

Eco-Homes, 36 Harpes Road, September 2026 Fact Sheet

Air conditioning for both cooling and warming

Installed in January 2026 by BHW Refrigeration and Air Conditioning Ltd, Bicester www.bhwoxford.co.uk. The Daikin unit in the living room is powered by the batteries using solar power. The cost was £1,548. It has been very efficient in both cooling in summer and warming in winter. Elaine has ordered another smaller unit to be added for the main bedroom, but due to demand there is a short delay in installation.

Solar Thermal for hot water

Installed by Riomay Ltd in June 2005. Evacuated tubes cost £3,950 including installation and free servicing, less £400 Clear Skies reimbursement (Government grant) www.clear-skies.org or telephone 08702 430 930. NB ask Oxford City Council for recommended firms, for example, Solar Systems Direct (local suppliers and installers). Since installation there has never been a need to switch on the gas boiler to heat water. In the winter when the sun is not so strong and the water is tepid, the twin coil hot water storage tank boosts the temperature of the water when the central heating is switched on. The feeling of having sun-heated water in the taps is terrific.

Solar Photovoltaic (PV) Panels

Solar PV Panels x 6 on south facing roof installed by JHS (company no longer in business) in November 2010, thereby benefiting from the 41.3p per unit feed in tariff reimbursement from Good Energy. Fronius IG PV Inverter installed on wall of upstairs landing.

Batteries: Solar PV

In January 2024, Joju Solar expanded the property's renewable portfolio by adding additional solar and battery storage. They installed a 3.01 kWp solar array, formed of 7x Canadian Solar 430W panels and an Enphase microinverter system. This supplies the house with on-site generated renewable energy. The excess power charges up the AC coupled 3kW Givenergy battery system, with a total storage capacity of 5.2kWh. The Givenergy battery system monitors the house consumption using a current transformer or CT clamp around the main incoming supply. This lets it know when to charge or discharge. This expansion to the system cost a total of £15,900 at 0% VAT, a tax exemption that now covers all solar and battery installations.

If you'd like to know more about the system we installed at Elaine's property, or if you're planning your own renewable energy project, we'd love to help. You can reach me directly at river.kit@joju.co.uk."

Loft Insulation

4 inches of insulation fibre had already been installed but in October 2006, it was increased to 10.5 inches (27 cm) and by adding Warmcel 100. This is a sustainable material made of recycled newspaper that has been treated to be fire and vermin proof. Cost for a roof space of 14 x 22 ft plus building a platform 4 x 8 ft for storage and access was £390 (23 bags @ £10 each, 2006 prices). As the insulation was not adequate, three loft rolls of 200 mm Super Top Up Knauf insulation were purchased, and with 3 hours of a handyman installing it, the total cost was £340 (September 2026).

Internal wall insulation in north facing bedroom

Front and side external walls insulated with Kingspan K17 3.25mm foil backed plasterboard. Wardrobes and window architraves moved forward into the room by only approximately 4cm. Cost £3,163.00 in 2013. Thermal imaging pre (Jan 2012) and post insulation (Jan 2013) showed a 10% rise in temperature of the internal walls on the exterior of the house.

Living room wall insulation

Sempatap Thermal - insulation for solid walls (Energy Savings Trust recommended) 10 mm <http://www.mgcltd.co.uk/> tel: 0208 3370731. One roll purchased with adhesive, sealant, edging strip was more than enough for front and side external single cell walls. Cost £187 per 12.5m roll + £25 delivery.

Draught proofing

All doors and windows draught proofed with draught excluder tape purchased from Wickes Building suppliers, Botley, Oxord. Cost £3.19 for 2x 5 metre rolls. On bedroom windows, before double glazing, used Stormguard seasonal double-glazing film £4.99 for 4m x 1.5m includes fixing tape (2014).

Wall Radiator Insulation Panels

Novitherm Panels are ridged to reflect heat from behind wet panel radiators into the room. Estimates of the improved effectiveness are about 20% or more. Available from Joulesave E.M.E.S. Ltd www.joulesave.co.uk tel 01572 768362. Cost for 10 Novitherm insulation panels plus one of roll double sided tape is £39 including delivery (2014).

Windows

Double-glazed sash windows installed in 2000 by Oxford Sash Windows. They were 4:24. One pane was toughened glass the other one was low E glass with Argon glass in between, with U-value of 1.6

Electric blind for deflecting heat

Fitted in 2020 on the outside of large extensions (south-facing) floor-to-ceiling windows. A record of which electricians fitted it, nor the manufacturer, was unfortunately not kept. The blind however, makes a significant cooling effect immediately when lowered.

Curtains

I have two full-length curtains where I have 'knocked-through' to make a larger front room space, which was and is still the trend. A curtain drawn across keeps either the heat in and the heat out. I also have a curtain across the front door.

Camp bed downstairs

During prolonged heatwaves, I sleep on a camp bed downstairs. It is often 10 degrees cooler on the downstairs floor.

Water efficiency

Toilet upstairs is an old-fashioned cistern has both a brick in it and two 'hippos' (plastic bags) that reduce the amount of water flushed. 'Hippos' are supplied by several companies,

including B&Q. Toilet downstairs has a smaller cistern with a dual flush. 3-minute egg timer in shower for limiting time in the shower as the Aussies do!

During the 2026 dry summer I have kept a pail beside the sink and have been using it to contain discarded washing up water etc. for the garden plants.

The garden water butt is a recycled olive oil container from Greece supplied by Bunkers Hill Garden Centre, north of Kidlington, tel: 01869 331219 cost £10 (without tap). A divertor for overflow to garden pond has been fitted.

Wood Burning Stove

Wood burning stoves are about 75-80% energy efficient (compared with a traditional open fire, when about 90% of the heat goes up the chimney. Stove purchased from Town and Country Fires (Pickering, Yorkshire) model: Little Thurlow, supplied by the Oxford Fireplace Centre, Botley, Oxford. www.oxford-fireplace-centre.com/ Cost £754 in 2007. Lining for the chimney conducted by Mark Winters of Winters Heating, Highworth, SN6 7HJ tel: 01793 764046, cost £550. However, since installation, strong evidence of the highly damaging harm to health of wood-particulate smoke pollution has been established, especially in children, the elderly and the sick. The wood burner is no longer used.

Kitchen Lighting

50 Watt halogen spotlights were fitted by the builders in 2005. As George Marshall, Co-founder of COIN said “halogen spotlights just guzzle electricity”. These were replaced in 2008 by 7 x 3 Watt Light Emitting Diodes (LED) bulbs purchased from The Light Bulb Company, UK Ltd, Bicester, tel: 01869 362222 www.thelightbulb.co.uk The Philips Master LED range (warm white, ie yellowish light not the cool blue) cost about £20+VAT each. For info contact Steve Cox tel 01483 293258 www.philips.co.uk.

In 2008, Eco-Street used their lighting calculator to **estimate carbon and financial savings** at 36 Harpes Road. Results were 0.4 tonnes of carbon emissions a year and 10.4 tonnes over the lifetime of the LED bulbs. Estimated savings are £54.29 per year in energy bills and £1,458 over the lifetime of the bulbs (which will be about 26 years or 45,000 hours life, compared with the now deleted incandescent light bulb life of 1,000 hours each). Savings of around £182 will be made by not having to keep purchasing replacement halogens (usual lifespan 6 – 12 months or 2-4,000 hours life). Info from www.ecostreet.co.uk
NB all electricity is supplied by **Good Energy** who guarantees that it comes from renewable sources.

Gas Worcester Greenstar Boiler

Fitted in 2015. This immediately increased the warmth in the radiators, and has cut carbon emissions.

Kitchen appliances

Fridge Freezer

Servis purchased in 2005 A-rated for energy efficiency (annual energy rating 316 kwh) More efficient models now available (AAA ratings)

Recycled Kitchen Units

The wooden fronted units are all 47 years old, supplied by Winchmore. They were re-polished when extension (of reclaimed bricks) was built.

Washing machine

Miele, will only wash at 40C by cold fill, needs to be replaced! A warm fill washing machine could use the solar heated water.

Dishwasher

Zanussi A rated, only used in daylight hours to use the electricity generated by the PV panels.

Kettle

Flat based therefore less water needed to boil one cup. Kettle on the gas hob would be even more energy efficient.

Bathroom

I have converted to using unbleached bamboo toilet paper (Naked Paper), made in a factory powered by wind, sun and natural biofuel. More expensive than a leading brand (£26.50 for 24 rolls) but feels better for the environment and no difference in quality.

Lifestyle choices

Since air travel is the most carbon-intense mode of travel, I have only taken three flights since 2018, but have enjoyed train travel to France, Romania and many parts of Scotland and Wales. I have a Toyota Yaris hybrid car. I have changed to being chiefly vegetarian but as yet am not vegan.

Garden

Elaine deliberately leaves her garden rather 'wild'. It has plenty of rough areas and leaf litter for insects, mammals and birds. The Royal Horticultural Society produces several documents on 'How to green your front garden', Front gardens and permeable paving and How to Green Your Grey Front Garden.

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