

People exploring low energy homes

Mowbray Road

Bea

'I used to work in bioenergy and am acutely aware of how difficult it is to take carbon out of transport fuels, and how comparatively easy it is to lower the carbon footprint for buildings – hence I am keen to see low carbon buildings implemented in the UK.

We were also interested in building a PassivHaus because mechanical ventilation and heat recovery filters out pollen from incoming air, minimising the symptoms of hayfever.'



Overview

Date built: Plot purchased in 2012, completed in 2015
House type: Detached
Wall type: Timber frame and walls
Floor area: 160 m²
Cost of newbuild: Not for disclosure
Occupants: 2 adults, 1 child

Energy kWh/m ² /yr		Carbon kg CO ₂ /yr	
Elec	Gas	/m ²	/person
5784	none	18.6	991

Key features

Insulation

Construction to PassivHaus standard

Glazing

Triple- glazing to Passivhaus standard

Heating/energy

Mechanical ventilation heat recovery system

Lighting/appliances

LED lighting throughout, all appliances rated A or better

Water

Rainwater harvesting for garden and flushing toilets

Construction and materials

The main building material was wood for the frame and walls, with Warmcel (made from recycled newspapers) for the wall insulation. 300mm Earthwool (formaldehyde-free) was used for insulating the roof.



Performance

We're in the first year of occupancy, so dealing with snagging issues is still ongoing, for example with the mechanical heat recovery system (MVHR). There have been none with the insulation or rainwater collection. On reflection one thing we would have done differently is include renewable water heating.

When we first investigated the PassivHaus concept, we were not sure whether it would feel claustrophobic to live in a near-airtight

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building, and whether the mechanical ventilation would cause uncomfortable draughts. This is not at all the case; we have been able to resolve issues with noise levels from the MVHR, and so far the requirement for heating has been minimal.



What is your top energy-saving tip for householders?

Our tip is not to underestimate the carbon footprint of water usage; and to minimise use of drinking water where lower grade water will do. It's lovely to know we are not flushing the toilets with drinking water!

Future Plans

We plan to grow fruit and vegetables, and potentially add solar PV.

Professional Contacts

Project management: [Integrity Buildings Ltd](#)

Timber frame: [Anson Timberworks](#)

Joinery: Ashton Carpentry & Joinery email: info@ashton-joinery.net

Electrics: [Complete Electrical Solutions](#)

Products and Costs

Mechanical Ventilation & Heat Recovery: [NIBE](#)

Insulation (walls): [Warmcel](#)

Insulation (roof): [Earthwool](#)