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, Tongh	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/m²		
Dwelling fabric energy efficiency	33.2 kWh/m ²	OK	

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m²K]	Dwelling average U-Value [W/m²K]	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)	ОК
Rooflights	2.2	1.2	North Roof Windows, North (1.2)	ОК

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)	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 [m²]	Orientation	Frame factor	U-Value [W/m ² K]
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

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Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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

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2d Thermal brid	dging (better than typically expec	ted values are flagged with a subs	equent (!))		
Building part 1 - Main Dwelling: Thermal bridging calculated from linear thermal transmittances for each junction					
Main element	Junction detail	Source	Psi value	Drawing /	
			[W/mK]	reference	
External wall	E2: Other lintels (including other	Calculated by person with suitable	0.021 (!)	LABC	
	steel lintels)	expertise			
External wall	E3: Sill	Calculated by person with suitable	0.027 (!)	LABC	
		expertise			
External wall	E4: Jamb	Calculated by person with suitable	0.041	LABC	
		expertise			
External wall	E5: Ground floor (normal)	Calculated by person with suitable	0.056	LABC	
		expertise			
External wall	E6: Intermediate floor within a	Calculated by person with suitable	0.01 (!)	LABC	
	dwelling	expertise			
External wall	E16: Corner (normal)	Calculated by person with suitable	0 (!)	LABC	
		expertise			
External wall	E11: Eaves (insulation at rafter	SAP table default	0.15		
	level)				
External wall	E13: Gable (insulation at rafter	Calculated by person with suitable	0.053	LABC	
	level)	expertise			
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		

Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services					
Eucodesign class Manufacturer Model Water heating - type: Cylinder thermostat and HW separately timed Manufacturer Model 7 Lighting Minimum permitted light source efficacy Robert System type: N/A Maximum permitted specific fan power N/A System type: N/A Maximum permitted specific fan power N/A Minimum permitted fact recovery efficiency N/A Heat recovery efficiency N/A ManufacturerModel Commissioning 9 Local generation Technology type: Photovoltaic system (1) Peak power 1 kWp Orientation South South None or very little 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 riue 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 required) has been reviewed in the course of preparing this BREL Compliance Report. Name: Date:					
Ecodesign class Mandfacturer Model Water heating - type: Cylinder thermostat and HW separately timed Manufacturer Model 7 Lighting Minimum permitted light source efficacy 75 Im/W OK External lights control N/A OK 8 Mechanical ventilation System type: N/A N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A N/A Minimum permitted specific fan power N/A Minimum pe		ature zone control by	arrangement of plumbing and electrical s	ervices	
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 Maximum permitted specific fan power N/A Minimum permitted specific fan power N/A Minimum permitted heat recovery efficiency N/A Minimum permitted heat recovery efficiency N/A Manufacturer/Model N/A Commissioning 9 Local generation Technology type: Photovoltaic system (1) Peak power N/A Pitch 30° Overshading None or very little Manufacturer None or very little Minimum very li	Function				
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Model	Water heating - type: Cylinder thermosta	at and HW separately	timed		
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	b. Client Declaration				

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