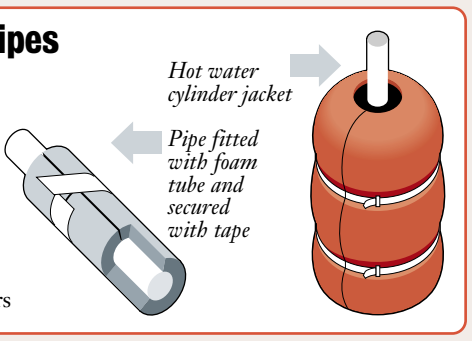
Inside a green house

Penney Poyser and Gil Schalom have transformed this run-down Victorian terraced house into one of the most energy-efficient homes in the country. Along the way they discovered countless energy- saving tips that we could all learn from. Many are as easy as changing a light bulb

Lagged tank and pipes

If your hot water tank has less than 7cm of insulation, you ought to fit a new jacket. It's worth lagging the pipes between your boiler and hot water cylinder too. Get pre- formed tubing from your local DIY store.
Cost: From £20 DIY
Energy saved: £20 a year
Pay-back time: Under 2 years



Bathroom

The Poyser's space-age bathroom slashes water and power use. No baths here, only showers with energy-cutting controls. The low flush toilets were flown in from Sweden, but you can get a similar effect by putting a water-saving bag in the cistern.

Solar water heating

A 4m square panel on the roof generates around half the household's hot water needs. The Poysers fitted everything themselves, with help from their local Solar Club. For your nearest club see *http://www.cse.org.uk*
Cost: £1,500
Energy saved: Around £200 a year
Pay-back time: 5 to 10 years

Insulation

You should have at least 25cm of insulation in your loft. The Poysers fitted 40cm worth, made from shredded surplus newspapers. Check walls as well — 75% of all homes built before 1930 have no insulation (If you're on benefits, you may be able to get a grant. Call 0800 316 6011 for details).

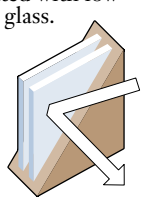
Cavity wall insulation
Cost: £350 to £500
Pay-back time: 4 to 8 years

External wall insulation
Cost: £1,800 to £2,800
Pay-back: 20 plus years

Loft insulation
Cost: £110 to £160 DIY, £200 to £300 professional
Pay-back time: 2 to 5 years

Glazing

Are your windows looking worse for wear? Then consider double glazing fitted with low-emissivity (low e) glass. Low e glass has a invisible metallic coating that reflects heat back into the room. The Poyser's home uses double- and triple-glazed timber units.


Heat reflecting back into room

Heating

The simplest way to save energy is to turn your thermostat down to around 18 to 21°C, close windows when the heating is on and draw curtains at dusk.

Radiators
Put foil behind any radiators against an outside wall to reflect heat back into the room. Use kitchen foil fixed to a board, or boards from a DIY store. Don't put furniture against radiators.
Cost: £10
Pay-back time: Under 2 years

Decor

Next time you redecorate consider natural paints and plasters. Saving the planet isn't just about saving energy.

TV and video

If you stop using your television for more than 15 minutes, it's worth turning it off. Same goes for your PC.

Lighting

Lights make up one fifth of your energy use, so turn them off when you can. Also fit energy-efficient bulbs which can last up to 12 times longer than ordinary types. Look for the Energy Efficiency Recommended logo when you buy.
Cost (per bulb): Around £5
Energy saved: £10 a year
Pay-back time: 6 months

Kitchen

Fridge
Defrost your fridge regularly, leave space behind so that air can circulate and keep it away from the cooker. Check the door seal by shutting a piece of paper in the gap. If you can move it, get a new seal.
Cost: £10
Pay-back time: One year

Drying clothes
Switch the tumble dryer off. Put your clothes on a rack instead.

Replace appliances
Look at the energy label next time you buy. Appliances graded A use less than half the power of models with a G rating.

Organic garden

The Poysers have started growing most of their food at home. Supermarket food often travels hundreds of miles to reach your plate, and uses a lot of packaging. If you don't have the space or the inclination, buy food in season, or buy loose. Consider joining a vegetable box scheme. There are more details at *http://www.soilassociation.org*

Rainwater storage

The Poyser's home saves the rainwater from the roof for flushing toilets, running the washing machine and watering the garden. The basement tanks can store around 2,000 litres, enough for ????? ??? ???? ????????? ??? ??????? ??????

Rubbish

The UK produces enough packaging waste each year to fill almost 20,000 jumbo jets. Try following the three Rs:

Reduce
Buy food with less packaging, or the kind that can be reused, eg milk in bottles rather than plastic cartons.

Reuse
Use old supermarket carrier bags again, and look out for products that can be refilled. Razors are an obvious one.

Recycle
Your local council website should carry a list of recycling centres near you.

Composting chamber

Although the home's toilets flush like conventional types, all solid waste ends up in basement tanks to be eaten by worms. Toilet waste, according to Gil, is the second biggest pollutant from homes after carbon dioxide. The only downside is the chore of having to "pump" the tank every six weeks to give the worms enough air to do their job. "But it's no worse than changing a nappy," says Gil.

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