

Roberts Road, Salisbury

**1930s semi, with new extension under construction.
Mainly low cost DIY retrofitting.**



Key features

- Mechanical ventilation with heat recovery
- Solar thermal (hot water)
- Woodburner with back boiler
- Water harvesting
- Drylined walls

The Story

When Alan and Alison first saw their home three years ago, it was damp and neglected, and the walls were wet with condensation. Since it was off the gas network, the cost of heating with electric night storage heaters was high. For Alan, an experienced DIY-er with an engineering background, the challenge was to convert it to a comfortable low energy home himself at minimum cost. They moved in two years ago, and the construction of an extension as well as extensive retrofitting is now well under way. Low cost materials, such as the water storage tanks, have been found through internet research, and Alan has done most of the work himself. His main complaint? Having done all the work himself rather than employing an accredited installer, he is not eligible for government support such as the Renewable Heat Incentive. Alan and Alison are now looking forward to the work being completed, getting to grips with the garden and keeping chickens again.

The Home

Design and materials: This is a typical 1930s semi. The extension is built to standard building regulations, but faces South to make the most of heat from the sun.

Insulation: Cavity wall insulation has been installed, and the loft insulation topped up. External walls were drylined with plasterboard but it was decided not to use insulation on the walls, due to the loss of space.



Heating, ventilation and hot water: Hot water underfloor heating is being installed in the extension with electric underfloor heating in the new wetroom. A [thermal store](#) provides hot water and feeds the underfloor heating. It is heated by a woodburning stove with back boiler, complemented by the solar thermal hot water system on the roof (cost £1200 from [Contemporary Energy](#), self-installed). A [mechanical ventilation and heat recovery](#) (MHVR) system ([Fantronix](#)) was installed using the redundant chimneys for duct runs, and it is planned to modify the system with additional heating/cooling coils to totally remove the storage heating. Condensation is now a thing of the past. It would be possible to add additional heat sources at a later date, such as heat pumps.



Windows: New double glazed windows were installed by [Zenith](#).

Lighting, appliances and electricity generation: All lights are low energy, and are gradually being replaced with [LEDs](#). Electrical goods are also being replaced with low energy models. Solar PV was considered but not installed due to the cost and because if self-installed, it would not have been eligible for the Feed in Tariff (FIT).



Water management: Four 1000 litre tanks were bought for £50 each from ebay. These will be installed at the side of the house, then pumped up to a roof tank to flush the toilets. There are water butts in the garden, and a water meter has been installed.

Energy saving

It is too soon to give details of cost savings on energy bills, or results from the data loggers installed. However, the air quality is better, with more consistent temperatures, and the condensation has disappeared.

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