

High Street - CB3 0QA

Six bed 1920's country house with on-going renovation for comfort and environmental well-being

Meet your hosts, Carol and Stewart

Carol and Stewart's six-bedroom country house was built by Stewart's grandparents just after the first world war and completed in 1920. The style of architecture was modelled on that found in their native village of Lingfield in Surrey. It has a cavity brick wall downstairs and a tile hung solid wall upstairs.

It's difficult and expensive to heat, a classic example of an old home that does not meet the comfort, energy and environmental requirements of our age. Carol and Stewart have been carrying out a long-term renovation to make things better, for their own comfort and to follow their environmental beliefs. It's a slow process because some of the changes are complicated and expensive but they're determined to do what they can.

Insulation

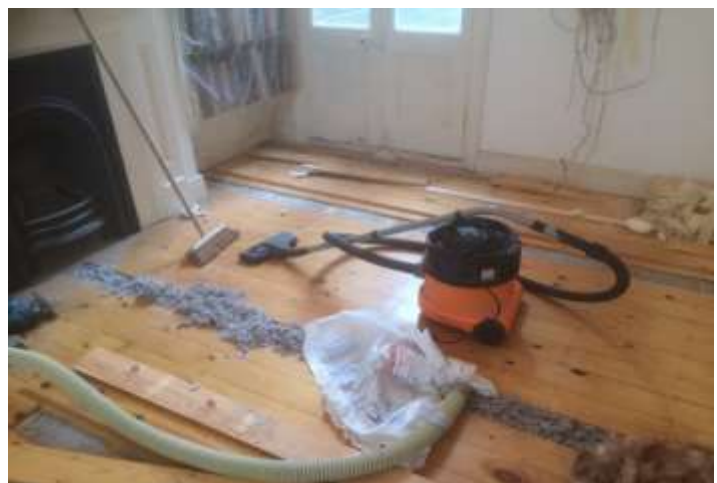
When they arrived in the house in 1984 there was next to no insulation and only single glazing throughout. Over time they have replaced all the glazing with wooden double glazing units, in some cases twice, when windows fitted in 1991 failed. They have made a conscious decision to avoid PVC windows.

Because the upstairs has essentially a hard to insulate single skin, Carol and Stewart have taken the decision to more-or-less turn the heating off upstairs. They have separated upstairs and downstairs with a thick stair curtain in the cooler months, a simple but effective measure to keep the heat where it is needed. The downstairs cavity wall is insulated with a fill of plastic beads.

This has been complimented with extensive cellulose under-floorboard insulation fitted by Open Eco Home sponsors Devana using an easy to install blow-in technique called Retrovive (see picture (from another installation)). Carol says this has made the most difference to comfort levels in the house as it has completely removed below-foot air draughts. Previously there was an 18-inch air gap between the suspended wooden floor and the earth beneath. The insulation took a day to install and required the lifting of intermittent floorboards rather than the whole floor.

Heating

The original night storage heaters were taken out and replaced by mains gas central heating some time ago. Carol says the main reduction in their gas consumption since that installation has come about by replacing the inefficient gas boiler that originally powered it with a Viessmann.



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High Street, CB3 0QA – 2017

Open Eco Homes is a Cambridge Carbon Footprint project. Charity number 1127376



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	High Street (6-7 bed) post renovation p.a.	High Street (6-7 bed) pre renovation p.a.	Average 4+ bed p.a.
Gas (incl. heating)	26,500kWh 110 kWh m ²	35,200 kWh 146 kWh m ²	21,120kwh

Renewable Energy

A solar PV array provides roughly 75% of all electricity with the rest imported from the National Grid. There output is slightly below what was predicted but this is partly due to unavoidable shading. In the previous two years about 3100 kWh of electricity have been produced. Unusually, each panel has its own inverter. Some of the electricity is used to charge an electric car, which is shared with their daughter and family next door.

Other measures

Before mains water was installed in 1960 a bore hole provided all the drinking water for the house. Now it provides water for gardening and a toilet cistern. The water is pumped into a holding tank and then distributed to various outlets from there. A conservatory fitted by Heritage Conservatories also provides some solar thermal pre-heat and insulation.

Performance

Generally performance has been as expected, with the underfloor insulation being particularly effective. In retrospect they also would have added solar water heating

Information

Much of the work was completed by builders and installers found in the local parish magazine, on the internet and through word of mouth. The PV was purchased via a door-to-door salesman which Carol and Steward were both unhappy about, but the installation was efficiently done.



Age, Type: 1920, Renovation, Detached

Wall type, Floor area: Cavity downstairs, tiled solid upstairs 240 sq m, not including loft, garage and conservatory.

Project timescale: ongoing

Number of people: 2 adults

Cost of improvements: £40,000

Key features

- Retrovive underfloor insulation
- Cavity wall insulation
- External and internal wall insulation
- Double glazing
- Low energy lightbulbs (CFL or LED) and appliances
- New boiler, heating zones and radiator controls
- 16 solar PV panels
- Well water for toilet cistern and garden
- Vegetable garden and composting

Key contacts and costs

Underfloor insulation: Devana Insulation, £4,000
www.devanainsulation.co.uk 01954 201834
<https://youtu.be/UINC3Ik5VDs>

Conservatory: Heritage Conservatories
www.heritageconservatories.com 01480 437774

Solar PV: CJ Electricals
www.cjsolar.co.uk 01473 276688

devana 
insulation

Retrovive
FLOOR

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