



People Exploring Low Energy Homes

## Silverwood Close, CB1 3HA

Patrick O'Donohoe:

Patrick moved into his 1930s end-of-terrace home in 2001. He had always been interested in eco renovations but he has become more aware about it through communications with Transition Cambridge. The main reasons which spurred him on were that his house was very cold during the winter, even with the boiler running full blast; he also needed more space but wanted to add this without increasing the carbon emissions.



### Overview

Age, Type: **Built in 1930's end of terrace.**  
 Wall type: **Original solid wall, 72m<sup>2</sup>**  
**Extension: insulated cavity, 18m<sup>2</sup>**  
 Project timescale: 7 months  
 Cost of build: **£106,000**

	Energy kWh/m <sup>2</sup> /yr		Carbon kgCO <sub>2</sub> /yr		1 people
	Elec	Gas	/m <sup>2</sup>	/person	
<b>Before</b>	<b>1500</b>	<b>7350</b>	<b>22.4</b>	<b>2020</b>	
<b>After</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	

### Key features

- External insulation
- Cavity wall insulation in extension
- Roof insulation in extension
- Pre-existing double glazing
- Radiator reflectors
- Loft insulation
- Low energy bulbs
- Condensing boiler
- AAA rated small fridge
- Underfloor heating
- Solar thermal panel
- MVHR (Mechanical ventilation heat recovery)

### Low Energy Measures

**Insulation:** The house has now been fitted with loft insulation and both cavity and external wall insulation for the original solid wall and cavity wall extension.

**Heating:** He has installed underfloor heating in his home along with a condensing boiler and a solar thermal panel to ensure that the heat he needs is available where and when he needs it. Radiator reflectors have also been placed around the property as a cost effective way to redirect the heat back into the room. Another installation is the MVHR (mechanical ventilation heat recovery) system of which there are two individual installations which help to keep the air warm inside two rooms. He also has a rainwater harvesting system.

**Appliances, lighting and water:** Low energy light bulbs have now been placed throughout the property along with the use of AAA rated small fridge.





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## Performance

All of these changes appear to be working however it is too early to say for sure what the difference is, although it has been noticed. The solar thermal is the most obvious contributor which has reduced his gas consumption since being installed.



## Future Plans

Thinking forward, Patrick would like to have internal insulation on the front wall which is the only wall left untouched and to have underfloor heating installed throughout the other rooms.

## Professional Contacts

Architect:

AC Architects  
01223 576 315  
[www.acarchitects.com](http://www.acarchitects.com)

Builder:

Dixon & Son  
01353 860062  
rwdbuild@aol.com

Structural engineer:

Andrew Firebrace Partnership Ltd  
[www.afpconsult.co.uk](http://www.afpconsult.co.uk)

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## Products and Costs

Rain water harvesting:

Rainwater Harvesting Ltd  
[www.rainwaterharvesting.co.uk](http://www.rainwaterharvesting.co.uk)

MHRV:

Vent Axia  
[www.vent-axia.com](http://www.vent-axia.com)

Insulation

Celotex  
[www.celotex.co.uk](http://www.celotex.co.uk)

Render on external insulation

Parex Ltd  
[www.parex.co.uk](http://www.parex.co.uk)