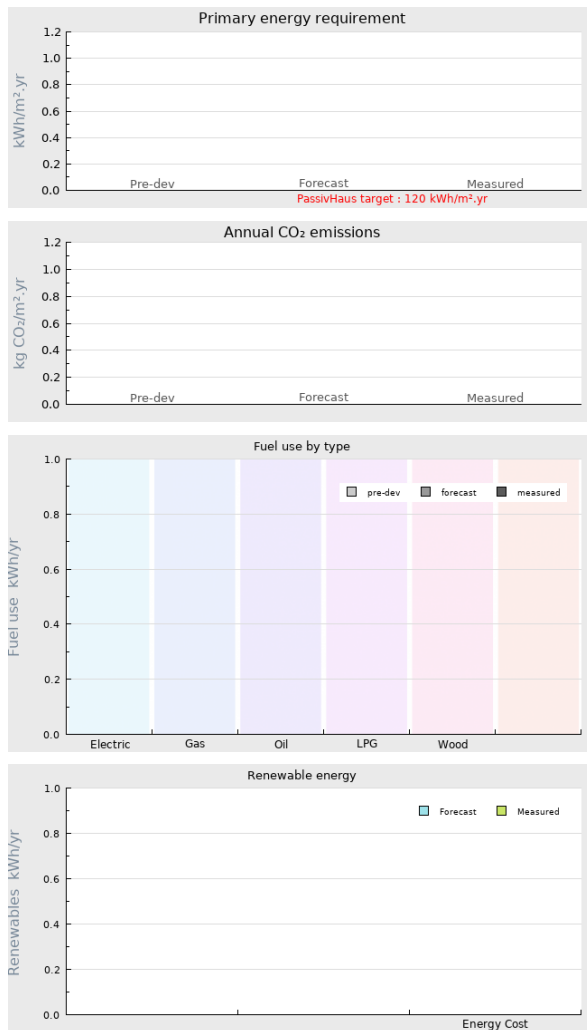http://lowenergybuildings.org.uk

Project name Steel Farm

Project summary WINNER of the UK Passivhaus Awards 2015 - Steel Farm is the first Certified Passivhaus in Northumberland. Built using traditional construction technology it is located near Hexham in the North Pennine Area of Outstanding Natural Beauty.

Primary energy requirement — kWh/m².yr — Pre-dev, Forecast, Measured
PassivHaus target : 120 kWh/m².yr

Annual CO₂ emissions — kg CO₂/m².yr — Pre-dev, Forecast, Measured

Fuel use by type — Fuel use kWh/yr — pre-dev, forecast, measured — Electric, Gas, Oil, LPG, Wood

Renewable energy — Renewables kWh/yr — Forecast, Measured — Energy Cost

Project Description

Projected build start date	
Projected date of occupation	
Project stage	Occupied
Project location	Hexham, Northumberland, England
Energy target	PassivHaus
Build type	New build
Building sector	Private Residential
Property type	Detached
Existing external wall construction	Masonry Cavity
Existing external wall additional information	Traditional Cavity Wall Masonry with Trussed Rafter Roof
Existing party wall construction	

Floor area	151 m²
Floor area calculation method	PHPP
Building certification	Passivhaus certified

Project team

Organisation	
Project lead	Mark Siddall, LEAP
Client	Private
Architect	Mark Siddall, LEAP
Mechanical & electrical consultant(s)	Alan Clarke
Energy consultant(s)	Alan Clarke
Structural engineer	Lee Dayes, Dayes Kenyon
Quantity surveyor	
Other consultant	
Contractor	Joe Dixon, J D Joinery and Building

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			

Fuel	previous	forecast	measured
Wood			

Primary energy requirement & CO2 emissions

	previous	forecast	measured
Annual CO2 emissions (kg CO2/m².yr)	-	-	-
Primary energy requirement (kWh/m².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