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: Mon 03 Mar 2025 14:29:27

Project Information			
Assessed By	Michael Juckes	Building Type	House, Detached
OCDEA Registration	KAZN000007	Assessment Date	2025-03-03

Dwelling Details			
Assessment Type	As designed	Total Floor Area	225 m^2
Site Reference	054 HT-Q	Plot Reference	054 HT-Q
Address	Address Line 1, ..., SL5 7HD		

Client Details	
Name	Cala Homes (Thames)
Company	Cala Homes (Thames)
Address	Cala House, 54 The Causeway, STAINES, TW18 3AX

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	Electricity	
Target carbon dioxide emission rate	*8.58 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	2.00 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*45.10 kWh$_{PE}$/m^2*	
Dwelling primary energy	23.68 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*42.33 kWh/m^2*	
Dwelling fabric energy efficiency	39.93 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*	0.21	Wl - Stud (0.28)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.16	Exposed over garage (0.17)	OK
Roofs	*0.16*	0.1	Rf - Ins Rafter (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.32	Front (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: Brick	241.259	0.21
Exposed wall: Garage	17.071	0.23
Exposed wall: Wl - Stud	0.762	0.28
Ground floor: Flr - Ground	76.485	0.16
Ground floor: Exposed over garage	20.229	0.17
Exposed roof: Rf - Ins Joist	72.857	0.09 **(!)**
Exposed roof: Rf - Ins Rafter	17.733	0.15
Exposed roof: Joist over Bay/Dormer	2.278	0.09 **(!)**
Exposed roof: Flat over Family/Balcony	7.474	0.1 **(!)**

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)	1.911	East	0.7	1.2
Front, Windows (1)	8.43	East	1.0	1.3
L Side, Windows (2)	2.388	North	1.0	1.3
R Side, Windows (3)	6.797	South	1.0	1.3
Rear, Windows (4)	7.068	West	1.0	1.3
Front, Windows (5)	2.856	East	1.0	1.4
R Side, Windows (6)	2.62	South	1.0	1.4
Rear, Windows (7)	5.319	West	1.0	1.4

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
L Side, RoofLights (1)	0.858	North	0.7	1.3
R Side, RoofLights (2)	1.04	South	0.7	1.3
R Side, RoofLights (3)	1.5	South	0.7	1.3

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)	Calculated by person with suitable expertise	0.024 **(!)**	Not Provided
External wall	E4: Jamb	Calculated by person with suitable expertise	0.008 **(!)**	Not Provided
External wall	E3: Sill	Calculated by person with suitable expertise	0.029 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.109	Not Provided
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.061	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.021 **(!)**	Not Provided
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.004 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.032 **(!)**	Not Provided
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.053	Not Provided
External wall	E15: Flat roof with parapet	SAP table default	0.3	Not Provided
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.013 **(!)**	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.115	Not Provided
External wall	E20: Exposed floor (normal)	Calculated by person with suitable expertise	0.035 **(!)**	Not Provided
External wall	E21: Exposed floor (inverted)	Calculated by person with suitable expertise	0.059	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	Not Provided
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.058	Not Provided
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.049	Not Provided
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.058	Not Provided
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	-0.059	Not Provided
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.046	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 - Electricity

Efficiency	304.84725799630814%
Emitter type	Radiators
Flow temperature	45°C
System type	HeatPumpsWet
Manufacturer	Daikin Altherma
Model	EDLA11D3V3
Commissioning	

Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	130 litres	
Declared heat loss	2.1 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: N/A		
Efficiency		
Manufacturer		
Model		

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	N/A	**N/A**
Manufacturer/Model	0	
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	2.43 kWp
Orientation	South
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: KAZN000007
Name: Michael Juckes	Date: 03 Mar 2025

b. Client Declaration

N/A