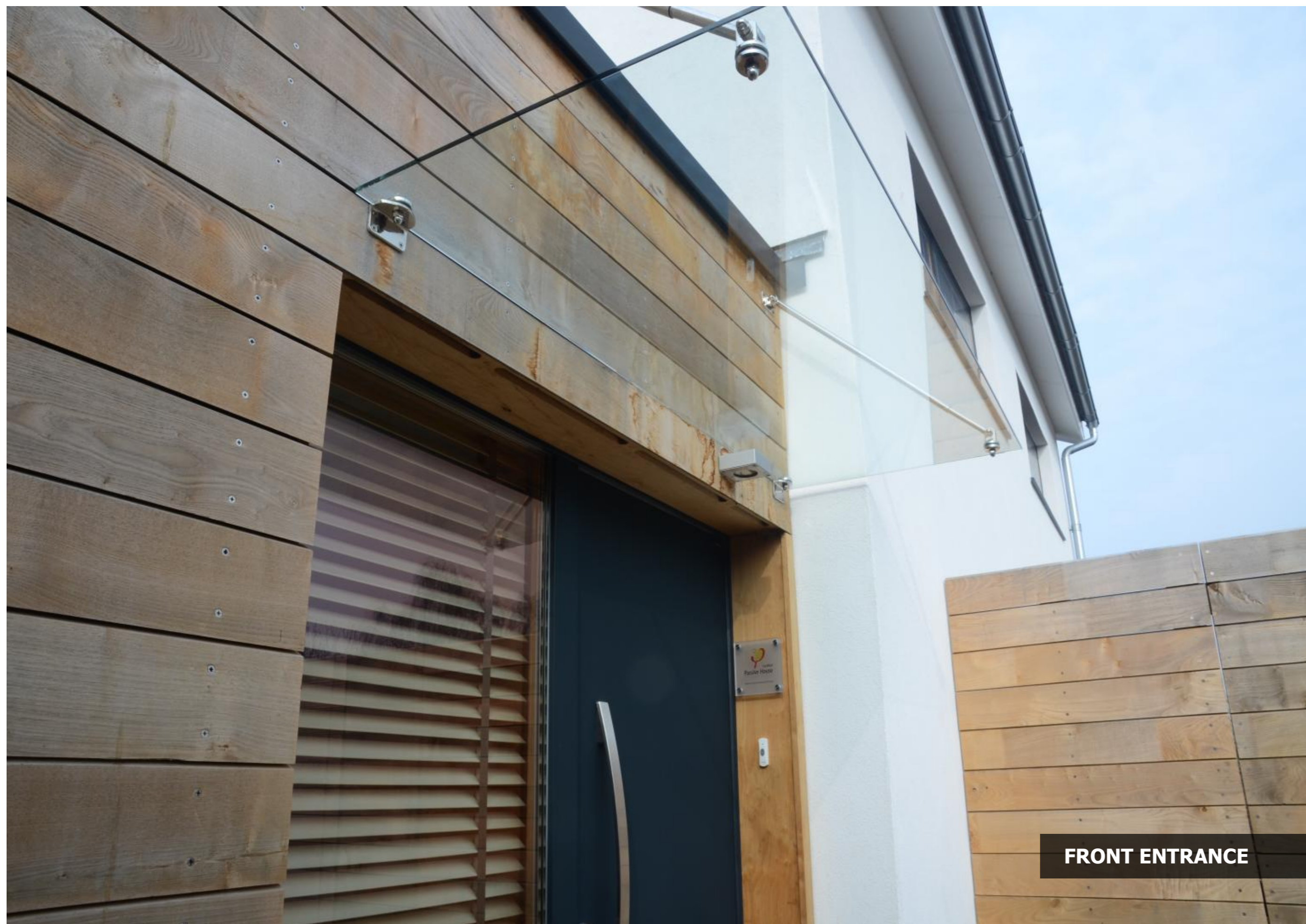


UK PASSIVHAUS AWARDS 2013

Totnes Passivhaus Passivhaus Homes Ltd



The Totnes Passivhaus was the third UK retrofit to be Passivhaus Certified. The project was challenging, including both masonry retrofit and new-build timber-frame elements, natural and high performance materials. The house forms part of a modernist housing estate and the Passivhaus requirements had to be met within very particular design constraints. It has proved a valuable learning resource, both for the team that created it and for visiting students and B&B guests. Common concerns about MHVR and about prohibitions on opening windows are dispelled when guests experience a Passivhaus for themselves and have an opportunity to quiz owners, Adam & Erica, about living in a Passivhaus. The project highlighted the need for a practical and accessible book on the subject – now realised in **The Passivhaus Handbook**. Together, they have proved very effective in helping to promote understanding of Passivhaus in the UK.

Project Overview

Name: Totnes Passivhaus
Location: Totnes, Devon
Building type: single family house
Construction type: hybrid cavity wall retro fit/timber frame new build
Completed in: September 2011
Occupancy status: occupied since completion, private home and bed & breakfast
Construction cost: £1400/m² gross £1475/m² net

Sustainability features

Annual heat demand: 13.3 kW/m².a (monthly method)
Heating load: 9 W/m² Cooling load: 4 W/m² cooling
Ventilation strategy: Paul Novus 300, Lindab Safe ducting
Heating strategy: post heater to warm incoming air
Shading strategy: Blinds integrated into windows
U value: exterior wall 0.1 W/m²K; roof 0.1 (average);
floor 0.2 (retrofit section), 0.08 (new build);
windows 0.75-0.93; doors 0.79
Other features: living roof, solar DHW & solar PV

Measured Performance

Headline energy results:
Total Primary measured energy in use is **75.8kWh/m².a**, of which 50.6 kWh/m².a is electricity and 25.1 kWh/m².a gas. Predicted total primary energy in the PHPP was 68 kWh/m².a (PE factor 2.6 for electricity and 1.1 for gas)

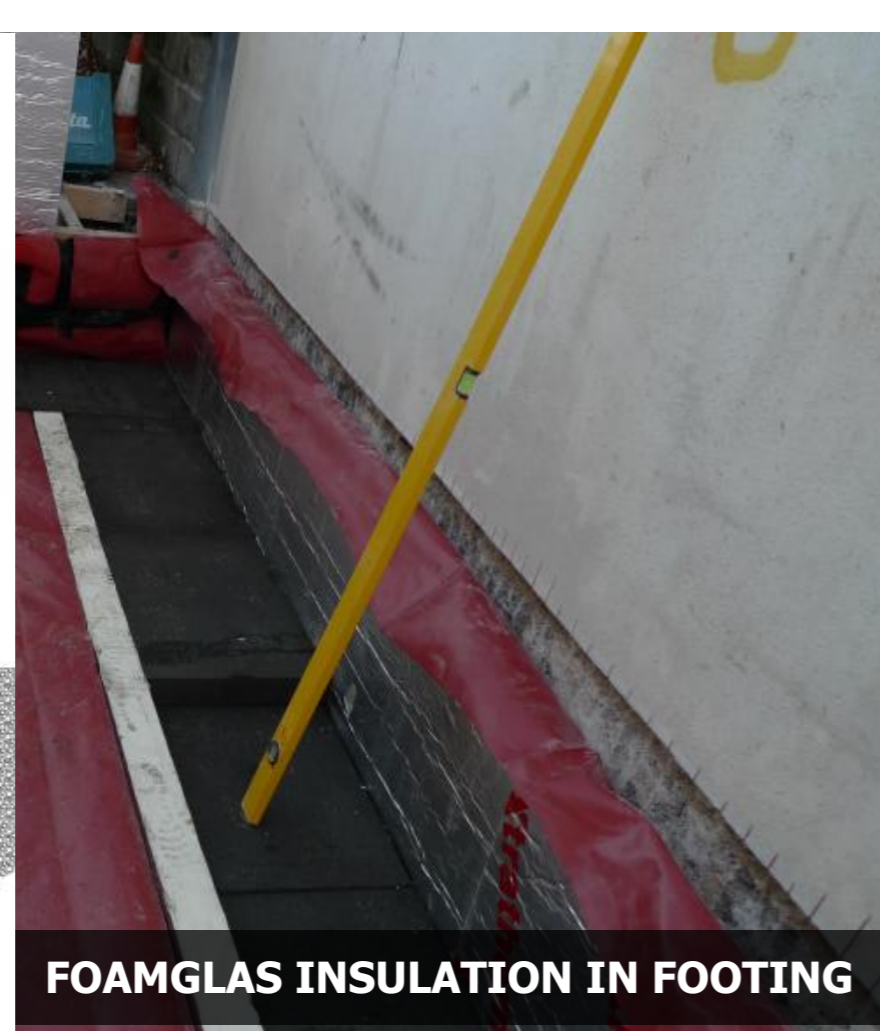
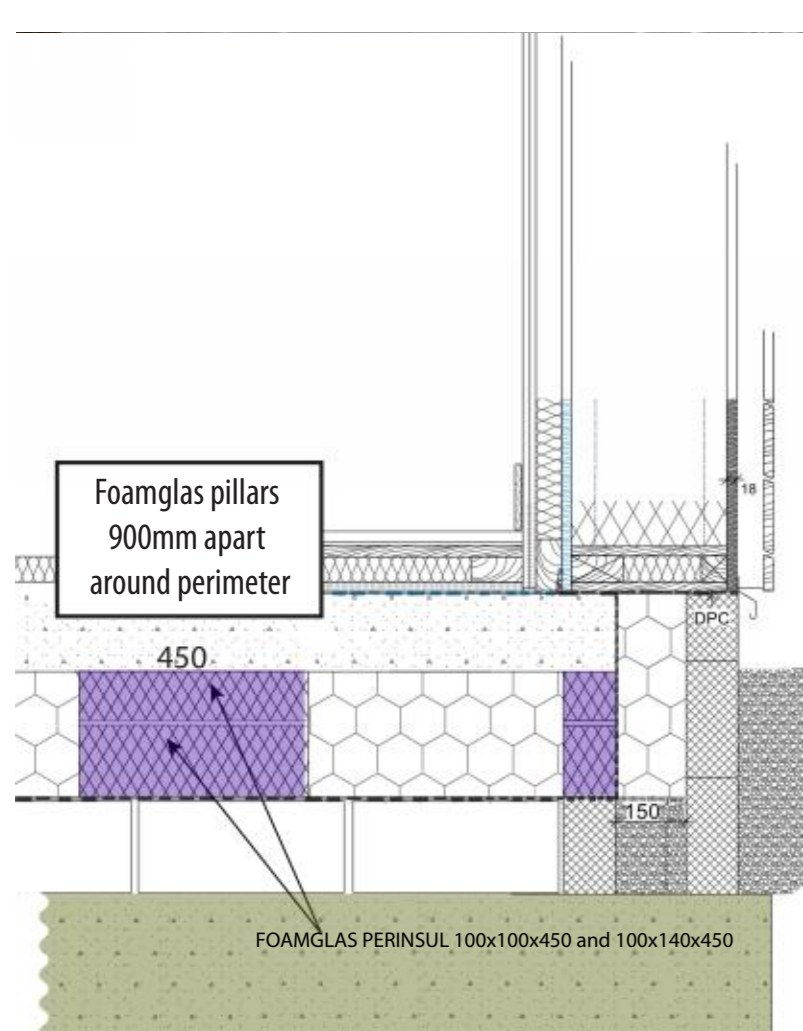
Small increase in energy use related to home working (office) and running the B & B.

Air pressure result: 0.2ach@50Pa

Occupant Feedback:

"The house is very quiet; you notice the slightest sounds as there is no ambient noise"
"We expected it to be stuffy inside but were surprised how fresh and airy it turned out to be"
B&B Guest comments

"It is very liberating not having to think about keeping warm or continually having to adjust thermostats. The house just seems to take care of you!"
Adam & Erica



TEAM CREDITS

Client: Adam Dadeby & Erica Aslett	Architect: Janet Cotterell CTT Sustainable Architecture
Certifier: Peter Warm WARM: Low Energy Building Practice	Contractor: Williams & Partners
PHPP Modelling: Adam Dadeby	

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