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 09 Dec 2024 13:27:05

Project Information			
Assessed By	Joanna Povey	Building Type	House, Detached
OCDEA Registration	KAZN000004	Assessment Date	2024-12-09

Dwelling Details			
Assessment Type	As built	Total Floor Area	149 m^2
Site Reference	Plot 1	Plot Reference	Plot 1
Address	1 John Bunyan Court, BEDFORD, MK43 7AY		

Client Details	
Name	DJS Building Solutions
Company	DJS Building Solutions
Address	Unit 24 Station Rd, Ampthill, BEDFORD, MK45 2QY

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	*10.73 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	3.69 kgCO_2/m^2	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.33 kWh$_{PE}$/m^2*	
Dwelling primary energy	38.13 kWh$_{PE}$/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*44.60 kWh/m^2*	
Dwelling fabric energy efficiency	39.89 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*	0.16	Wl - 1 (0.16)	**OK**
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.12	Flr - Exposed Floor (0.14)	**OK**
Roofs	*0.16*	0.11	Rf - Ins Rafter (0.15)	**OK**
Windows, doors, and roof windows	*1.6*	1.23	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 - 1	141.476	0.16
Exposed wall: Wl - 3	16.507	0.16
Exposed wall: Wl - Dormer	5.818	0.16
Exposed wall: Wl - Stud	15.262	0.16
Ground floor: Flr - Ground	67.397	0.12
Ground floor: Flr - Exposed Floor	13.911	0.14
Exposed roof: Rf - Ins Joist	78.681	0.11
Exposed roof: Rf - Ins Rafter	4.03	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]**
Front, Door (1)	2.091	East	0.7	1.1 **(!)**
Rear, Door (2)	4.977	West	0.7	1.4
Front, Windows (1)	7.772	East	0.7	1.2
L Side, Windows (2)	3.517	South	0.7	1.2
Rear, Windows (3)	4.982	West	0.7	1.2
Rear, Windows (4)	1.521	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	E2: Other lintels (including other steel lintels)	Government-approved scheme	0.057	Not Provided
External wall	E4: Jamb	Government-approved scheme	0.009 **(!)**	Not Provided
External wall	E3: Sill	Government-approved scheme	0.014 **(!)**	Not Provided
External wall	E5: Ground floor (normal)	Government-approved scheme	0.044	Not Provided
External wall	E6: Intermediate floor within a dwelling	Government-approved scheme	0.005 **(!)**	Not Provided
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.034 **(!)**	Not Provided
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.052	Not Provided
External wall	E13: Gable (insulation at rafter level)	Government-approved scheme	0.04	Not Provided
External wall	E16: Corner (normal)	Government-approved scheme	0.032 **(!)**	Not Provided
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	-0.088	Not Provided
External wall	E20: Exposed floor (normal)	Government-approved scheme	0.32	Not Provided
External wall	E21: Exposed floor (inverted)	Government-approved scheme	0.32	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	0.24	Not Provided
Roof	R2: Sill of roof window	Government-approved scheme	0.24	Not Provided
Roof	R3: Jamb of roof window	Government-approved scheme	0.24	Not Provided
Roof	R6: Flat ceiling	Government-approved scheme	0.12	Not Provided
Roof	R7: Flat ceiling (inverted)	Government-approved scheme	0.12	Not Provided
Roof	R8: Roof to wall (rafter)	Government-approved scheme	0.12	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	177.8%
Emitter type	Radiators
Flow temperature	55°C
System type	HeatPumpsWet
Manufacturer	Mitsubishi Electric Europe B.V.
Model	Ecodan 6.0 kW
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	250 litres
Declared heat loss	1.8 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: 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	1%	**N/A**
Manufacturer/Model		
Commissioning		

9 Local generation
N/A

10 Heat networks
N/A

11 Supporting documentary evidence	
Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name: Joanna Povey	Assessor ID: KAZN000004 Date: 09 Dec 2024
b. Client Declaration	
This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed: Name: DJS Building Solutions	Organisation: DJS Building Solutions Date: