

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 29 Apr 2025 13:35:06

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-04-29

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 01	Plot Reference	AB
Address	69 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.31 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.65 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	53.82 kWh _{PE} /m ²		
Dwelling primary energy	38.15 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	35.4 kWh/m ²		
Dwelling fabric energy efficiency	35.3 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]	
Exposed wall: Walls (1)	88.92675	0.19	
Exposed wall: Walls (2)	4.0495	0.18	
Exposed wall: Walls (3)	12.26	0.1 (!)	
Party wall: Party Wall (1)	56.73	0 (!)	
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)	
Exposed roof: Roof (1)	20.77708	0.1 (!)	
Exposed roof: Roof (2)	18.48	0.13	
Exposed roof: Roof (3)	2.26	0.1 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	2.715	North East	1.0	1.4
Front Windows, Window	0.483	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	3.255	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Rear Windows, Window	2.945	South West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.37 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	243.1%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID:

P399-0001

Name:

JEN MATTHEW

Date:

29.04.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCHURCH HOMES LTD

Name:

STEVEN LUDLAM

Date:

29.04.2025

Building Regulations England Part L (BREL) Compliance Report

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OCDEA Registration	EES/019242	Assessment Date	2025-04-29

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Address	67 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.31 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.34 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	48.48 kWh _{PE} /m ²		
Dwelling primary energy	34.97 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.5 kWh/m ²		
Dwelling fabric energy efficiency	29.9 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	28.45675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	113.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	2.715	North East	1.0	1.4
Front Windows, Window	0.483	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	3.255	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Rear Windows, Window	2.945	South West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

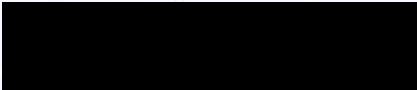
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	2.95 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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		
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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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
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12 Declarations	
a. Assessor Declaration	
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Signed: 	Assessor ID: 0388-0001
Name: BEN MARTINSON	Date: 29.04.2025
b. Client Declaration	
This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed: 	Organisation: WESTCOTCH HOMES LTD
Name: STEVEN LUDLAM	Date: 29.04.2025

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Dwelling primary energy	34.97 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	30.5 kWh/m ²	
Dwelling fabric energy efficiency	30.0 kWh/m ²	OK

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Roofs	0.16	0.11	Roof (2) (0.13)	OK
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Roof	R3: Jamb of roof window	SAP table default	0.24	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.24	

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Fuel	N/A	
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Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	250 litres	
Declared heat loss	2 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: N/A		
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8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID:

P398-001

Name:

BEN MATTEN

Date:

6.04.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation:

WESTCHURCH HOMES LTD

Name:

STEVEN LUDLAM

Date:

29.04.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 29 Apr 2025 13:35:06

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-04-29

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 04	Plot Reference	AB
Address	63 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.31 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.34 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	48.48 kWh _{PE} /m ²	
Dwelling primary energy	34.97 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	30.5 kWh/m ²	
Dwelling fabric energy efficiency	30.2 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	28.45675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	113.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	2.715	North East	1.0	1.4
Front Windows, Window	0.483	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	3.255	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Rear Windows, Window	2.945	South West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.5 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	
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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed:  Name: BEN MATTHEWS	Assessor ID: P397-0001 Date: 29.04.2025
b. Client Declaration This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed:  Name: STEVEN LUDLAM	Organisation: WESTCHURCH HOMES LTD. Date: 29.04.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 29 Apr 2025 13:35:06

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-04-29

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 05	Plot Reference	AB
Address	61 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.31 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.34 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	48.48 kWh _{PE} /m ²	
Dwelling primary energy	34.97 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	30.5 kWh/m ²	
Dwelling fabric energy efficiency	30.1 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	28.45675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	113.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	2.715	North East	1.0	1.4
Front Windows, Window	0.483	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	3.255	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Rear Windows, Window	2.945	South West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.39 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	
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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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: 	Assessor ID: P398-0001
Name: BEN MATTHEW	Date: 29.04.2025
b. Client Declaration This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed: 	Organisation: WESTATON HILLS LTD
Name: STEVEN LUDLAM	Date: 29.04.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 29 Apr 2025 13:35:06

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-04-29

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 06	Plot Reference	AB
Address	59 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.31 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.34 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	48.48 kWh _{PE} /m ²		
Dwelling primary energy	34.97 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.5 kWh/m ²		
Dwelling fabric energy efficiency	30.1 kWh/m ²		OK

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External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 (!))		
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Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

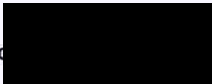
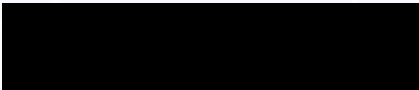
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

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External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.44 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: BEN MATTHEW</p>	<p>Assessor ID: 12345-0001</p> <p>Date: 24.04.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN WOLHAM</p>	<p>Organisation: WESTCOTE HOMES LTD</p> <p>Date: 29.04.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 29 Apr 2025 13:35:06

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-04-29

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 07	Plot Reference	AB
Address	57 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.31 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.34 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	48.48 kWh _{PE} /m ²		
Dwelling primary energy	34.97 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.5 kWh/m ²		
Dwelling fabric energy efficiency	29.9 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	28.45675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	113.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	2.715	North East	1.0	1.4
Front Windows, Window	0.483	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	3.255	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Rear Windows, Window	2.945	South West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (I))

Building part 1: 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	0.039 (I)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (I)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (I)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (I)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (I)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (I)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (I)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (I)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (I)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.24	

3 Air permeability (better than typically expected values are flagged with a subsequent (I))

Maximum permitted air permeability at 50Pa	8 m ³ /hm ²	
Dwelling air permeability at 50Pa	3.08 m ³ /hm ² , Measured value (I)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID:

P123-0001

Name:

DEN MATTHEW

Date:

29.04.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation:

WESTCHURCH HOMES LTD

Name:

STEVEN LUDLAM

Date:

29.04.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 29 Apr 2025 13:35:06

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-04-29

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 08	Plot Reference	AB
Address	55 Louisa Street, MANCHESTER, M11 1AD		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.31 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.65 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	53.82 kWh _{PE} /m ²		
Dwelling primary energy	38.15 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	35.4 kWh/m ²		
Dwelling fabric energy efficiency	35.2 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	88.92675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	56.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	2.715	North East	1.0	1.4
Front Windows, Window	0.483	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	3.255	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Rear Windows, Window	2.945	South West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.21 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	243.1%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

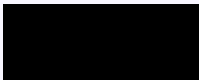
11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

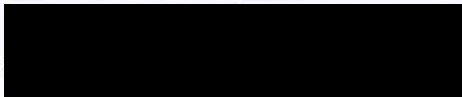
Name: BEN MATTHEW

Date: 29.04.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCHURCH HOMES LTD

Name: STEVEN WUDLAM

Date: 29.04.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 09	Plot Reference	AB
Address	1 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	11.77 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.93 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	61.66 kWh _{PE} /m ²	
Dwelling primary energy	41.04 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	36.9 kWh/m ²	
Dwelling fabric energy efficiency	36.7 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	81.799925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	55.01	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

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

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.14 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	223.7%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: BEN MATTHEWS</p>	<p>Assessor ID: P370001</p> <p>Date: 02.05.2021</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM</p>	<p>Organisation: WESTCOTT HOMES LTD.</p> <p>Date: 02.05.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 10	Plot Reference	AB
Address	3 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.6 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	55.39 kWh _{PE} /m ²		
Dwelling primary energy	37.51 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	31.3 kWh/m ²		
Dwelling fabric energy efficiency	30.7 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.43 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	215.2%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: BEN MATTHEW</p>	<p>Assessor ID: P138-0001</p> <p>Date: 02.05.2021</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM</p>	<p>Organisation: WESTCHURCH HOMES LTD.</p> <p>Date: 02.05.2021</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 11	Plot Reference	AB
Address	5 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.51 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	54.86 kWh _{PE} /m ²		
Dwelling primary energy	37.51 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.8 kWh/m ²		
Dwelling fabric energy efficiency	30.3 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.36 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	215.2%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: BEW MATTHEW</p>	<p>Assessor ID: P3880001</p> <p>Date: 02.05.2021</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM</p>	<p>Organisation: WESTCHURCH HOMES LTD.</p> <p>Date: 02.05.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 12	Plot Reference	AB
Address	7 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.51 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	54.86 kWh _{PE} /m ²		
Dwelling primary energy	37.51 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.8 kWh/m ²		
Dwelling fabric energy efficiency	30.2 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.11 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	215.2%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

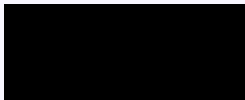
11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P378-0001

Name: BEN MATTHEW

Date: 02.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCOTCH HOMES LTD

Name: STEVEN LUDLAM

Date: 02.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 13	Plot Reference	AB
Address	9 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.51 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	54.86 kWh _{PE} /m ²	
Dwelling primary energy	37.51 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	30.8 kWh/m ²	
Dwelling fabric energy efficiency	30.3 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.31 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	215.2%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID:

P788-0001

Name:

BEN MATTIAS

Date:

02-05-2021

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation:

WESTCHURCH HOMES LTD

Name:

STEVEN LUDLAM

Date:

02-05-2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 14	Plot Reference	AB
Address	11 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.6 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	55.39 kWh _{PE} /m ²	
Dwelling primary energy	37.51 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	31.3 kWh/m ²	
Dwelling fabric energy efficiency	30.6 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.29 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	215.2%
Emitter type	Radiators
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Panasonic HVAC UK Ltd
Model	WH-SDC0305J3E5 + WH-UD03JE5
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	
5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	200 litres
Declared heat loss	1.7 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
External lights control	N/A
8 Mechanical ventilation	
System type: Decentralised mechanical extract	
Maximum permitted specific fan power	0.7 W/(l/s)
Specific fan power	0.09 W/(l/s)
Minimum permitted heat recovery efficiency	N/A
Heat recovery efficiency	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095
Commissioning	
9 Local generation	
N/A	
10 Heat networks	
N/A	

11 Supporting documentary evidence Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	
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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: 	Assessor ID: P311-0001
Name: DEN MATTHEW	Date: 02.05.2021
b. Client Declaration This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed: 	Organisation: WESTCOTCH HOMES LTD
Name: STEVEN LUDLAM	Date: 02.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 02 May 2025 11:51:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-02

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 15	Plot Reference	AB
Address	13 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	11.77 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.93 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	61.66 kWh _{PE} /m ²		
Dwelling primary energy	41.04 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	36.9 kWh/m ²		
Dwelling fabric energy efficiency	36.7 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	81.799925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	55.01	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	North East	1.0	1.4
Front Windows, Window	1.0731	North East	1.0	1.4
Front Windows, Window	1.787625	North East	1.0	1.4
Front Doors, Door	2.1462	North East	N/A	1.1 (!)
Rear HGD, Window	1.9572	South West	1.0	1.4
Rear Windows, Window	1.7829	South West	1.0	1.4
Rear Windows, Window	2.2923	South West	1.0	1.4
Dormer Window, Window	1.9005	North East	1.0	1.4
Rooflight, Roof Window	1.34292	South West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

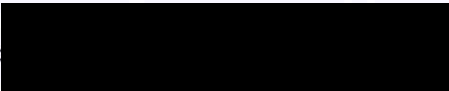
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.13 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	223.7%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.	
11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.	
11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	
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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: 	Assessor ID: P388-001
Name: BEN MATTHEW	Date: 02.05.2025
b. Client Declaration	
This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed: 	Organisation: WESTCHURCH HOMES LTD
Name: STEVEN LUDLAM	Date: 02.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	113 m ²
Site Reference	R3103 Louisa Street Plot 16	Plot Reference	AB
Address	15 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.31 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.51 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	53.83 kWh _{PE} /m ²		
Dwelling primary energy	36.61 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	35.2 kWh/m ²		
Dwelling fabric energy efficiency	34.7 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	85.9252	0.19
Exposed wall: Walls (2)	18.1624	0.18
Exposed wall: Walls (3)	10.8	0.1 (!)
Party wall: Party Wall (1)	53.19	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	42.51	0.09 (!)
Exposed roof: Roof (1)	19.8548	0.1 (!)
Exposed roof: Roof (2)	19.76	0.13
Exposed roof: Roof (3)	3.76	0.18
Exposed roof: Roof (4)	2.76	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.16495	North West	1.0	1.4
Front Windows, Window	1.0731	North West	1.0	1.4
Front Windows, Window	1.7829	North West	1.0	1.4
Front Windows, Window	0.60165	North West	1.0	1.4
Front Doors, Door	2.1462	North West	N/A	1.1 (!)
Rear HGD, Window	3.78	South East	1.0	1.4
Rear Windows, Window	1.2264	South East	1.0	1.4
Rear Windows, Window	1.6848	South East	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Rear Windows, Window	1.6848	South East	1.0	1.4
Dormer Window, Window	2.0376	North West	1.0	1.4
Rooflight, Roof Window	1.3452	South East	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	Dormer
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.04	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.039 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.03 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.04 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	239.8%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		

9 Local generation		
N/A		

10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

Name: Ben Matthews

Date: 13.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCHURCH HOMES LTD

Name: STEVEN LUDLAM

Date: 13.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	113 m ²
Site Reference	R3103 Louisa Street Plot 17	Plot Reference	AB
Address	17 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.66 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.29 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	50.35 kWh _{PE} /m ²	
Dwelling primary energy	34.36 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	32.1 kWh/m ²	
Dwelling fabric energy efficiency	31.3 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	41.3552	0.19
Exposed wall: Walls (2)	18.1624	0.18
Exposed wall: Walls (3)	10.8	0.1 (!)
Party wall: Party Wall (1)	106.38	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	42.51	0.09 (!)
Exposed roof: Roof (1)	19.8548	0.1 (!)
Exposed roof: Roof (2)	19.76	0.13
Exposed roof: Roof (3)	3.76	0.18
Exposed roof: Roof (4)	2.76	0.1 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.16495	North West	1.0	1.4
Front Windows, Window	1.0731	North West	1.0	1.4
Front Windows, Window	1.7829	North West	1.0	1.4
Front Windows, Window	0.60165	North West	1.0	1.4
Front Doors, Door	2.1462	North West	N/A	1.1 (!)
Rear HGD, Window	3.78	South East	1.0	1.4
Rear Windows, Window	1.2264	South East	1.0	1.4
Rear Windows, Window	1.6848	South East	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Rear Windows, Window	1.6848	South East	1.0	1.4
Dormer Window, Window	2.0376	North West	1.0	1.4
Rooflight, Roof Window	1.3452	South East	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	Dormer
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.04	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.039 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.03 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.43 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	231.5%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: Ben Matthews</p>	<p>Assessor ID: P388-0001</p> <p>Date: 13.05.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM</p>	<p>Organisation: WEST CHURCH HOMES LTD</p> <p>Date: 13.05.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	113 m ²
Site Reference	R3103 Louisa Street Plot 18	Plot Reference	AB
Address	19 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.66 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.29 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	50.35 kWh _{PE} /m ²		
Dwelling primary energy	34.36 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	32.1 kWh/m ²		
Dwelling fabric energy efficiency	31.1 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]	
Exposed wall: Walls (1)	41.3552	0.19	
Exposed wall: Walls (2)	18.1624	0.18	
Exposed wall: Walls (3)	10.8	0.1 (!)	
Party wall: Party Wall (1)	106.38	0 (!)	
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	42.51	0.09 (!)	
Exposed roof: Roof (1)	19.8548	0.1 (!)	
Exposed roof: Roof (2)	19.76	0.13	
Exposed roof: Roof (3)	3.76	0.18	
Exposed roof: Roof (4)	2.76	0.1 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.16495	North West	1.0	1.4
Front Windows, Window	1.0731	North West	1.0	1.4
Front Windows, Window	1.7829	North West	1.0	1.4
Front Windows, Window	0.60165	North West	1.0	1.4
Front Doors, Door	2.1462	North West	N/A	1.1 (!)
Rear HGD, Window	3.78	South East	1.0	1.4
Rear Windows, Window	1.2264	South East	1.0	1.4
Rear Windows, Window	1.6848	South East	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Rear Windows, Window	1.6848	South East	1.0	1.4
Dormer Window, Window	2.0376	North West	1.0	1.4
Rooflight, Roof Window	1.3452	South East	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	Dormer
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.04	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.039 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.03 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.02 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	231.5%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: Ben Matthews</p>	<p>Assessor ID: P388-0001</p> <p>Date: 13.05.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM</p>	<p>Organisation: WESTCHURCH HOMES LTD.</p> <p>Date: 13.05.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	113 m ²
Site Reference	R3103 Louisa Street Plot 19	Plot Reference	AB
Address	21 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.41 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.51 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	54.39 kWh _{PE} /m ²		
Dwelling primary energy	36.61 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	35.8 kWh/m ²		
Dwelling fabric energy efficiency	35.2 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]	
Exposed wall: Walls (1)	85.9252	0.19	
Exposed wall: Walls (2)	18.1624	0.18	
Exposed wall: Walls (3)	10.8	0.1 (!)	
Party wall: Party Wall (1)	53.19	0 (!)	
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	42.51	0.09 (!)	
Exposed roof: Roof (1)	19.8548	0.1 (!)	
Exposed roof: Roof (2)	19.76	0.13	
Exposed roof: Roof (3)	3.76	0.18	
Exposed roof: Roof (4)	2.76	0.1 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.16495	North West	1.0	1.4
Front Windows, Window	1.0731	North West	1.0	1.4
Front Windows, Window	1.7829	North West	1.0	1.4
Front Windows, Window	0.60165	North West	1.0	1.4
Front Doors, Door	2.1462	North West	N/A	1.1 (!)
Rear HGD, Window	3.78	South East	1.0	1.4
Rear Windows, Window	1.2264	South East	1.0	1.4
Rear Windows, Window	1.6848	South East	1.0	1.4

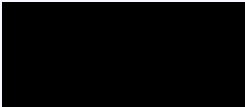
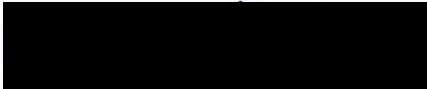
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Rear Windows, Window	1.6848	South East	1.0	1.4
Dormer Window, Window	2.0376	North West	1.0	1.4
Rooflight, Roof Window	1.3452	South East	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	Dormer
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.04	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.08	
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.039 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.03 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.28 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		
4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	239.8%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: Ben Matthews</p>	<p>Assessor ID: P388-0001</p> <p>Date: 13.05.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM.</p>	<p>Organisation: WESTCHURCH HOMES LTD.</p> <p>Date: 13. 05. 2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 20	Plot Reference	AB
Address	20 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	11.68 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.9 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	61.18 kWh _{PE} /m ²		
Dwelling primary energy	40.77 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	36.5 kWh/m ²		
Dwelling fabric energy efficiency	36.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]	
Exposed wall: Walls (1)	81.799925	0.19	
Exposed wall: Walls (2)	4.3295	0.18	
Exposed wall: Walls (3)	9.4	0.1 (!)	
Party wall: Party Wall (1)	55.01	0 (!)	
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)	
Exposed roof: Roof (1)	20.88708	0.1 (!)	
Exposed roof: Roof (2)	14.46	0.13	
Exposed roof: Roof (3)	1.82	0.18	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	1.787625	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	1.9572	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

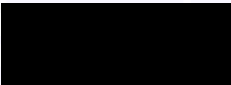
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.39 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	223.8%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: Ben Matthews</p>	<p>Assessor ID: P388-0001</p> <p>Date: 13.05.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: SEVEN LUDLAM</p>	<p>Organisation: WESTCHURCH HOMES LTD.</p> <p>Date: 13 . 05 . 2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 21	Plot Reference	AB
Address	18 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.52 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.56 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	54.91 kWh _{PE} /m ²		
Dwelling primary energy	37.26 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.9 kWh/m ²		
Dwelling fabric energy efficiency	30.3 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	1.787625	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	1.9572	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

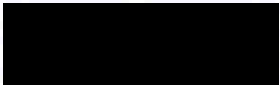
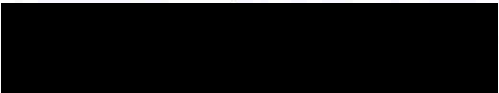
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.36 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	215.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: Ben Matthews</p>	<p>Assessor ID: P388-0001</p> <p>Date: 13.05.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM.</p>	<p>Organisation: WESTCOTRAC HOMES LTD.</p> <p>Date: 13.05.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 22	Plot Reference	AB
Address	16 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.52 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.56 kgCO ₂ /m ²	OK

1b Target primary energy rate and dwelling primary energy		
Target primary energy	54.91 kWh _{PE} /m ²	
Dwelling primary energy	37.26 kWh _{PE} /m ²	OK

1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	30.9 kWh/m ²	
Dwelling fabric energy efficiency	30.3 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.17	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	27.209925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	110.02	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	1.787625	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	1.9572	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.32 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	215.3%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

Name: Ben Matthews

Date: 13.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCHURCH HOMES LTD

Name: STEVEN LUDLAM

Date: 13.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	90 m ²
Site Reference	R3103 Louisa Street Plot 23	Plot Reference	AB
Address	14 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	11.58 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.88 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	60.63 kWh _{PE} /m ²		
Dwelling primary energy	40.56 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	36.0 kWh/m ²		
Dwelling fabric energy efficiency	35.8 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	81.799925	0.19
Exposed wall: Walls (2)	4.3295	0.18
Exposed wall: Walls (3)	9.4	0.1 (!)
Party wall: Party Wall (1)	55.01	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	32.41	0.09 (!)
Exposed roof: Roof (1)	20.88708	0.1 (!)
Exposed roof: Roof (2)	14.46	0.13
Exposed roof: Roof (3)	1.82	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	1.787625	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	1.9572	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
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2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.1	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.084	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.49 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	223.0%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		
5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	200 litres	
Declared heat loss	1.7 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

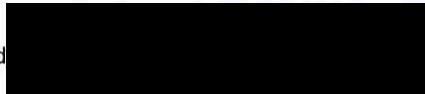
Name: Ben Matthews

Date: 13.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCHURCH HOMES LTD

Name: STEVEN LUDLAM

Date: 13.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 24	Plot Reference	AB
Address	12 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.26 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.47 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	53.56 kWh _{PE} /m ²	
Dwelling primary energy	36.1 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	35.1 kWh/m ²	
Dwelling fabric energy efficiency	35.0 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	88.92675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	56.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	2.715	South East	1.0	1.4
Front Windows, Window	0.483	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	3.255	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Rear Windows, Window	2.945	North West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.1	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.34 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	242.6%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

Name: Ben Matthews

Date: 13.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: WESTCHURCH HOMES LTD

Name: STEVEN LUDLAM

Date: 25.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 25	Plot Reference	AB
Address	10 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.37 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.18 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	48.77 kWh _{PE} /m ²		
Dwelling primary energy	33.2 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	30.8 kWh/m ²		
Dwelling fabric energy efficiency	30.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	28.45675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	113.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	2.715	South East	1.0	1.4
Front Windows, Window	0.483	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	3.255	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Rear Windows, Window	2.945	North West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

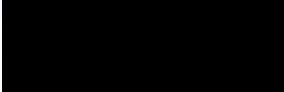
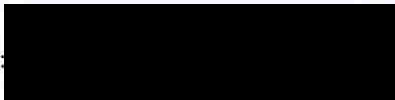
Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.49 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.5%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence	
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>	
12 Declarations	
a. Assessor Declaration	
<p>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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.</p>	
<p>Signed: </p> <p>Name: Ben Matthews</p>	<p>Assessor ID: P388-0001</p> <p>Date: 13.05.2025</p>
b. Client Declaration	
<p>This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.</p>	
<p>Signed: </p> <p>Name: STEVEN LUDLAM.</p>	<p>Organisation: WESTCHURCH HOMES LTD.</p> <p>Date: 13.05.2025</p>

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:45

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, Mid-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 26	Plot Reference	AB
Address	8 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	9.37 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.18 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	48.77 kWh _{PE} /m ²	
Dwelling primary energy	33.2 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	30.8 kWh/m ²	
Dwelling fabric energy efficiency	30.3 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.16	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	28.45675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	113.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	2.715	South East	1.0	1.4
Front Windows, Window	0.483	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	3.255	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Rear Windows, Window	2.945	North West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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	3.12 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	232.5%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

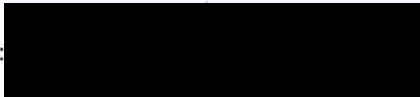
Name: Ben Matthews

Date: 13.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed:



Organisation: *WESTCOTT HOMES LTD*

Name: *STEVEN LUDLAM*

Date: *13.05.2025*

Building Regulations England Part L (BREL) Compliance Report

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

Date: Mon 12 May 2025 15:21:44

Project Information			
Assessed By	Benjamin Matthews	Building Type	House, End-terrace
OCDEA Registration	EES/019242	Assessment Date	2025-05-12

Dwelling Details			
Assessment Type	As built	Total Floor Area	116 m ²
Site Reference	R3103 Louisa Street Plot 27	Plot Reference	AB
Address	6 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.26 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.47 kgCO ₂ /m ²	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	53.56 kWh _{PE} /m ²	
Dwelling primary energy	36.1 kWh _{PE} /m ²	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	35.1 kWh/m ²	
Dwelling fabric energy efficiency	35.0 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.19)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.09	Heat Loss Floor 1 (0.09)	OK
Roofs	0.16	0.12	Roof (3) (0.18)	OK
Windows, doors, and roof windows	1.6	1.37	Front Windows (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 ² K]
Exposed wall: Walls (1)	88.92675	0.19
Exposed wall: Walls (2)	4.0495	0.18
Exposed wall: Walls (3)	12.26	0.1 (!)
Party wall: Party Wall (1)	56.73	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	40.26	0.09 (!)
Exposed roof: Roof (1)	20.77708	0.1 (!)
Exposed roof: Roof (2)	18.48	0.13
Exposed roof: Roof (3)	2.26	0.18

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.85075	South East	1.0	1.4
Front Windows, Window	1.0731	South East	1.0	1.4
Front Windows, Window	2.715	South East	1.0	1.4
Front Windows, Window	0.483	South East	1.0	1.4
Front Doors, Door	2.1462	South East	N/A	1.1 (!)
Rear HGD, Window	3.255	North West	1.0	1.4
Rear Windows, Window	1.7829	North West	1.0	1.4
Rear Windows, Window	2.2923	North West	1.0	1.4
Rear Windows, Window	2.945	North West	1.0	1.4

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Dormer Window, Window	1.9005	South East	1.0	1.4
Rooflight, Roof Window	1.34292	North West	0.7	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.1	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.082	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.081	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	SAP table default	0.18	
External wall	E17: Corner (inverted - internal area greater than external area)	SAP table default	0 (!)	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 (!)	
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.041	
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.04	
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.04	
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.023 (!)	
Roof	R8: Roof to wall (rafter)	Calculated by person with suitable expertise	0.015 (!)	
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.054	
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.11	
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.032 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.12	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
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	
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	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		3.36 m ³ /hm ² , Measured value (!)		
Air permeability test certificate reference		OK		

4 Space heating		
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	242.6%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
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	2 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		

11 Supporting documentary evidence

Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.

11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.

11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:



Assessor ID: P388-0001

Name: Ben Matthews

Date: 13.05.2025

b. Client Declaration

This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.

Signed



Organisation: WESTCHURCH HOMES LTD

Name: STEVEN LUDLAM

Date: 13.05.2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 16 Sep 2025 15:52:58

Project Information			
Assessed By	Benjamin Matthews	Building Type	Bungalow, Semi-detached
OCDEA Registration	EES/019242	Assessment Date	2025-09-16

Dwelling Details			
Assessment Type	As built	Total Floor Area	61 m ²
Site Reference	R3103 Louisa Street Plot 28	Plot Reference	AB
Address	4 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.44 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.7 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	55.74 kWh _{PE} /m ²		
Dwelling primary energy	49.01 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	44.8 kWh/m ²		
Dwelling fabric energy efficiency	41.0 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.19	Walls (1) (0.19)	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	Heat Loss Floor 1 (0.1)	OK
Roofs	0.16	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]
Exposed wall: Walls (1)	49.844	0.19
Party wall: Party Wall (1)	22.8	0 (!)
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	61.2	0.1 (!)
Exposed roof: Roof (1)	61.2	0.08 (!)

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.295	South East	1.0	1.4
Front Windows, Window	2.295	South East	1.0	1.4
Front Doors, Door	1.911	South East	N/A	1.1 (!)
Rear HGD, Window	3.801	North West	1.0	1.4
Rear Windows, Window	1.3125	North West	1.0	1.4
Side Windows, Window	1.33575	South West	1.0	1.4
Side Windows, Window	1.33575	South West	1.0	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))	
Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.08	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.039 (!)	

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	2.43 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Heat pump with radiators or underfloor heating - Electricity	
Efficiency	208.4%
Emitter type	Radiators
Flow temperature	55°C
System type	Heat Pump
Manufacturer	Panasonic HVAC UK Ltd
Model	WH-SDC0305J3E5 + WH-UD03JE5
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder	
Capacity	150 litres
Declared heat loss	1.22 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	

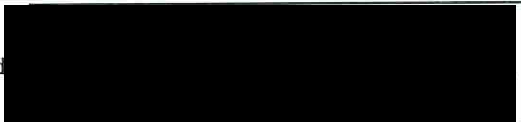
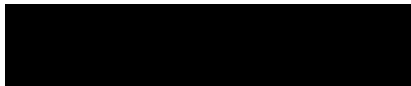
7 Lighting		
Minimum permitted light source efficacy	75 lm/W	
Lowest light source efficacy	80 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		

9 Local generation		
N/A		

10 Heat networks		
N/A		

11 Supporting documentary evidence	
Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct. 11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required. 11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.	

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 and construction information submitted for this dwelling for the purpose of carrying out the assessment, and that the supporting documentary evidence (identified in 11.1 and 11.2) pursuant to Part L of the Building Regulations 2010 (as amended) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed:  Name: Ben Matthews	Assessor ID: P388-0001 Date: 16.09.2025
b. Client Declaration	
This declaration by the client is confirmation that the dwelling has been constructed and completed according to the specifications set out in this BREL Compliance Report, and that photographic evidence of key stages, as described in 11.2, has been provided to the Assessor for this dwelling.	
Signed:  Name: STEVEN WUDLAM	Organisation: WESTCHURCH HOMES LTD Date: 16 / 09 / 2025

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 16 Sep 2025 15:53:43

Project Information			
Assessed By	Benjamin Matthews	Building Type	Bungalow, Semi-detached
OCDEA Registration	EES/019242	Assessment Date	2025-09-16

Dwelling Details			
Assessment Type	As built	Total Floor Area	61 m ²
Site Reference	R3103 Louisa Street Plot 29 AB	Plot Reference	AB
Address	2 Shaw Park Close, MANCHESTER, M11 1AB		

Client Details	
Name	Westchurch Homes
Company	Westchurch Homes
Address	Kennedy House, Altrincham, WA14 1ES

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	10.84 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	57.9 kWh _{PE} /m ²		
Dwelling primary energy	49.97 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	46.7 kWh/m ²		
Dwelling fabric energy efficiency	43.1 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.19	Walls (1) (0.19)	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	Heat Loss Floor 1 (0.1)	OK
Roofs	0.16	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	1.6	1.36	Front Windows (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 ² K]	
Exposed wall: Walls (1)	49.844	0.19	
Party wall: Party Wall (1)	22.8	0 (!)	
Ground floor: Heat Loss Floor 1, Heat Loss Floor 1	61.2	0.1 (!)	
Exposed roof: Roof (1)	61.2	0.08 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Windows, Window	2.295	South East	1.0	1.4
Front Windows, Window	2.295	South East	1.0	1.4
Front Doors, Door	1.911	South East	N/A	1.1 (!)
Rear HGD, Window	3.801	North West	1.0	1.4
Rear Windows, Window	1.3125	North West	1.0	1.4
Side Windows, Window	1.33575	North East	1.0	1.4
Side Windows, Window	1.33575	North East	1.0	1.4

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))	
Building part 1: 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	0.039 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.025 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.147	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.08	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.039 (!)	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.091	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.027 (!)	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.062	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.044	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.039 (!)	

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	3.2 m ³ /hm ² , Measured value (!)	OK
Air permeability test certificate reference		

4 Space heating

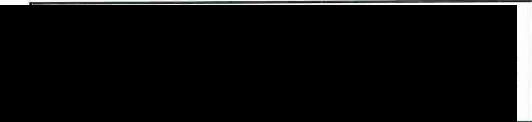
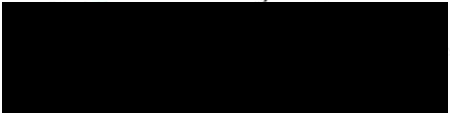
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	208.4%	
Emitter type	Radiators	
Flow temperature	55°C	
System type	Heat Pump	
Manufacturer	Panasonic HVAC UK Ltd	
Model	WH-SDC0305J3E5 + WH-UD03JE5	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water

Cylinder/store - type: Cylinder		
Capacity	150 litres	
Declared heat loss	1.22 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: Decentralised mechanical extract		
Maximum permitted specific fan power	0.7 W/(l/s)	
Specific fan power	0.09 W/(l/s)	OK
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model	Lo-Carbon NBR dMEV C 100, 498095	
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
<p>Documentary evidence identified in 11.1 and 11.2 is needed to confirm the data values used for any calculations undertaken, manufacturer declarations made, and tests performed as reflected in this "As built" BREL Compliance Report are correct.</p> <p>11.1 SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required.</p> <p>11.2 Indicative photographic evidence of key stages during construction (guidance within Approved Document L, Volume 1 – Appendix B) that confirms the products identified in this BREL Compliance Report are used in this dwelling, and workmanship is of sufficient quality to support the calculated values claimed in 2a to 2d.</p>		
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Name: STEVEN LUDLAM	Date: 16 / 09 / 2025	