

Project name Barmouth Road

Project summary Barmouth Road in Wandsworth, London is a Victorian terraced house retrofitted to the EnerPHit standard. To meet strict planning requirements the building was insulated internally and triple glazed sash look-alike casement windows were installed to retain the original appearance of the facade.



Project Description

Projected build start date	01 Mar 2013
Projected date of occupation	01 Apr 2014
Project stage	Occupied
Project location	Wandsworth, London, England
Energy target	EnerPHit
Build type	Refurbishment
Building sector	Private Residential
Property type	Mid Terrace
Existing external wall construction	Solid Brick
Existing external wall additional information	Solid brick wall insulated internally.
Existing party wall construction	

Floor area	139 m ²
Floor area calculation method	PHPP
Building certification	Passivhaus certified

Project team

Organisation	Green Tomato Energy
Project lead	Green Tomato Energy
Client	Luigi Caccavale
Architect	Alexander Owen Architecture
Mechanical & electrical consultant(s)	Green Tomato Energy
Energy consultant(s)	Green Tomato Energy
Structural engineer	Elite Designers
Quantity surveyor	
Other consultant	Certifier - WARM: Low Energy Building Practice
Contractor	Reality HG

Design strategies

Planned occupancy	3 persons
Space heating strategy	Heating from mains gas condensing boiler. Distributed by under floor heating on lower floor and radiators on upper floor. Heat recovery from MVHR unit.
Water heating strategy	Hot water provided by mains gas condensing boiler.
Fuel strategy	Mains gas. Mains electricity.
Renewable energy generation strategy	
Passive solar strategy	Window proportions optimised using PHPP software.
Space cooling strategy	Natural ventilation for cooling season. Daytime use of MVHR during heat waves.
Daylighting strategy	
Ventilation strategy	Mechanical ventilation with heat recovery during winter months. Openable windows to encourage passive ventilation during the summer.
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			
mains gas		13800	

Primary energy requirement & CO2 emissions

	previous	forecast	measured
Annual CO2 emissions (kg CO2/m ² .yr)	-	20	-
Primary energy requirement (kWh/m ² .yr)	-	114	-

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	-	0.87

Annual space heat demand (kWh/m².yr)

	Pre-development	forecast	measured
Space heat demand	-	23	-

Whole house energy calculation method

PHPP

Other energy calculation method

Predicted heating load

14 W/m² (demand)

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

2

Volume

Thermal fabric area

Roof description

Main house - 0.18 W/m² K. New extension flat roof - 0.11 W/m² K

Roof U-value

0.18W/m² K

Walls description

Solid wall with IWI - 0.17 W/m² K. Insulated cavity wall - 0.13 W/m² K

Walls U-value

0.17W/m² K

Party walls description

Party walls U-value

Floor description

Main house suspended timber floor - 0.09. W/m².K Extension solid concrete floor - 0.15 W/m².K

Floor U-value

0.09W/m² K

Glazed doors description

Glazed doors U-value

Opaque doors description

Opaque doors U-value

Windows description

Windows U-value

0.80W/m² K uninstalled

Windows energy transmittance (G-value)

Windows light transmittance

Rooflights description

Rooflights light transmittance

Rooflights U-value

Project images



