

Property Information Sheet



Name and Address

Lauren and Edward John
16 de Quincey Fields
Upton Magna
SY4 4US

Property Description

2016 new build to Passivhaus standards

What materials were used in the construction of your home?

Insulated concrete floor slab cast over 225mm Kay-cel super plus insulation
Brick/block cavity walls with 300mm cavity filled with 3 layers of 100mm Dri-therm Batt 32 insulation – 3 layers of Knauf Polyfoam ECO Floorboard Standard' installed in cavity below ground level.
Traditional roof trusses with 700mm Loft roll 44 insulation installed at ceiling level.
UPVC Triple glazed, argon filled windows

No radiators or underfloor heating – only three heated towel rails upstairs (which we never use!)
4No. Vaillant Auro Therm VFK 145V solar thermal panels
16No. Panasonic Hybrid PV panels (4kWp) Excess power generated is diverted to a Akvatherm heat store for hot water use
Small Vaillant boiler as backup for hot water

Why did you make these choices?

In 2014, while we were looking to purchase a new house, we came across an opportunity to design and build a new two storey, detached property with a local housing developer.

From previous experience in the construction industry, we had gained some knowledge on improving the current building regs through enhanced material properties and construction details in relation to thermal performance.

Initially we considered heating the property using a ground source heat pump, however after receiving several high quotes we began researching the cost implications of improving the building envelope, and removing the need for heating at all. This is where we discovered the concept of Passivhaus and the project developed from there.

While the construction elements of the property were not considered 'traditional' for the Passivhaus concept, these were the construction methods that were familiar to the developer and therefore seemed to be the most logical way forward.

What were the approximate costs?

Developers Build cost - £180k including solar thermal and solar voltaic panels

What have been the approximate energy savings?

With the FIT tariff from our solar panels we currently pay nothing for electricity
Gas bills average at approx. £30 per month which is approx. 50% cheaper than a similar traditional property

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What have been the effects on your home, compared to traditional homes you have previously lived in?

We have noticed that the house maintains a more constant temperature throughout the year, and due to the MVHR system we have no issues with condensation or humidity.

Between March and September, we rarely use the MVHR as the windows (and doors) are almost always open to maintain a comfortable temperature. Potential overheating was flagged up in our PHPP analysis and may be something we need to look at in the future. In the winter on a cold, overcast morning when we have had little solar gain, we occasionally use a small electric heater for 5mins (or cook breakfast!) to bring the temperature back to a more comfortable temperature.

Who undertook the work?

Shropshire Homes Ltd

Doors & Window – Munster Joinery (UK) Ltd

Solar panels – Go Green Systems

MVHR – Green Building Store

Would you recommend them?

Yes – however due to the commercial implications SHL did not adopt the Passivhaus method of construction going forward

The Green Building Store provided an incredibly helpful consultation at the start of our project and proved a useful source of advice and competitive products throughout the project. Go Green systems were also very knowledgeable on their products and services.

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

We are considering solar shading to the south facing elevation of the property to reduce some of the solar gain in the summer as it can get quite warm. This is something we will hopefully get around to!

We would also like to carry out an additional air test now that we have been living here for 5 years to confirm whether there has been any reduction in the efficiency of the air tight envelope.

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

As noted above, we considered the use of ground source heat pumps however felt that the increased cost was better spent on improving the building elements

Do you have any further comments?

We found that project managing a more specialized build was time consuming as at the time we were unable to easily locate the knowledge and products/materials that we were looking for. This led to us creating our own specific details based on location, construction techniques and budget and we hadn't factored in the time it would take to do this.

We also still have slight issues with our thermal store/heating/hot water system as we were unable to locate anyone who could design the whole system. As a result, the combination of trades and products used don't always communicate with each other as effectively as they could!

It all proved to be worthwhile however, as overall the house performs as hoped.

Are there any access issues? Eg steep steps, no downstairs toilet.

N/A