

Chesterton Road, CB4 1DA

Nicola and Arthur:

'We moved into our three-storey Victorian house in 1997. It's an excellent location and a good size and shape for us. However we rapidly discovered it was cold and draughty and cost a fortune to heat.

Ten years later, having replaced all the windows with modern glazing and also the lounge and dining room fireplaces, the coldest part of the house was the enormous old shopfront window.

It wasn't practical, or particularly desirable, to keep it, so we commissioned an architect to design something more cosy.'



Overview

Property age & type: 1896, Victorian detached

Wall type: Solid brick

Floor area: 230 m²

Cost of retrofit: £250k

Occupants: 2 adults

	Energy kWh/m ² /yr		Carbon kgCO ₂ /yr	
	Elec	Gas	/m ²	/person
Before	17.4	141	33.7	3879
After	15	65.5	18.7	2154

Key features

Insulation

- Internal and external walls, floors, roof
- Insulated internal shutters

Glazing

- Double-glazing

Heating/energy

- Solar thermal
- Solar PV
- Heat recovery ventilation

Lighting

- Roof windows
- Light pipe

Low Energy Measures

Insulation

In 2009 we replaced the shopfront with a modern two-storey bay window with a glass dormer added above. We have since insulated the 'envelope' of the house with wall, floor and loft insulation. Internal wall insulation is now installed in the new bay window and dining room, rear sitting room, bedrooms and bathroom. There's external wall insulation around the kitchen, including the roof.

Glazing

We installed new roof windows for daylighting and a lightpipe to help light the back of the library. The house is double-glazed throughout

Heating/energy

The renovation included adding two new shower rooms. A new condensing boiler was fitted with weather compensating controls. Solar thermal panels provide hot water and solar PV an electricity supply. Heat recovery ventilation is installed in the renovated rooms

Performance

Our house is now warmer and uses considerably less energy – and will hopefully retain its value better than it would have done.



People Exploring Low Energy Homes



Professional Contacts

Architect: AC Architects Cambridge Ltd
www.acarchitects.com

Builder: Richard Dixon & Son
www.rdbuilders.com

Products and Costs

Insulation

Internal & external wall, loft and ground floor insulation:
Celotex www.celotex.co.uk

Other floors insulation: Rockwool
www.rockwool.co.uk

Insulated shutters: Custom-made for bay window
by Richard Dixon www.rwdbuilders.com

Windows

Dormer and bay windows: Custom-made by
Beaufort Secure Design
www.blyweertbeaufort.com

Glass: Dormer, bay, and new shower room
window with integral venetian blind N & C glass
www.nandcglass.co.uk

Roof and kitchen: Velux www.velux.co.uk

Lightpipe: Monodraught SunPipe
www.monodraught.com

Lighting

In the library – EXERGI LEDs www.exergi.co.uk

Heating

Heat recovery system: ADM Systems
www.admsystems.co.uk

Condensing boiler: Vaillant Ecotec-plus 624

Solar thermal hot water tubes: Thermomax,
Solarworks www.solarworks.co.uk

Solar PV system: 1.665 kW system £7,900 9 x
Powerglaz 185W solar panels and 3 Mastervolt
Soladin Inverters - Midsummer Energy
www.midsummerenergy.co.uk