Extended Georgian Home
Cudnall Street, Charlton Kings

GREEN OPEN HOMES

2015

NUMBER OF BEDROOMS: 4

OCCUPANTS: 2

CONSTRUCTION:

A mix of stone and solid brick with cavity wall extension

KEY FEATURES:

A traditional Georgian home with external wall insulation, solar heated water and a lovely wildlife friendly garden

Measures installed	Carbon savings and potential benefits
External wall insulation	Improved thermal comfort and heat retention
Solar thermal water heating	Free hot water and Renewable Heat Incentive payments
Double glazing to original Georgian and metal-framed windows	Elimination of unwanted draughts
South facing conservatory	Reduction of draughts from previously exposed back door and provides solar gain

The home & occupants

This lovely detached Georgian home built in the 1790s in a Charlton Kings conservation area was extended in the 1950s to provide an additional two storeys at the side of the house. The original home extends over three floors with the basement area providing an additional bedroom and living area which has previously been used as a separate flat. The current owners have lived here for 3 years, and were initially attracted not only to the house, but to the large gardens that they were keen to develop. The first winter after moving in proved to be particularly cold, prompting the owners to look at how they could improve the warmth within the home. Being interested in sustainability, and with concerns about the environment and climate change, they were keen to ensure that any improvements took this into consideration.

"We have not had a very cold winter recently, but after the improvements we have made, the house has been very comfortable over the winter period"

"The solar gain from the new conservatory has made a considerable difference, particularly in the winter. When it is sunny we open the door into the conservatory and the warm air floods in. When it is cold we just keep it closed!"

Gardens at the back of the property

asiantaeth ynni SevernWye energy agency

cheltenham green doors
sharing knowledge about sustainable living

What they did

Reducing heat loss - glazing & insulation

That cold first winter in the house allowed the owners to understand where the problems were, and to think through what they could do to improve warmth and comfort in the home. The first priorities were to replace the old metal framed windows and solve the problem of cold air blowing into the house whenever they opened their exposed back door.

A local joinery company were employed to fit a bespoke conservatory that leads into the back garden. This not only provides them with additional space, but it has also helped to reduce heat loss. It also works well at generating solar gains that help to warm the connected living room, especially on cold but sunny winter days. When it is hot in the summer, they can simply keep the door from the living room to the conservatory shut!

The owners commented that the existing windows at the rear and sided of the house were 'old and horribly inefficient'. Although double glazed they were very old and the metal frames served only 'to conduct the cold into the house'. A local joiner constructed new timber framed double glazing to the owner's specification which solved this problem perfectly. A later project looked at the large, original single glazed front windows of the house. Although reluctant to lose the historic glazing, the cold could be felt coming through them. Secondary glazing was considered but found to be technically difficult due to the existing internal reveals. Eventually a *Slimlite* double glazed unit was found and the joiner fitted new windows for the ground floor and for the basement which required a curved pane to fit into the original opening. The owners commented that the new glazing had made 'a big difference in reducing the cold around the windows'.

At the same time as the rear and side windows were being replaced, the decision was taken to also externally insulate the gable and rear walls of the house, including the cavity wall extension area. It was decided not to insulate the front aspect of the home due to concerns about changes in appearance and because the large front windows reduced the exposed external wall area significantly anyway. The owners understood that the insulation work was best done at the same time as the window replacement as adding new windows later could compromise the seal of the insulation. They could also ensure that they were happy with the external finish of the windows which had to take into account the additional depth of the insulation to the wall. The joiner fitting the windows and the insulation company worked well together and the owners commented that the house felt very comfortable after all the work was completed.

Space and water heating solution

When the owners moved in, they found that although gas was available to the house, the radiators and water was heated using a coal fired Rayburn. They were reluctant to remove and waste this heating system that was working perfectly well, but were concerned about the environmental effects of burning coal. They therefore chose to switch to locally sourced wood fuel and to fit a solar thermal system to the small south facing roof area. This allows them to heat the vast majority of their water using the solar panels from April to October with occasional electric top up. When the Rayburn has been lit to provide space heating in the colder months this not only takes over the top up to the water heating but also offers a cooker, a set-up that works well for the owners.

Conservatory and modern double glazing at the back of the property

What are the next steps?

Ongoing re-decoration of the basement area of the house has highlighted the two ill-fitting and draughty single glazed external doors to the basement. Plans to replace these with modern thermally efficient doors are being considered as well as looking at a possible upgrade to the heating system. The basement is heated using three electric storage heaters and an electric immersion for the hot water. This could be replaced with a gas boiler, though as with the main house heating, the owners are investigating the value of this and the impact of removing the existing system before making a final decision.

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

"Don't do anything in too much of a hurry. Understand what works, what doesn't, and where the problems are in the home. You will then be able to plan what improvements need to be made"

This home is also participating in the 'open gardens' weekend. This lovely south facing garden aims to offer habitats for wildlife and people with flowering plants throughout the year. Other highlights include a wildlife pond, chickens, and an emphasis on the re-use of existing materials, and composting.