



**An Ecohome: 7 CLIFFE LANE,
HATHERSAGE S32 1DE**



South elevation showing solar panels on south facing roof

Background

A 1978 built four bedroomed detached house on a quarter acre plot on the edge of the village. We moved here in 1985 and have become increasingly motivated by the environmental impact as well as the economy of home improvements.

Double glazing 1995

Fitter/supplier: All windows and doors replaced by Everest good quality double glazed pvc units.

Notes: Labour-saving, greater comfort, energy saving. Expensive, but worth paying for high quality.

Wood-burning stove 2009

Model: 5kw Stovax Stockton wood-burning stove

Fitter/supplier John Norton & Son (Sheffield).

Use: We have the fire alight every evening in winter and often during the day.

Cost: including fitting and flu lining: £2000.

Running costs: All fuel is gathered locally from roadsides, neighbours and from our own garden. We store 2 tons of wood under cover which is sufficient for 2 years. Only cost is for chimney sweep/servicing: £100 pa.



Woodstack in car port by front door

Heat output: approx 2500kWh pa.

Notes.

Not expensive and good energy saving given chimney location in middle of house to minimise heat loss and maximise benefit.

1. Environmental impact controversial. Essential to use well seasoned, dry, wood and to burn at high temperature to minimise carbon and small particle emission.
2. Watch Govt. legislation regarding wood burning stoves which is changing.
3. We enjoy foraging our wood, but it would not be economical if you bought kiln dried wood.
4. Very pleasant to sit beside.
5. Works well alongside ASHP to boost ambient temperature in the main living area

Solar Panels 2010

Model: 20 x Romag PV panels producing 3.6kw

Fitter/supplier: Ecofirst, which shortly after went bust alongside many other suppliers

Cost: £14,000, recouped in under 7 years with £2,200 annual Feed-in-Tariff (FiT) payments

Notes:

1. Was excellent investment when FiT payments were high. May not be so good now.
2. Low maintenance, good energy saving.
3. Beware of dubious companies attempting to sell insurance and service.
4. There may be planning consent issues. Peak Park were most unhelpful with this.

Solar Boost (iBoost) installed. This enables any excess energy produced (after the batteries have been filled, if you have batteries) to be directed to an immersion heater in hot water cylinder for domestic use or ASHP.

Cost: around £200 which should pay for itself after 5-8 years.

Zero surface water drainage 2013

To reduce strain on the sewage system - and our water bill - we ensured that all rainfall downpipes lead to soak away rather than into sewers. An application for cancellation of the use of the public sewer for run-off water was made to Severn Trent Water, who make inspection.

Cost: We dug drainage ditches to a soak away where needed so no cost was involved.

Saving: £50 pa

Note: Only practical to do this in some cases. We found that the existing system already used some soak away drainage, so little extra work was needed.

Air Source Heat Pump (ASHP) 2020.

Replacing gas hob with Induction enabled us to disconnect from gas.



East elevation showing ASHP at 1st floor level

Model : Mitsubishi Ecodan PUHZ-W112VAA-BS

Fitter: Greener Living, Unit 3A, Ecclesfield Industrial Estate, Sheffield, South Yorkshire S35 9YR.

Poor installation and service. Not recommended

Cost. £15,000, but Ofgem payments amount to £12.5k over 7 years plus fuel saving of £127 pa over gas

CO2 emissions: Replacing gas with ASHP reduced CO2 emissions from 8.1 to 3.9 tonnes.

Notes: Temperature of water circulating in system is much lower than with gas. This is more ef-

ficient. (Efficiency can be gained with Gas ch by reducing boiler temp.) But efficiency much reduced in cold weather.

Further insulation 2021

Ceilings: Two ceilings directly onto roofs were insulated internally with 25mm Kingspan

Wall: A North facing wall insulated internally with 50mm Kingspan.

Batteries 2022

Model: 6.6kw made up of 2 x Growatt 3.3kw batteries (Growatt GBLK13331)

Cost: £6000 incl fitting.

Any electricity not immediately used in the house is stored in the batteries to be used when solar power is not sufficient/available. When the batteries are full, excess power is diverted to the hot water cylinder of the ASHP via the iBoost

Fitter: Solar Maintenance Solutions, 2 Mount Street, Manchester M2 5WQ

TOTAL Fuel Usage and Costs

We only use electricity and foraged wood which we season well.

For the last year to June 2023 our total electricity consumption was 3.9MWh. However, we only had batteries installed in Nov 2022 and expect that the consumption for the year up to June 2024 will be around 3.5MWh. Projected to cost around £1500.

For comparison, the average detached house consumes 4.153MWh of electricity and also gas. See:

<https://www.ovoenergy.com/guides/energy-guides/how-much-electricity-does-a-home-use>

Endnotes

1. The most effective form of economy and carbon reduction is to wear an extra layer of clothing!
2. We are fortunate to have had enough savings to invest in these innovations without paying interest on loans. Investment in energy saving always seems to save money as well as reduce carbon footprint.

Contact

We would be very happy to discuss any of the above with you if you are considering installing solar panels, Air Source Heat Pump, or Batteries.

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