

People Exploring Low Energy Homes

## St Barnabas Road, CB1 2BY

**Howard and Fiona** – Howard says:

We moved to our very well preserved Victorian house about 10 years ago. We are passionate about not altering the appearance of the building internally or externally and we have not had the money nor wanted to suffer the disruption of major energy improvements carried out all at once.

Instead we made a wide range of incremental and often inexpensive and opportune improvements. Many of these have been carried out by ourselves and could easily be copied by others.

Although there are many further improvements planned our house is now comfortable and, considering its size, reasonably economical to run.



### Overview

Age, Type: **1897 Victorian, Semi-detached**

Wall type, Floor area: **Solid brick, 290 sq m**

Timescale of project: **10 yrs ongoing**

Cost of measures: **£10,000**

### Energy usage – 2 adults

After: **17 kWh** per sq m pa electricity  
**96 kWh** per sq m pa gas  
**600 kg** pa logs for woodburner

Before: A lot more - figures not available

### Key features

- + insulation: loft, roof space voids, underfloor, exterior walls internally, behind radiators
- + windows, various approaches:  
sealed using V-seal draught strip (also doors), secondary glazed either internally or externally, double glazed using original sashes, completely new double glazed sash windows
- + doors: sealed using V-seal draught strip
- + chimneys: sealed
- + condensing boiler, very high specification
- + weather compensating controls
- + heating controls: four independent zones
- + woodburner
- + lean to conservatory: passive solar gain
- + water: low flush toilets (bricks interim), water butts
- + architectural salvage, reused materials throughout

Our motivation to conserve and recycle has been a life-long passion. I was Involved with Friends of the Earth as a student and I have always been in tune with the environment and ecology both in my immediate environment and globally. For my MSc thesis I studied woodland conservation and became a trees advisory officer in Suffolk as my first job.

### Low Energy Measures

Most effective: Simply **closing the flue dampers** to all 10 fireplaces or **placing offcuts of Celotex** in the flues where they did not exist, and **behind radiators on exterior walls** was an early, obvious and low cost first step to **reducing heat loss**.

In the attic, **insulating the loft** and the **triangular voids in the roof space** was another early priority.

Installing a **new very high specification boiler** and **programmable controls to four independent zones** was an important but expensive next step.

This happened about the same time as refitting a bathroom with **internal wall insulation** which quickly demonstrated just how effective this is.

In our sitting room **underfloor insulation** has recently transformed a cold draughty room.

Our hall and stairwell were similarly very draughty but **external secondary glazing** of the large leaded window on the landing has addressed the problem **inexpensively and without visual impact**.

Lastly, our **superb woodburner** means that our kitchen/living room is always cosy of an evening, which means we can **maintain a lower overall temperature** elsewhere.

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## Future Plans

**Roof insulation** when re-roofing takes place.

**Solid wall insulation** in the kitchen/living room, and **floor insulation** to the one remaining ground floor room with a suspended floor.

A few more **secondary glazing units** where inconspicuous, and thorough **draught proofing** of the remaining original sash window.

## Professional Contacts

We did it all ourselves with **technical advice** from our son who is an engineer and trained in the field of **energy conservation in buildings**, so no professional contacts.

## Products

### Insulation

**Exterior walls internally, loft, between and below ground floor joists:** Celotex  
[www.celotex.co.uk](http://www.celotex.co.uk)

**Other floors:** fibreglass and Rockwool  
[www.rockwool.co.uk](http://www.rockwool.co.uk)

**Underfloor, sitting room:** timber floorboards carefully lifted and relaid over 85mm of Celotex FR5000 using UNI TAPE universal paper-based adhesive tape to air seal all joints

**Loft:** mostly at least 300mm glass fibre

**Radiators:** 12 mm Celotex behind exterior wall radiators.

## Windows and doors

**Windows:** a combination of approaches.

**New sashes:** 20mm low 'e' argon fill double glazed units in Victorian style sliding sash replacement windows to kitchen/living room.

**Secondary glazing:** 2 mm acrylic and magnetic strip either externally or internally.

**Doors:** draught V-seal DIY strip also used on original sash windows.

## Heating system

**Heating controls:** timer and thermostatic radiator valves 4 zones independently controlled.

**Condensing boiler:** Veissman high spec boiler chosen for efficiency and quiet running.

**Woodburner:** Morso 6140.

**Passive solar gain:** double glazed period style conservatory also helps to insulate large area of external solid 9 inch wall.

## Lighting

We have a few **compact fluorescent bulbs** but mostly we hate them so we tend to use **low voltage halogen fittings with 20w bulbs** and make sure we only have them on when and where we need them.

## Water

**Water butts** for garden.

**Toilets:** low flush, bricks as interim measure in old large capacity cisterns until they are replaced.