

Nuttings Road – CB1 3HU

Low cost renovation of 1950s semi-detached with substantial DIY elements

Meet your hosts Suzie and Iain – Suzie says:

‘When looking for our first home, we wanted it to be south facing, with a big garden. A big lounge for socialising, was also an important factor. In 2006 we moved into a home with aluminium framed double-glazed windows, minimal insulation and an old gas fire with boiler.

We are both very passionate about the environment and love that our home is now an expression of this. We sometimes put our ideology before our finances or convenience but are happy about this.

Now our utility bills are only £40 a month, yet our home is warm and snug, with a close connection between the house, garden and seasons. This is about 1/3 national average’

Low Energy Measures

‘As soon as we moved in we switched to Good Energy, who only provide 100% renewable energy.

We drew up a five-year plan. The major eco work so far has been installing the hot water and heating system - adding solar thermal hot water and a 9kW wood-burning stove which supplies hot water for taps and central heating.

We had ourselves cut off gas when this was installed. We are constantly improving our firewood processing making the most of all the wood and the ‘sawdust waste’, as well as improving storage. At the same time, installing a highly insulated [Akvaterm](#) hot water tank, designed to be heated by wood and sun, or electricity if we are desperate.

We had the cavity walls insulated, and we did the loft insulation ourselves with 150 mm of British sheep’s wool, on top of the 150mm of yellow itchy insulation already in situ. We also insulated under the bath (re-using coats and pillows) - so now we can have a good long soak in the bath because the water stays warm for ages!

Accessible pipes are insulated with grey foam coats, or [Kingspan](#) Tarec. We have a thermally-lined curtain which reduces the size of the sitting room in winter, making the stove more effective and the room more cosy. The fireplace is rendered with lime.

Suzie’s favourite energy saving aspect of our home is the kitchen sink area. After a partial kitchen refit and lots of decluttering, the crockery and cutlery are permanently stored where they dry. Under the sink rubbish and reusable bags are sorted. All this saves human time and energy.

Our water use includes 5 water butts for the garden. And to reduce our mains water use we have the lowest flush toilet locally available.



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Other DIY measures include low-energy and LED light bulbs, draught-proofing and secondary glazing. The kitchen

Professional Contacts

Solar thermal system and wood-burning stove: Jonathan Cooke of [Dragon Renewables](#)

Solar photovoltaic (PV) system: [Midsummer Energy](#)

Kitchen refit and various: John Crawford and friends via [Mother's Little Helpers](#)

Products and Costs

Insulation: [Thermafleece](#), from Earth and Reed, Needham Market (company now dissolved)

Green materials: NCT Paints, Earth and Reed

Wood-burning stove: 9 Kw [Woodwarm](#) System, Metal Developments

Solar thermal system: [Gasokol](#) £2,900

Solar PV system: 1.85 kWp [Romag](#) panels £9,500

Windows & external doors: Wood-framed, double-glazed, from Everest (not recommended) £10,000. Some PVC windows, from Polarglaze (highly recommended) £8000 approx.

Architectural salvage: Cambridge Woodworks (company now dissolved) £70

Extension Building Improvements: [Green Hat Construction](#)

Floor: <http://corkfloor.co.uk> £750

Age: 1950s

Type: Semi-detached

Wall type: Cavity **Floor area:** 88 m²

Project timescale: 13 years

No of occupants: 3 adults, 2 children

Cost of project: £46,000

	Energy kWh/m ² /yr		Carbon kgCO ₂ /yr	
	Elec	Gas	/m ²	/person
Before	25kWh	2kWh	14.0	308
After	11kWh	none	6.7	148

Insulation

- Cavity wall insulation
- Loft insulation
- Insulated water tank
- Insulation under bath
- Triple-layered, thermal-lined blackout curtains
- Cork flooring

Glazing

- Windows and external doors double-glazed

Heating/energy

- Wood-burning stove
- Solar PV system
- Low energy lighting (house)

Water

- Lowish flush toilet, water butts, Ebac washing machine with hot and cold fill

Other

- Sedum roof on shed
- Fruit and vegetable growing
- Wild flower garden

ceiling is painted white to reflect light. Sadly, after 13 years of fridge-free living, we now have a fridge and freezer as Suzie couldn't see a way to child mind without. We also partially refitted the kitchen, bathroom and extension

Outside we have a sedum green roof on one of the woodsheds. Another shed has a clear roof for extra growing space. In the garden we grow some of our own fruit, nuts and some vegetables. We have built our own hurdle fencing from local coppice. Iain loves nature so the abundance of nature in our garden is his favourite part of our home.

The last time we flew was 2005 and we will not fly for leisure again. We successfully share a car and a cargo bike with local friends. We try to use feet, bikes, buses, boats and trains for most of our travelling. We've made our bikes more accessible and secure.

A friend invested in a solar photovoltaic (PV) system for our roof. When they have recouped their costs from the Feed-in-Tariff, we will get any future profits. Our electricity usage is a third of the national average and we 'make' three-quarters of what we use.

In recent years' we have insulated and double glazed our extension. Insulating cork floor and underlay in the kitchen and extension have made it a better place for our children to play and keep us warmer.

We mainly use eco paint and minimal eco-cleaning products. We have only bought six new items of furniture or white goods, the rest were all second hand. This has helped create a low toxin environment for us, our housemate and our daughters.

Performance

Home energy use was reduced by 60% – and to 68% less than the national average. CO₂ emissions were reduced by 60%, currently approximately 0.44 tonnes a year (from 1.05 tonnes). Because our electricity comes from Good Energy, which is 100% renewable, in theory our CO₂ emissions from electricity is zero.

We have shown the reduction as if we were using the standard electricity mix. Overall we only expect to use 1100 of the 1500 kWh electricity that our

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solar array produces per year.