HEAT 2008

Stabilizing CO2 Emissions

Passive House Technology
What it is and why use it

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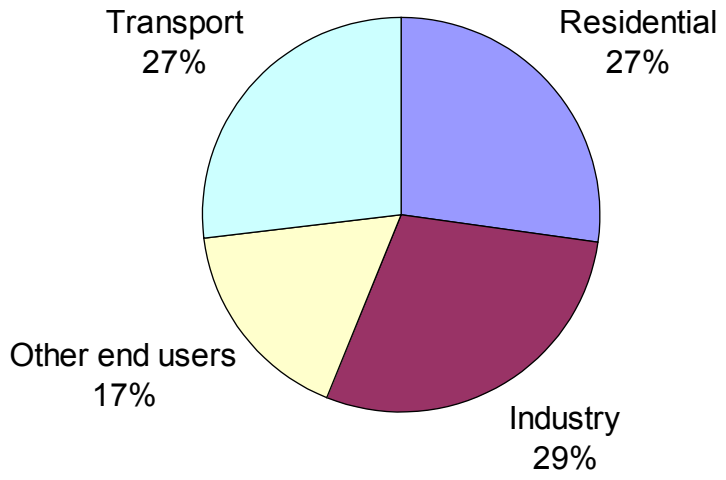
Targeting Carbon emission reduction

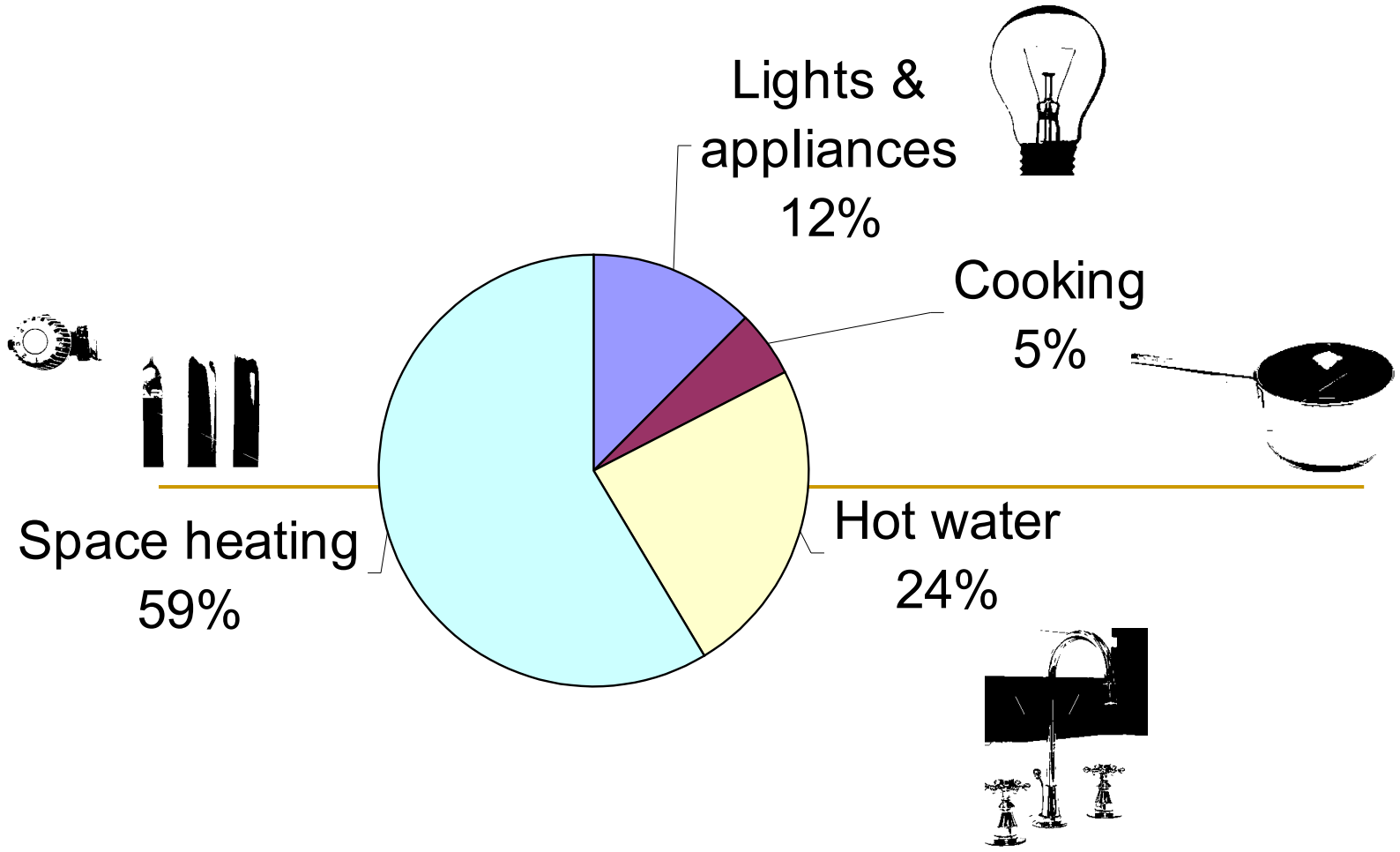


‘ Domestic property contributes 27% of UK’s CO2 emissions. The Government is seeking to reduce the emissions from new homes to zero carbon in all new housing by 2016.’

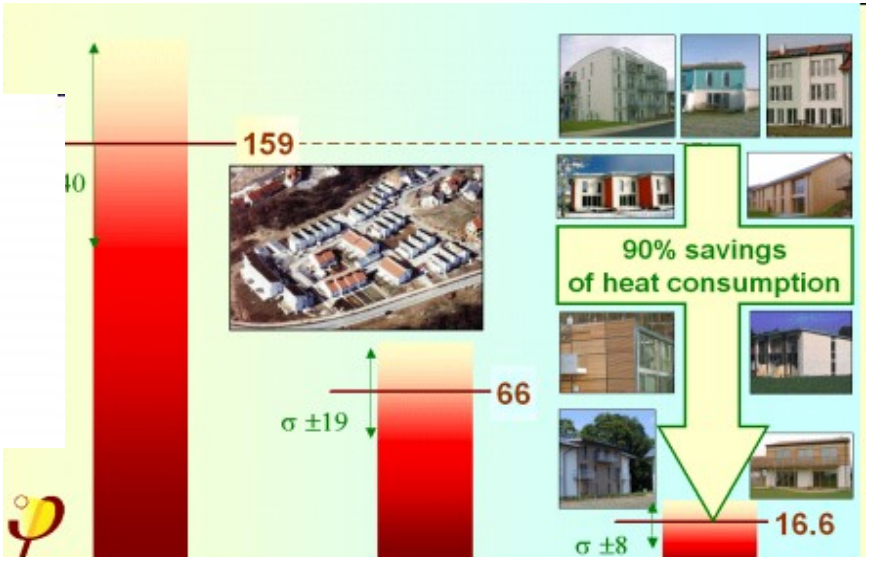
(Source:UK Gov 2002)

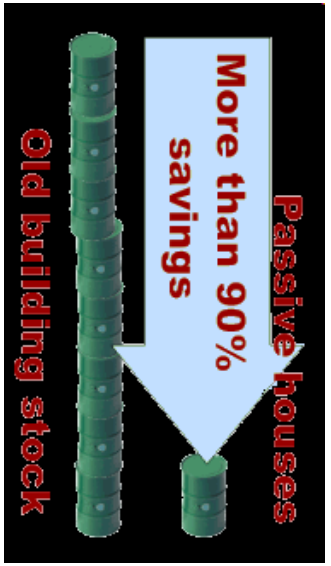
UK residential energy consumption

by end use



No space-heating = Less CO2



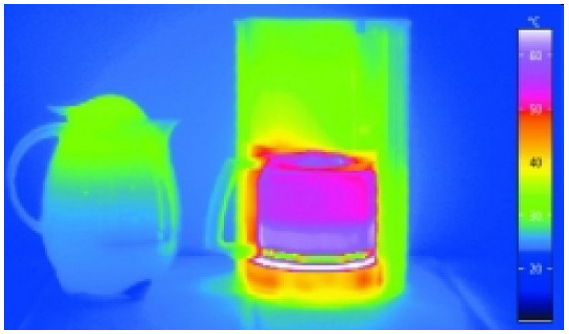


By eliminating the need for space-heating we can save millions of tons of CO2 from dwelling emissions and construction techniques each year, simply by building Passive Houses

What is a Passive House!

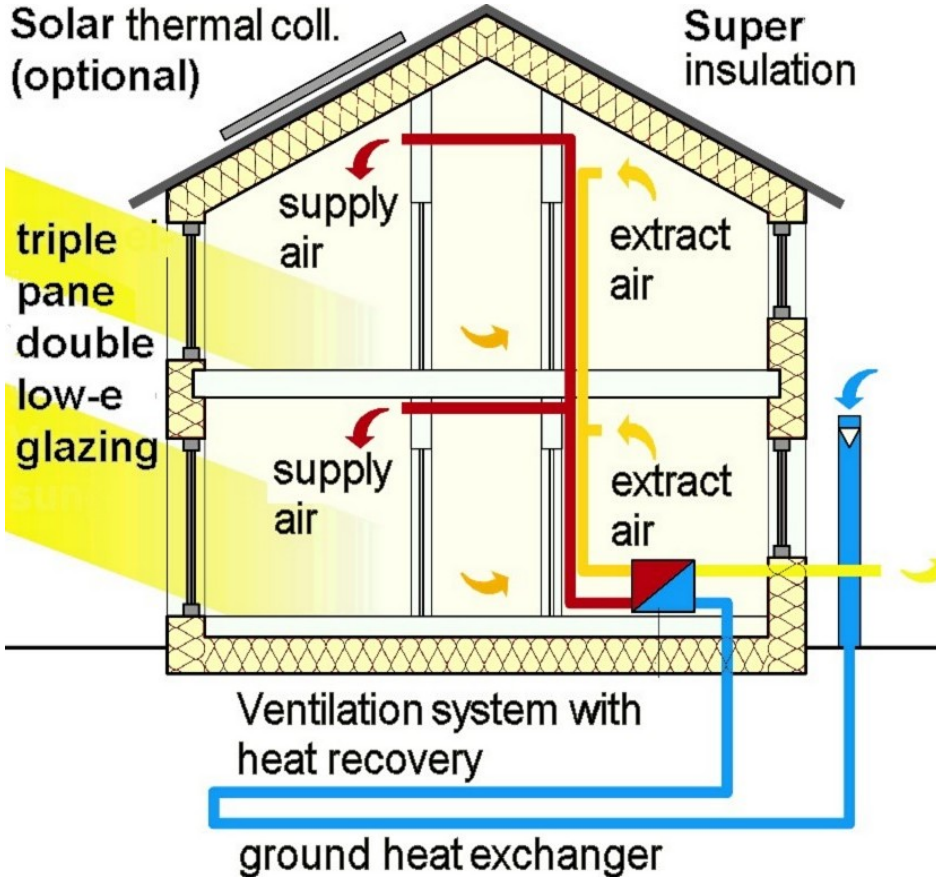
To keep the coffee warm, we either leave it in the machine on a hot plate that constantly uses energy.

Or we can use a thermos flask, keeping it just as warm without energy. The Passive House uses the thermos approach.



Passive House…

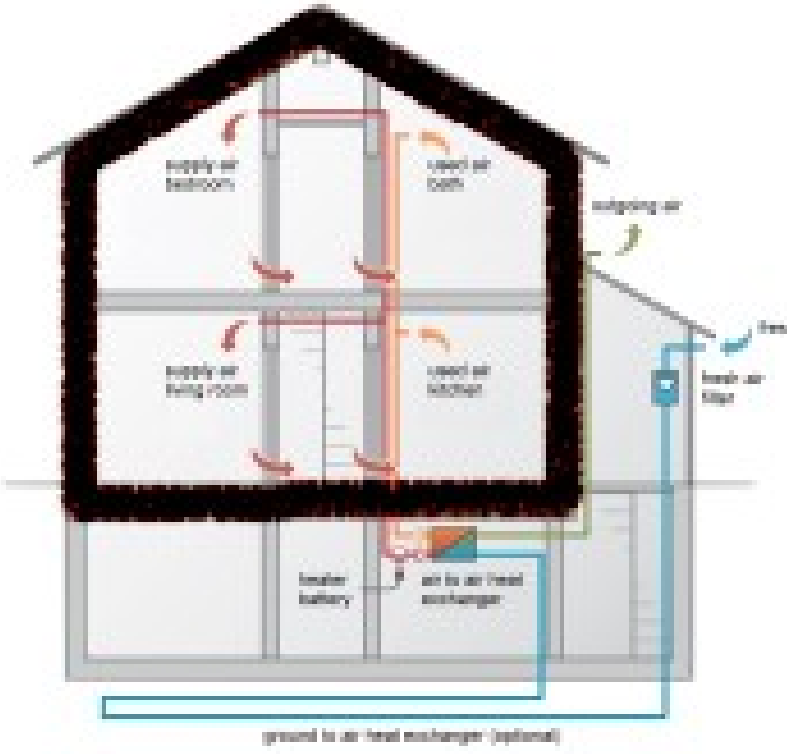
Instead of constantly supplying heat, which subsequently escapes the building through windows, walls, ground and roof, it aims to contain the heat within.



Typical components in Passive House

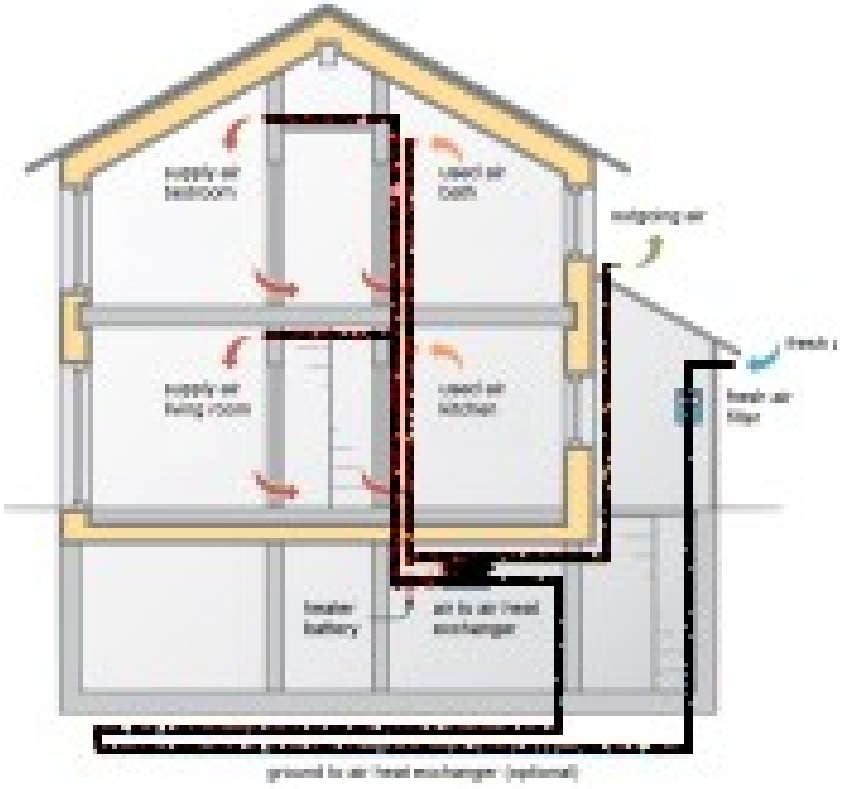
Excellent uninterrupted insulation of the whole building shell, including

- foundation
- walls
- roof
- floors
- windows
- doors.



Typical components in Passive House

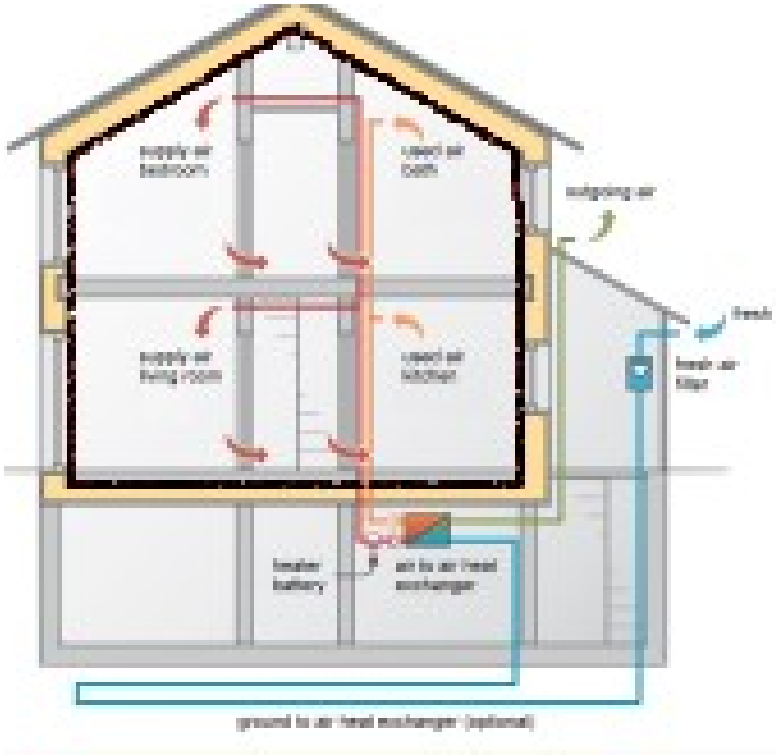
Mechanical ventilation system with heat recovery provides clean and healthy air around the clock, eliminating the need to air the house manually.



Typical components in Passive House

Draft-proof building with no leakage between inside and outside.

Leakage causes draft and heat loss alongside condensation within walls leading to mould and other damage to the structure



Typical components in Passive House

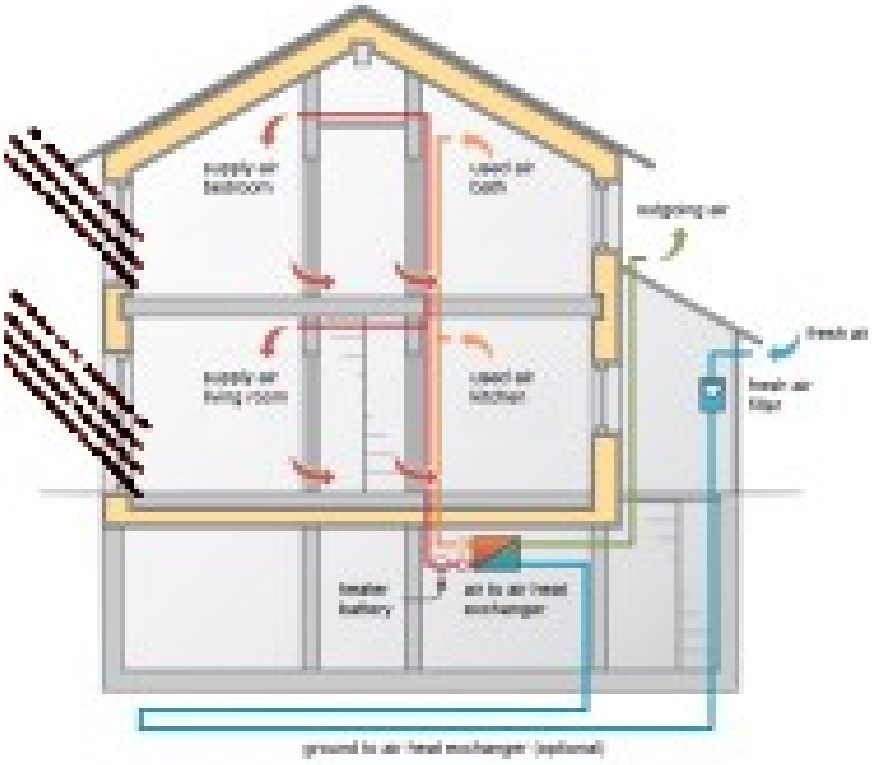
Building design according to solar gain principles:

Large windows, south facing

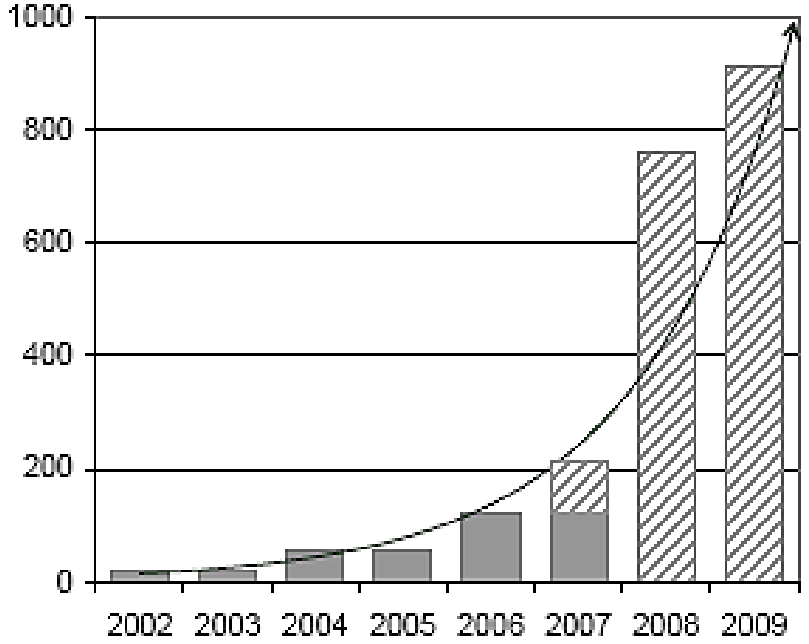
No dormers

Through house heating

Open plan "family oriented" space



The Swedish Passive House



made of wood – eco-friendly and eco-nomical

The first offsite-manufactured Passive House in the world was built in Ireland in 2003, in just 25 days!

…and in UK
Demonstration houses at BRE

Will most planners accept this as "affordable or social housing"

The Government wants 3 million new homes built by 2020….35% to be social and affordable!

All new homes to be zero-carbon from 2016.

The solution???

Apply pre engineered, offsite manufactured, Passive House technology to all new homes in UK…