Building Regulations England Part L (BREL) Compliance Report

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

Date: Sun 26 Feb 2023 12:34:05

Project Information			
Assessed By	Steven Leahy	Building Type	House, Detached
OCDEA Registration	EES/004184	Assessment Date	2023-02-26

Dwelling Details			
Assessment Type	As designed	Total Floor Area	213 m^2
Site Reference	Poyle Road - Plot 1	Plot Reference	Poyle Road Plot 1 - ASHP
Address	54 Plot 1 Poyle Road, Tongham, GU10 1DU		

Client Details	
Name	Harding Rose Architects
Company	Harding Rose Architects Limited
Address	Sterling House, Stroudley Road, Basingstoke, RG24 8UG

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	*7.95 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.83 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*41.62 kWh_{PE}/m^2*	
Dwelling primary energy	40.42 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*35.9 kWh/m^2*	
Dwelling fabric energy efficiency	33.2 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*	0.16	Walls (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*	0.13	Ground Floor (0.13)	OK
Roofs	*0.16*	0.13	Roof (1) (0.13)	OK
Windows, doors, and roof windows	*1.6*	1.18	South Windows (1.2)	OK
Rooflights	*2.2*	1.2	North Roof Windows, North (1.2)	OK

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: Walls (1)	175.805	0.16
Ground floor: Ground Floor, Ground Floor	86.24	0.13
Exposed roof: Roof (1)	98.04	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^2K]**
Entrance Door, Entrance Door	2.835	South	N/A	1 **(!)**
South Windows, Windows	2.16	South	0.7	1.2
South Windows, Windows	2.16	South	0.7	1.2
South Windows, Windows	2.16	South	0.7	1.2
South Windows, Windows	2.16	South	0.7	1.2
South Windows, Windows	1.2	South	0.7	1.2
North Windows, Windows	2.16	North	0.7	1.2
North Windows, Windows	2.16	North	0.7	1.2
North Windows, Windows	1.2	North	0.7	1.2
North Windows, Windows	1.2	North	0.7	1.2
North Windows, Windows	4.83	North	0.7	1.2
North Windows, Windows	4.83	North	0.7	1.2
West Windows, Windows	0.63	West	0.7	1.2

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
West Windows, Windows	0.63	West	0.7	1.2
North Roof Windows, Roof Window	0.48	North	0.7	1.2
North Roof Windows, Roof Window	0.48	North	0.7	1.2
North Roof Windows, Roof Window	0.48	North	0.7	1.2
North Roof Windows, Roof Window	0.48	North	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)	Calculated by person with suitable expertise	0.021 **(!)**	LABC
External wall	E3: Sill	Calculated by person with suitable expertise	0.027 **(!)**	LABC
External wall	E4: Jamb	Calculated by person with suitable expertise	0.041	LABC
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.056	LABC
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.01 **(!)**	LABC
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0 **(!)**	LABC
External wall	E11: Eaves (insulation at rafter level)	SAP table default	0.15	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.053	LABC
Roof	R1: Head of roof window	SAP table default	0.24	
Roof	R2: Sill of roof window	SAP table default	0.24	
Roof	R3: Jamb of roof window	SAP table default	0.24	

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: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	170.0%
Emitter type	Both radiators and underfloor
Flow temperature	35°C
System type	Air source heat pump
Manufacturer	
Model	
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	2.3 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 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	1 kWp
Orientation	South
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: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	