

Property Information Sheet



Name and Address

David and Sorrel Williams
46 Oakley St
Shrewsbury
SY3 7JY

Property Description

1930s 3-bed semi detached
Solid brick walls

What changes have you made to your home?

The house renovation is in progress, but the planned changes are: ground floors replaced with 100mm concrete above 250mm expanded polystyrene (EPS) insulation, 100mm wood fibre internal wall insulation on front wall, 120mm EPS external wall insulation applied to side and rear walls, 400mm cellulose insulation in loft, chimney flues sealed at base and filled with perlite, general airtightness improvements to target <2 air changes per hour at 50Pa, install mechanical ventilation with heat recovery (MVHR) system, underfloor heating system for half of downstairs, radiators sized for 40°C flow elsewhere, 5kW air source heat pump (ASHP) for heating, Sunamp heat battery for hot water powered by ASHP, 44mm triple glazed windows throughout, new front and rear composite doors, should meet AECB Retrofit Standard. Single storey extension at rear with 200mm raft slab on 250mm EPS insulation, 140mm block wall, 250mm EPS external wall insulation, 300mm cellulose insulation in roof, 44mm triple glazed windows and bifold door.

Why did you make these changes?

The aim is to have a comfortable home with minimal energy costs. We've been interested in low energy house building methods for around 20 years, so when we saw this house in need of updating in an ideal location within walking distance of town we decided to go for it.

What were the approximate costs?

£3.5k ground floor insulation (£1.8k EPS insulation from Roofing Outlet, London plus £1.7k labour and materials Shuker Building, Bayston Hill), £1.8k internal wall insulation (DIY, from Mike Wye, Devon), £10k external wall insulation for main house (Mr Smooth Plastering, Shrewsbury), £1.2k loft insulation (Firth Construction, Presteigne), £200 flue filling (DIY, from Dupre Minerals, Staffordshire), £700 airtightness materials (DIY, from Green Building Store, Huddersfield and PYC Group, Welshpool), £450 airtightness test (PYC Group, Welshpool), £5.5k MVHR system including design (DIY, from Green Building Store, Huddersfield), £900 underfloor heating system (DIY, from Wunda, Chepstow), £1.2k radiators (DIY, from Toolstation), £10k ASHP and Sunamp install (HeatCore, Cannock), £8k triple glazed windows for main house (Alpha Windows, Wrexham), £1.2k front and rear doors (DIY, from Eurocell, Shrewsbury).

As work is in progress, a lot of these figures are based on quotes.

What have been the approximate energy savings?

All the updates have been modelled using the Passive House Planning Package (PHPP) and are predicted to reduce the peak heating load to 2750W at -2°C, giving an estimated heating demand of 4600kWh per year



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What have been the effects on your home?

Although we are only part of the way through the work, the house is already much more comfortable. The biggest change has come from the improved airtightness and removing the suspended timber floors - there are no longer significant draughts on a windy day. Sealing all the holes in the party wall means that we can no longer smell when our neighbour is baking cakes!

Who undertook the work?

A lot of the work has been done by us, we were competent DIYers before starting but had never tackled a lot of this work before. Shuker Building, Bayston Hill are building the extension and have also supplied labour and expertise for installing the insulated ground floors. Windows were installed by Alpha Windows, Wrexham.

Would you recommend them?

I'd recommend all of the companies mentioned above

What else would you like to do? And why haven't you done them yet?

All measures we'd like to do are in the plan

Have you considered any measures but rejected them? Please give details of what & why.

Solar PV and solar thermal were both rejected due to a limited budget.

We considered trying to achieve the Passivhaus EnerPHit standard for retrofit but the more stringent requirement for energy use would have led to costly structural changes e.g. extending eaves to allow thicker external wall insulation and re-roofing to increase insulation thickness at the eaves.

External wall insulation on the front of the house was rejected because of the complications of working around the bay window and porch.

Do you have any further comments?

Doing a full house renovation like this is very disruptive. Lots of jobs can be tackled on a room-by-room basis, but big things like insulating the ground floors made the house uninhabitable.

Fitting a mechanical ventilation system into an existing house is difficult. The fan unit is large and needs to be easily accessible to change the filters. 100 and 125mm ducts take up a lot of space in the airing cupboard and loft.

Many specialist materials cannot be bought from local builders merchants (e.g. wood fibre insulation, lime plaster) so be prepared for long lead times and high delivery costs.

Many local trades don't like taking on work that is out of the ordinary; Shuker Building, Alpha Windows, Mr Smooth Plastering and HeatCore were all chosen because they understood what we wanted to achieve and were happy to help.

There are lots of inspiring renovations being discussed on internet forums, Instagram and Twitter.

Are there any access issues?

No downstairs toilet, uneven ground around extension works