



# Clevedon Green Open Homes

## Case Study for 42 Dial Hill Road home of Wendy and David Clegg



1920s Detached house, 4 bedrooms, 2 occupants,  
Total Floor area: 215 Sq metres.

Built in 1928 of rendered brick construction - mortared using coal dust from South Wales. Early cavity walls - high ceilings. Raised wooden floors. Very exposed site, looking down Bristol Channel. Garden on several levels due to slope of site, rock close to surface.

**Key features – Solar photovoltaic cells, i-Boost, high level of insulation including cavity wall and under floor insulation, numerous water butts and compost bins for the productive garden.**

Annual Energy Costs: 2013/14

Approx £1000 for both Electricity and Gas.



### The Story

Wendy and David moved into this house nearly 25 years ago. It was cold and draughty with carpets that had black edges and lifted with the breeze!! Initial emphasis was on reducing draughts with double glazing, cavity wall insulation and, under floor insulation on ground floor. The house has long pipe runs, so pipe insulation was added under the floor as well as netting to hold up extra fleece insulation. Gaps between floor boards and skirting boards were also sealed. Extra thick underlay was laid downstairs, under carpets.

To reduce heating costs further and make the house comfortable, we recycled the old water tank jacket as added insulation to the loft hatch and side loft doors. The hot water tank is double insulated. Loft insulation has been increased wherever possible, as has the insulation around the dormer. We bought thick curtains with thermal linings for the winter and fitted reflector panels behind radiators.

We fitted thermostatic radiator valves in every room and draught excluders on external doors. All this helped reduce draughts and make the house feel warmer. However we also keep our heating costs down in winter by wearing thick pullovers and thick socks!!

## Energy Saving measures

Our largest project was the Photovoltaic panels installed by Solarsense in April 2011. We have 17 panels giving us a maximum output of 4kW. The forecast from Solarsense of 3366kW hrs p.a. has been met, averaged over the last 3 years.

2011-2012 = 3370 kW hrs

2012 -2013 = 3190 kW hrs

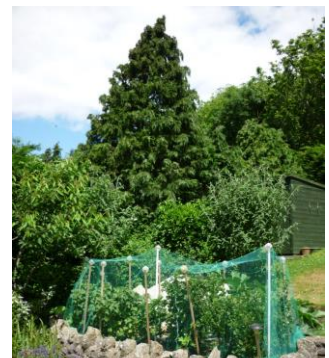
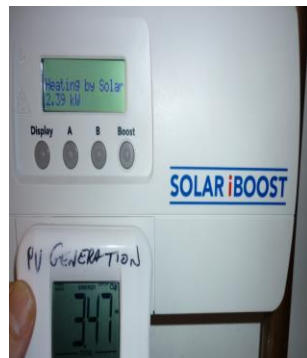
2013-2014= 3591 kW hrs

With the income from the Feed-in Tariff, plus savings from gas usage, we will cover the cost of PV installation in 7/8 years. We use as much of the electricity as we can during the day as it's produced. We monitor the electricity output and turn on the washing machine, dishwasher or other appliances accordingly. Having discussed the installation of an IMMERSUN power regulator with other members of the Transition Group, we also have just fitted a solar i-Boost power optimiser, which sends surplus solar power to the immersion heater. The cost was £300 and we expect it to payback in 3 years. We have bought replacement energy efficient appliances and a new boiler timer that allows us to operate heating and hot water separately.

## Future Plans

Re-do insulation under the floors as we redecorate downstairs. The fibreglass insulation will have settled and we have found a better way of doing it now!

Monitor new technology as the market increases and improved controls are developed for micro-generation installations to maximise the power as it is generated.



**Water Butts and Compost Bins** The garden has 3 compost bins for garden waste, kitchen vegetable matter and shredded paper to produce compost for free!! There are 9 water butts to catch rain water off the extensive roof. This provides valuable irrigation for the vegetable and fruit areas as the sloping site and limestone rock make this area very free draining. We have undertaken some terracing to increase the depth of soil in areas of the rear garden.

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