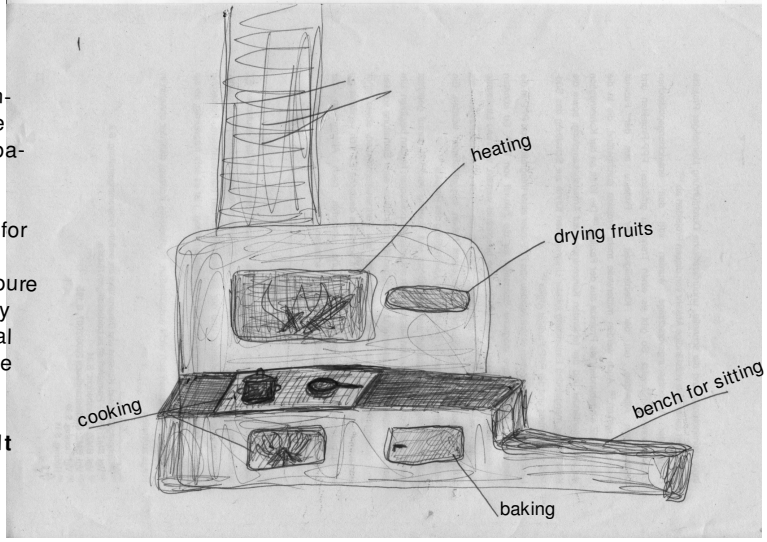
As we arrived in Clos du Doubs, we met Krishan, an old and wise clay-oven-builder. He was there visiting Niccolas to build with him the new oven for the upstairs-rooms. The oven would be used to heat the upper rooms and for baking food and drying fruits.

We came exactly in the right time, they had already built up the fundament for the oven and made some skizzen, but the were only at the beginning. Some of us were very interested in learning how to build an oven made of pure nature clay and sand, so we started to help them build the oven up, brick by brick. Whilst building Krishan told us about ovens and we learned in practical way. In the evenings he gave us lessons in oven-building-theory and how he started to build up clay-ovens.



Here you can find an instruction for building the oven that we built

Chapter one: Chimney

A chimney is a rope or a duct which normally goes through the house vertically up to the roof or sometimes just straight out of the oven itself. The chimney has the function of sucking out the air and the smoke of the oven and sucking new air into the fireplace to heat up the fire and keep it alive.

So the higher a chimney is, the more sucking-power it has. But why is that so?? The nature tries to balance everything. When you put hot water in cold water it mixes it up and balances the temperature. It is the same with the air pressure. In higher areas we have lower air pressure than in lower areas. At the fireplace we have more air pressure than at the top of the chimney, so the air pressure automatically presses the steam and smoke of the fire up through the chimney to balance the air pressure-differences.

At the same time:
The air gets heated by the fire which is more hot than the outside air. Hot air is more light than cold air and rises straight-up, so it is flowing up through the chimney and generating an under-inflation, which sucks new air from the bottom of the chimney through the fireplace and keeps the fire alive by feeding it with oxygen in that way.

How big should a chimney be? 5-6 metres tall is minimum size, also the diameter should be not too big, minimum size is 18cm = 220cm² You can calculate the cm²: For round chimneys with following formula: $r^2*\pi$ (square radius, multiplicated by pi) For cornered chimneys multiply the length and width of the chimney-sides.

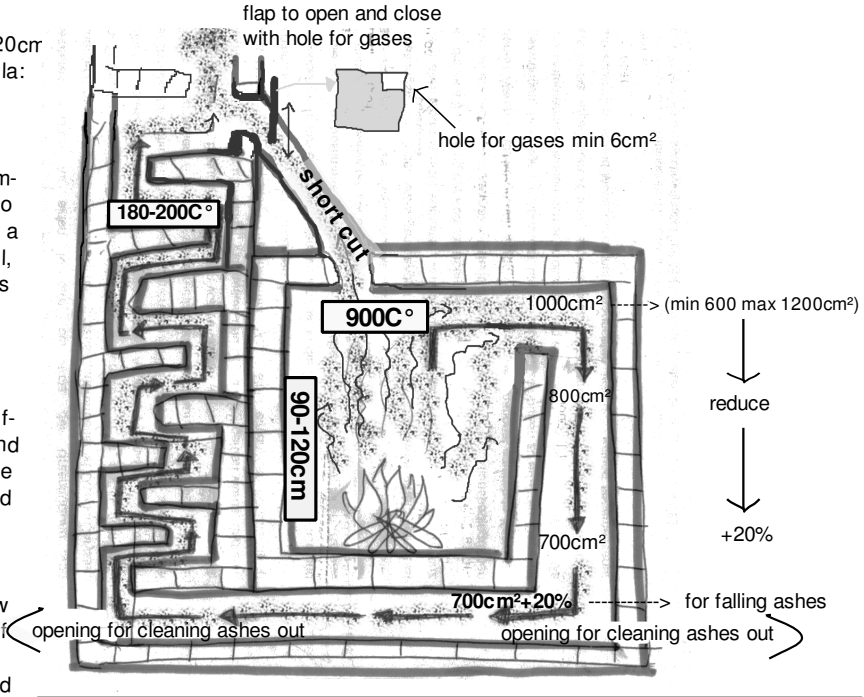
In older buildings, the chimneys where built very big so that the chimney-cleaners were able to climb into them. For the most ovens its too big, and sucks too bad, so it much more efficient when you build in a smaller tube, you will have much more sucking power. But be careful, ask your chimney-cleaners, there are everywhere different strict rules about ovens and chimneys.

Also when the chimney is too big the smoke will circulate inside and move up much slower. When the chimney is small it goes straight-up and fast. When you build the chimney with bricks you will have the effect that the bricks will be heated by the hot smoke of the oven(s) and heat the areas where the chimney passes by creating a heater at the same time. When you use a tube inside the chimney which is isolated from the walls, you will not have this effect.

You also always have to look when you build a chimney, which main wind-direction you have, this is important for knowing how you should build it. Also when your chimney is smaller than the top of the roof it can happen that the wind hits the top of the roof, starts to squirl and press air into the chimney, so the smoke cannot go out and gets pressed back into the house.

Also very important is the location of your house and your surrounding. Is the house built on the top of a hill, where the air runs up the side and helps to press the smoke out of the chimney. This is better than a house which is built in a forest, where if many tall trees are growing beside the house the air can fall down between the trees and could press the smoke back into the chimney.

For starting the fire it is also bad if the air pressure outside is too low, or the chimney is too cold, for that you can use a trick. Go down to the cleaning-clap of the chimney in the basement and start a short and very hot fire with newspapers there.. so you will heat up the chimney very fast and you can more easily start a fire in the oven. In german it is called "Lockfeuer".



One thing I learned in this workshop (maybe I already learned this in physics in school but I must have forgot;-) There is a big difference in between the heat of a stove and a heater: a stove warms you up through radiation and a heater through conduction. This means: the air in a room heated by a heater will warm up, the temparature will raise and the air gets dried out. In a room heated by a stove, you have the same effect as when you are sitting in the snow in the sun. The temparature of the air mustn't be necessarily higher than before, but still you feel the radiotion of heat. This is why the air in a room heated by a stove is usually better - at least if the stove is leakproof.

(Anja)