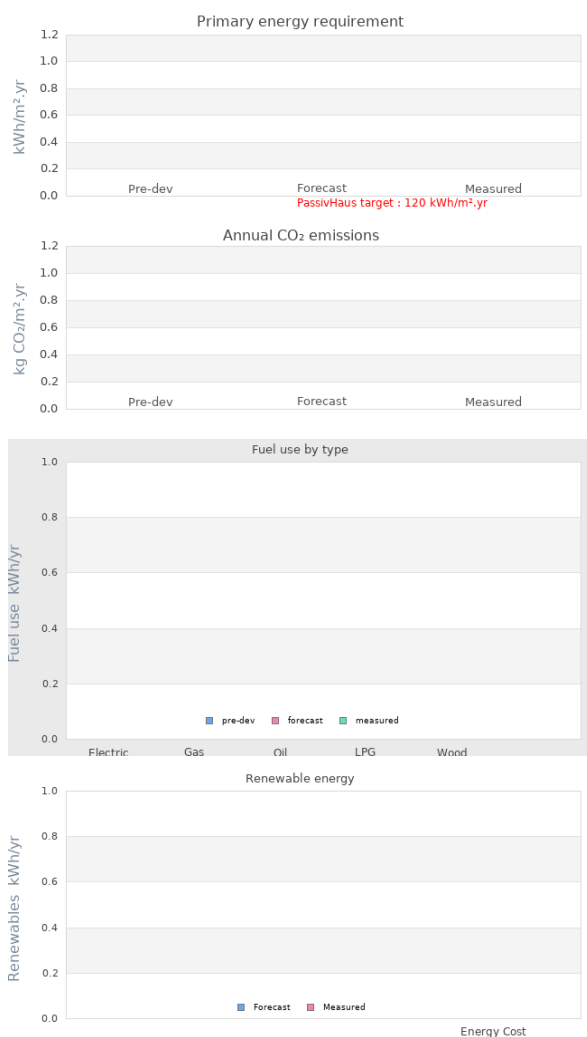


Project name Canolfan Hyddgen

Project summary Canolfan Hyddgen - built in 2008 & occupied in January 2009 - is the UK's 1st certified Passivhaus office building located in Machynlleth, Wales. As a BREEAM excellent Multi occupancy building with over 15 tenants it provides Bi lingual IT provision for the adjacent school, night classes, adult learning, meeting rooms, drop-in centre and council service point. JPW led the design team and partnered with the Client to satisfy a brief which demanded a building which could maximise revenue through flexible/continuous use and minimise running costs via energy efficiency to create an environmentally & financially sustainable facility. Consultation with stakeholders at the earliest opportunity embedded a passivhaus approach into a design focused on local natural aesthetics & materials. On going monitoring, regular servicing and induction of building users has enabled continual reduction of energy consumption below predicted for the last 4 years.



Project Description

Projected build start date

Projected date of occupation

01 Jan 2009

Project stage

Occupied

Project location

Machynlleth, Powys, Wales

Energy target

PassivHaus

Build type

New build

Building sector	Commercial
Property type	Detached
Existing external wall construction	Other
Existing external wall additional information	External Timber Frame Envelope
Existing party wall construction	
Floor area	410 m²
Floor area calculation method	PHPP
Building certification	Passivhaus certified

Project team

Organisation	JPW Construction
Project lead	John Williamson
Client	Powys County Council
Architect	JPW Construction
Mechanical & electrical consultant(s)	
Energy consultant(s)	
Structural engineer	
Quantity surveyor	
Other consultant	JPW Construction
Contractor	C. Sneade

Design strategies

Planned occupancy
Space heating strategy
Water heating strategy
Fuel strategy
Renewable energy generation strategy
Passive solar strategy
Space cooling strategy
Daylighting strategy
Ventilation strategy
Airtightness strategy
Strategy for minimising thermal bridges
Modelling strategy
Insulation strategy
Other relevant retrofit strategies
Other information (constraints or opportunities influencing project design or outcomes)

Energy use

Fuel use by type (kWh/yr)

Fuel	previous	forecast	measured
Electric			
Gas			
Oil			
LPG			
Wood			

Primary energy requirement & CO2 emissions

	previous	forecast	measured
Annual CO2 emissions (kg CO2/m ² .yr)	-	-	-
Primary energy requirement (kWh/m ² .yr)	-	-	-

Renewable energy (kWh/yr)

Renewables technology	forecast	measured
-		
-		
Energy consumed by generation		

Airtightness (m³/m².hr @ 50 Pascals)

	Date of test	Test result
Pre-development airtightness	-	-
Final airtightness	-	-

Annual space heat demand (kWh/m².yr)

	Pre-development	forecast	measured
Space heat demand	-	-	-

Whole house energy calculation method

Other energy calculation method

Predicted annual heating load

-

Other energy target(s)

Building services

Occupancy

Space heating

Hot water

Ventilation

Controls

Cooking
Lighting
Appliances
Renewables
Strategy for minimising thermal bridges

Building construction

Storeys
Volume
Thermal fabric area
Roof description
Roof U-value
Walls description
Walls U-value
Party walls description
Party walls U-value
Floor description
Floor U-value
Glazed doors description
Glazed doors U-value
Opaque doors description
Opaque doors U-value
Windows description
Windows U-value
Windows energy transmittance
(G-value)
Windows light transmittance
Rooflights description
Rooflights light transmittance
Rooflights U-value

Project images

