

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 05 Sep 2025 08:23:57

| Project Information | | | |
|---------------------|-------------------|-----------------|-----------------|
| Assessed By | Alexander Pelling | Building Type | House, Detached |
| OCDEA Registration | EES/022570 | Assessment Date | 2025-09-05 |

| Dwelling Details | | | |
|------------------|---|------------------|--------------------|
| Assessment Type | As designed | Total Floor Area | 221 m ² |
| Site Reference | CLARFELT | Plot Reference | As-Designed |
| Address | Rear of Haynes Partridge Green, Horsham, RH13 8JF | | |

| Client Details | |
|----------------|--|
| Name | Project Manager |
| Company | Scandia-Hus Ltd. |
| Address | Oakleigh House, Scandia-Hus Business Park, Felcourt Road, Felcourt, East Grinstead, RH19 2LP |

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 | 8.16 kgCO ₂ /m ² | | |
| Dwelling carbon dioxide emission rate | 2.89 kgCO ₂ /m ² | | OK |
| 1b Target primary energy rate and dwelling primary energy | | | |
| Target primary energy | 43.48 kWh _{PE} /m ² | | |
| Dwelling primary energy | 32.94 kWh _{PE} /m ² | | OK |
| 1c Target fabric energy efficiency and dwelling fabric energy efficiency | | | |
| Target fabric energy efficiency | 45.3 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 | 0.16 | Walls (5) (0.18) | OK |
| Party walls | 0.2 | N/A | N/A | N/A |
| Curtain walls | 1.6 | N/A | N/A | N/A |
| Floors | 0.18 | 0.11 | Ground Floor (0.11) | OK |
| Roofs | 0.16 | 0.13 | Roof (2) (0.14) | OK |
| Windows, doors, and roof windows | 1.6 | 1 | Opening 1 (1) | 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) | 23.76 | 0.15 |
| Exposed wall: Walls (2) | 107 | 0.17 |
| Exposed wall: Walls (3) | 13.44 | 0.15 |
| Sheltered wall: Walls (4) | 32.57 | 0.13 (!) |
| Exposed wall: Walls (5) | 1.67 | 0.18 |
| Ground floor: Ground Floor, Ground Floor | 130.67 | 0.11 |
| Exposed roof: Roof (1) | 23.87 | 0.13 |
| Exposed roof: Roof (2) | 8.47 | 0.14 |
| Exposed roof: Roof (3) | 75.1596 | 0.14 |
| Exposed roof: Roof (4) | 34.59 | 0.11 |

| 2c Openings (better than typically expected values are flagged with a subsequent (!)) | | | | |
|---|------------------------|-------------|--------------|------------------------------|
| Name | Area [m ²] | Orientation | Frame factor | U-Value [W/m ² K] |
| Opening 1, Windows | 0.84 | West | 0.7 | 1 (!) |
| Opening 2, Windows | 2.4 | West | 0.7 | 1 (!) |
| Opening 3, Windows | 0.84 | West | 0.7 | 1 (!) |
| Opening 4, Solid Doors | 2.1 | West | N/A | 1 (!) |
| Opening 5, Windows | 0.84 | West | 0.7 | 1 (!) |
| Opening 6, Windows | 3.15 | West | 0.7 | 1 (!) |

| Name | Area [m ²] | Orientation | Frame factor | U-Value [W/m ² K] |
|------------------------|------------------------|-------------|--------------|------------------------------|
| Opening 7, Windows | 7.56 | East | 0.7 | 1 (!) |
| Opening 8, Windows | 7.56 | East | 0.7 | 1 (!) |
| Opening 9, Windows | 0.72 | South | 0.7 | 1 (!) |
| Opening 10, Windows | 0.72 | South | 0.7 | 1 (!) |
| Opening 11, Windows | 7.56 | East | 0.7 | 1 (!) |
| Opening 12, Windows | 5.25 | North | 0.7 | 1 (!) |
| Opening 13, Windows | 2.4 | North | 0.7 | 1 (!) |
| Opening 14, Windows | 0.72 | North | 0.7 | 1 (!) |
| Opening 15, HG Doors | 1.89 | North | N/A | 1 (!) |
| Opening 16, Rooflights | 1.092 | West | 0.7 | 1 (!) |
| Opening 17, Rooflights | 1.092 | West | 0.7 | 1 (!) |
| Opening 18, Rooflights | 0.9204 | West | 0.7 | 1 (!) |
| Opening 19, Rooflights | 0.9204 | West | 0.7 | 1 (!) |
| Opening 20, Rooflights | 1.092 | West | 0.7 | 1 (!) |
| Opening 21, Rooflights | 1.092 | West | 0.7 | 1 (!) |
| Opening 22, Rooflights | 0.9204 | South | 0.7 | 1 (!) |
| Opening 23, Windows | 1.56 | East | 0.7 | 1 (!) |
| Opening 24, Windows | 1.56 | East | 0.7 | 1 (!) |
| Opening 25, Rooflights | 0.9204 | South | 0.7 | 1 (!) |
| Opening 26, Rooflights | 0.9204 | South | 0.7 | 1 (!) |
| Opening 27, Windows | 3.15 | East | 0.7 | 1 (!) |
| Opening 28, Rooflights | 0.9204 | North | 0.7 | 1 (!) |

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 | E11: Eaves (insulation at rafter level) | Calculated by person with suitable expertise | 0.002 (!) | |
| External wall | E13: Gable (insulation at rafter level) | Calculated by person with suitable expertise | -0.018 (!) | |
| Roof | R6: Flat ceiling | SAP table default | 0.12 | |
| Roof | R4: Ridge (vaulted ceiling) | SAP table default | 0.12 | |
| Roof | R5: Ridge (inverted) | SAP table default | 0.12 | |
| External wall | E2: Other lintels (including other steel lintels) | Calculated by person with suitable expertise | 0.046 | |
| External wall | E3: Sill | Calculated by person with suitable expertise | 0.075 | |
| External wall | E4: Jamb | Calculated by person with suitable expertise | 0.047 | |
| External wall | E5: Ground floor (normal) | Calculated by person with suitable expertise | 0.02 (!) | |
| External wall | E6: Intermediate floor within a dwelling | Calculated by person with suitable expertise | -0.002 (!) | |
| 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 | |
| External wall | E16: Corner (normal) | Calculated by person with suitable expertise | 0.041 | |
| External wall | E17: Corner (inverted - internal area greater than external area) | Calculated by person with suitable expertise | -0.079 | |

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

| | | |
|---|--|----|
| Maximum permitted air permeability at 50Pa | 8 m ³ /hm ² | |
| Dwelling air permeability at 50Pa | 5 m ³ /hm ² , Design value | OK |
| Air permeability test certificate reference | | |

| | | |
|--|----------------------|-----|
| 4 Space heating | | |
| Main heating system 1: Heat pump with radiators or underfloor heating - Electricity | | |
| Efficiency | 249.9% | |
| Emitter type | Underfloor | |
| Flow temperature | 35°C | |
| System type | Air source heat pump | |
| Manufacturer | | |
| Model | | |
| Commissioning | | |
| Secondary heating system: Closed room heater | | |
| Fuel | Wood logs | |
| Efficiency | 65.0% | |
| Commissioning | | |
| 5 Hot water | | |
| Cylinder/store - type: Cylinder | | |
| Capacity | 250 litres | |
| Declared heat loss | N/A | |
| 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 | 75 lm/W | OK |
| External lights control | N/A | |
| 8 Mechanical ventilation | | |
| System type: Centralised mechanical extract | | |
| Maximum permitted specific fan power | 0.7 W/(l/s) | |
| Specific fan power | 0.43 W/(l/s) | OK |
| Minimum permitted heat recovery efficiency | N/A | |
| Heat recovery efficiency | N/A | N/A |
| Manufacturer/Model | K 160 EC | |
| Commissioning | | |
| 9 Local generation | | |
| Technology type: Photovoltaic system (1) | | |
| Peak power | 4.4 kWp | |
| Orientation | North | |
| Pitch | 45° | |
| Overshading | None or very little | |
| Manufacturer | | |
| MCS certificate | | |
| 10 Heat networks | | |
| N/A | | |
| 11 Supporting documentary evidence | | |
| N/A | | |

| 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 information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.</p> | |
| <p>Signed:</p> <p>Name:</p> | <p>Assessor ID:</p> <p>Date:</p> |
| b. Client Declaration | |
| N/A | |