



ECO-BUILDING

Modern buildings are usually made from bricks, blocks, and concrete. Bricks are baked mud, they must be heated to 1000°C, thus the firing of the bricks uses lots of energy. The cement used as mortar for bricks and concrete blocks and for making the blocks is ordinary portland cement. Portland cement uses a lot of energy in its production, as well. Concrete and cement are one of the main contributors of CO₂. Modern concrete doesn't last very long. The concrete we use begins to lose its strength after only 50 years and it is one of the main climate killers. Yet archeologists are still finding Roman concrete that is good, even after a thousand years, which demonstrates it can be made to last.

Eco versus Low Energy

People in general don't know the massive ecological problems caused by modern building techniques. Governments and architects are aware of the problems. Some are attempting to create "greenwash" solutions that, though they do reduce the damage to some extent, are still problematic and better solutions are available.

Low energy housing is better than their other alternative, however, energy use is only one of the many problems the conformist society produces. Urban planning is perhaps a contradiction in terms.

Sustainable Materials

Wood is one of the traditional building materials and all over Asia and Europe you can find old pin-jointed buildings that have survived for centuries. Wooden pegs and beams, if kept dry, will last forever and solid oak heartwood can even survive a fire.



Other materials include mud and straw (see below) and almost anything that nature provides can be used, with a bit of imagination. Natural materials require skill and intelligence to work with, these can be seen as dangers by those who prefer workers to be without the skill levels needed for complicated building schemes, therefore cheaper to hire.

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Cob Building

Beneath the fertile topsoil, the subsoil is a good and solid building material. This can be mixed with straw or other strengtheners or may be rammed into place, making it strong. This is an age-old system for building a dwelling house, rarely seen today.



Straw Building

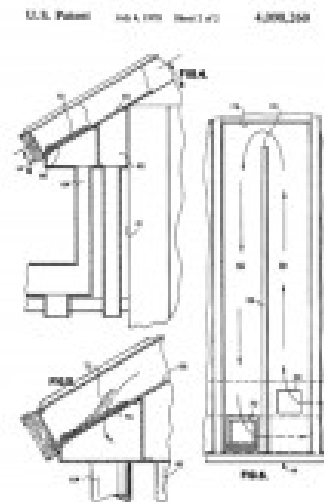
Straw is soft and flexible, but when compacted into a block it makes a hard brick like building material. If it is placed on a dry surface and plastered over to protect from the rain, then it will last longer than Portland cement blocks.



Passive and Active Solar

The sun is the closest safe nuclear reactor and it powers all the plants on the Earth for free. Houses can be designed so that the windows on the south are big while those on the north are small or omitted, in this way the windows provide passive solar heating through their greenhouse effect. Conservatories are also a form of passive solar heating, the house is warmed for free, without any extra energy input.

Active solar heating is more about techniques or technologies that involve additional designed elements that are most likely powered. This includes powered and passive solar water heating but can also involve systems where a whole wall is converted to a solar collector, the stones or brickwork being the heat store. Solar walls may need fans to help collect or distribute the heat.



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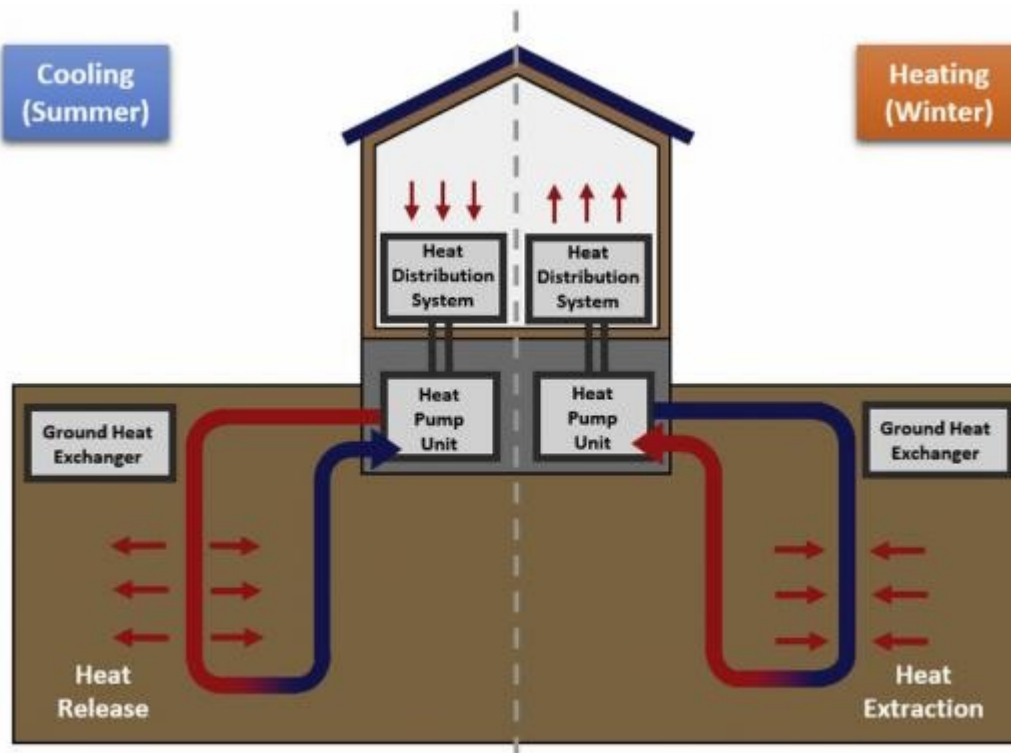


Clean Wood Stoves

Wood fires smoke. Smoke is unburnt fuel and it can also be toxic and add particulates to the air. Fires that are designed to burn the smoke are still a relatively unknown technology, but have been around for a while. Like the after burner on a jet plane, these fires will also get extra power from this complete combustion. The only emissions are water and CO₂, ready to help the next trees grow. These kind of fires are a bit large and are best incorporated into a house at the building stage.

Geo-Thermal

Another technology that is best installed at the building stage is Geo-thermal. These are systems that operate with the same technology as a fridge, but in this case the idea is to collect the heat inside instead of keeping the cold. The pipes to collect heat are usually buried in the ground around the home. They can also be run by drilling wells. An alternative is air to water, which takes the heat out of the air around the machine.



Related Videos & Websites

- ⇒ [Full-Length Video on the Need to Change to More Sustainable Architecture.](#) ⇐
- ⇒ [Eco-House in Australia](#) ⇐
- ⇒ [Passive Solar House](#) ⇐
- ⇒ [Interesting Architecture with Trees & Green Space](#) ⇐

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