

Cotswold stone house Birdlip

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connecting with local tradespeople

Case study 25



£1,160

Saving
on fuel bills

21%

Reduction
in carbon
emissions

Measures installed	Total cost	Annual CO ₂ saving (tonnes)	Annual fuel bill saving
Loft insulation top-up	£149	0.64	£126
Internal wall insulation	£5,707	2.17	£427
Flat ceiling insulation	£3,805	1.81	£355
Double glazing	£13,534	1.28	£252
Total package	£23,195	5.90	£1,160

The home

This home is a detached stone built house that was formed from three separate cottages originally built over a hundred years ago. Although it is a period property with many historic features, it is neither a listed building nor within a conservation area.

Heated with an oil central heating system, the energy consumption and fuel costs were high. At the time of the Target 2050 survey there was little insulation within the loft area, no wall insulation and all the windows were single glazed. The owners were therefore keen to investigate ways in which they could improve the energy efficiency of the home and to make it a more comfortable place to live.

What they did

The Target 2050 survey and report highlighted a number of improvements that could be made to the property. The family was aware that a number of the windows needed to be replaced, though the internal wall insulation work that was recommended was something that had not previously occurred to them as a possibility. On completion of the new double glazed windows, internal wall insulation was fitted in one of the main ground floor living rooms. This was complemented by ceiling insulation to this single storey area, and topping up the loft insulation in the main loft space.

“Before the windows were replaced, it was difficult to keep the rooms warm in winter. Now they are comfortable, and we are no longer continually fetching logs for the fire.”



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Double glazing

The single glazed windows in the main living areas and bedrooms were something which the owners were keen to replace. Cartwright Windows from Mitcheldean were employed to install new double glazed, black aluminium casement units sympathetic to the historic character of the house. A total of 34 units in six windows were replaced at a total cost of around £13,500. The owners were extremely pleased with their new windows, both aesthetically and as a heat loss reducing measure. In December 2010, the family commented that they had noticed a real difference in how warm the house felt.

Insulation improvements

The first and most straightforward improvement made was to insulate the main loft area of the house. This was completed by a local company, BCL Insulation, and was eligible for an energy supplier subsidy to reduce the cost to £149. The owners then concentrated on other ways in which they could reduce heat loss from the fabric of the building.

One of the main ground floor living areas of the house was rarely used in the winter as the exposed walls and windows made the room difficult to heat. With the windows in this area now double glazed, quotations were received for the internal insulation of the walls. Domestic and General Insulation of Hereford were engaged to complete this work, installing 50mm phenolic foam insulation which was then covered over with plasterboard and completed with a plaster skim.

The survey had recommended that the ceiling should also be insulated. The attic space above the room was covered in floor boards in the 1920s with no insulation being added at that time to the gap between the ceiling and the boarding. As access to this attic area was difficult and there was no concern with loss of headroom within the living area, it was possible to insulate the ceiling in the same way as the walls. The cost of this work, which included the removal



New double glazed windows at rear of property

and reinstatement of skirting boards, picture rails and lighting amounted to just over £9,500. The improvements should now help to keep this room warmer, and make it a habitable area in the winter.

Next steps

The owners feel sure that further improvements can be made in the coming years, and would like to investigate a replacement boiler for the oil fired central heating and also consider a log burner in one of the main living rooms to provide a supplementary heat source .

Energy consumption	Total (kWh)	Per m ² floor area
Before improvement (2010)	98,597	349
After improvement (2011)	76,806	272
With all possible measures	53,489	189
UK average (2011)	19,800 ¹	217 ⁴

Running costs	Total	Per m ² floor area
Before improvement (2010)	£6,052	£21.42
After improvement (2011)	£4,892	£17.32
With all possible measures	£3,631	£12.85
UK average (2011)	£1,032 ³	£11.34 ⁴

¹Ofgem 2011

²English Housing Condition Survey 2011

CO ₂ emissions	Total (tonnes)	Kg per m ² floor area
Before improvement (2010)	28.27	100
After improvement (2011)	22.37	79
With all possible measures	14.85	53
UK average (2011)	6.00 ²	66 ⁴

Possible next steps	Annual CO ₂ saving (tonnes)	Annual fuel bill saving
Replacement boiler	0.78	£179
Log burner	2.34	£165
Total	3.12	£344

³Ofgem 2011

⁴Based on 91m² from English Housing Condition Survey 2011