Building Regulations England Part L (BREL) Compliance Report

Approved Document L1 2021 Edition, England assessed by Elmhurst Sap 10 SAP 10 program, 1.0

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Project Information			
Assessed By	Harry Davey	Building Type	Bungalow, Detached
OCDEA Registration	EES/020345	Assessment Date	2022-07-27

Dwelling Details			
Assessment Type	As designed	Total Floor Area	129 m^2
Site Reference	5644	Plot Reference	Be Green
Address	50 Belsize Park Garden Land behind, London, NW3 4ND		

Client Details	
Name	David Au-Yeong
Company	SGA Consulting Ltd
Address	3rd Floor,, Unit 2 Pride Court, 80-82 White Lion Street, London, N1 9PF

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	*10.58 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	4.79 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*57.87 kWh$_{PE}$/m^2*	
Dwelling primary energy	50.74 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*58.2 kWh/m^2*	
Dwelling fabric energy efficiency	57.5 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	Heat Loss Floor 1 (0.1)	OK
Roofs	*0.16*	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	*1.6*	1.2	Opening 1 (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)	129.01	0.18
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	129.04	0.1 **(!)**
Exposed roof: Roof (1)	19.144	0.11
Exposed roof: Roof (2)	106.77	0.11

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 1, Window	6.24	North West	0.8	1.2
Opening 1, Window	6.816	North West	0.8	1.2
Opening 1, Window	2.52	North West	0.8	1.2
Opening 1, Window	4.8	North West	0.8	1.2
Opening 1, Window	7.104	North West	0.8	1.2
Opening 2, Window	3.72	South East	0.8	1.2
Opening 2, Window	5.76	South East	0.8	1.2
Opening 2, Window	25.8	South East	0.8	1.2
Opening 3, Window	5.6	South West	0.8	1.2
Opening 4, rooflight	3.036	Horizontal	0.7	1.2
Opening 4, rooflight	1.71	Horizontal	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	
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	
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	0.08	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.08	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.24	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.04	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.04	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.09	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.09	
Roof	R8: Roof to wall (rafter)	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	3 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	263.3%
Emitter type	Underfloor
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Mitsubishi Electric Europe B.V.
Model	Ecodan 8.5 kW
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	2.1 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: N/A		
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: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	*1.5 W/(l/s)*	
Specific fan power	0.6 W/(l/s)	**OK**
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	89%	**OK**
Manufacturer/Model	MRXBOXAB-ECO3	
Commissioning		

9 Local generation
N/A

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	