Building Regulations England Part L (BREL) Compliance Report

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

Date: Wed 17 Jan 2024 09:48:05

Project Information			
Assessed By	Harry Davey	Building Type	Bungalow, Detached
OCDEA Registration	EES/020345	Assessment Date	2024-01-17

Dwelling Details			
Assessment Type	As designed	Total Floor Area	64 m^2
Site Reference	7657-1	Plot Reference	00001
Address	Gods Farm Dwelling 1 Harts Lane, Ardleigh, CO7 7QQ		

Client Details	
Name	Client
Company	Company
Address	Address, Town, AA11 1AA

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	*11.51 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	3.58 kgCO_2/m^2	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.6 kWh$_{PE}$/m^2*	
Dwelling primary energy	41.87 kWh$_{PE}$/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*45.7 kWh/m^2*	
Dwelling fabric energy efficiency	45.6 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	Walls (1) (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	Heatloss Floor 1 (0.1)	**OK**
Roofs	*0.16*	0.13	Roof (1) (0.13)	**OK**
Windows, doors, and roof windows	*1.6*	1.2	Opening (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: Walls (1)	66.0475	0.18
Ground floor: Heatloss Floor 1, Heatloss Floor 1	63.65	0.1 **(!)**
Exposed roof: Roof (1)	63.65	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]**
Opening, hgd	3.045	West	N/A	1.2
Opening, window	1.8375	West	0.7	1.2
Opening, window	1.26	West	0.7	1.2
Opening, window	1.8375	East	0.7	1.2
Opening, window	0.4725	East	0.7	1.2
Opening, window	4.41	East	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	0.05	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.05	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.05	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.16	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.09	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	

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	352.6%
Emitter type	Underfloor
Flow temperature	35°C
System type	Heat Pump
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	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	1.2 kWp
Orientation	East
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	