

# 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	Maisonette, Semi-detached
OCDEA Registration	EES/020345	Assessment Date	2023-10-26

Dwelling Details			
Assessment Type	As designed	Total Floor Area	137 m <sup>2</sup>
Site Reference	6408-1	Plot Reference	Green
Address	23 Flat 1 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	13.44 kgCO <sub>2</sub> /m <sup>2</sup>	
Dwelling carbon dioxide emission rate	4.34 kgCO <sub>2</sub> /m <sup>2</sup>	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	70.99 kWh <sub>PE</sub> /m <sup>2</sup>	
Dwelling primary energy	45.5 kWh <sub>PE</sub> /m <sup>2</sup>	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	49.9 kWh/m <sup>2</sup>	
Dwelling fabric energy efficiency	48.8 kWh/m <sup>2</sup>	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m <sup>2</sup> K]	Dwelling average U-Value [W/m <sup>2</sup> K]	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	0.1	Heatloss Floor 1 (0.1)	OK
Roofs	0.16	0.13	Roof (1) (0.13)	OK
Windows, doors, and roof windows	1.6	1.21	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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]
Exposed wall: Walls (1)	90.7	0.18
Exposed wall: Walls (2)	22.8	0.18
Exposed wall: Walls (3)	19	0.18
Party wall: Party Wall (1)	19.76	0 (!)
Ground floor: Heatloss Floor 1, Heatloss Floor 1	71.82	0.1 (!)
Upper floor: Heatloss Floor 2, Heatloss Floor 2	14.74	0.1 (!)
Exposed roof: Roof (1)	50.31	0.13

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Opening, DTC	1.89	East	N/A	1.4
Opening, window	4.25	North	0.7	1.2
Opening, window	4.25	North	0.7	1.2
Opening, window	4.25	North	0.7	1.2
Opening, window	4.25	North	0.7	1.2
Opening, window	2.5	North	0.7	1.2
Opening, window	2.5	North	0.7	1.2
Opening, window	1.4	West	0.7	1.2
Opening, window	1.4	West	0.7	1.2
Opening, window	1.4	West	0.7	1.2

Name	Area [m <sup>2</sup> ]	Orientation	Frame factor	U-Value [W/m <sup>2</sup> K]
Opening, window	1.2	West	0.7	1.2
Opening, window	1.89	West	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	
External wall	E20: Exposed floor (normal)	SAP table default	0.32	
External wall	E21: Exposed floor (inverted)	SAP table default	0.32	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0 (!)	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.07	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.08	
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.09	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 (!)	
Party wall	P7: Exposed floor (normal)	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 <sup>3</sup> /hm <sup>2</sup>	
Dwelling air permeability at 50Pa	3.5 m <sup>3</sup> /hm <sup>2</sup> , 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	

<b>Waste water heat recovery system 1</b> - type: N/A		
Efficiency		
Manufacturer		
Model		
<b>6 Controls</b>		
<b>Main heating 1</b> - type: Charging system linked to use of heating, programmer, and at least two room thermostats		
Function		
Ecodesign class		
Manufacturer		
Model		
<b>Water heating</b> - type: N/A		
Manufacturer		
Model		
<b>7 Lighting</b>		
<i>Minimum permitted light source efficacy</i>	75 lm/W	
Lowest light source efficacy	80 lm/W	OK
External lights control	N/A	
<b>8 Mechanical ventilation</b>		
<b>System type:</b> Balanced whole-house mechanical ventilation with heat recovery		
<i>Maximum permitted specific fan power</i>	1.5 W/(l/s)	
Specific fan power	0.75 W/(l/s)	OK
<i>Minimum permitted heat recovery efficiency</i>	73%	
Heat recovery efficiency	88%	OK
Manufacturer/Model	MRXBOXAB-ECO3	
Commissioning		
<b>9 Local generation</b>		
N/A		
<b>10 Heat networks</b>		
<b>Network name:</b> Array		
Service provision	Space and water heating	
Status	New heat network	
Carbon dioxide emission factor for delivered heat	0.044 kgCO <sub>2</sub> /kWh	
Primary energy factor for delivered heat	0.458 kWh <sub>PE</sub> /kWh	
<b>11 Supporting documentary evidence</b>		
N/A		
<b>12 Declarations</b>		
<b>a. Assessor Declaration</b>		
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:	Assessor ID:	
Name:	Date:	
<b>b. Client Declaration</b>		
N/A		