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: Wed 05 Mar 2025 10:45:26

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

Dwelling Details			
Assessment Type	As designed	Total Floor Area	162 m^2
Site Reference	058	Plot Reference	HT K
Address	058, HT K, Ascot High Street, 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	*9.53 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	1.56 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*49.82 kWh_{PE}/m^2*	
Dwelling primary energy	19.95 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*41.37 kWh/m^2*	
Dwelling fabric energy efficiency	40.58 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*	0.22	Wl - Dormer (0.26)	OK
Party walls	*0.2*	0	Party Wall (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.17	Flr - Ground (0.17)	OK
Roofs	*0.16*	0.14	Dormer Flat Roof (0.19)	OK
Windows, doors, and roof windows	*1.6*	0.98	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: Stucco Render	49.187	0.21
Exposed wall: Buff Brick	57.337	0.21
Exposed wall: Feature Block	5.915	0.21
Exposed wall: Garage	25.741	0.23
Exposed wall: Wl - Dormer	7.848	0.26
Exposed wall: Wl - Stud	22.152	0.23
Party wall: Party Wall	63.292	0 **(!)**
Ground floor: Flr - Ground	49.079	0.17
Ground floor: Exposed over garage	20.895	0.17
Exposed roof: Rf - Flat Roof	45.675	0.13
Exposed roof: Rf - Ins Rafter	8.204	0.15
Exposed roof: Behind stud	9.27	0.17
Exposed roof: Flat over Family/Balcony	7.43	0.1 **(!)**
Exposed roof: Dormer Flat Roof	3.24	0.19

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)	2.121	North	0.7	1.2
R Side, Door (2)	1.89	East	0.7	1.2
Front, Windows (1)	1.38	North	1.0	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
L Side, Windows (2)	3.114	West	1.0	1.3
Rear, Windows (3)	3.476	South	1.0	1.3
L Side, Windows (4)	1.074	West	1.0	1.3
Rear, Windows (5)	3.476	South		0 **(!)**
Front, Windows (6)	2.704	North	1.0	1.3
Rear, Windows (7)	2.704	South		0 **(!)**
Rear, Windows (8)	2.488	South	1.0	1.4
Front, Windows (9)	5.242	North	1.0	1.4
Rear, Windows (10)	2.488	South		0 **(!)**
Rear, RoofLights (1)	1.5	Horizontal	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	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	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.011 **(!)**	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
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.086	Not Provided
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	Not Provided
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.038 **(!)**	Not Provided
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.085	Not Provided
Party wall	P7: Exposed floor (normal)	SAP table default	0.48	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
Roof	R8: Roof to wall (rafter)	SAP table default	0.12	Not Provided
Roof	R10: All other roof or room-in-roof junctions	SAP table default	0.32	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	305.55592073444%
Emitter type	Radiators
Flow temperature	45°C
System type	HeatPumpsWet
Manufacturer	Daikin Altherma
Model	EDLA09DA3V3
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	1.5 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	Horizontal
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: 05 Mar 2025

b. Client Declaration

N/A