

People Exploring Low Energy Homes

Rathmore Rd, CB1 7AD

William and Deborah

William and Deborah McVey's stunning four bedroom new-build has been built for sociability and low running costs. Constructed from their own design in the garden of their existing home by kit home specialists Fjordhus, the house is packed full of interesting features, designed to maximise comfort, beauty and functionality whilst minimising energy use.



Overview

Property age: December 2015
Type: Detached
Wall type: Factory made panel construction.
Floor area: 210m²

Cost of build: Approx. £450,000

Occupants: 2 adults

	Energy estimated kWh/m ² /yr		Carbon kgCO ₂ /yr	
	Elec	Gas	/m ²	/person
Before	n/a	n/a	n/a	n/a
After	14 kWh*	22kWh	n/a	n/a

* PV is estimated to produce 4,000 kWh of electricity, compared to 3,000 kWh use per year

Key features

Insulation and Glazing

- Cavity wall external
- Insulation between rooms
- Loft and ground floor underfloor
- Triple glazing with trickle vents

Heating/energy

- LED lighting (some sensor controlled)
- Under-floor heating with zoned controls
- Low energy appliances
- Gas boiler with magnetic filter
- Solar Water heating
- PV

Other features

- Rainwater harvesting
- Marmoleum and oak flooring
- Oak staircase

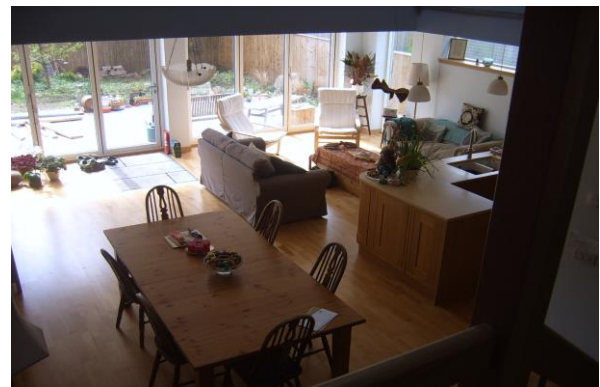
Building the right house

'We have lived in Rathmore Road for 35 years. Latterly it became our intention to build a house suitable for our changing life-style; and economical to run in our retirement. The inclusion of eco-friendly technology, materials and life-style were additional aims.

We had a garden large enough to accommodate a new house with the same footprint as our existing house. We wanted a house that was more open plan to accommodate large family/social gatherings.

We have researched many aspects of eco-homes over the last ten years; we have also stayed in many friend's houses in continental Europe – where modern building techniques and practices seem to have been ahead of the UK for some time.

Eventually we designed a house that we believed would be appropriate for our needs, incorporating as much 'new technology' as we could.'



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Choosing the build company

'We came across Fjordhus Construction Ltd at the National Home Improvements exhibition at Earls Court. On their (very modest size) stand they were showing a time-lapse video of a house being built in 7 days in the Outer Hebrides. We visited the office of Fjordhus in Scotland as well as three houses that they had already built – including the MD's own house. We also visited and were shown round the factory in Glasgow where the house was to be manufactured.'

Preparing the site

'With the help of our family, we had cleared the site of the vegetation and the old asbestos garage (using a specialist contractor); various trees were removed by our tree surgeon and the stumps ground-out.

The ground-works crew of two men from the Scottish Borders, prepared the ground and completed the foundations and all associated ground-works in the 5 weeks from 6 April 2015. They also installed the 3,000 litre rainwater harvesting tank in the back garden.'

Assembling the kit-house

'A series of flat-bed trucks brought the shrink-wrapped cassettes containing the house frames to the site each morning and afternoon in a planned sequence.

Typically there were two cassettes on each truck; each cassette weighed approximately 1-1.5 tonnes. The crane from Welch's lifted each cassette from the truck over the scaffolding or over the roof of our house onto the building site; this task took about 45 minutes each time.

The joiners unwrapped the cassette and the crane then lifted each section into place: external walls, flooring panels, any structural pieces and internal walls/partitions. Within six days the structure was complete.

We moved in to the completed house on 13 December 2015 – 23 weeks from the start of the house-build. We are extremely pleased with the outcome – the speed of the process, the quality of the finishes, the economical consequences of the design and the resulting comfort.'

Insulation, heating and renewable energy

Our design is close to Passivhaus standards of insulation and air tightness. We have a 7-zone under-floor heating system on the ground floor, a gas boiler and solar water heating and PV. Heating costs are estimated to be £1 per day and our PV should generate about one quarter more electricity than we use.



What would you have done differently?

'Built the house before now!'

What is your top energy-saving tip for householders?

'Decide everything you possibly can before you start work. Be clear and stick to the specifications. Do not defer decisions on, or applications for permissions, services, supplies. Most things take longer that you can ever imagine. Keep in regular contact with your contractors, professional advisors, suppliers. You are important to them but you may be one of many for them, while they are the only ones you have.'

Professional contacts

Fjordhus, Craig Richardson, MD
www.fjordhus.com

Stuart Davidson Architecture,
www.stuardavidsonarchitecture.co.uk

Products, advice and contractors

Much of the work was done by two carpenter/joiners and other contractors employed by Fjordhus (most came from the Scottish Borders). Most of the other suppliers were found through the National Home Improvements exhibition, the internet and Homebuilding and Renovating magazine.

Welch's crane hire www.welchscranehire.co.uk

Bi-fold doors from Kloeber of Huntingdon
www.kloeber.co.uk

Kitchen and bathroom from Wickes (fitted by Fjordhus joiners, electricians and plumbers).