

CRE8 BARN

Retrofit

Green Building Store

Passivhaus
Trust
Awards 2015

UK PASSIVHAUS AWARDS 2015

07 July – Residence of the Austrian Ambassador

UK PASSIVHAUS AWARDS 2015
RETROFIT

Sponsored by:

Ecology
Building Society

green
building
store

PROJECT OVERVIEW

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Location: Stirley Community Farm, Huddersfield, W. Yorkshire

Building Type: Visitor and Education Centre

TFA: 98m²

Construction: Inner timber frame within outer masonry barn

Completion Date: October 2013

Occupancy: occupied since October 2013

Budget: £1930 (£/m²)

Key team

Client: Yorkshire Wildlife Trust

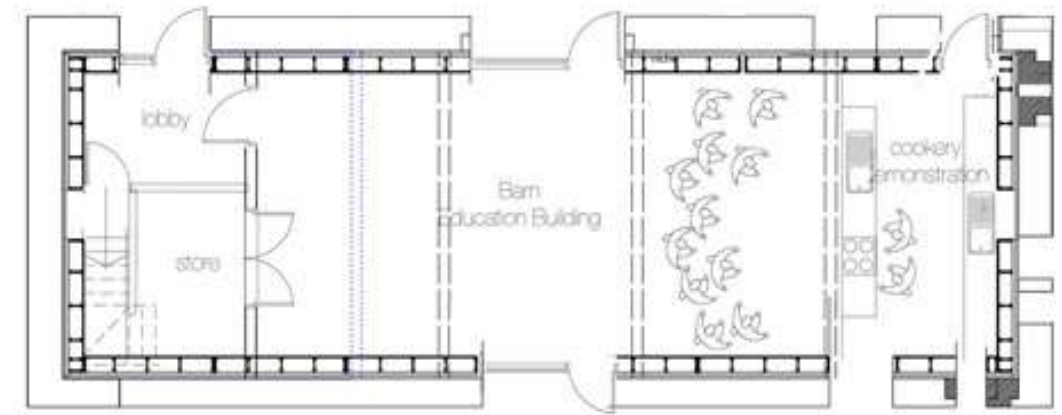
Architect: Green Building Store Design & Build project (with architect Derrie O'Sullivan)

Consultant: Green Building Store

Contractor: Green Building Store

Certifier: Pete Warm, WARM low energy practice

Structural Engineer: Stuart McCormick, Structural Engineer, SGN structural engineers



Ground Floor Plan - Proposed



DESIGN PHILOSOPHY

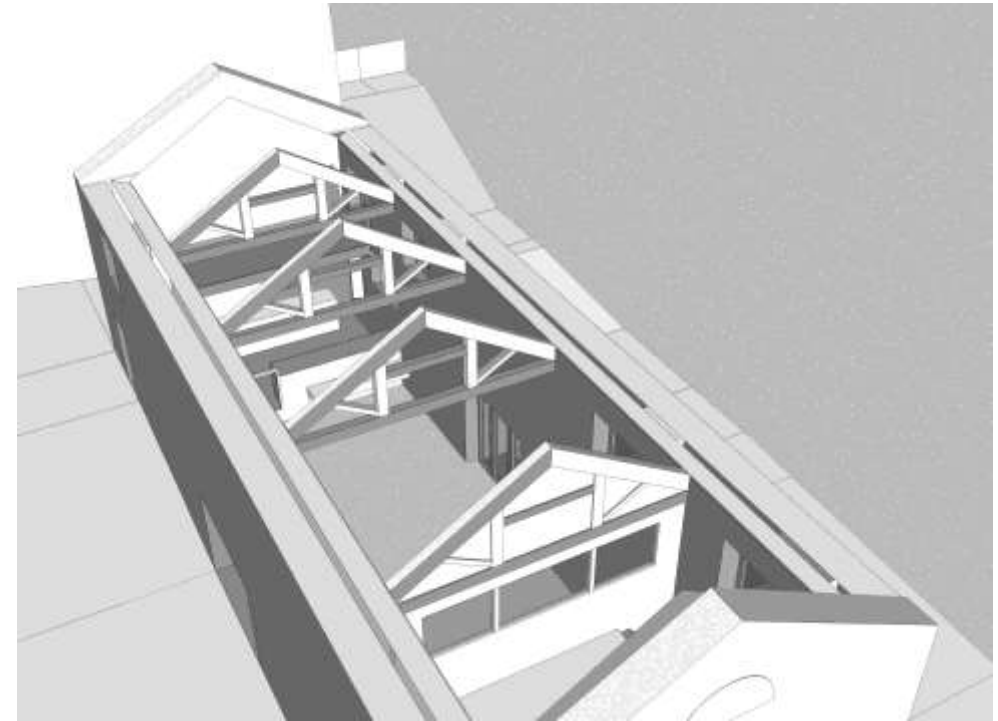
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The Cre8 Barn project is an innovative barn conversion to the EnerPHit standard:

- 'Box within a box' structure (inner timber frame building within outer masonry barn).
- The timber frame construction not only ensures thermal performance, and helps provide structural stability to the outer masonry walls.
- Innovative thermal bridge-free wall connector technique utilised low thermal conductivity wall connectors between the inner timber wall and outer masonry wall.
- Risk of moisture build up within the cavity was extensively addressed at the design stage and is now being monitored.
- First EnerPHit component approach certified building in the UK



AESTHETICS

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- Maintains its agricultural building aesthetic, to fit in with the farm buildings around it.
- Contemporary interior design sympathetic to external facades, with deep window reveals.



ENERGY PERFORMANCE

PRIMARY ENERGY =
136 KWH/M²/YEAR

HEATING DEMAND =
33 KWH/M²/YEAR

AIR CHANGES/HR =
0.35 ACH @ 50PA

HEATING &
COOLING LOAD =
17 W/M²

ENERGY CONSUMPTION DATA

Mains gas consumption October 2013 – October 2014: 42.9 kWh/m²/year

TFA: 98m²

Gas consumption includes: space heating, hot water and cooking

Predicted running costs for heating (£/a)

- Assumed gas charges: 4.29p per kWh
- Predicted running costs for heating (£/a) : £138.73
- Actual running costs (*including gas used in cooking and hot water*) (£/a): £180.50

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USER FEEDBACK

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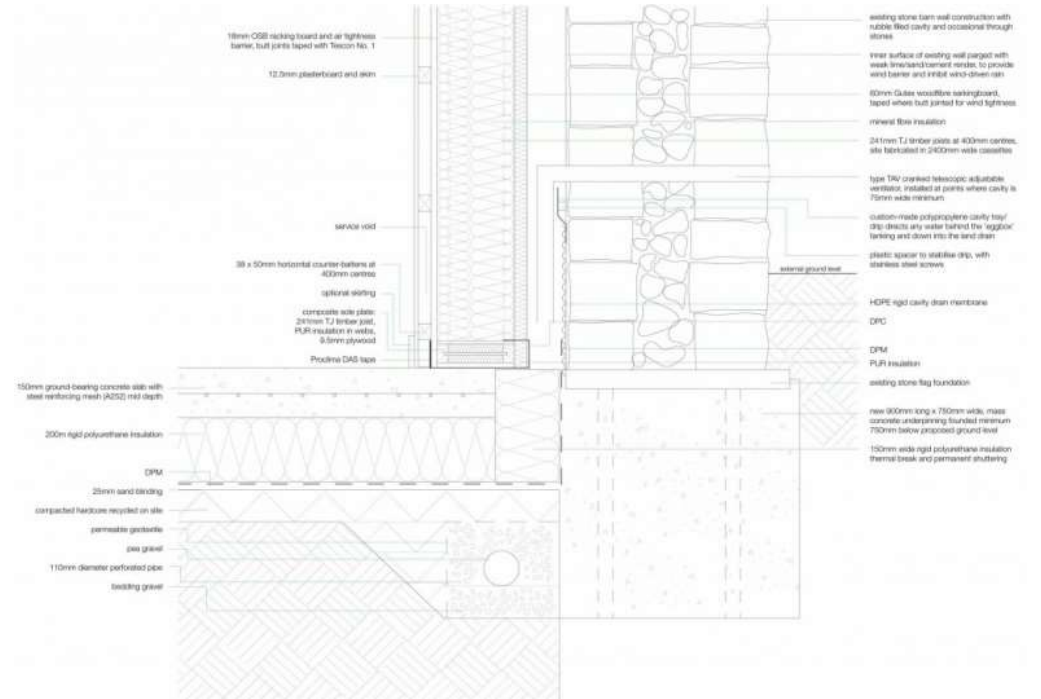
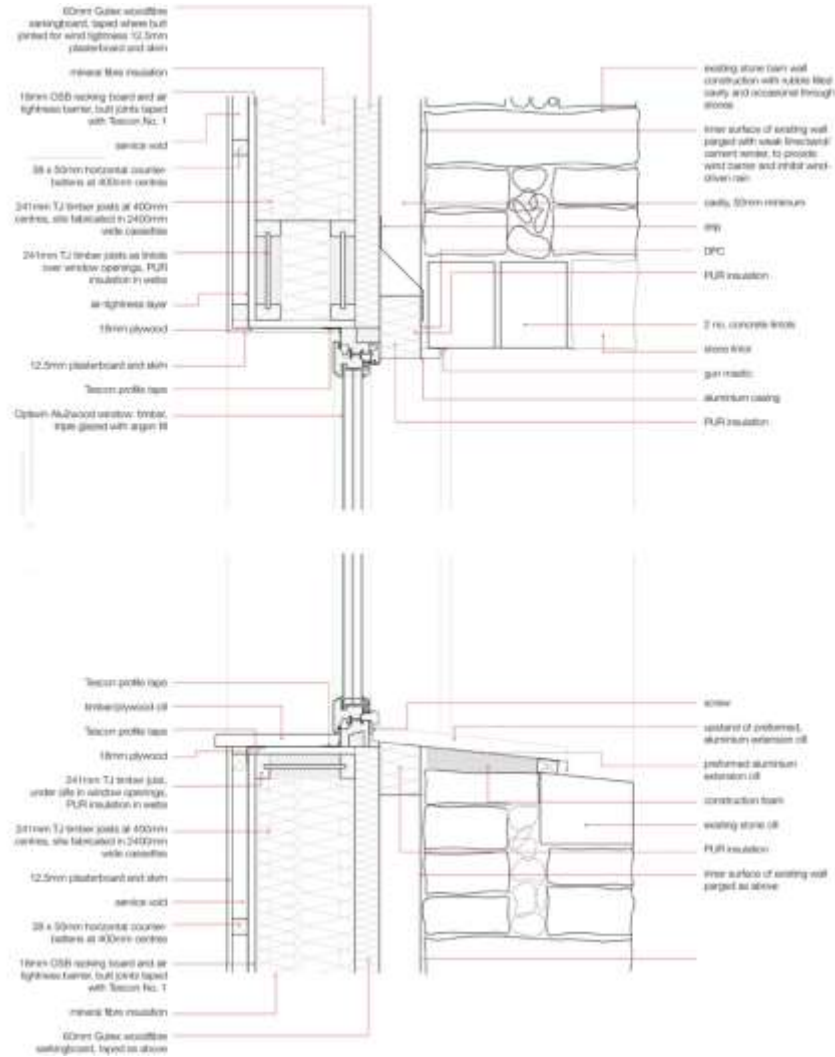
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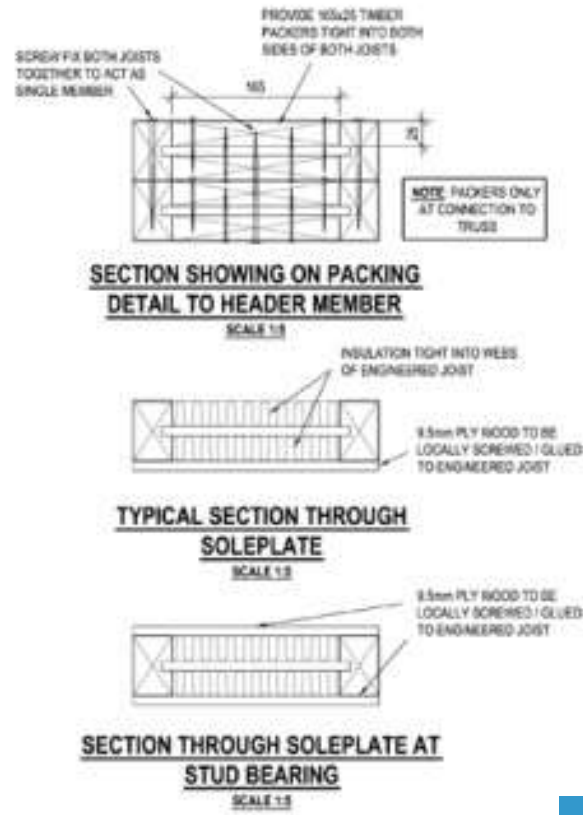
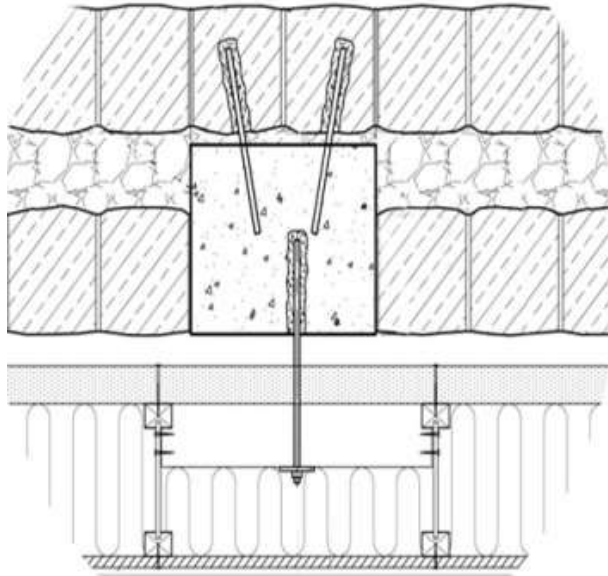


“Thanks to the Passivhaus strategies applied to the refurbishment, the Cre8 Barn uses very little energy to heat, offering a fantastic public example of how good design can be used to radically reduce energy use and improve comfort in even the most cold and draughty of buildings”

Rob Stoneman, Chief Executive at Yorkshire Wildlife Trust







**Total Costs:
£1930/sqmTFA**

FURTHER INFORMATION

FREE technical briefing and resources:
www.greenbuildingstore.co.uk/enerphit

Ongoing HydroTrac monitoring by Centre for the Built Environment (CEBE), Leeds Beckett University

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