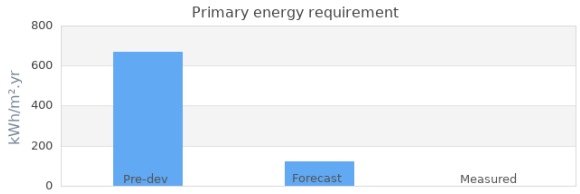
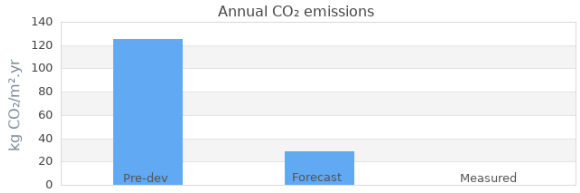
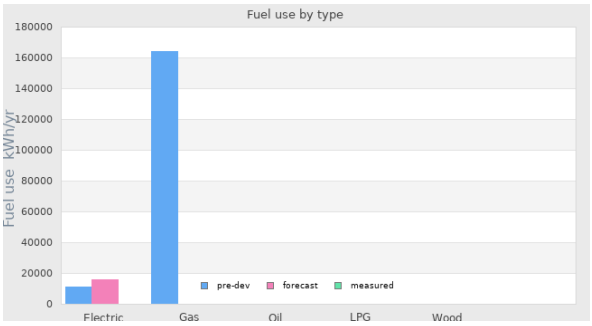
https://www.lowenergybuildings.org.uk/

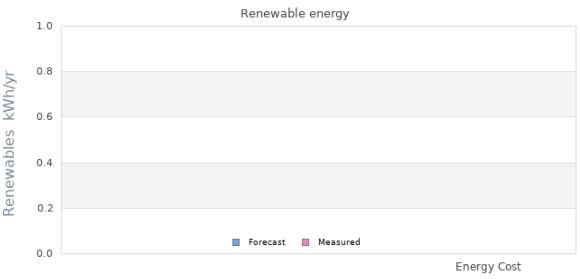
Project name Foxlow, Marple

Project summary Retrofit of Edwardian Manor House. Targetting EnerPHit









Project Description

Projected build start date	29 Jan 2021
Projected date of occupation	01 Jan 2023
Project stage	Occupied
Project location	Marple, Manchester, England
Energy target	other
Build type	Refurbishment
Building sector	Private Residential
Property type	Detached
Existing external wall construction	Stone
Existing external wall additional information	
Existing party wall construction	n/a
Floor area	322 m²
Floor area calculation method	PHPP

Project team

Organisation	Progress in Practice / Ecospheric
Project lead	Progress in Practice / Ecospheric
Client	Louise & Richard Glover
Architect	Progress in Practice
Mechanical & electrical consultant(s)	Ecospheric
Energy consultant(s)	Ecospheric
Structural engineer	
Quantity surveyor	
Other consultant	
Contractor	Ecovert

Design strategies

Planned occupancy	Two
Space heating strategy	Direct electric heating via MVHR post heating
Water heating strategy	Direct electric Mixergy Tank
Fuel strategy	Mains electricity
Renewable energy generation strategy	n/a
Passive solar strategy	
Space cooling strategy	Daytime use of MVHR with window night purging during heat waves.
Daylighting strategy	Existing building so not much change. Small windows facing South have been increased in size where possible.
Ventilation strategy	MVHR with openable windows
Airtightness strategy	Passive purple in sub-floor void and roofspace. Parge coat on masonry with Lime plaster.
Strategy for minimising thermal bridges	
Modelling strategy	Whole house modelling was undertaken in PHPP
Insulation strategy	Woodfibre IWI. Open blow cellulose in attic. Woodfibre in suspended floor.
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	11000	15900	
Gas	164000		
Oil			
LPG			
Wood			

Primary energy requirement & CO2 emissions

	previous	forecast	measured
Annual CO2 emissions (kg CO2/m².yr)	125	29	-
Primary energy requirement (kWh/m².yr)	671	123	-

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	-	14.29
Final airtightness	05 Jan 2023	1.9

Annual space heat demand (kWh/m².yr)

	Pre-development	forecast	measured
Space heat demand	359	31.1	-

Whole house energy calculation method	PHPP
Other energy calculation method	
Predicted heating load	17.7 W/m² (demand)
Other energy target(s)	

Building services

Occupancy	2
Space heating	Heated supply air terminals. Electric towel rails. 3 x wood burning stoves as back-up.
Hot water	Mixergy Smart hot water cylinder. Direct electric
Ventilation	Zehnder Comfoair Q600

Controls	
Cooking	Electric induction hob and 2 x ovens
Lighting	LED
Appliances	
Renewables	n/a
Strategy for minimising thermal bridges	

Building construction

Storeys	3
Volume	873m³
Thermal fabric area	872m²
Roof description	
Roof U-value	0.08W/m² K
Walls description	
Walls U-value	0.20W/m² K
Party walls description	
Party walls U-value	0.00W/m² K
Floor description	
Floor U-value	0.16W/m² K
Glazed doors description	
Glazed doors U-value	0.80W/m² K uninstalled
Opaque doors description	
Opaque doors U-value	0.80W/m² K uninstalled
Windows description	
Windows U-value	0.75W/m² K uninstalled
Windows energy transmittance (G-value)	0.54%
Windows light transmittance	
Rooflights description	n/a
Rooflights light transmittance	
Rooflights U-value	

Project images