



Clevedon Green Open Homes

Case Study for 3 Glebe Road home of Sally and William King



1920s Semi-detached House, 3 bedrooms, 2 occupants,

Built in 1922 of rendered brick construction.

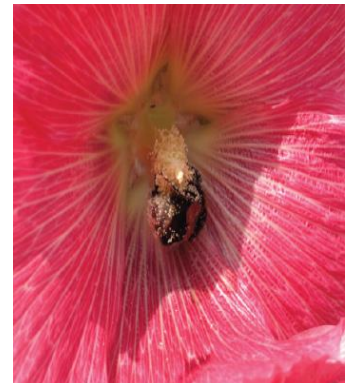
Rear garden approximately 70ft in length incorporating a bee friendly flower garden, fruit trees and vegetables grown using an organic no-dig system.

Key features – Solar photovoltaic cells, solar thermal water heating, Torrent heat store giving mains pressure hot water and wood burning stove, LED light bulbs, hallogen oven

Annual Energy Costs 2013/14:

Electricity £253

Gas £500



The Story

Sally and Will moved into their 1920s semi-detached house in October 2008. They planned to use the money left over from the sale of their previous house to create a property with as many ecological features as they could afford and to grow their own food in the larger than average garden.

The property already had **loft insulation** and **cavity wall insulation** and their first project was to replace the elderly and inefficient boiler with a modern **condensing gas boiler** to run the central heating system. This is used in tandem with a **solar thermal unit** on the roof to provide mains pressure hot water through a **Torrent heat store** located in the airing cupboard. Another project was the installation of a four kilowatt cast iron **wood burning stove** which is used principally in autumn and spring evenings to heat the living room without using the central heating. In October 2010 it was decided to have a small array of five **photovoltaic panels** installed to generate electricity which could either be used domestically or sold to the national grid. They have a wood store at the end of the garden and are fortunate in that nearly all the wood is given to them by friends keen on gardening and carpentry.

In 2013 Sally and Will added a **front porch** which, being south facing, provides a warm area between the front door and the outside and it has been very effective in eliminating draughts. Finally, earlier this year, replacement A-rated **double glazing** was installed.

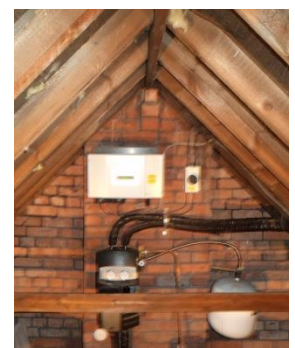
Energy Saving Measures

Solar PV Each panel generates 225 watts when operating under optimum conditions – something which happens rarely as it requires the sun to be at an elevation of about 60 degrees shining in a cloudless sky. However, since its installation the system has generated over 4000 kWh and the Feed-in Tariff (FIT) has averaged £503 per annum. The system cost £4370 to install in 2010 and benefits from the highest FIT.

Solar Thermal The solar thermal system provides virtually all the hot water during the summer months and it also pre-heats the water to some extent when the elevation of the sun is lower, so less gas is required to bring the water to optimum temperature. It is estimated that the annual saving would be 130 cubic metres of gas which equates to a reduction in carbon emissions of 295 kilogrammes, though there is no means of verifying this. The total cost of the installation was £4200.

Halogen Oven Using only 1300 watts this small and inexpensive oven uses approximately 75 per cent less energy than a conventional oven.

LED Light bulbs 5w gives an approximately equivalent light to a 40w incandescent bulb.



Both Sally and Will are keen gardeners and have added three compost bins and three water butts to try to use their own resources as far as possible. Sally's fruit and vegetables have saved money on grocery bills in the summer months as well as being tastier than most supermarket products. Will's domain is the flower garden, recognising that the ecological lifestyle is not just about practicalities but also includes an appreciation of the beauties of nature.

The garden is a place of recreation, providing a safe space for the couple's four grandchildren to romp around and, after they have left, a quiet place to enjoy a glass of wine with friends.

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