

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 28 Mar 2025 15:46:20

Project Information			
Assessed By	Dhiraj Karsan	Building Type	House, Semi-detached
OCDEA Registration	EES/019966	Assessment Date	2025-03-28

Dwelling Details			
Assessment Type	As designed	Total Floor Area	186 m ²
Site Reference	Plot 1 7HR	Plot Reference	Plot 1-Gas Boiler
Address	Plot 1 7 Hawthorne Road, READING, RG4 6LY		

Client Details	
Name	Clearstream
Company	Clearstream Projects
Address	Unit 70, London, W5 2AA

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	8.16 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	6.47 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	42.75 kWh _{PE} /m ²		
Dwelling primary energy	34.88 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	37.1 kWh/m ²		
Dwelling fabric energy efficiency	34.2 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.11	Heat Loss Floor (0.11)	OK
Roofs	0.16	0.12	Roof (1) (0.14)	OK
Windows, doors, and roof windows	1.6	1.2	NW Door (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 ² K]
Exposed wall: Walls (1)	117.2	0.18
Sheltered wall: Walls (2)	28.1	0.11 (!)
Party wall: Party Wall (1)	72.7	0 (!)
Ground floor: Heat Loss Floor, Heat Loss Floor	89.7	0.11
Exposed roof: Roof (1)	17.5	0.14
Exposed roof: Roof (2)	55.2	0.11
Exposed roof: Roof (3)	10.52	0.13

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
NW Door, Door	1.89	North West	N/A	1.2
NW Windows, Windows	1.98	North West	0.7	1.2
NW Windows, Windows	0.66	North West	0.7	1.2
NE Windows, Windows	1.98	North East	0.7	1.2
NE Windows, Windows	1.98	North East	0.7	1.2
NE Windows, Windows	5.04	North East	0.7	1.2
NE Windows, Windows	1.68	North East	0.7	1.2
NE Roof Windows, Roof Windows	0.72	North East	0.7	1.2
NE Roof Windows, Roof Windows	0.72	North East	0.7	1.2
NE Roof Windows, Roof Windows	0.72	North East	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
SW Windows, Windows	1.98	South West	0.7	1.2
SW Windows, Windows	1.98	South West	0.7	1.2
SW Windows, Windows	0.66	South West	0.7	1.2
SW Windows, Windows	1.68	South West	0.7	1.2
SW Windows, Windows	0.99	South West	0.7	1.2
SW Roof Windows, Roof Windows	0.72	South West	0.7	1.2
Flat Roof Window, Roof Windows	6	Horizontal	0.7	1.2

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.04	
External wall	E3: Sill	Calculated by person with suitable expertise	0.03 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.03 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.07	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.09	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.08	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.06	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.08	

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		

4 Space heating

Main heating system 1: Boiler with radiators or underfloor heating - Mains gas

Efficiency	88.8%
Emitter type	Both radiators and underfloor
Flow temperature	55°C
System type	Regular boiler
Manufacturer	Bosch Thermotechnology
Model	Greenstar 8000 Style
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 litres
Declared heat loss	1.59 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	80.5 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	7.7 kWp	
Orientation	South West	
Pitch	30°	
Overshading	None or very little	
Manufacturer		
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:	
Name:	Date:	
b. Client Declaration		
N/A		