Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 26 Oct 2023 12:16:22

Project Information			
Assessed By	Harry Davey	Building Type	Flat, Semi-detached
OCDEA Registration	EES/020345	Assessment Date	2023-10-26

Dwelling Details			
Assessment Type	As designed	Total Floor Area	103 m^2
Site Reference	6408-2	Plot Reference	Green
Address	23 Flat 5 Crescent East, London, EN4 0EY		

Client Details	
Name	Igli Salillari
Company	PK Developments
Address	66 The Transmitting Station, Hatfield, AL9 6NE

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	Heat network	
Target carbon dioxide emission rate	*11.83 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	3.78 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*62.03 kWh_{PE}/m^2*	
Dwelling primary energy	39.87 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*39.2 kWh/m^2*	
Dwelling fabric energy efficiency	36.8 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*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.15	Heatloss Floor 1 (0.15)	**OK**
Roofs	*0.16*	0.13	Roof (1) (0.13)	**OK**
Windows, doors, and roof windows	*1.6*	1.22	Opening (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: Walls (1)	65.6	0.18
Exposed wall: Walls (2)	23.41	0.18
Party wall: Party Wall (1)	10.53	0 **(!)**
Party floor: Heatloss Floor 1, Heatloss Floor 1	3.68	0.15
Exposed roof: Roof (1)	5.5	0.13
Exposed roof: Roof (2)	23.23	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, DTC	1.89	West	N/A	1.4
Opening, window	1.26	North	0.7	1.2
Opening, window	3.91	North	0.7	1.2
Opening, window	3.91	North	0.7	1.2
Opening, window	1.75	South	0.7	1.2
Opening, window	1.75	South	0.7	1.2
Opening, window	1.75	South	0.7	1.2
Opening, window	1.26	East	0.7	1.2
Opening, window	1.26	East	0.7	1.2
Opening, window	1.26	East	0.7	1.2
Opening, window	1.26	East	0.7	1.2

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

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	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.07	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	
External wall	E20: Exposed floor (normal)	SAP table default	0.32	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.08	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	
External wall	E14: Flat roof	SAP table default	0.16	
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	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.06	
Party wall	P8: Exposed floor (inverted)	SAP table default	0.48	
Party wall	P4: Roof (insulation at ceiling level)	SAP table default	0.48	

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	3.5 m^3/hm^2, Design value **(!)**	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat network - Heat network	
Efficiency	
Emitter type	
Flow temperature	
System type	
Manufacturer	
Model	
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: N/A	
Efficiency	
Manufacturer	
Model	

6 Controls		
Main heating 1 - type: Charging system linked to use of heating, programmer, and at least two room thermostats		
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	0.53 W/(l/s)	**OK**
Minimum permitted heat recovery efficiency	*73%*	
Heat recovery efficiency	90%	**OK**
Manufacturer/Model	MRXBOXAB-ECO3	
Commissioning		

9 Local generation
N/A

10 Heat networks	
Network name: Array	
Service provision	Space and water heating
Status	New heat network
Carbon dioxide emission factor for delivered heat	0.043 $kgCO_2/kWh$
Primary energy factor for delivered heat	0.455 kWh_{PE}/kWh

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	