

From 25l to 5l House

A reconstruction from a normal house to a "Zero Emission Building" (in this case, zero emission means without any CO₂)

We are wasting energy on heating in the northern regions of Europe. New buildings are allowed to consume up to 10l oil per m² per year, but we could construct buildings which only consume 2l per m²/a.

The following example shows a house which was reconstructed in 1995. Even at that time it was possible to change it from a 25l- to a 10l-House- a "low energy house".

Now, in 2006, we reduce all houses' emissions to 3-5 l/m²/a

The oil heating in the example house was replaced with a wood pellet burner in 2005.

A solar panel was installed on the roof of the outbuilding which produces the amount of energy that is required for the house over a year. This means that the whole energy supply of the house comes from renewable sources.

Before reconstruction, the energy consumption for the heating of the building (with an area of 300m²) was:

$300\text{m}^2 \times 25\text{l} (250\text{kWh/m}^2) = 75,000\text{kWh/a} (= 7.500 \text{ l Oil})$

Post-reconstruction, the consumption for heating is:

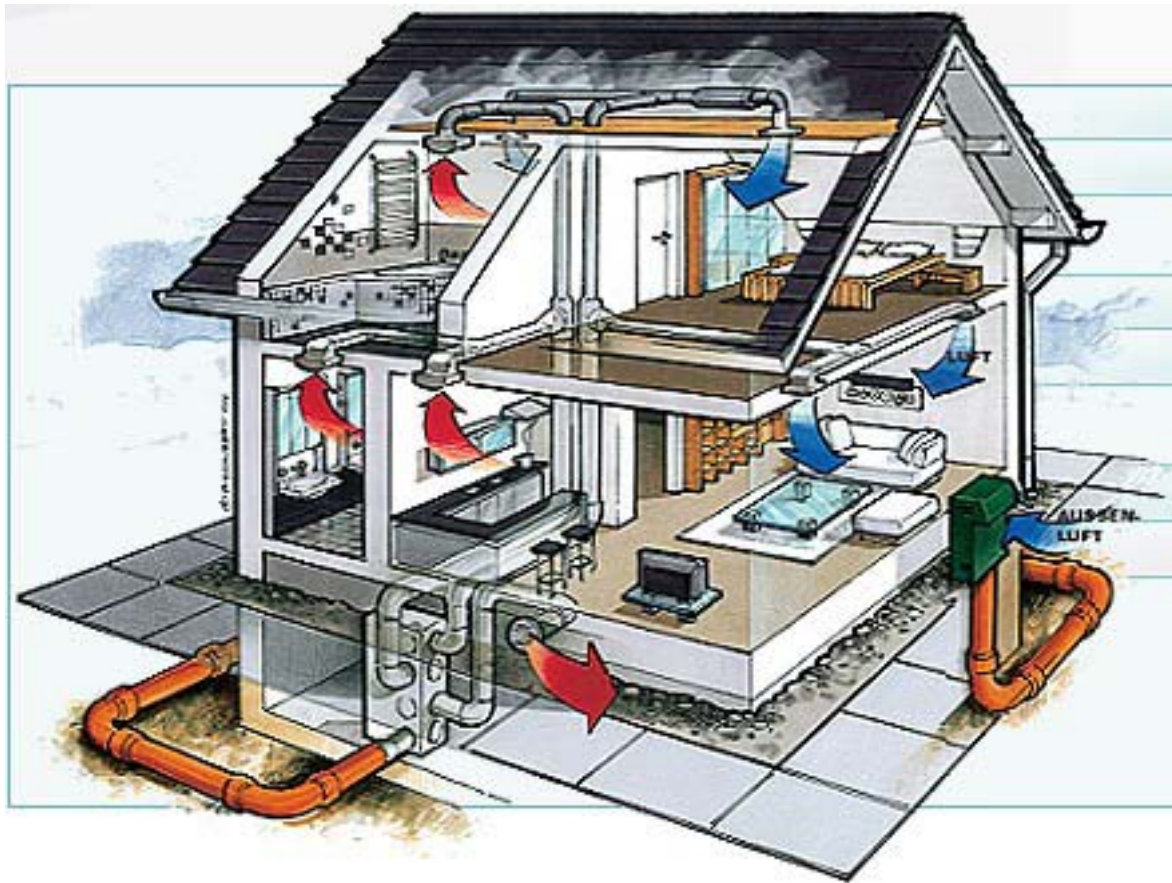
$300 \text{ m}^2 \times 10 \text{ l} (100 \text{ kWh/m}^2) = 30,000 \text{ kWh/a}$ (using wood pellets (ca. 6 t).)

The wattage for a 5 head family (about 5,000 kWh) is produced by the sun.

Theoretically therefore, the house is now no longer causing CO₂ emissions (Zero Emissions).



The house with the solar installation for hot water



The controlled aeration with its hard, the heat recovery



Photovoltaics-panel for power generation, 5 Uwp



The Pellet Boiler