

# GOLCAR PASSIVHAUS

## Green Building Store



### PROJECT FACTS

230m<sup>2</sup>

TFA

£1344/m<sup>2</sup>

cost

JAN 2015

completed

HUDDERSFIELD  
West Yorkshire  
location

MAY 2015

occupied

### ENERGY PERFORMANCE

52  
kWh/m<sup>2</sup>a

primary energy

8.7  
kWh/m<sup>2</sup>a

heating demand

8  
w/m<sup>2</sup>

heating load

#### u-values

Walls 0.117

Floor 0.107

Roof 0.104

Windows 0.68

0.25ach

airtightness

Heating strategy: Mains gas boiler 4.8kW  
+ thermal store, 2 radiators, 3 towel rails

Shading strategy: Mature trees + moderate  
night purging

Ventilation strategy: PAUL Novus 300 MVHR unit  
+ rigid steel ducting

#### Gas consumption data

Feb 2015 – Feb 2016:

654 m<sup>3</sup> gas = 7316 kWh

7316 kWh divided by Treated Floor Area:  
230m<sup>2</sup>

= **32 kWh/m<sup>2</sup>/ annum** (including cooking,  
water heating costs and energy consumption  
used for 'drying out' the house)

*NB House occupied from May 2015 but utility bill  
information gathering has been problematic.*

*Prior to May 2015, the house was being heated  
to dry out the house, while decoration and other  
internal works going on.*

### DESIGN PHILOSOPHY

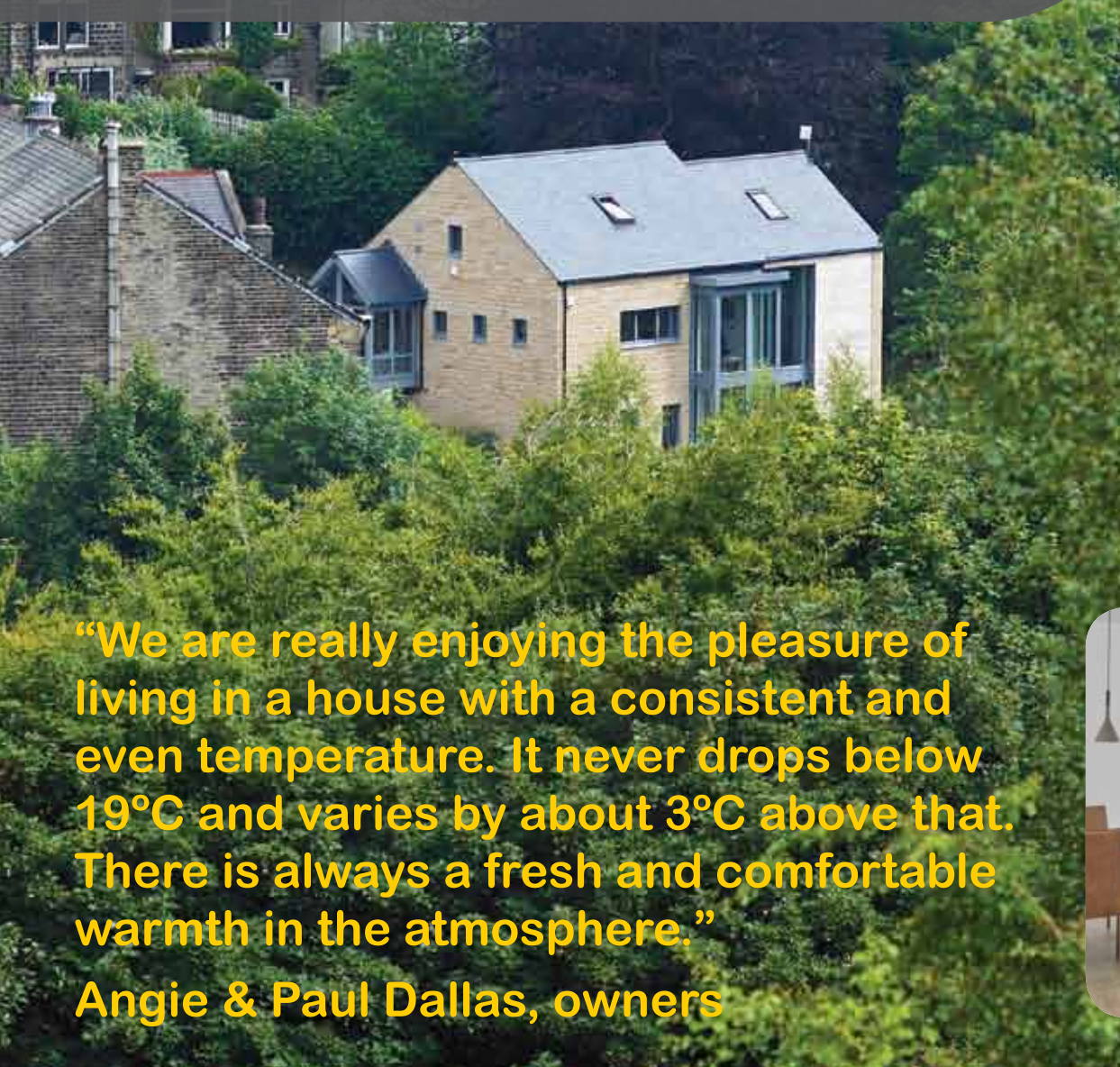
Newbuild 4 bed detached 296m<sup>2</sup> home combining light, contemporary, open plan aesthetics with technical advancements in cavity wall Passivhaus construction detailing. The house is designed to bring an up-to-date contemporary look to the Yorkshire vernacular style of houses surrounding the building. The house is faced with Yorkshire stone, but also features timber cladding on certain aspects and has a large bay window. The project is designed to have clean, simple lines enhanced by the use of timber windows with narrow sightlines.

The project uses similar design detailing to the team's previous Denby Dale Passivhaus project (the first cavity wall Passivhaus in the UK), but has further improved upon it by:

- developing new strategies used to reduce thermal bridging at door thresholds
- developing junction detailing for 'cathedral roofs', including improvement to I joist detailing
- making improvements to the groundfloor detailing

Technical information on the project has been widely shared:

[www.greenbuildingstore.co.uk/golcar](http://www.greenbuildingstore.co.uk/golcar)



**“We are really enjoying the pleasure of living in a house with a consistent and even temperature. It never drops below 19°C and varies by about 3°C above that. There is always a fresh and comfortable warmth in the atmosphere.”**

**Angie & Paul Dallas, owners**



### TEAM CREDITS

Architect, Consultant, Contractor:

Green Building Store Design & Build

Certifier: WARM Low Energy Building Practice