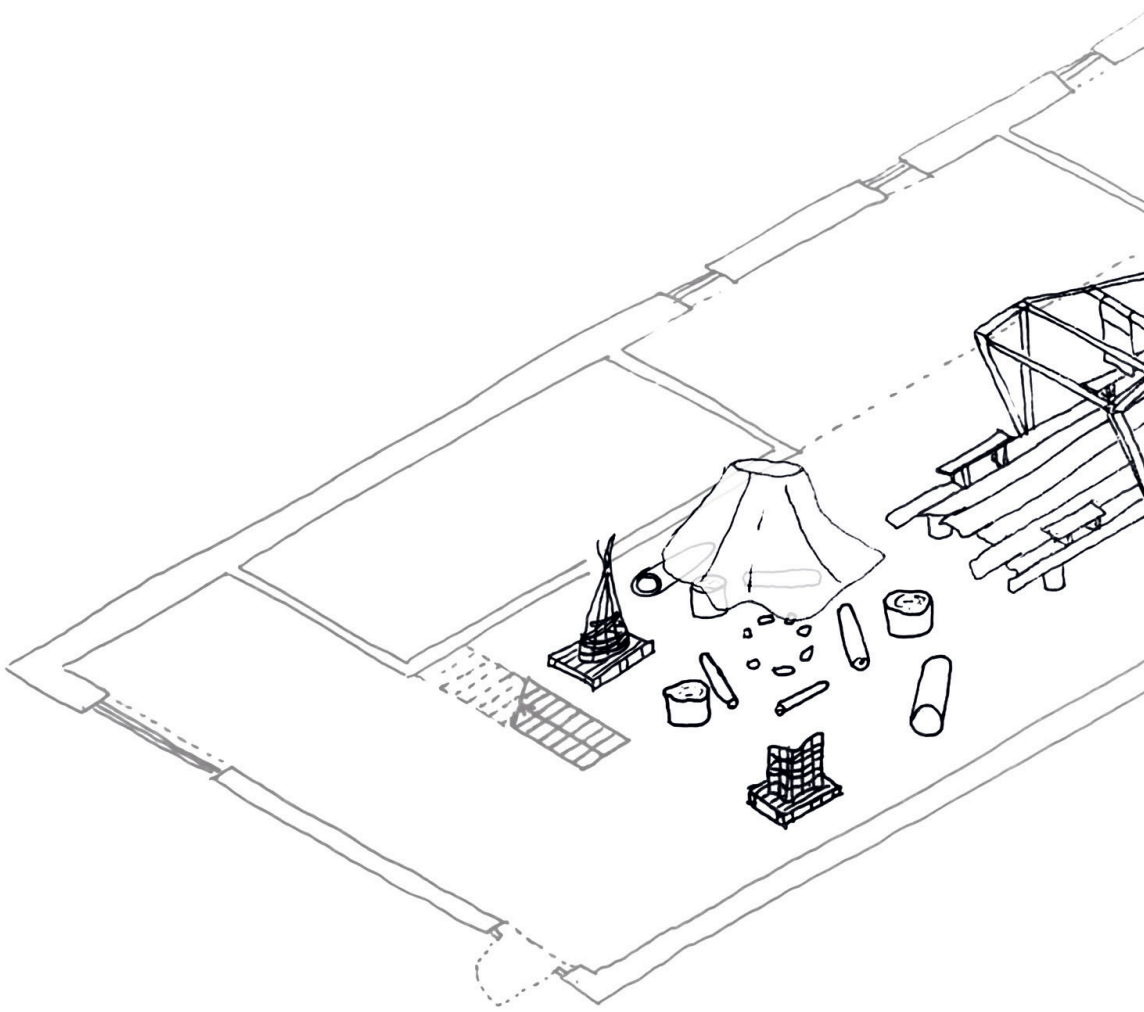
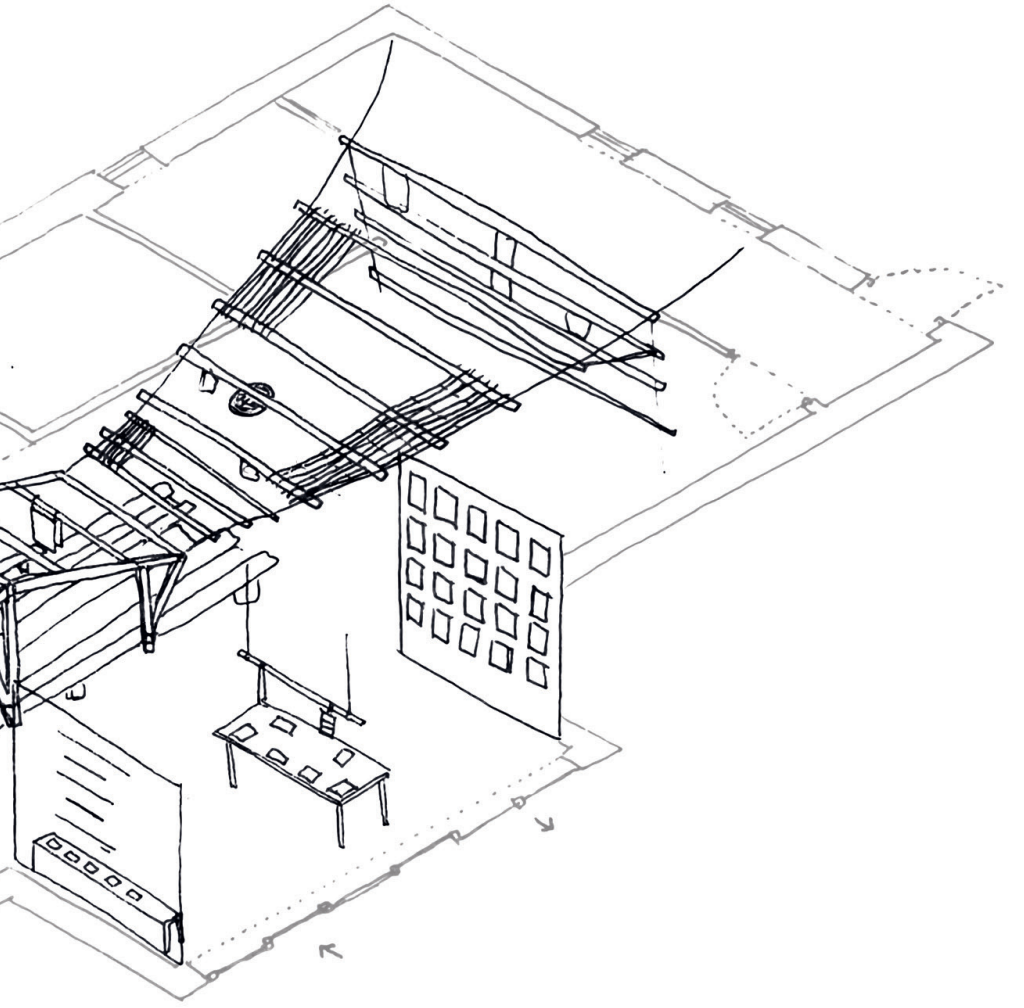
A way of Shelter-ing

Developing a frame-design for Lerfald Gård





Index

Ana Baber Garca
Siv-Ananthini Balasundaram
Hasse Peeters
Christian Opdal
Pernille Landr
Stijn Oeyen
Annabell Aichele

Making a Shelter

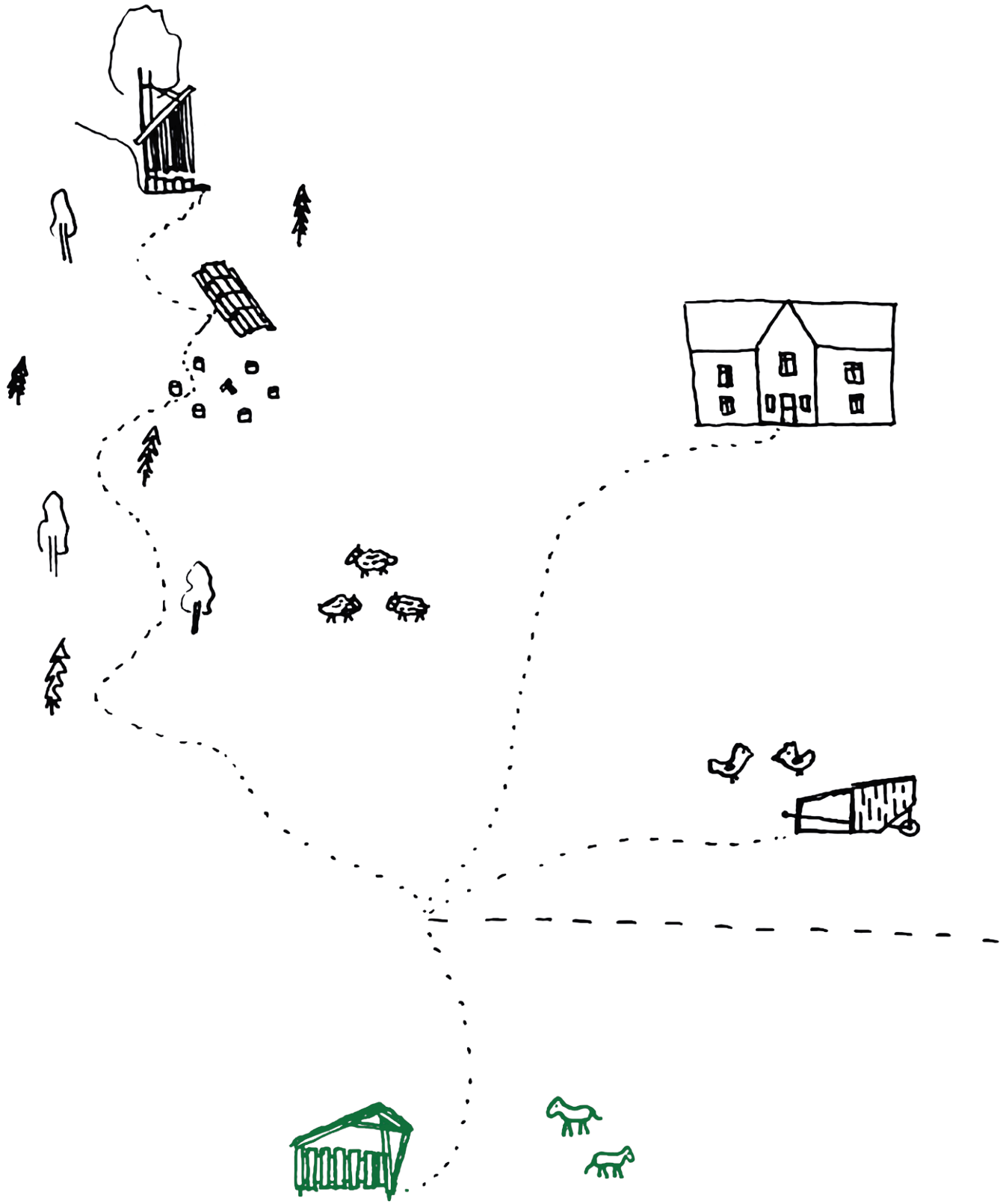
Experimental practice: To build not for the mere sake of building, but rather as a tool of investigation.

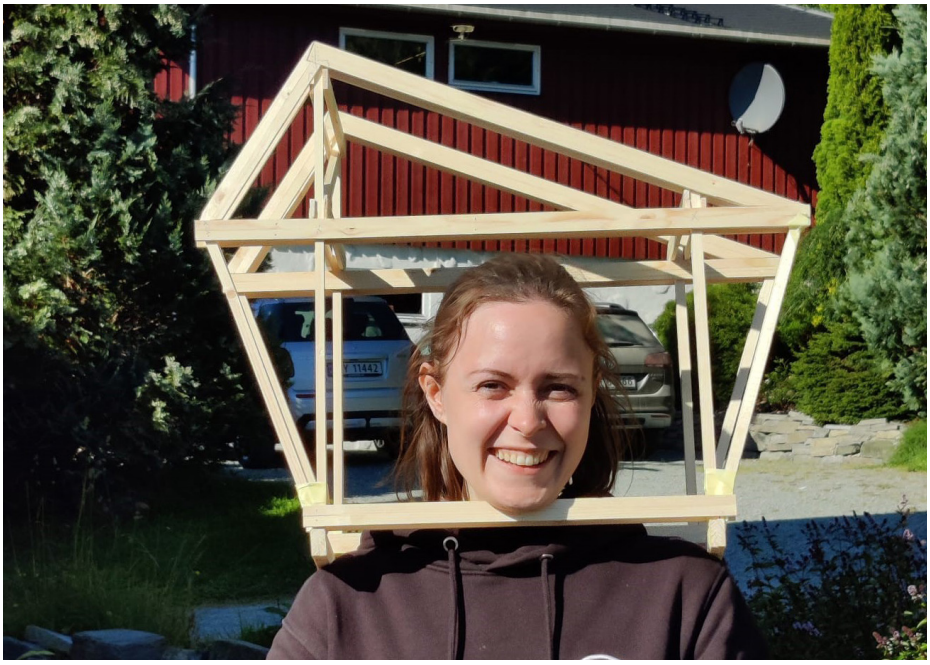
We were assigned the task to build an experimental piece of building at the scale of 1:1 at Lerfald Gård, Leinum, Trondheim, Norway. A total of 20 students were separated into 4 teams of 5 people, seperately designing and building: a chicken house, a toilet, an outdoor kitchen and a shelter. We made a Shelter

The planned building-weeks super busy. The program planned for one week of designing, two weeks of building, then one week of re-discovering what we had built.

The assignment began with a trip to the site, Lerfald Gård. One can get to the site from Gløshaugen by bus 1 from Hesthagen to Heimdal, then bus 77 to Leinum. The Farm is lovely located on a south-facing hill, right next to the nature reseve, Gaulosen, facing the river Gaula and Trodheimsfjorden. The farm is huge, consisting of: areas of forrest, fully cultivated fields, a river and a little stone quarry to mention a fraction of diversity.

Lerfald Gård is owned by our clients, Katy and Magnus, who actively participated in the process of going from the concept to the making of a Shelter.






8,00
4,00

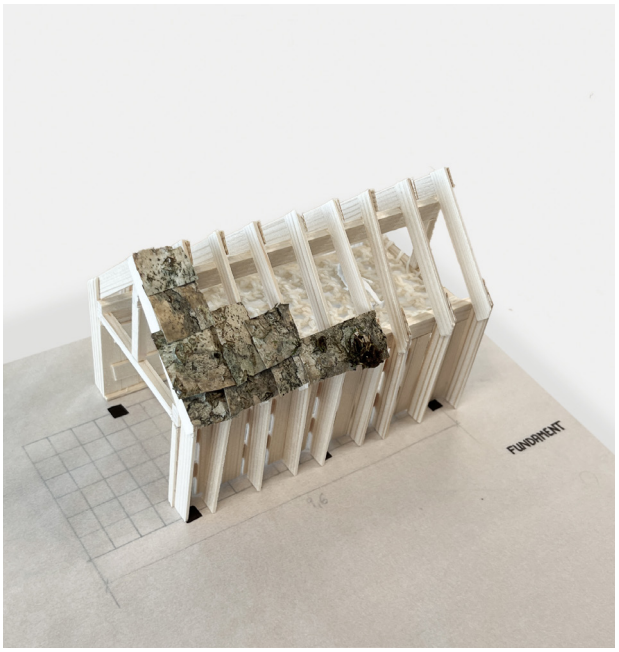
The idea of a Shelter at Lerfald G□rd

Katy and Magnus at Lerfald G□rd base the work and daily life at the farm on permacultural ideals. Permaculture is a sustainable concept for agriculture and horticulture based on closely observing and imitating natural ecosystems and cycles in nature. A key concept in regards to permaculture is the idea of getting the most out of what you do, and the deisgn-idea of integrating more functions to what you have,

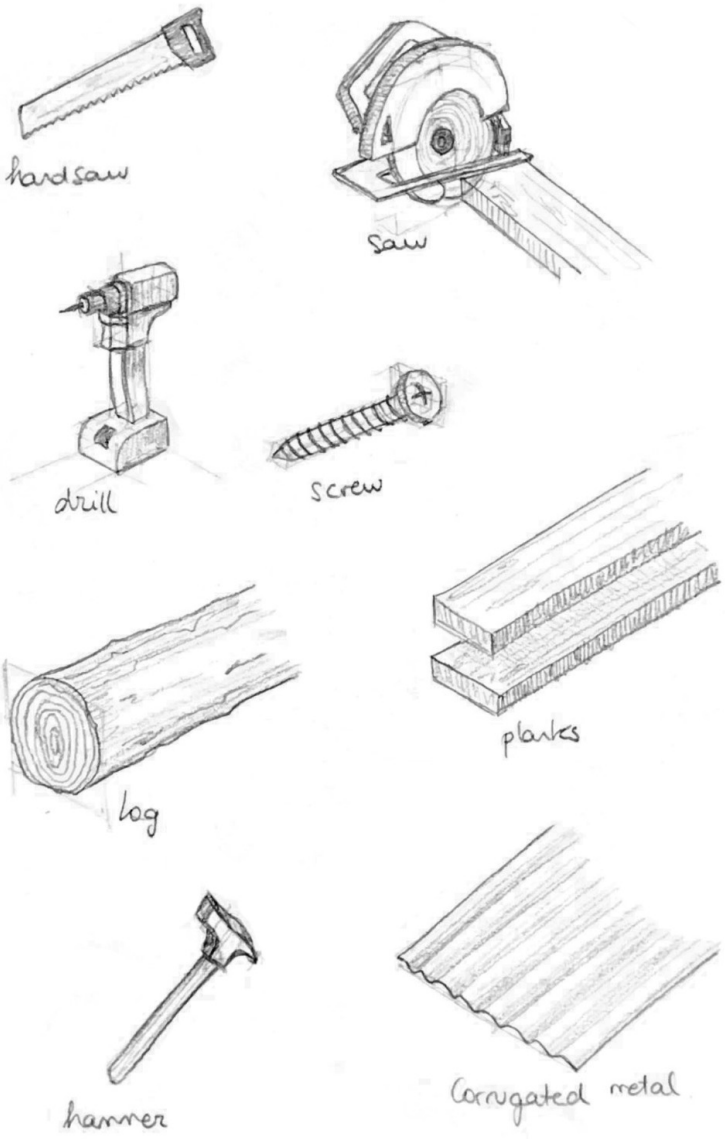
the threefold. To make three uses out of one thing. For instance in the case of a sawmillhouse, the shelter houses a functional saw, but are there possibilities for a greater use of the building?

Initial concept:
To keep with permacultural ideals and this threefold of ideas, our design integrates two additional functions.
To act as a sawmillhouse.
To act as an experimental lab.
To be a place to rest.

However, as we learnt during the process of the sawmillhouse; the design would change and develop to new directions as we progressed towards a final build. This improved our method of design, byt not only using architecture for the mere sake of building, but collectively, to use it as a tool for investigation.


FUNDAMENT

Concept development through modelmaking...


hardsaw
saw
drill
screw
planks
log
hammer
Corrugated metal

Tool Menu

Most of our material except from some planks, a lot of screws and some textiles were either produced at the farm or reused items.

Tools

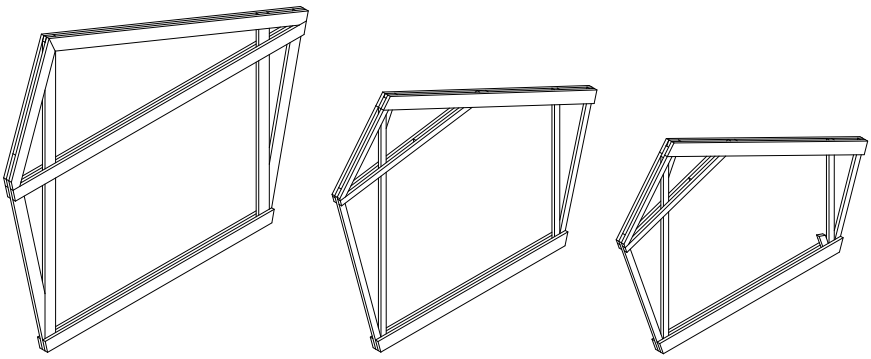
- 3 Drills
- 2 Circel saws
- A lot of screws
- A hammer
- A handsaw

Foundation

- 6 Big bold stones
- 4 Logs from nearby spruces
- 6 Jordskruer

Structural material

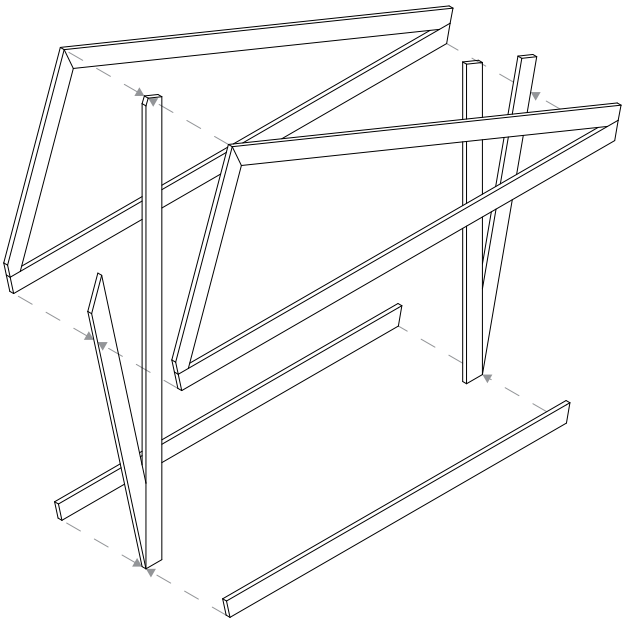
- $1^{1}/_{2}$ Spruce trees, freshly cut into planks
- 8 Re-used corrugated metal sheets

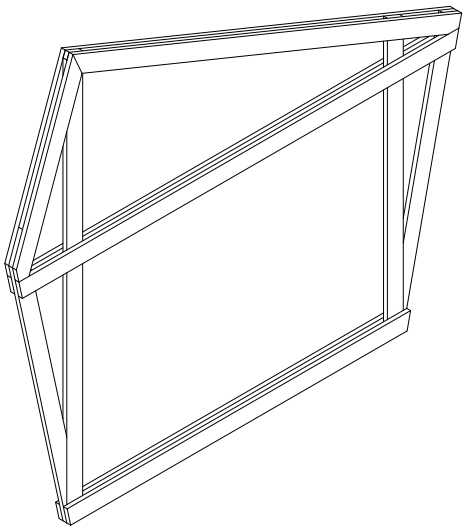


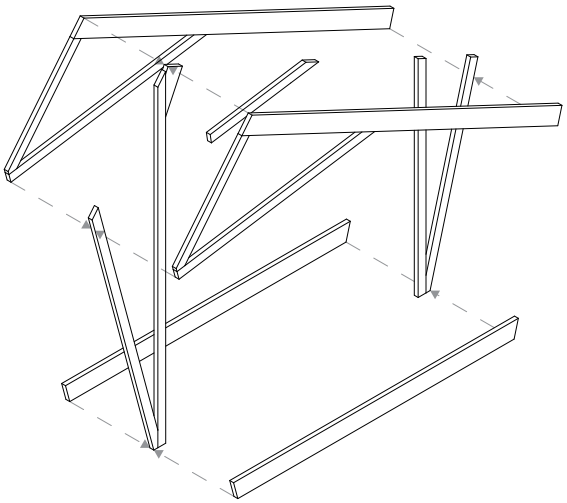
Construction of the Shelter

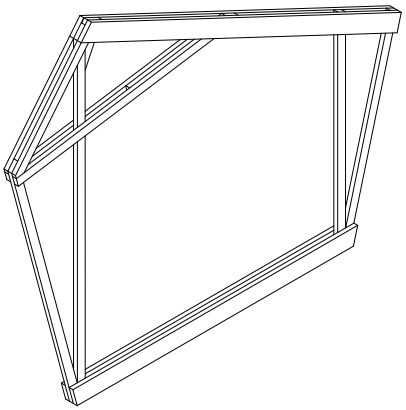
The core idea of the frame: a timber frame construction system where the individual frame is stiff in itself.
All joints are put together with screws to make it easy to skrew and un-skrew.

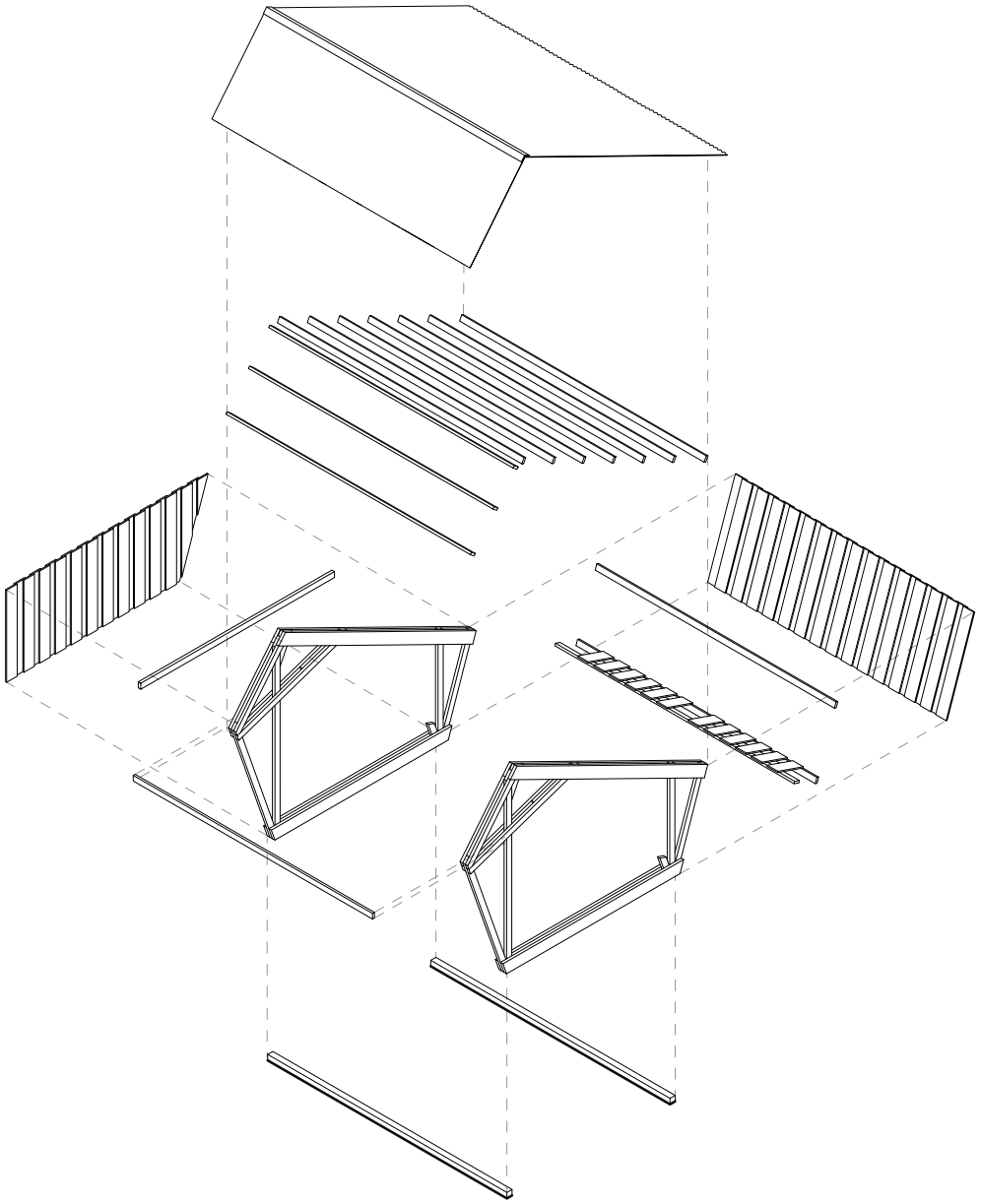
The shelter is designed in such a way that it can be adapted to changing environments and requirements. This means that the construction can be extended or reduced as pleased.The minimum limit is that there needs to be two frames in one system, but there is no limit to the number of extensions.











From Sawmillhouse to Horse stable

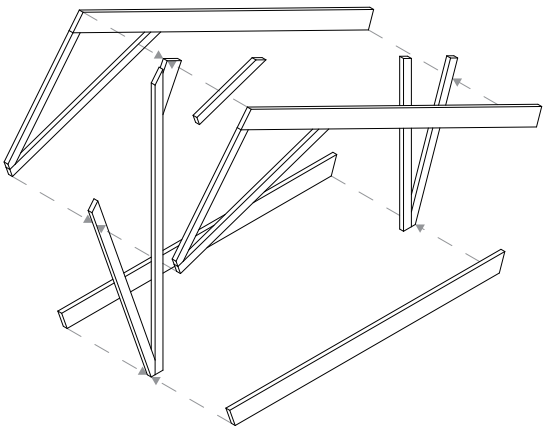
As we were working on the Sawmill house, we realized this was too big of a project to make over a 2-week-building-period.

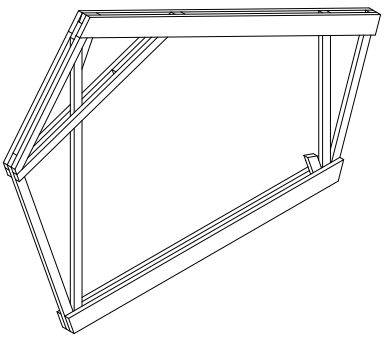
So we changed from:

Making a Shelter as a Sawmill house:
A foundation of 6 natural stones and 2 logs,
A house consisting of 7 frame house with a 3 meter span (and opening) on the short side, and a 6 meter span (and opening) on the long side.

To a new site and adapted situation...

To make a Shelter as a Horse stable:
A foundation of jordskruer and protected timber planks,
A house consisting of 3 frames with two spans of 2 meters on the long entry side.





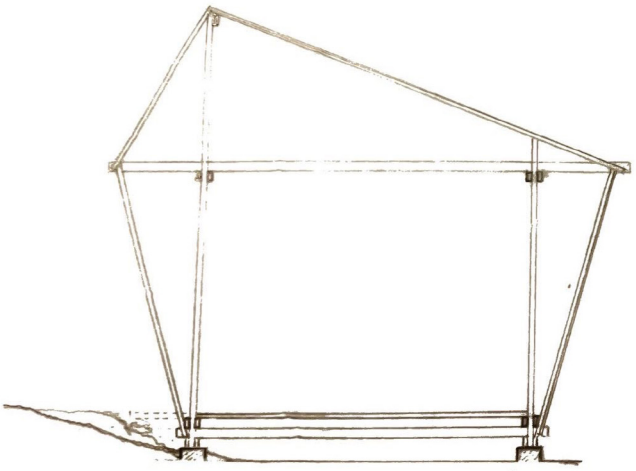
To go from Shelter to Sawmillhouse to Horsestable was a long but fruitful journey. Because of the experimentational approach to a big building with many parameters, it was a difficult quest to find a suitable design and construction method in the matter of days.

In the beginning weeks, we approached the project with the clear aim to build a 40 sqm. shelter within the time of only 2 weeks, however, we understood that this would not be possible.

Even though the initial design task was too big to finalize, our approach resulted in great design-development and testing. Through a process which was heavly involved with our client, our method was both empathical, pragmatic and creative. How can we make a good frame design, how will it be used at the farm, and lastly, how can this be made by us using relatively sparse tools in a limited time.

From beginning-design, to a buildable-frame-design, to an improved-frame-design, to an adapted task - we constanly improved in our understanding at what we had at hand. This resulted in the frame design as much as our understanding of the client and the site.

All in all, we ended up not building for the mere sake of building, but rather as a long process to investigate the environment, methods and approaches of building in a completely new situation.



Experimental Practices A

The Shelter