19th Century Regency Style Home Painswick Road, Cheltenham





2015

NUMBER OF BEDROOMS: 4



CONSTRUCTION:

Regency solid brick construction

KEY FEATURES:

Beautiful regency style house within a conservation area of Cheltenham with innovative internal wall insulation, double glazing, solar PV and LED lighting

Measures installed

Internal wall insulation
Double glazing and window shutters
Condensing boiler and heating controls
Solar photovoltaics (1.57kWp system)
Low energy and LED lighting

The home & occupants

This home is a 4 bed end terrace Regency style house located within a conservation area of Cheltenham. Built in 1840 with thick solid brick walls, it was extended very soon after at the gable end to create an additional 3 storey area with a wall that curves from the front to the new gable end. This wall is much thinner than the original walls making this part of the home colder than the rest of the house. When the current owners moved in they found that the house was very energy inefficient generally with an old heating system, single glazed windows and a large number of energy hungry halogen down lighters.

"Changing the boiler and adding double glazing have made the biggest differences"

Carbon savings and potential benefits

Improved thermal comfort and heat retention Elimination of unwanted draughts Reduced energy bills Lifestyle changes to benefit from free electricity and Feed in Tariff payments Reduced electricity bills

What they did

With a keen interest in the environment, and a determination to live more frugally in regard to energy, the owners took on a number of home improvements that they hoped would improve the energy performance of their home as well as making it a warmer and more comfortable place to live.



Curved insulated wall featuring a roll of the insulating material

"It is fun setting aims, however modest, and it is satisying to see our bills go down a 30 to 40% drop from the estimates when we moved in"



Glazing solutions

The biggest investment made by far was to replace all but two of the original, draughty single glazed windows. As the house is not 'listed' this was something the owners were able to do. A listing status on the home would have required inspection of plans and permission from the local authority before work could proceed. New individual bespoke double glazed units were made and fitted that were sympathetic to the original windows, and in keeping with the conservation characteristics of the area. These not only made the house feel warmer but also reduced noise levels from outside. One of the two remaining windows, which was curved and so difficult to replace, had thermal blinds fitted. The other window had shutters installed. These improvements help to keep the warmth in during the colder months.

Improving the heating

The old inefficient heating system was unable to heat the house sufficiently so a new condensing boiler with a programmer and thermostat was fitted alongside a wood burning stove sited in the main living room. Adding doors from the living room to the rest of the house was a huge help in allowing the owners to quickly heat the living room when necessary by keeping the doors closed, and then opening the doors to allow the heat to escape and heat the rest of the house when it became too warm!

The new boiler has 'paid for itself' within a few years the owners commented.

The householders had three distinct reasons for considering the addition of solar PV panels. Not only were they hoping to reduce their carbon footprint, but the investment should also reduce their energy bills and provide them with a good return on their money. A 1.57kWp system was installed in 2010 on their rear east, to south east facing roof space. With the benefit of a partial grant toward the cost and payments from the 'Feed In Tariff' scheme the owners are expecting a 12% return on their investment, typically earning over £500 a year in Feed in Tariffs and saving around £80 a year on their electricity bills by using the generated electricity. The owners also commented that cost should not be the only consideration when selecting your installer. They obtained three quotes and chose the installer they felt had the right knowledge and experience to best help them.

A solid wall insulation solution

As well as being thermally poor, the curving extension wall is on the north facing side of the house which made this part of the home very cold in winter. Even with a newly, well insulated loft, heating system and double glazing, improving this area was now a priority. External insulation was not possible due to planning constraints and typical solid board internal insulation not practical due to the curving wall and limited room in the kitchen.

'Warm a wall' which is a flexible, thermal and acoustic wall lining made from recycled polyurethane was chosen to insulate these north facing walls as an alternative. This was applied over the existing wall and then re-plastered and decorated. Although this was a time consuming and disruptive job, the rooms are 'noticeably better', bringing 'big benefits in comfort'.



Double glazing and window shutters

Low energy lighting

At the time of moving into the house there was not a single low energy lightbulb to be seen, even though there were 75 50watt down lighter halogen bulbs! The owners estimated that the lighting costs alone would amount to over £200 a year. They set about replacing the bulbs with traditional low energy versions and replacing all the downlighters with LED versions that use a fraction of the energy of halogens and last a lot longer. Even though most of this work is now complete and they are using far less electricity to light their home the owners highlighted that 'they only use what they need, and switch lights off after use!'

What difference has it all made?

From a starting point of having a cold, energy hungry house with a poor EPC rating of F, the owners have transformed the home, reducing energy costs and carbon emissions by up to a half and increasing the EPC rating to a C. This investment in cost of around £38,000 has provided them with a home that is 'much nicer to live in' as well as being much cheaper to run. There are still a few challenges, such as insulating the floor in the basement, but the owners now feel that they have got to the stage where they have done most of what they can and are enjoying the benefits.

If I could offer one piece of advice it would be...

"If possible make any big capital improvements before, or soon after you move in, to reduce the disruption that work such as glazing and internal insulation can make."