

Home energy information based on talk on June 7th 2006

I invited David Shewan from Creative Environmental Network (CEN) to come to No. 99 and talk about what our street of early 1900s houses could do to consume less energy. He emphasised draught proofing, insulating, and upgrading heating systems and controls as being the most cost-effective. He emphasised all the 'no cost' habits that we can all get into to save energy. He also mentioned solar water heating, solar electricity and wind turbines. Creative Environmental Networks is based in Norbury: tel. 020 8683 6600; website: www.cen.org.uk They welcome calls from householders.

These houses are a big energy challenge because they are draughty, with floorboards, cellars, chimneys and solid walls (which can be recognised by the brick pattern showing short ends of bricks).

Draught-proofing

Doors and windows can be draught-proofed using various kinds of strip and this will get them to the standards of new hermetically sealed windows and doors. Brush types are good. Gill mentioned a company called Ventrolla who specialise in renewing sash windows in this way: <http://www.ventrolla.co.uk/> May be expensive though to have the whole works done.

Cost of DIY draught-proofing for the whole house could be rather less than £100.

There's no danger in houses like this of getting too sealed up! They were built loosely, with plenty of airgaps, draughty and unless a total remodelling is done, cannot really be made too airtight for comfort accidentally. Modern building regulations are a different story, with houses being built so tightly that provisions have to be made for sufficient ventilation.

Insulation

Since these houses do not have cavity walls, they will need insulation on the inside or outside. The latter is more expensive and would be likely to run into problems with appearance even though this is not a conservation area. David mentioned three types of interior wall insulation:

- Sempatap which is quite thin (10mm) and costs around £2,000 for a house. Not polystyrene - it is designed to be easily decoratable, and re-decoratable even.
- Knaufboard: like plasterboard with insulating material on the back.
- A thicker type of insulation using battens to build an inner false wall: the space is then filled with material such as mineral wool (or even more sustainable products, like sheep's wool, can be used).

One thing to consider with these systems is that mouldings, cornices, and electrical fittings may have to be re-done, but this is not always the case, especially with Sempatap.

Cellars and under the stairs can be insulated with mineral wool in bags from B&Q, which can just be tacked on. I want to do the wooden side of the stairs from the inside and I'd like to try the sheep's wool stuff if possible. It is about

four times more expensive but it supports a sustainable industry and takes less energy to make. However even the energy used by the other materials is quickly compensated by the amount saved once you have installed it.

Lofts are now insulated far more deeply than in the past. If yours was done years ago, then it can have more added up to a depth of about 10 inches. If you are on income support you can get free loft insulation, and anyone else should be able to get a grant of about ~30% (offers vary). (Free insulation is also currently available for Powergen customers over 60.) I want to try sheep's wool in the bits of our roof we can still insulate but should perhaps not use the loft room in winter, and keep the door closed.

Windows

David said that the window area is much less than the wall area, so most heat is lost through the walls. Double glazing will not be nearly as cost effective as less publicised measures, such as draught strips – these will help a lot and can be very cheap. I have seen another solution on:

<http://www.alternative-energy.co.uk/first%20steps%20being%20efficient.htm>

Lighting

Energy-saving light bulbs pay for themselves in a few months. They use around a fifth of the energy of the standard incandescent. Typical prices are around £4. They also last much longer so you don't have to change them. They don't get hot so they may be safer. Note that they don't work in dimmer switches.

You can get candle shapes for chandeliers. B&Q do a selection including spirals. IKEA also has a good selection of different styles, however B&Q is nearer to here! I get my spiral ones from the Green Shop: www.greenshop.co.uk or phone 01452 770629. This is mail order from Gloucestershire, and they also sell paints and other eco-friendly DIY products. LED ones (like bike lights) are coming in for home lighting now, and will be even more efficient than the compact fluorescents, and will be available for the small recessed lights in ceilings. For more information see <http://www.est.org.uk/myhome/efficientproducts/recommended/index.cfm> and select 'light fittings'.

Central heating

It is a fallacy that heating should be left on all the time and then it doesn't have to warm up. Use the timer to put it on an hour before you come in (or whatever time it takes for your house to heat up - perhaps 2 hours in very cold weather). A plumber can install thermostatic Radiator Valves (TRVs) on all the radiators. These sense when the room is warm enough and turn off the radiator. When the temperature drops, it goes on again. If you are normally active set the thermostat to 18 ° C or 21 ° C at most. 18 °C is fine for bedrooms. For a guest room set the radiator lower, just to avoid freezing, and to keep a minimal warmth to avoid condensation from warm moist air from the warmer parts of the house. Some thermostats have a no-freeze setting. The central heating system's main thermostat, usually placed in a central living room room on the wall, governs the boiler itself. 18 ° C is adequate for this too, unless you are older or not active, and 21 ° C should be the maximum.

When you need a new boiler, modern ones, especially combination and condensing boilers, are far more efficient than anything that is 15 or 20 years old.

Some new highly insulated houses hardly need central heating! They may have wood-burning stoves for minimal extra heat in winter, or they might get the heat they need simply from the hot water tank. See end for examples of doing the maximum.

Payback

Heating controls, loft insulation and cavity wall insulation pay for themselves in about two years.

What appliances use and how to use less

Computers use about 150 watts; laptops around 100 watts. Fridges and freezers use about 15 watts – if you need a new one get the most efficient. Electric space heating is very wasteful because the power station wastes more than half its energy as heat before it even gets to us. It is better to heat water on the gas cooker providing you do not waste energy by having flames shooting up around the outside. There are special kettles with a hollow underneath to trap even more of the heat. Showers are better than baths on the whole. You can get water-saving shower heads that help save water as well as energy.

Renewable energy

Solar hot water panels can provide most of your hot water in the summer. A system should cost around £4,000 – avoid anyone who sells door to door, some more indiscriminate installers are known to charge 2-3 times as much! They will probably need replacing in about thirty years. There is a government grant of £400.

Solar PV panels provide electricity directly from daylight. They are more expensive and last for 45 years. There are larger grants towards these, and many different companies supply them. There are small flexible systems starting at £1,100. The amount of power they provide is enough for a few energy-efficient light bulbs, a fridge or a home office. See www.climatefriendly.co.uk

Wind power

There are small systems that can be put on a house. For example David Cameron has a Swift, from www.renewabledevices.com This currently costs £3,500 but is likely to come down to £1,500 as the market matures (according to the suppliers). These are now installed on housing association houses in Aberdeen and many other places. They are fully approved by Government. Malcolm Wicks, the Energy Minister, has a Windsave, which is noisy and not yet recommended! Another is the Stealth, which is cheaper and lower power. A realistic annual yield at a typical urban site would be around 660 Kw hours which equates to a daily average of 1.8 kW hours per day (20% of average UK household electricity consumption). The Stealth costs from £2,600 installed. See: <http://www.energyenv.co.uk/D400WindTurbine.asp>

Renewable energy suppliers

We are with Good Energy, and this has a very good deal for buying back any electricity generated at home. Visit www.good-energy.co.uk or ring 0845 456 1640. Switching is now very easy and quick.

Doing more

Some people have gone much further in converting their houses - see for example:

Hints based on Victorian house <http://www.alternative-energy.co.uk/> and Account of arrangements in a smaller house:

<http://greencottage.burysolarclub.net/>

Green Building Forum: <http://www.greenbuildingforum.co.uk/forum/> - lots of discussion and exchange of information

Another very efficient Victorian conversion, [Penney Poyzer's Nottingham Refurbishment](#) (5.65MB pdf)

Detailed, informative house renovation in Oxford: The Yellow House:

<http://theyellowhouse.org.uk>

Inspirational conversion, also in Oxford:

<http://www.sageoxford.org.uk/ecohouse.htm>

Ann Link, July 2006