Hills Road, CB2 8RP

Martin and Sally - Martin says:

We’ve lived in our 1905 Edwardian semi-detached house since 2003, and our three grown up children have ‘fled the coop’. To me heat and power is an invaluable resource which should not be wasted or allowed to leak away. To reduce our home energy bill my approach has been to get the ‘box’ well insulated before investing in any technology.

I admit to a thrifty nature and therefore make those investments, in time or money, which give a good pay back. I can show you data on the investment and the likely % return for many improvements: those I have made, planned for and/or rejected.

To this end, I like to measure the impact of the changes I make, so I routinely track our energy use. The results have been a 27% reduction in gas - over and above those savings from a previously installed new boiler - and a 35% fall in electricity. At the same time there are less draughts and the house is warm and comfortable.

Overview

Age, Type: 1905 Edwardian, Detached
Wall type, Floor area: Solid brick, 240 sqm
Project timescale: 8 yrs, ongoing
Cost of measures: £13,000 to date

Energy usage – 3.5 adults
After: 17 kWh per sq m pa electricity (2011)
        87 kWh per sq m pa gas (2011)
Before: 29 kWh per sq m pa electricity (2005)
        178 kWh per sq m pa gas (2005)

Key features
+ insulation: loft, walls, floors
+ draught proofing: windows, doors, letterbox
+ condensing boiler
+ secondary glazing
+ radiators: thermostatic valves, reflective panels
+ lighting: LEDs, low energy bulbs
+ solar photovoltaic (PV) system
+ water: aerating shower, low flush toilet
+ rainwater harvesting: water butts for garden
+ future plans: insulate all exterior walls

Low Energy Measures

Besides the physical changes, a key component has been managing the use of energy, for instance by only heating those rooms where we spend most time and then only when they are occupied.

I think of the house as made up of modules and heat those modules that are used. So I turn off the living room radiator before going to bed to ensure it’s not heated in the morning.

Since I work from home a lot, I’m the only one here, so I wear a jumper and leave the heating off.

But I must limit my exuberance as I need to bring my family along with me in this enterprise. So at times I’ve relented in terms of the reductions I seek to make - if the family rebels all hope is lost!

We also sometimes have language students to stay and they don’t want to pay to live in a cold house.

Not everyone may be as nerdy with all this as I am - but consider your home energy as a vital resource and you will find your own balance.

We installed a replacement condensing boiler in 2005, followed by many DIY improvements including: 300mm loft insulation with boarding under the area used for storage; draught proofing of doors and windows; thermostatic radiator valves; reflective panels behind radiators; energy saving bulbs and - most recently - secondary glazing on all exterior doors and windows (this last change cost £700).

I have also installed a low-flush toilet and an aerating shower, and have seven water butts collecting rainwater for the garden.
Renewable Energy

As I say, until recently most technological 'bling' was ruled out by poor return on investment.

However, Feed-In Tariffs (FITs) changed the picture for Solar Photovoltaic (PV) panels and led me to install 6 x 240W PV panels (1.44 kW) late last year. This was the highest number that I could get on our small south facing roof but should still give a 10% return on £7,200 invested over the 25 years of the tariffs - I look on it as a pension.

My brother lives locally and was able to install a full 4 kW on his roof and so is looking at an even more attractive pay back. I have a calculator that can help in this which I can also share with you.

Future Plans

The next major step for me will involve external insulation on the north-facing gable-end wall, and internal insulation of the front and rear of the house but I'm still steeling myself for the necessary £16,000 investment and upheaval required.

If subsidies for external wall insulation come in with the new Green Deal, then I will probably take the plunge.

So please visit me – it may just push me towards this next step!

Professional Contacts

Loft insulation: 300mm Knauf from B&Q www.knaufinsulation.co.uk £200 plus DIY time.

Pipe insulation: B&Q, cost £10 plus DIY time.


Cost: £700 for all the windows in the house, £100 per door, plus do-it-yourself time.

Condensing boiler: Vaillant (2005), Green Heat www.greenheat.uk.com (supply / install) £3000

Thermostatic radiator valves: £10-£15 per valve.

Solar PV cells: 6 x 240w panels (1.44 kW) BritishEco www.britisheco.com (supply / install) £7200

Low-energy lighting: Various, cost £70 Bedroom LEDs cost £30 total.

Water use: Low flush loo (cost £150), and aerating shower (£200) from Total Bathrooms www.totalbathrooms.co.uk

Draught-stripping, letterbox excluder and radiator foil: cost £10-20, plus DIY time