



Heatherley, Great Ayton



Information on this home

Heatherley was built in 1949 and is a detached, brick built, 2-storey property. We bought Heatherley in 2006 and were in the fortunate position of being able to stay in our previous house whilst renovation work was undertaken. The house is south west facing.

The previous owners had night storage heaters and a solid fuel stove. As we are off the gas grid our options were to get an oil boiler, pellet boiler, LPG or ground source heat pump. At the time domestic sized pellet boilers were not readily available. Therefore after some investigation we chose to go for a ground source heat pump.

We do not have energy figures from the previous occupants and we don't have an EPC. We use approx 9,000 kWh of electricity a year for cooking, heating, hot water, lighting and electrical appliances.

We generate approx 2,800 kWh a year from the PV panels.

Low-cost improvements

Cavity wall insulation.
Loft insulation – mixture of sheep's wool and newspaper.
Improved seals round double glazing units.
Draught proofing round loft hatches and skirting boards.
Pillow up open chimney.

Issues to consider:-

Roof Insulation:

Photo of kitchen/utility room roof shows difference in effectiveness of different types of roof insulation. Under roof covered in snow is Kingspan and under the roof where snow has melted is sheep's wool. Important to find out thermal values of insulation before making choice.



Cavity wall insulation: Had to have air vents fitted when cavity wall insulation installed. Not mentioned during survey visit and not given any choice over type of vents.

Open fireplace: Remember to take pillow out before lighting a fire!

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‘Big’ insulation works

Internal wall insulation in kitchen and utility room using sheep’s wool.

Year of installation:- 2006/7

Installer:- Ayton Building Services

Issues to consider:- Find out U value and thickness required before deciding which type of insulation to have.

Renewables: heat

Ground Source Heat Pump:- IVT-Bosch Greenline HT Plus C7 (7kW)
14 panels (2 arrays of 7) in ground at depth of 1.5m. Panels are each 2m by 1.5 m.

Supplier:- Ice Energy
www.iceenergy.co.uk/

Installed:- 2007

Installer:- GRS Electrical and Heating, Great Ayton

Costs:-

Heat pump and commissioning £7,500
Ground works £3,000
Installation £3,500

Financial support:-
Npower grant £1,500



Pictures show the ground source heat pump pipes, backfilling and the manifold.

Issues to Consider:-

RHI is now available instead of grant. The heating system runs at a lower temperature than standard central heating. Therefore, we chose to install oversized radiators to provide the heating rather than dig up a concrete floor to put in under-floor heating.

Need space outside for panels, slinky pipes or loop pipes and space inside for heat pump unit, which is about size of a large fridge freezer, plus some accompanying pipe work and a small expansion tank.

Due to amount of sand above panels the ground level rises and falls over the seasons depending on how much moisture there is underground.

We are pleased with the system which gives a very even heat and provides all our hot water as well.

We use a wood burning stove in the living room to provide comfort heating on wet days in spring/autumn, to avoid use of electric cassette when below -5 °C outside or emergency heating if electricity supply goes off.

Renewables:- electricity

Solar Photovoltaic

Year of installation:- 2011

Installer :- Access Renewables (no longer trading)

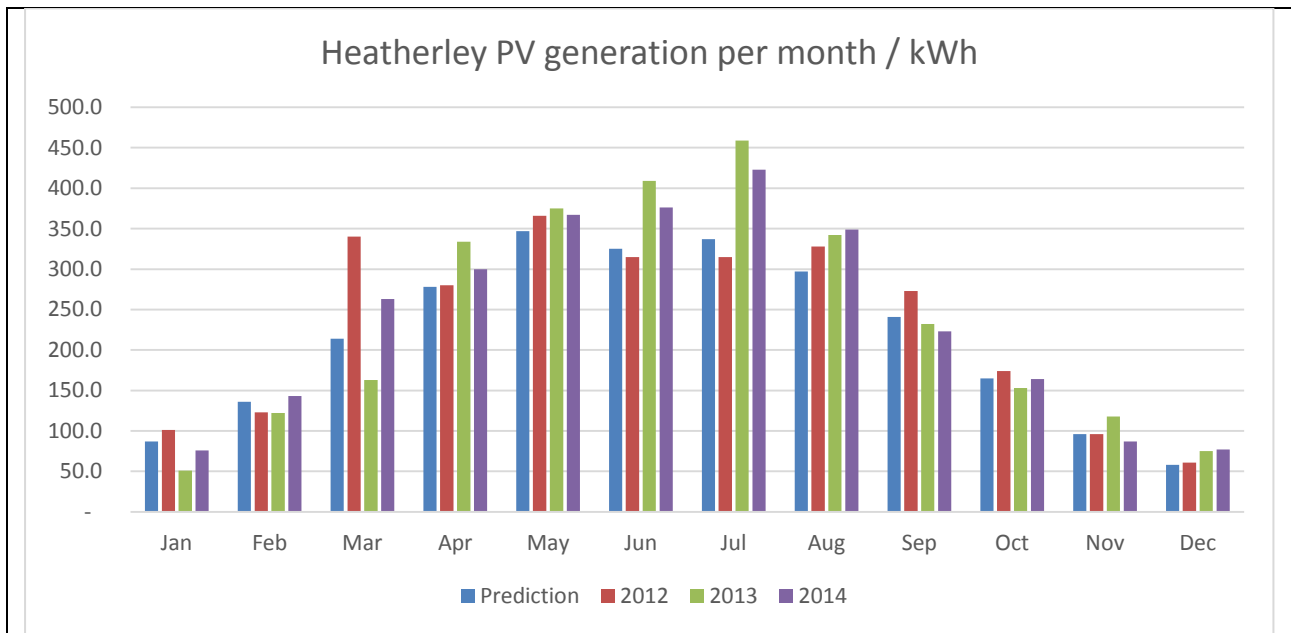
Manufacturer:- Sharp Electronics (UK) Ltd

Costs:- £12,600

Benefits: Feed-in Tariff payments for generation and electricity export

Technical details:- 14 × 245 W panels giving total peak output of 3.43 kW

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Issues to consider:-

The price of panels has come down a lot as has the FiT rate.

As shown in the chart above actual generation is likely to be more than predicted using the model available at <http://re.jrc.ec.europa.eu/pvgis/>

Sustainable building materials

See above re sheep's wool and newspaper insulation.

Recycled pine kitchen units

Aircrete breeze blocks for porch as use less concrete due to air bubbles, mixed with slag and concrete. These are more expensive to buy, but quicker to build with, so lower labour costs than standard breeze blocks.

Installer: Falkland Pine, Marske for kitchen units.

Lifestyle changes

Grow some fruit and vegetables

Cycle locally

Use train when can

Season own wood (and donated wood) for wood burning stove.

We buy our electricity from Good Energy www.goodenergy.co.uk which whilst more expensive than some other suppliers it is all produced through use of renewable resources.

Personal insights

We have now completed all major work on the property. In time we will probably replace the remaining UPVC double glazing that we still have when the existing units fail.

We are pleased with our ground source heat pump and PV panels, although half way through the excavation work in the garden for the heat pump pipes we wondered what we had let ourselves in for.

We felt the costs were reasonable given the price of oil central heating.

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