Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed by Stroma SAP 10.2 SAP 10 program, 10.2

Date: Mon 12 Jun 2023 21:34:11

Project Information			
Assessed By	John Young	Building Type	House, Detached
OCDEA Registration	STRO034821	Assessment Date	2023-06-04

Dwelling Details			
Assessment Type	As designed	Total Floor Area	241 m^2
Site Reference	Plot 1 - 27 Gravel Hill	Plot Reference	GF/FF 45.46
Address	Plot 1, 27 Gravel Hill, Emmer Green, READING, RG4 8QN		

Client Details	
Name	Not Provided
Company	Not Provided
Address	Not Provided, Not Provided, WF10 5QU

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	*8.11 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	1.45 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*42.92 kWh_{PE}/m^2*	
Dwelling primary energy	21.21 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.6 kWh/m^2*	
Dwelling fabric energy efficiency	40.2 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*	0.18	External (0.18)	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	GF (0.1)	OK
Roofs	*0.16*	0.11	Flats (0.15)	OK
Windows, doors, and roof windows	*1.6*	1.2	1 (1.2)	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: External	194.765	0.18
Exposed wall: Dormer	1.8	0.17
Ground floor: GF	120.51	0.1 **(!)**
Exposed roof: Ceiling	98.87	0.1 **(!)**
Exposed roof: Rafters	19.99	0.12
Exposed roof: Flats	5.21	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]
1, Doors	1.932	North	0.7	1.2
2, Doors	1.932	West	0.7	1.2
3, Windows (1)	21.6	North	0.7	1.2
4, Windows (1)	19.15	South	0.7	1.2
5, Windows (1)	0.651	West	0.7	1.2

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	E1: Steel lintel with perforated steel base plate	Not government-approved scheme	0.068	LABC
External wall	E3: Sill	Not government-approved scheme	0.027 **(!)**	LABC
External wall	E4: Jamb	Not government-approved scheme	0.021 **(!)**	LABC
External wall	E5: Ground floor (normal)	Not government-approved scheme	0.1	Not Provided
External wall	E6: Intermediate floor within a dwelling	Not government-approved scheme	0 **(!)**	Not Provided
External wall	E11: Eaves (insulation at rafter level)	Not government-approved scheme	0.007 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Not government-approved scheme	0.076	Not Provided
External wall	E13: Gable (insulation at rafter level)	Not government-approved scheme	0.073	Not Provided
External wall	E16: Corner (normal)	Not government-approved scheme	0.046	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	Not government-approved scheme	-0.059	Not Provided
Roof	R7: Flat ceiling (inverted)	Not government-approved scheme	0.12	Not Provided
Roof	R9: Roof to wall (flat ceiling)	Not government-approved scheme	0.32	Not Provided
Roof	R6: Flat ceiling	Not government-approved scheme	0.12	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	5 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference	Not Provided	

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	290.5%
Emitter type	Underfloor
Flow temperature	45°C
System type	
Manufacturer	
Model	
Commissioning	
Secondary heating system: Closed room heater	
Fuel	Wood logs
Efficiency	65.0%
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.77 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	75 lm/W	**OK**
External lights control	N/A	

8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	*N/A*	
Specific fan power	N/A	**N/A**
Minimum permitted heat recovery efficiency	*N/A*	
Heat recovery efficiency	N/A	**N/A**
Manufacturer/Model		
Commissioning		

9 Local generation	
Technology type: **Photovoltaic system (1)**	
Peak power	4 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: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	