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 19 Feb 2025 14:07:17

Project Information			
Assessed By	Connor Campbell	Building Type	House, Detached
OCDEA Registration	KAZN000009	Assessment Date	2025-02-19

Dwelling Details			
Assessment Type	As designed	Total Floor Area	153 m^2
Site Reference	082	Plot Reference	HT14 (Sycamore)
Address	082 - HT14 (Sycamore), ..., CO7 9EU		

Client Details	
Name	Cala Homes North Home Counties
Company	Cala Homes North Home Counties
Address	Shire Park, 1 Falcon Gate, WELWYN GARDEN CITY, AL7 1TW

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	*10.28 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	2.88 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*53.89 kWh_{PE}/m^2*	
Dwelling primary energy	29.88 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.53 kWh/m^2*	
Dwelling fabric energy efficiency	41.67 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*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.17	Flr - Exposed (0.18)	OK
Roofs	*0.16*	0.1	Rf - Joist Bay (0.22)	OK
Windows, doors, and roof windows	*1.6*	1.31	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	150.68	0.21
Exposed wall: Wl - Garage	22.414	0.25
Exposed wall: Wl - Dormer	0.266	0.26
Ground floor: Flr - Ground	71.586	0.17
Ground floor: Flr - Exposed	19.991	0.18
Exposed roof: Rf - Ins Joist	78.253	0.09 **(!)**
Exposed roof: Rf - Ins Rafter	8.079	0.16
Exposed roof: Rf - Uninsulated	2.588	0.12
Exposed roof: Rf - Joist Bay	1.621	0.22
Exposed roof: Rf - Flat Dormer	1.089	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)	1.911	North	0.7	1.2
Front, Door (2)	1.894	North	0.7	1.2
Rear, Door (3)	1.911	South	0.7	1.4
Front, Windows (1)	8.863	North	1.0	1.3
L Side, Windows (2)	3.196	West	1.0	1.3
R Side, Windows (3)	2.94	East	1.0	1.3
Rear, Windows (4)	10.716	South	1.0	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
Rear, Windows (5)	5.052	South	1.0	1.4
L Side, RoofLights (1)	1.313	West	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)	Government-approved scheme	0.024 **(!)**	Not Provided
External wall	E4: Jamb	Government-approved scheme	0.008 **(!)**	Not Provided
External wall	E3: Sill	Government-approved scheme	0.029 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Government-approved scheme	0.062	Not Provided
External wall	E6: Intermediate floor within a dwelling	SAP table default	-0.042	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.021 **(!)**	Not Provided
External wall	E11: Eaves (insulation at rafter level)	Government-approved scheme	0.004 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.032 **(!)**	Not Provided
External wall	E13: Gable (insulation at rafter level)	Government-approved scheme	0.053	Not Provided
External wall	E16: Corner (normal)	Government-approved scheme	0.013 **(!)**	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	-0.115	Not Provided
External wall	E20: Exposed floor (normal)	Government-approved scheme	0.035 **(!)**	Not Provided
External wall	E21: Exposed floor (inverted)	Government-approved scheme	0.059	Not Provided
External wall	E24: Eaves (insulation at ceiling level - inverted)	Government-approved scheme	0.15	Not Provided
Roof	R1: Head of roof window	Government-approved scheme	0.058	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	R4: Ridge (vaulted ceiling)	Government-approved scheme	0.12	Not Provided
Roof	R6: Flat ceiling	SAP table default	-0.059	Not Provided
Roof	R7: Flat ceiling (inverted)	SAP table default	-0.046	Not Provided
Roof	R10: All other roof or room-in-roof junctions	Government-approved scheme	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: Heat pump with radiators or underfloor heating - Electricity

Efficiency	
Emitter type	Radiators
Flow temperature	45°C
System type	HeatPumpsWet
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	280 litres
Declared heat loss	1.13 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	1%	**N/A**
Manufacturer/Model	0	
Commissioning		

9 Local generation
N/A

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: 19 Feb 2025
b. Client Declaration	
N/A	