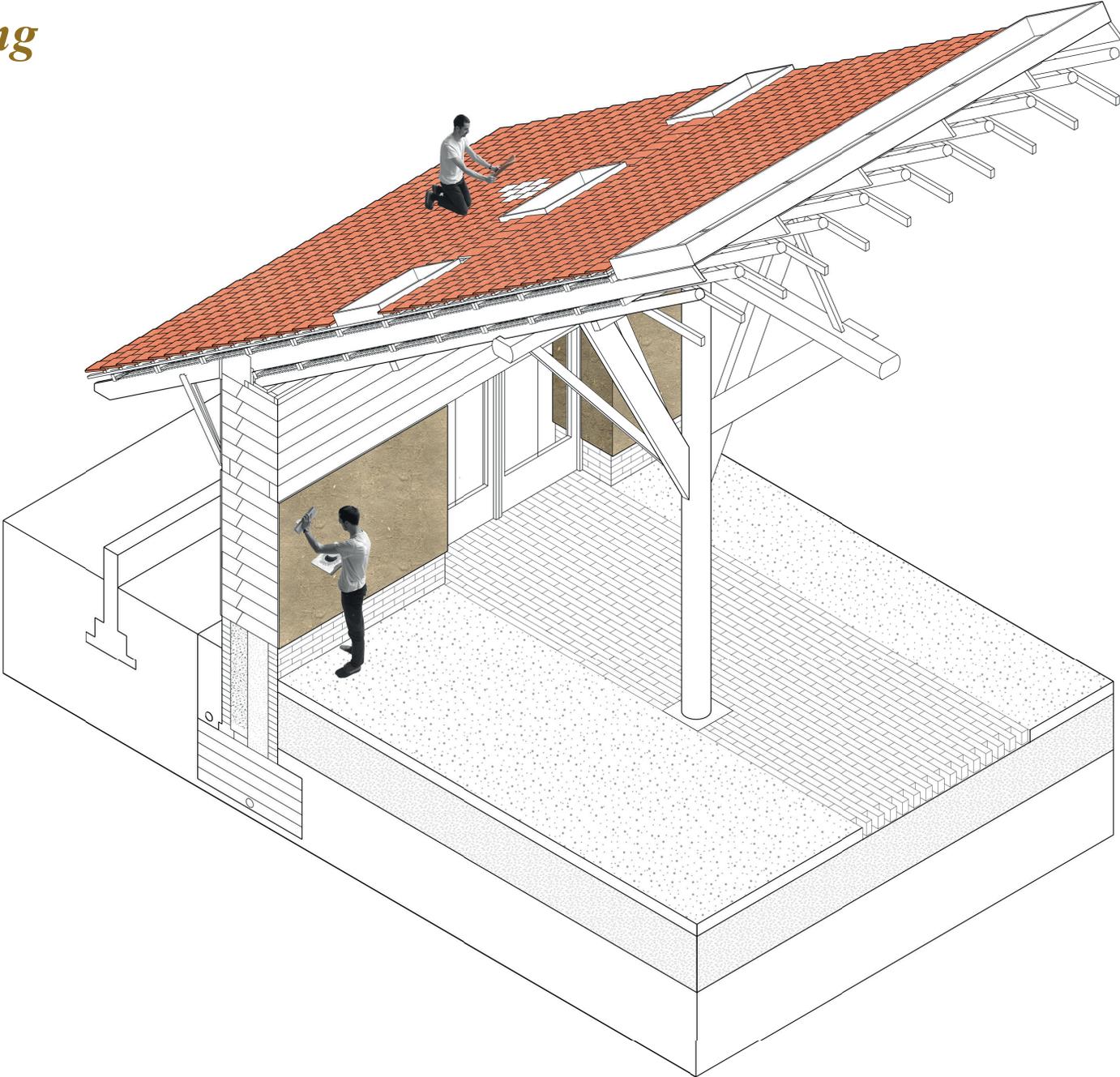


*re-used Black Alder*

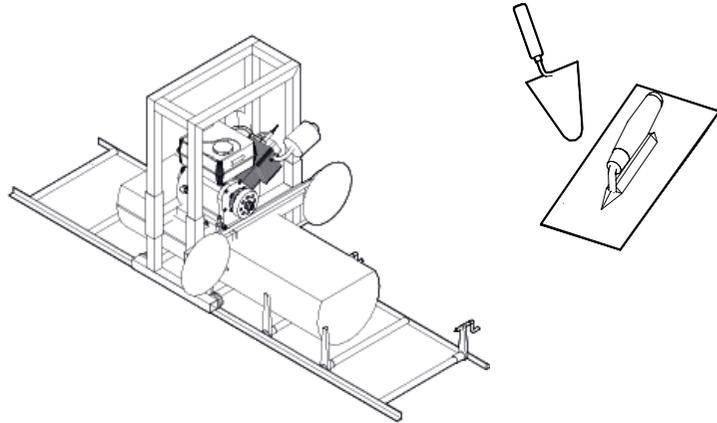


*Re-used Willow boards*

*Finishing*



## *Tools*



## *Instructions*

For the finishing of the wall the outer layers is plastered in a lime-based clay plaster. The inside wall is plastered with a clay plaster but left unplastered above 2,2m. Reused Hollandseholle roof tiles are used together with straw dolls that lie in between the roof tiles. These dolls are made of freshly moan rye straw. The rye straw sticks out underneath the rooftile, enabling moss to grow on it, which naturally seals of the roof. The window frames made of ashe are also put into place

### *Regional materials - non seasonal*



*Poplar*



*Ash*



*Clay plaster*

### *Cultivated materials - seasonal*



*Rye straw*

### *Re-used materials - non seasonal*



*re-used roof tiles*





