

Melbourne Place, CB1 1EQ

David and Tina – David says:

We have lived in our home for 40 years and it was in need of renovation. Tina wanted to change the design to maximise ground floor living and allow in more sunlight, while I saw it as my last chance to make it future proof – in other words as low energy as possible for a listed house.

As an architect by training, low energy issues have been a long term concern. For example, in the '70's I designed and built a house with a whole-house heat recovery system – it was highly unusual in those days and it's still working well.

As well as more sunlight, we wanted a kitchen with a view (not buried in the basement) and easy access to the garden – that was important because Tina is a keen gardener and we love making use of it.



This required significant internal remodelling and also a new sunroom on the south side, as part of both the re-organised living spaces and the energy-efficiency upgrade.

Overview

Age, Type: **1840, Victorian listed, Terraced**

Wall type, Floor area: **Solid brick, 149 sq m**

Project timescale: **4 yrs, ongoing**

Cost of measures: **As yet unknown**

Energy usage – 2 adults

Not yet available

Key features

- + insulation: exterior walls internally, loft, floors
- + windows: double-glazing throughout, inc. sash
- + air-sealed windows, doors, letterbox
- + air source heat pump
- + underfloor heating
- + passive solar gain: south facing windows
- + solar photovoltaic panels
- + rainwater harvesting for toilets, clothes washing
- + high efficiency appliances, induction hob
- + radiators: thermostatic valves, reflective panels
- + lighting: LED lamps
- + water: aerating taps, low flush WCs & Toto washlet
- + floors: wood, tiles
- + re-used bricks, FSC timber, lead substitute flashing
- + insulated internal blinds (still to come)

Low Energy Measures

To start with, the 'envelope' of the house was improved - with **insulated plasterboard** added internally to the solid exterior walls (**loft insulation** had been added earlier). Extra-thin replacement **double-glazing** for the sash windows was installed by a local joiner, together with draught stripping.

The **underfloor heating** runs off an **air-source heat pump**, and this is topped up in winter by a wood-burner. The sunroom gets **passive solar gain** and **solar photovoltaic panels** have now been installed on the roofs of the main house and the reconstructed garage.

The house has **rainwater harvesting** – two 500L tanks in the basement supply the **low-flush toilets**, and **aerating shower heads** are fitted.

We use **energy efficient appliances** including an **induction hob** and 'A' rated **fridge freezer**.

There are lots of **6W LED GU10 recessed lamps** (and spotlights) and **compact fluorescents**, a **letterbox draught excluder**, and **radiator foil** where needed (in the basement).

It was important to consider the sustainability of the materials – so the project **re-used bricks**, and **FSC timber** as much as possible. The flashing is done with a **lead substitute material**.

Floors are either **wood** (ash) or **travertine tiles**.

Recent work & future plans

This year we completed Stage 3: a new pitched roof with **solar photovoltaic panels** for the garage, plus more solar PV panels on the main house roof.

To come: **solar thermal hot water** and heat-saving **insulated internal blinds** beneath the sloping roof glazing and **insulated curtains** in sunroom.

Professional Contacts

Architectural design: David Crowther

Structural Engineer: Philip Cooper
philip.cooper@carltd.com

Builder: John Curran Building Co Ltd
info@johncurran.co.uk 07889 8151846

Electrician: Geoff Peters Electrical
www.geoffpeterselectrical.co.uk

Plumber: Mark Popper at Entire Group Ltd
www.entiregroup.co.uk

Heating services (ASHP & u/floor heating):
 Evergreen Ventures www.evergreenventuresltd.co.uk

Joiner: Oliver Heywood
Oliverheywood@btinternet.com 0771 7833436

Products

Insulation

Insulated plasterboard (external walls): Gyproc Thermaline Plus 27mm www.british-gypsum.com

Insulating plaster (basement): Wall Reform
www.walltransform.co.uk

Damp-proofing system (basement): Newton Newlath 2000 www.newton-membranes.co.uk

Fire resistant board (basement & cellar ceilings):
 Euroform Versapanel www.euroform.co.uk

Windows and doors

Timber sliding doors: Drewexim www.drewexim.pl

Roof lights: Fakro www.fakro.co.uk and The Standard Patent Glazing Co (sunroom & garage) www.patent-glazing.com

Sash window glazing: Slimlite thin double-glazing units (10.4mm total) www.slimliteglass.co.uk

Heat

Air Source Heat Pump: for underfloor heating and domestic hot water, Daikin Altherma 'Split Inverter'
www.daikinheating.co.uk

Basement skirting heating: Thermaskirt
www.thermaskirt.com

Woodburner: Scan inset room heater www.scan.dk



Light

Ceiling track lighting: "Nada" 240v track with GU10 spotlights & 6W LED lamps: QVS www.qvsdirect.com

Floors

New floor: Hanson Jetfloor www.hanson.com/uk
 Inverted conc T-beams with expanded polystyrene blocks as permanent shuttering for structural screed.

Solid wood: Junckers 20.5mm single plank Ash boards
www.junckers.co.uk

Stone tiles: Travertine, Fired Earth www.firedearth.com

Paint

Doors & windows (gloss): Auro www.auro.co.uk

External stone & brickwork: Keim breathable paint
www.keimpaints.co.uk

Internal plasterwork: B&Q Low-VOC Ivory emulsion

Water

Rainwater tank/pump supplier (and much advice): Neil at www.rainwater-harvesting.biz 0871 200 2082

Attic header tank: for low water toilet cisterns and washing machine www.rainharvesting.co.uk

Toto Washlet GL toilet (which drastically reduces the need for toilet paper): Toto Europe www.gb.toto.com
 0207 831 7544

Shower head: Nordic Eco shower
www.nordicecoshower.co.uk