If a house is built in unfired clay instead of reinforced concrete and tiles, we have estimated that the CO₂ emission is reduced by more than 90%.

The main saving is found in the process of making the materials. Producing reinforced concrete will have an emission of 53 kg CO₂ pr. ton reinforced concrete and producing tiles will give an emission of 79 kg CO₂ pr. ton yellow tiles. There is no significant emission of CO₂ in the process of making the unfired clay.

We have only calculated the differences in producing the houses. For example the emission for the roof and the machines needed for producing the house is almost the same for both houses.

There is also a great saving in demolition of the house. The unfired clay can be recycled just as it is.

Cut down the CO₂ emission - build green!

### CO₂ SAVINGS

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- **Producing reinforced concrete will have an emission of 53 kg CO₂ pr. ton reinforced concrete and producing tiles will give an emission of 79 kg CO₂ pr. ton yellow tiles.**
- **There is no significant emission of CO₂ in the process of making the unfired clay.**

### EXPERIENCES

- **In Svebo (DK) they built a student accommodation in 1987/88 made with following details:**
  - The outer wall is made of 600mm stamped clay, 200mm hard isolation bats and a surface of chalk rendering. The ground deck is made of reinforced concrete with 1,5m leca insulation and the roof is shaped, so the solar panels are placed optimal. The partition walls are made by stamped clay.

### PROCESS METHOD

- Using pisé for constructions put the clay mixture into the formwork and stamp it.
- The clay needs to be without bigger lumps and plant leftovers. If the clay has high moisture content, shrinkage will appear. To prevent cracks, you can insert joints in the wall, so you can control the cracks. The clay can also be improved when mixed with cement, chalk or fiber reinforcement.

### THERMAL CONDUCTIVITY

- The heat conductivity λ [W/mK] can be determined by the instrument ISOMET. Heat transfer analyzer. The probe is placed upon the test sample and connected to the instrument.
- The heat loss coefficient (U) for the house is proportional to the heat conductivity.

### OUR RESULTS

**The heat conductivity λ [W/mK] can be determined by the instrument ISOMET.**

**A materials strength parameters describes how resistant the material is to compression and tensile.**

**In Denmark the material is exposed for changes in the weather. Therefore the relative humidity is a parameter for our strength.**

**For the tests we used a cylinder (ø100/200 mm) that is compressed until it breaks. The load is noted and converted to the compression strength.**

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