Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed using Kaizen SAP 10.2 SAP 10 program, 1.0.1

Date: Fri 31 Jan 2025 16:15:07

Project Information			
Assessed By	Connor Campbell	Building Type	House, Detached
OCDEA Registration	KAZN000009	Assessment Date	2025-01-31

Dwelling Details			
Assessment Type	As designed	Total Floor Area	136 m^2
Site Reference	097 - Willow	Plot Reference	097 - Willow
Address	Address Line 1, ..., CW1 4QW		

Client Details	
Name	Not Given
Company	Not Given
Address	Not Provided, Not Provided, AL9 5HZ

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Mains gas	
Target carbon dioxide emission rate	*9.95 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.73 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*51.91 kWh_{PE}/m^2*	
Dwelling primary energy	51.60 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.07 kWh/m^2*	
Dwelling fabric energy efficiency	37.56 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Wl - Dormer (0.26)	**OK**
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.12	Flr - Ground (0.12)	**OK**
Roofs	*0.16*	0.12	Rf - Ins Rafter (0.16)	**OK**
Windows, doors, and roof windows	*1.6*	1.18	Rear (1.4)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Wl - Brick	143.044	0.21
Exposed wall: Wl - Dormer	5.096	0.26
Exposed wall: Wl - Stud Ashlar	15.218	0.1152 **(!)**
Ground floor: Flr - Ground	51.121	0.12
Exposed roof: Rf - Ins Joist	19.202	0.09 **(!)**
Exposed roof: Rf - Ins Rafter	17.55	0.16
Exposed roof: Rf - Flat Bay	1.482	0.16
Exposed roof: Rf - Flat Dormer	3.536	0.16
Exposed roof: Rf - Ashlar behind Stud	14.767	0.1152

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
Front, Door (1)	2.148	North West	0.7	1 **(!)**
Front, Windows (1)	7.273	North West	1.0	1.3
L Side, Windows (2)	2.252	South West	1.0	1.3
R Side, Windows (3)	2.252	North East		0 **(!)**
Rear, Windows (4)	6.918	South East	1.0	1.3
Front, Windows (5)	2.259	North West	1.0	1.3
Rear, Windows (6)	3.853	South East	1.0	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part **1 - Main Dwelling**: Thermal bridging calculated from linear thermal transmittances for each junction				
Main element	**Junction detail**	**Source**	**Psi value [W/mK]**	**Drawing / reference**
External wall	E2: Other lintels (including other steel lintels)	Government-approved scheme	0.051	Not Provided
External wall	E4: Jamb	Government-approved scheme	0.033 **(!)**	Not Provided
External wall	E3: Sill	Government-approved scheme	0.036 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Government-approved scheme	0.091	Not Provided
External wall	E6: Intermediate floor within a dwelling	Government-approved scheme	0.052	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.068	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.052	Not Provided
External wall	E13: Gable (insulation at rafter level)	Government-approved scheme	0.031 **(!)**	Not Provided
External wall	E16: Corner (normal)	Government-approved scheme	0.058	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	-0.039 **(!)**	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	Government-approved scheme	0.107	Not Provided
Roof	R2: Sill of roof window	Government-approved scheme	0.049	Not Provided
Roof	R3: Jamb of roof window	Government-approved scheme	0.058	Not Provided
Roof	R6: Flat ceiling	SAP table default	-0.001 **(!)**	Not Provided
Roof	R7: Flat ceiling (inverted)	Government-approved scheme	0.021 **(!)**	Not Provided
Roof	R10: All other roof or room-in-roof junctions	Government-approved scheme	0.029 **(!)**	Not Provided

3 Air permeability (better than typically expected values are flagged with a subsequent (!))		
Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89%
Emitter type	Radiators
Flow temperature	55°C
System type	Gas1998OrLater
Manufacturer	
Model	
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	N/A
Declared heat loss	1.4 kWh/day
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	1%
Manufacturer	Q-Blue B.V.
Model	QB1-21

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	*0.7 W/(l/s)*	
Specific fan power	0.01 W/(l/s)	**OK**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	1%	**N/A**
Manufacturer/Model	0	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	1.62 kWp
Orientation	South East
Pitch	45°
Overshading	None or very little
Manufacturer	Not Provided
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name: Connor Campbell	Assessor ID: KAZN000009 Date: 31 Jan 2025
b. Client Declaration	
N/A	