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: Tue 08 Oct 2024 12:24:03

Project Information			
Assessed By	BRE Testing	Building Type	House, Detached
OCDEA Registration	KAZN000001	Assessment Date	2024-10-08

Dwelling Details			
Assessment Type	As designed	Total Floor Area	164 m^2
Site Reference	Birch D	Plot Reference	Birch D
Address	Address Line 1, ..., AL9 5HZ		

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	*9.73 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.60 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*51.13 kWh_{PE}/m^2*	
Dwelling primary energy	49.60 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*43.60 kWh/m^2*	
Dwelling fabric energy efficiency	42.16 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*	0.24	Brick (0.24)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.1	Flr - Ground (0.1)	OK
Roofs	*0.16*	0.09	Rf - Ins Rafter (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.19	Rear (1.3)	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: Brick	161.371	0.24
Ground floor: Flr - Ground	82.679	0.1 **(!)**
Ground floor: Flr - Exposed Floor	1.621	0.1 **(!)**
Exposed roof: Rf - Ins Joist	81.353	0.09 **(!)**
Exposed roof: Rf - Ins Rafter	1.865	0.17
Exposed roof: Rf - Flat Roof	0.182	0.16
Exposed roof: Rf - Ins Joist 2	1.238	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
L Side, Door (1)	2.148	South	1.0	1.2
Front, Door (2)	2.148	East	0.7	1.1 **(!)**
Rear, Door (3)	7.35	West	1.0	1.2
Rear, Windows (1)	9.22	West	1.0	1.3
Front, Windows (2)	11.623	East	1.0	1.3
L Side, Windows (3)	2.056	South	1.0	1.3
R Side, Windows (4)	2.056	North		0 **(!)**

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	0.042	Not Provided
External wall	E4: Jamb	Government-approved scheme	0.01 **(!)**	Not Provided
External wall	E3: Sill	Government-approved scheme	0.009 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Government-approved scheme	0.06	paralell
External wall	E20: Exposed floor (normal)	Government-approved scheme	0.034 **(!)**	Not Provided
External wall	E21: Exposed floor (inverted)	Government-approved scheme	0.146	Not Provided
External wall	E6: Intermediate floor within a dwelling	Government-approved scheme	0.003 **(!)**	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.04	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	Government-approved scheme	0.107	Not Provided
External wall	E11: Eaves (insulation at rafter level)	SAP table default	-0.027 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.044	Not Provided
External wall	E13: Gable (insulation at rafter level)	Government-approved scheme	0.046	Not Provided
External wall	E16: Corner (normal)	Government-approved scheme	0.029 **(!)**	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	-0.129	Not Provided
Roof	R1: Head of roof window	Government-approved scheme	0.05	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
External wall	E2: Other lintels (including other steel lintels)	Government-approved scheme	0.483	Catnic
External wall	E2: Other lintels (including other steel lintels)	Government-approved scheme	0.075	Eves Lintel
External wall	E5: Ground floor (normal)	Government-approved scheme	0.048	perp

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	4.5 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	181.3%
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	210 litres
Declared heat loss	1.48 kWh/day
Primary pipework insulated	Yes
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	88 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	1.75 kWp
Orientation	North East
Pitch	30°
Overshading	None or very little
Manufacturer	Not Provided
MCS certificate	
Technology type: **Photovoltaic system (2)**	
Peak power	1.6 kWp
Orientation	South West
Pitch	30°
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:	Assessor ID: KAZN000001
Name: BRE Testing	Date: 08 Oct 2024

b. Client Declaration
N/A