

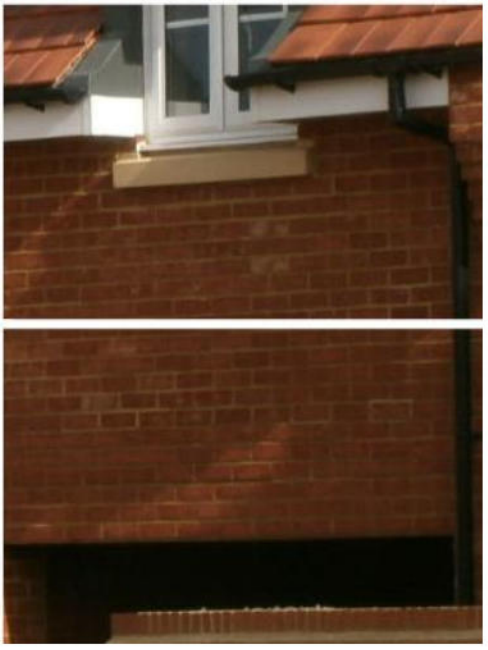
environmental economics

Energy Statement

Monaveen Gardens Phase 1

BDW Southampton

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www.environmental-economics.co.uk

Revision History

Version	Date Issued	Issued by	QA Check
1	29/08/2025	Alex Dodson BSc	Ruth Ferguson BSc MSc

About Environmental Economics

Our team of experienced consultants specialise in construction and building energy. We have qualifications in sustainability, energy, engineering, building physics and construction as well as environmental, quality management and auditing.

We develop flexible, practical, cost-effective specifications for our clients through identifying solutions and delivering design advice. This includes the following disciplines:

- *Energy Reports*
- *Sustainability Statements*
- *Compliance assessments and advice covering*
  - *Part L (SAP) & Future Homes Standard*
  - *Part F (ventilation)*
  - *Part G (water)*
  - *Part O (overheating)*
- *Overheating - TM59 dynamic modelling*
- *Overheating – simple method*
- *Life cycle carbon assessments*
- *Net zero carbon assessments*
- *BREEAM*
- *SBEM (existing and new build)*
- *Minimum Energy Efficiency Standards (MEES)*
- *Thermal Bridging (Psi value calculations)*

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1. Executive Summary

1.1.1. Environmental Economics Ltd has been commissioned by BDW Southampton to produce an energy Statement for the residential site Monaveen Gardens Phase 1. This document sets out how the development proposal presents a positive sustainable development and meets the policy requirements.

1.1.2. The proposed development is designed to achieve carbon emissions in line with Part L 2021 through the employment of low and zero carbon technologies.

1.1.3. Enhanced building fabric specification with a Fabric-First approach including high efficiency insulation.

1.1.4. The following LZCT are proposed for the plots on site:

- Waste Water Heat Recovery (WWHR)
- Photovoltaic (PV) panels
- Flue Gas Heat Recovery (FGHR)
- Decentralised Mechanical Extract Ventilation (dMEV)

1.1.5. The LZCT technologies will deliver approx. 25.74% of the modelled energy demand, exceeding the 10% required by Condition 20 of Decision Notice AL/129/21/OUT (22/08/2022).

1.1.6. The use of smart meters will provide occupiers with real time data which will allow occupiers to manage their energy consumption, save money and reduce Carbon. This is particularly important as the UK migrates towards half-hourly pricing levels and the proposed smart grid system.

2. Project Overview

2.1. Description of Site

2.1.1. The site proposal consists of the construction of 93 residential dwellings which include detached, semi-detached, terraced houses and low-rise apartments.

2.1.2. The proposed site plan is shown in Appendix A.

2.2. Planning Policy

2.2.1. The planning authority for this site is Arun District Council. The decision notice containing the relevant condition is below:

2.2.2. Condition 20

At least 10% of the energy supply of the development shall be secured from decentralised and renewable or low carbon energy sources (as described in the glossary at Annex 2 of the NPPF) unless it can be demonstrated that a fabric-first approach would achieve an equivalent energy saving. Details and a timetable of how this is to be achieved for each phase or sub phase of development, including details of physical works on site, shall be submitted to and approved in writing by the Local Planning Authority before any development in that phase or sub phase begins. The development shall be implemented in accordance with the approved details and timetable and retained as operational thereafter.

Reason: In order to secure a reduction in the use of energy at the site in accordance with national planning policy and policy ECC SP2 of the Arun Local Plan. This is required to be a pre-commencement condition because the approved measures may need to be built into the fabric of the buildings.

2.2.3. This report seeks to address the Condition 20 for the proposed site.

2.2.4. This report should be read in conjunction with other reports prepared for this development.

2.3. Building Regulations

2.3.1. All newbuild development must comply with Building Regulations. The Approved Document L 2021 (AD-L 2021) provides for a 31% reduction in Carbon emissions over the previous 2013 edition.

2.3.2. Monaveen Gardens Phase 1 is expected to be built to Part L 2021 Building Regulations.

2.3.3. Parts of this development may also fall under the upcoming Future Homes Standard, which is expected to be published in 2025, and represents an improvement on current (Part L 2021) building regulations by approximately 49%.

2.3.4. There are two transitional periods proposed, but it's possible that some of the units on site will fall under FHS regulations.

2.3.5. The former government minister Christopher Pincher is quoted as saying, "A new home built to Future Homes Standard in 2025 is to have 75-80% lower carbon emissions than Part L 2013.

2.3.6. Based on the above statement and the 31% betterment from Part L1A 2013 to Part L1A 2021 regulations, it can be reasoned that the likely betterment over current regulations (Part L 2021) will be 49%, as shown below:

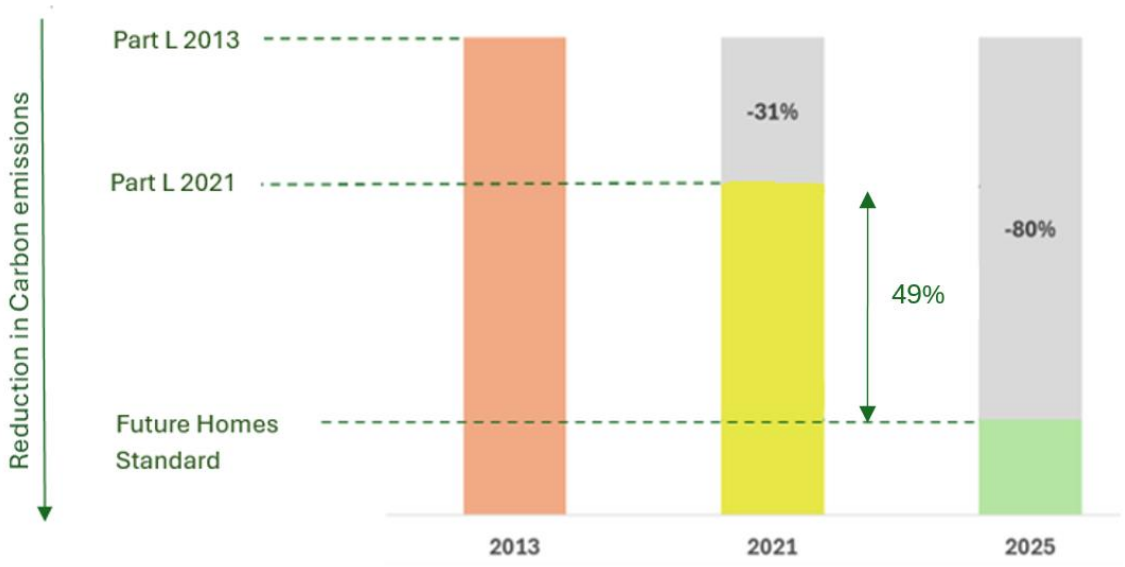


Figure 1: Regulatory targets for Carbon emissions. Percentage figures are reductions over Part L 2013 baseline.

3. Energy Performance

3.1. Assessment Methodology

3.1.1. Environmental Economics have modelled representative house types for this site using the SAP 10 software by Elmhurst and approved by BRE. The software provides a number of outputs, and based on the provided specification for this proposed development, we are able to assess the following areas for our calculations:

- *Building regulations compliance, including:*
  - *Carbon emissions (kg CO2/m2/year)*
  - *Primary Energy Demand (kWh/m2/annum)*
  - *Fabric Energy Efficiency (kWh/m2/annum)*
- *Energy usage per year (kWh/annum)*
- *Energy costs per year (£/annum)*
- *More detailed breakdowns by end use (space heating, water heating, cooking, lighting, appliances)*

3.1.2. Each of these outputs can be used in different ways to analyse the performance of the dwelling. The total regulated carbon emissions for each property is based upon:

- *Space heating*
- *Water heating*
- *Electricity for pumps and fans*
- *Electricity for lighting*

3.1.3. SAP software is issued by independent software suppliers and checked and approved on behalf of government by the Building Research Establishment (BRE). As of 22nd November 2022, SAP 10 has now been fully approved.

3.1.4. The SAP reports for representative house types used in this energy report are shown in Appendix E.

3.2. Design Philosophy

3.2.1. Upgrades have been made to a number of elements from a standard build specification in order to improve energy efficiency across the development.

3.2.2. The proposed development adopts nationally recognised design and construction principles as the industry moves towards zero carbon. The principles are illustrated in Figure 2 below.

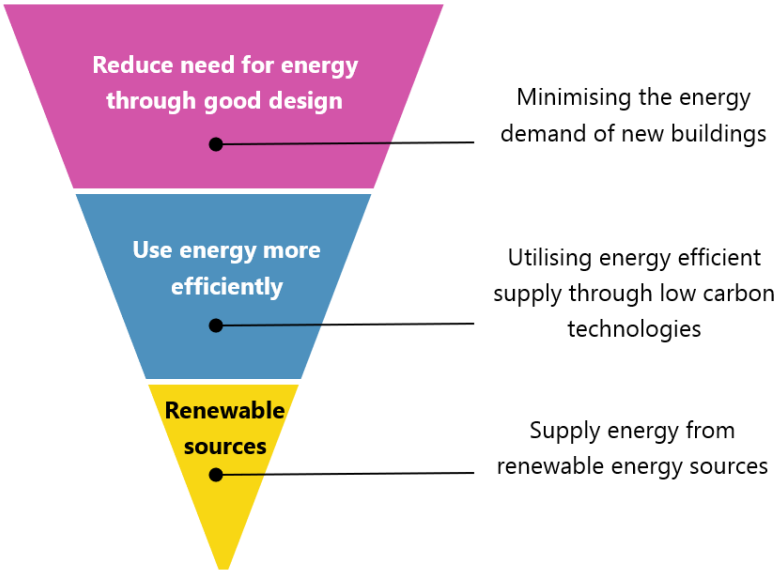


Figure 2 – The Energy Hierarchy

3.2.3. To reduce the residual carbon emissions a number of improvements were made to the standard material and product specification. These improvements include:

- *Upgraded heating and hot water controls*
- *Improved insulation levels*
- *Design air permeability of 4m3/hr/m2*
- *Bespoke low heat loss thermal bridging details*

3.3. Fabric Improvements Part L1A 2021

3.3.1. The building fabric for all Part L 2021 plots within the proposed development have been improved in relation to the ADL 2021 backstop notional specification. These fabric improvements reduce the space heating requirement upon a property. The improvements will be made through a combination of upgraded materials and increased insulation thicknesses. Enhanced glazing with a larger transmittance factor allowing for increased solar gains will also be used.

3.3.2. Proposed fabric designs and U-Values for the masonry and timber frame build constructions can be found in Tables 1 and 2 below.

Table 1 – Part L 2021 Masonry Build Specification

Element	*Minimum Standard*	*Improved Specification*	
-	***W/m²k***	***Description***	***W/m²k***
Walls	0.26	Full-fill blown bead insulation in 100mm cavity	0.23
Roof	0.16	Loft Space – 500mm Mineral Wool	0.09
		Sloping Ceiling to have 100mm PUR between joists, and 55mm PUR Board underlaid	0.16
Floors	0.18	Beam & Block floor system	0.11
Doors	1.60	Double glazed Low-E, u-PVC frame	1.30
Glazing	1.60	Double glazed Low-E, u-PVC frame	1.30

Table 2 – Part L 2021 Timber Frame Build Specification

Element	*Minimum Standard*	*Improved Specification*	
-	***W/m²k***	***Description***	***W/m²k***
Walls	0.26	Timber Frames, insulation between studs	0.20
Roof	0.16	Loft Space – 500mm Mineral Wool	0.09
		Sloping Ceiling to have 100mm PUR between joists, and 55mm PUR Board underlaid	0.16
Floors	0.18	Beam & Block floor system	0.11
Doors	1.60	Double glazed Low-E, u-PVC frame	1.30
Glazing	1.60	Double glazed Low-E, u-PVC frame	1.30

3.3.3. As improvements are made to the thermal conductivity of main elements, thermal bridging and air permeability become increasingly significant in the overall fabric performance. Bespoke thermal bridging designs have been utilised, which achieve much lower heat loss levels in comparison with standard practice.

3.3.4. As a result of following these junction details and focusing on build quality, air permeability will also decrease. A target air pressure rating of 4m3/hr.m2 has been set for all houses on site which is an improvement on the maximum allowable rating in the 2021 Building Regulations.

3.4. Building Services & Renewable Energy (LZCT)

3.4.1. The systems used in a property to supply hot water and heating, as well as to control it, are important to the overall energy demand of a property.

3.4.2. The design of building services which provide space heating and domestic hot water, ventilation, and lighting, must be considered in a holistic way in order to avoid unintended consequences and to maximise the benefits from such systems.

3.4.3. After due consideration of the potential LZCT available (shown in Appendix D) the design team propose to adopt the following technologies which provide benefits / compliance with national and local policies as listed:

- ***Photovoltaic (PV) panels:***
  - Low noise and visual pollution;
  - Efficient low-carbon source of renewable energy.
- ***PV diverters:***
  - Connects to the immersion heater within hot water cylinder;
  - Utilises energy from PV panels to heat hot water, reducing demand on gas.
- ***Waste Water Heat Recovery (WWHR):***
  - Passive technology, no maintenance required;
  - Recovers waste heat from shower, pre-heats incoming cold. This mitigates the amount of hot water required from the hot water cylinder;
  - Typical systems recover ~60% waste heat.
- ***Flue Gas Heat Recovery (FGHR):***
  - Recovers waste heat from the flue of a boiler;
  - The waste heat is utilised to pre-heat incoming mains cold supply, thereby reducing the energy required from the boiler to lift the incoming main water to the required temperature.

3.4.4. It is currently proposed that PV panels and WWHR will be used to improve dwelling performance to the level required for Part L 2021. The amount of PV which will be required for this development is to be calculated at the detailed design stage.

3.4.5. Table 4 in Appendix B shows the amount of PV allocated to each modelled house type.

3.4.6. For Part L 2021 it is currently proposed to provide heating and hot water via mains gas boilers.

3.4.7. Should some plots fall under the Future Homes Standard, Air Source Heat Pumps are proposed as part of the heating strategy, instead of gas boilers.

3.4.8. For a mains gas fired system, the minimum boiler efficiency required is 92%. Compliant Ideal Logic boilers have been adopted which exceed this requirement.

3.4.9. Where installed, hot water cylinders can lose a significant amount of energy. To minimise this energy loss and corresponding carbon emissions, cylinders which have higher levels of insulation in comparison to typical hot water cylinders will be used. Hot water distribution pipework will be fully insulated.

3.4.10. The viability of a heat network was considered for this development, however DHNs (District Heating Networks) are generally suited to development with high thermal demand, typically provided by sufficient density or a large anchor load, i.e., high-density flats or leisure centres.

3.4.11. The development of highly-insulated, high-efficiency homes such as those proposed limits the heating demand of the site, and therefore, the feasibility and viability of the installation of district heating. For these reasons, DHN is considered unsuitable for this development.

3.4.12. Lighting provision will be from LED low energy fittings achieving a minimum efficacy of 100 lamp lumens per circuit watt, an improvement of over 50% from AD-L 2013 performance levels.

3.4.13. Smart meters will be installed on all properties, providing:

- Real time information on energy use both in terms of consumption and cost
- Occupier can manage their energy, save money and reduce carbon emissions
- Smart meters will also allow for easier switching between suppliers
- Facilitate a more reactive, price driven, demand-response
- End estimated billing and eliminate the need for meter readers to visit premises

4. Results

4.1.1. All plots on site are expected to be built to Part L 2021, although some plots may fall under the upcoming Future Homes Standard, depending on when it is published and the transitional arrangements.

4.1.2. Each house type employs the use of renewables, including PV panels, WWHR, FGHR and dMEV.

4.1.3. At time of writing, PV panels typically provide 405W. Therefore, the SAP assessments are modified by changing the PV in 405W intervals.

4.1.4. Table 4 in Appendix B shows the amount of PV (in kWp) allocated per modelled house type, as well as the other LZCT used.

4.1.5. Table 5 in Appendix C shows the energy from LZCT from each plot, as well as the total energy demand.

4.1.6. Table 3 below summarises these results.

Table 3 – Energy from LZCT analysis

Total energy demand across site (kWh/yr)	**460,826**
Total energy from LZCT across site (kWh/yr)	**118,608**
Percentage energy from LZCT across site	**25.74%**

4.1.7. Across the site, 25.74% of energy is gained from renewable sources. The development therefore meets the 10% energy from renewable or low carbon sources target set out in Condition 20.

5. Conclusion

5.1.1. This energy and sustainability report has been produced for the residential site Monaveen Gardens Phase 1.

5.1.2. Each house type employs the use of Low and Zero Carbon Technologies (LZCT), including:

- Photovoltaic (PV) panels
- Waste Water Heat Recovery (WWHR)
- Decentralised Mechanical Extract Ventilation (dMEV)
- Flue Gas Heat Recovery (FGHR)

5.1.3. The use of these LZCT means the site achieves approx. 25.74% of its energy from renewable sources, thereby complying with the 10% target set out in Condition 20 of Decision Notice AL/129/21/OUT (22/08/2022).

5.1.4. It can therefore be seen that the proposed development will:

- *Incorporate recognised LZC technologies in order to meet building compliance under Part L1A 2021*
- *Achieve a reduction of approximately 25.74% in energy demand from these LZC technologies, therefore meeting the 10% requirement.*

Appendix A – Proposed Site Layout



Appendix B – LZCT Per Plot

Table 4 – LZCT per plot

Plot	*Housetype*	*PV (kWp)*	WWHR	*FGHR*
1	Stanford	1.215	✓	✓
2	Marwick	0.81	✓	✓
3	Marwick	0.81	✓	✓
4	Marwick	0.81	✓	✓
5	Rainham	0.81	✓	✓
6	Rainham	0.81	✓	✓
7	Rainham	0.81	✓	✓
8	Rainham	0.81	✓	✓
9	Rainham	0.81	✓	✓
10	Rainham	0.81	✓	✓
11	Rainham	0.81	✓	✓
12	Fairburn	2.025	✓	-
13	Fairburn	2.025	✓	-
14	Fairburn	2.025	✓	-
15	Conwy	2.43	✓	-
16	Conwy	2.43	✓	-
17	Portmore	0.81	✓	✓
18	Portmore	0.81	✓	✓
19	Portmore	0.81	✓	✓
20	Portmore	0.81	✓	✓
21	Stanford	0.81	✓	✓
22	Rainham	0.81	✓	✓
23	Rainham	0.81	✓	✓
24	Rainham	0.81	✓	✓
25	Rainham	0.81	✓	✓
26	Stanford	0.81	✓	✓
27	Conwy	2.835	✓	-
28	Portmore	0.81	✓	✓
29	Portmore	0.81	✓	✓
30	Martham	1.62	✓	✓
31	Mildenhall	0.81	✓	✓
32	Langley	2.835	✓	-
33	Cattawade	3.24	✓	-
34	Holywell	0.81	✓	✓

35	Holywell	0.81	✓	✓
36	Martham	1.215	✓	✓
37	Type 50	0.81	✓	✓
38	Type 52	1.215	✓	✓
39	Type 55	2.025	✓	✓
40	Type 55	2.025	✓	✓
41	Type 54	1.215	✓	✓
42	Nene	0.81	✓	✓
43	Nene	0.81	✓	✓
44	Nene	0.81	✓	✓
45	Nene	0.81	✓	✓
46	Nene	0.81	✓	✓
47	Nene	0.81	✓	✓
48	Nene	0.81	✓	✓
49	Martham	1.215	✓	✓
50	Cattawade	3.24	✓	-
51	Type 50	0.81	✓	✓
52	Type 52	1.215	✓	✓
53	Marwood	1.62	✓	✓
54	Marwood	1.62	✓	✓
55	Marwood	1.62	✓	✓
56	Martham	1.215	✓	✓
57	Mildenhall	0.81	✓	✓
58	Mildenhall	0.81	✓	✓
59	Type 60	0.81	✓	✓
60	Type 60	0.81	✓	✓
61	Type 61	0.81	✓	✓
62	Type 61	0.81	✓	✓
63	Nene	0.81	✓	✓
64	Martham	0.81	✓	✓
65	Millbeck	1.62	✓	✓
66	Holywell	0.81	✓	✓
67	Type 58	0.81	✓	✓
68	Type 59	0.81	✓	✓
69	Mildenhall	0.81	✓	✓
70	Holywell	0.81	✓	✓
71	Mildenhall	0.81	✓	✓

72	Mildenhall	0.81	✓	✓
73	Martham	1.62	✓	✓
74	Mildenhall	0.81	✓	✓
75	Mildenhall	0.81	✓	✓
76	Falkirk	0.81	✓	✓
77	Falkirk		✓	✓
78	Falkirk		✓	✓
79	Falkirk		✓	✓
80	Falkirk		✓	✓
81	Falkirk		✓	✓
82	Marwood	1.62	✓	✓
83	Marwood	1.62	✓	✓
84	Marwood	1.62	✓	✓
85	Marwood	1.62	✓	✓
86	Holywell	0.81	✓	✓
87	Martham	0.81	✓	✓
88	Martham	0.81	✓	✓
89	Type 52	1.215	✓	✓
90	Type 50	0.81	✓	✓
91	Type 50	0.81	✓	✓
92	Type 58	0.81	✓	✓
93	Type 59	0.81	✓	✓

Appendix C – Percentage Energy from Renewables

Table 5 – Percentage Energy from Renewables

	Total energy demand (without renewables) (kWh/yr)	Energy from renewables (kWh/year)
Plot 001 Stanford Det	5921.52	1310.43
Plot 002 Marwick MT	3425.46	1276.17
Plot 003 Marwick MT	3425.46	1276.17
Plot 004 Marwick ET	3895.99	1276.10
Plot 005 Rainham	5362.61	1313.73
Plot 006 Rainham	5362.61	1313.73
Plot 007 Rainham	5362.61	1313.73
Plot 008 Rainham	5362.61	1313.73
Plot 009 Rainham	5362.61	1313.73
Plot 010 Rainham	5362.61	1313.73
Plot 011 Rainham	5362.61	1313.73
Plot 012 Fairburn Det	7071.46	1978.55
Plot 013 Fairburn Det	7071.46	1978.55
Plot 014 Fairburn Det	7071.46	1978.55
Plot 015 Conwy Det	7200.56	2308.09
Plot 016 Conwy Det	7260.17	2308.09
Plot 017 Portmore SD	4865.53	1328.12
Plot 018 Portmore SD	4865.53	1328.12
Plot 019 Portmore SD	4865.53	1328.12
Plot 020 Portmore SD	4865.53	1328.12
Plot 021 Stanford Det	5757.25	1205.64
Plot 022 Rainham	5521.44	1215.89
Plot 023 Rainham	5521.44	1215.89
Plot 024 Rainham	5521.44	1215.89
Plot 025 Rainham	5521.44	1215.89
Plot 026 Stanford Det	5937.00	1344.97
Plot 027 Conwy Det	7301.67	2268.69
Plot 028 Portmore SD	4776.55	1188.79
Plot 029 Portmore SD	4776.55	1188.79
Plot 030 Martham SD	5096.20	1298.97
Plot 031 Mildenhall SD	4858.60	1332.02
Plot 032 Langley Det	7129.92	2553.72
Plot 033 Cattawade Det	7231.47	2351.95
Plot 034 Holywell SD	4375.31	1069.60
Plot 035 Holywell SD	4375.31	1069.60
Plot 036 Martham Det	5426.00	1353.91
Plot 037 Type 50 End	4752.81	1090.84
Plot 038 Type 52 Mid	4593.47	1413.33
Plot 039 Type 55 End	5401.89	1499.40
Plot 040 Type 55 SD	5401.89	1499.40
Plot 041 Type 54 SD	5659.44	1538.62
Plot 042 Nene SD	4365.06	1067.68
Plot 043 Nene SD	4365.06	1067.68
Plot 044 Nene End	4365.06	1067.68
Plot 045 Nene Mid	3783.16	1178.99
Plot 046 Nene Mid	3783.16	1178.99
Plot 047 Nene End	4365.06	1067.68

Plot 048 Nene SD	4365.48	1067.68
Plot 049 Martham SD	4969.35	1353.95
Plot 050 Cattawade Det	7354.22	2351.95
Plot 051 Type 50 SD	4745.47	1090.84
Plot 052 Type 52 SD	5288.38	1413.26
Plot 053 Marwood End	6165.31	1200.18
Plot 054 Marwood Mid	5427.55	1200.27
Plot 055 Marwood End	6252.37	1200.17
Plot 056 Martham Det	5321.20	1353.92
Plot 057 Mildenhall SD	4853.98	1220.78
Plot 058 Mildenhall SD	4853.98	1220.78
Plot 059 Type 60 GF	3214.08	974.01
Plot 060 Type 60 GF	3214.08	974.01
Plot 061 Type 61 FF	3235.12	973.99
Plot 062 Type 61 FF	3235.12	973.99
Plot 063 Nene SD	4340.86	945.67
Plot 064 Martham SD	4790.76	1216.93
Plot 065 Millbeck Det	5061.35	1852.62
Plot 066 Holywell SD	4295.75	1069.62
Plot 067 Type 58 GF SD	3029.24	1081.14
Plot 068 Type 59 FF SD	3912.18	1245.05
Plot 069 Mildenhall SD	4783.52	1220.78
Plot 070 Holywell SD	4375.85	1069.60
Plot 071 Mildenhall SD	4783.52	1220.78
Plot 072 Mildenhall SD	4783.52	1220.78
Plot 073 Martham End	5096.20	1298.97
Plot 074 Mildenhall Mid	4330.95	1220.83
Plot 075 Mildenhall End	4858.60	1332.02
Plot 076 Falkirk GF	3667.67	510.96
Plot 077 Falkirk GF	3498.38	510.98
Plot 078 Falkirk MF	2748.44	489.61
Plot 079 Falkirk MF	2998.73	489.56
Plot 080 Falkirk TF	3276.09	489.51
Plot 081 Falkirk TF	3545.02	489.48
Plot 082 Marwood SD	6252.37	1200.17
Plot 083 Marwood SD	6165.31	1200.18
Plot 084 Marwood SD	6252.37	1200.17
Plot 085 Marwood SD	6165.31	1200.18
Plot 086 Holywell SD	4351.73	947.59
Plot 087 Martham SD	4790.76	1216.93
Plot 088 Martham Det	5551.67	1216.86
Plot 089 Type 52 SD	5288.38	1413.26
Plot 090 Type 50 SD	4714.84	1090.85
Plot 091 Type 50 SD	4732.42	1090.85
Plot 092 Type 58 GF SD	2867.18	1081.17
Plot 093 Type 59 FF SD	3714.21	1245.07
Total energy demand across site (kWh/yr)		**460,826**
Total energy from LZCT across site (kWh/yr)		**118,608**
Percentage energy from LZCT across site		**25.74%**

Appendix D – Low and Zero Carbon Technologies

	Description	Advantages	Disadvantages	Adopted?
Solar Hot Water (SHW)	SHW systems generate energy which is used to heat stored water (in a special solar hot water cylinder) which offsets the energy required for the boiler, thereby reducing fuel use and reducing carbon emissions.	• Meets approximately 50% hot water demand for a dwelling	• PV cells provide more efficient use of roof area compared to SHW	
Photovoltaic (PV) Cells	Generates electricity from solar energy from the sun.	• Provides carbon savings • Excess electricity can be exported to the grid • Low maintenance	• Additional capital cost	✓
Ground Source Heat Pumps (GSHP)	GSHP provide heating and hot water to a dwelling through geothermal effects.	• CoP can be greater than that of ASHPs	• Rely on having appropriate ground conditions • Expensive to install	
Biomass Heating Systems	Biomass heating systems burn fuels, considered carbon neutral, to heat the water required for a dwelling.	• Large variety of systems available • Good carbon savings when replacing electrical hot water system	• High maintenance	
Wind Turbines	Wind turbines provide electricity directly to a dwelling. They can be added to a property in two ways: pole mounted or building mounted.	• Large-scale pole mounted turbines provide great financial return	• Pole mounted requires a lot of space • Building mounted have lower power output	
Waste Water Heat Recovery (WWHR)	Recovers the energy that is lost from the waste water that is generated from showers.	• Reduces load on the main DHW system, leading to greater energy/carbon savings • Passive design requiring very low maintenance	• Additional capital cost	✓

Subject to final SAP calculations, the following technologies could be considered for the scheme:

	Description	Advantages	Disadvantages	Adopted?
Air Source Heat Pumps (ASHP)	ASHP provide heating and hot water to a home through thermal energy gathered from air outside the dwelling.	• Net zero ready complying with UK Government policy to reach net zero carbon by 2050. • This is achieved by utilizing low carbon grid electricity. • Typical CoP of 3.5 leading to large energy and carbon savings.	• Requires professional commissioning to ensure optimal performance. This ensures cost parity with gas systems.	

Appendix E – SAP Reports

SAP reports from SAP 10
can be found within the following pages

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	102 m^2
Site Reference	Plot 001 Stanford Det	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.74 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.26 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.49 kWh_{PE}/m^2*	
Dwelling primary energy	60.77 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*41.8 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.29	D02 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	127.644575	0.23
Ground floor: Jetfloor, Jetfloor	51.14	0.11
Exposed roof: Roof (1)	49.7	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D01, Type 2 Front Door	2.490075	North West	N/A	1.2
D02 , French doors	3.234	North East	0.7	1.3
W01, Window	1.6305	North West	0.7	1.3
W02, Window	1.593	North West	0.7	1.3
W03, Window	1.593	South West	0.7	1.3
W04, Window	1.14	North East	0.7	1.3
W05, Window	1.4337	North West	0.7	1.3
W06, Window	0.6525	North West	0.7	1.3
W07, Window	1.4337	North West	0.7	1.3
W08, Window	1.4337	South West	0.7	1.3
W9, Window	0.76125	North East	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01 D1-3 Rem
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE311/E6/01 240mm FJ
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic at Eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21/RV02 D1-3

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.215 kWp
Orientation	North West
Pitch	45°
Overshading	None or very little
Manufacturer	3 x 0.40kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, Mid-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	71 m^2
Site Reference	Plot 002 Marwick MT	Plot Reference	Issue A
Address	Plot 002 Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.83 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	8.78 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.44 kWh_{PE}/m^2*	
Dwelling primary energy	46.95 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*28.9 kWh/m^2*	
Dwelling fabric energy efficiency	27.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	30.936425	0.23
Party wall: Party Wall (1)	78.11	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.41	0.11
Exposed roof: Roof (1)	33.97	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
W1, Window	1.14	North	0.7	1.3
D1, Front door Type 2	2.490075	North	N/A	1.2
W2, Window	1.14	North	0.7	1.3
W3, Window	1.14	North	0.7	1.3
D2, Window	5.3235	South	0.7	1.3
W4, Window	1.14	South	0.7	1.3
W5, Window	1.14	South	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic at eaves
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.089	PW01 / GF22 rev A
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101 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	0.18 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 400W panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, Mid-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	71 m^2
Site Reference	Plot 003 Marwick MT	Plot Reference	Issue A
Address	Plot 003 Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.83 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	8.78 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.44 kWh_{PE}/m^2*	
Dwelling primary energy	46.95 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*28.9 kWh/m^2*	
Dwelling fabric energy efficiency	27.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	30.936425	0.23
Party wall: Party Wall (1)	78.11	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.41	0.11
Exposed roof: Roof (1)	33.97	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
W1, Window	1.14	North	0.7	1.3
D1, Front door Type 2	2.490075	North	N/A	1.2
W2, Window	1.14	North	0.7	1.3
W3, Window	1.14	North	0.7	1.3
D2, Window	5.3235	South	0.7	1.3
W4, Window	1.14	South	0.7	1.3
W5, Window	1.14	South	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic at eaves
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.089	PW01 / GF22 rev A
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101 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	0.18 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 400W panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	71 m^2
Site Reference	Plot 004 Marwick ET	Plot Reference	Issue A
Address	Plot 004 Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.04 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.19 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*62.97 kWh_{PE}/m^2*	
Dwelling primary energy	54.39 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	33.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.9829	0.23
Party wall: Party Wall (1)	40.74	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.41	0.11
Exposed roof: Roof (1)	33.97	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
W1, Window	1.14	North	0.7	1.3
D1, Front door Type 2	2.4931	North	N/A	1.2
W2, Window	1.14	North	0.7	1.3
W3, Window	1.14	North	0.7	1.3
D2, Window	5.334	South	0.7	1.3
W4, Window	1.14	South	0.7	1.3
W5, Window	1.14	South	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic at eaves
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 400W panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 005 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	0.12	Roof (4) (0.19)	**OK**
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 006 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 007 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	0.12	Roof (4) (0.19)	**OK**
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 008 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 009 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 010 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	0.12	Roof (4) (0.19)	**OK**
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 011 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.34 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.23 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.0 kWh_{PE}/m^2*	
Dwelling primary energy	49.69 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.8 kWh/m^2*	
Dwelling fabric energy efficiency	32.8 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	0.12	Roof (4) (0.19)	**OK**
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	North East	N/A	1.2
D2, French doors	5.145	South West	0.7	1.3
W1 front, Window	1.3725	North East	0.7	1.3
W1 side, Window	0.732	North	0.7	1.3
W1 side, Window	0.732	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	South West	0.7	1.3
W3, Window	0.87	North East	0.7	1.3
W4, Window	1.14	North East	0.7	1.3
W5, Window	1.14	South West	0.7	1.3
W6, Window	0.87	South West	0.7	1.3
W7, Window	0.96075	North East	0.7	1.3
W8, Window	1.092	South West	0.7	1.3
W9, Rooflight	1.092	South West	0.7	1.7
W10, Rooflight	0.7644	South West	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	139 m^2
Site Reference	Plot 012 Fairburn Det	Plot Reference	Issue A
Address	Plot 012 Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.16 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.1 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*47.85 kWh$_{PE}$/m^2*	
Dwelling primary energy	47.52 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.0 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	129.522025	0.23
Ground floor: Jetfloor, Jetfloor	70.87	0.11
Exposed roof: Roof (1)	66.81	0.09 **(!)**
Exposed roof: Roof (2)	2.27	0.17
Exposed roof: Roof (3)	0.4	0.17
Exposed roof: Roof (4)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 1 Front Door	2.373825	North	N/A	1.1 **(!)**
D2, Type 6 Rear Door	2.1441	South	N/A	1.4
D3, French door	3.15	South	0.7	1.3
D3w(a), French door	0.846	South	0.7	1.3
D3w(b), French door	0.846	South	0.7	1.3
W1, Window	1.59	North	0.7	1.3
W1(a), Window	0.645	North West	0.7	1.3
W1(b), Window	0.645	North East	0.7	1.3
W2, Window	1.365	North	0.7	1.3
W3, Window	0.71925	East	0.7	1.3
W4, Window	1.2276	South	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W5, Window	1.5345	North	0.7	1.3
W6, Window	1.092	North	0.7	1.3
W7, Window	1.092	North	0.7	1.3
W8, Window	0.71925	East	0.7	1.3
W9, Window	1.2276	South	0.7	1.3
W10, Window	0.822	South	0.7	1.3
W11, Window	1.2276	South	0.7	1.3
W12, Window	0.71925	West	0.7	1.3
D3w(c), Window	1.656	West	0.7	1.3
D3w(d), Window	1.656	East	0.7	1.3

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	0.032 **(!)**	H+H EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	H-H 22/029/EW 21/SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	H-H 22/029/EW 21/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic (closed eaves)
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	H+H 22/029/EW 21/RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.067	H+H 22/029/EW 21/RV03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	H+H 22/029/EW 21/RV04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	H+H 22/029/EW 21/RE22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.074	H+H 22/029/EW 21/RE25
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.055	TE 311/E24/01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	H+H 22/029/EW 21/RG22
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311/E14/01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	H+H 22/029/EW 21/CN01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.094	H+H 22/029/EW 21/CI01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311/E16/01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311/E16/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC HEAT2	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	189 litres	
Declared heat loss	1.52 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	70.7%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

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	82 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.025 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	5 x 400Wp panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	139 m^2
Site Reference	Plot 013 Fairburn Det	Plot Reference	Issue A
Address	Plot 013 Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.16 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.1 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*47.85 kWh$_{PE}$/m^2*	
Dwelling primary energy	47.52 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.0 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	129.522025	0.23
Ground floor: Jetfloor, Jetfloor	70.87	0.11
Exposed roof: Roof (1)	66.81	0.09 **(!)**
Exposed roof: Roof (2)	2.27	0.17
Exposed roof: Roof (3)	0.4	0.17
Exposed roof: Roof (4)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 1 Front Door	2.373825	North	N/A	1.1 **(!)**
D2, Type 6 Rear Door	2.1441	South	N/A	1.4
D3, French door	3.15	South	0.7	1.3
D3w(a), French door	0.846	South	0.7	1.3
D3w(b), French door	0.846	South	0.7	1.3
W1, Window	1.59	North	0.7	1.3
W1(a), Window	0.645	North West	0.7	1.3
W1(b), Window	0.645	North East	0.7	1.3
W2, Window	1.365	North	0.7	1.3
W3, Window	0.71925	East	0.7	1.3
W4, Window	1.2276	South	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W5, Window	1.5345	North	0.7	1.3
W6, Window	1.092	North	0.7	1.3
W7, Window	1.092	North	0.7	1.3
W8, Window	0.71925	East	0.7	1.3
W9, Window	1.2276	South	0.7	1.3
W10, Window	0.822	South	0.7	1.3
W11, Window	1.2276	South	0.7	1.3
W12, Window	0.71925	West	0.7	1.3
D3w(c), Window	1.656	West	0.7	1.3
D3w(d), Window	1.656	East	0.7	1.3

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	0.032 **(!)**	H+H EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	H-H 22/029/EW 21/SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	H-H 22/029/EW 21/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic (closed eaves)
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	H+H 22/029/EW 21/RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.067	H+H 22/029/EW 21/RV03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	H+H 22/029/EW 21/RV04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	H+H 22/029/EW 21/RE22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.074	H+H 22/029/EW 21/RE25
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.055	TE 311/E24/01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	H+H 22/029/EW 21/RG22
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311/E14/01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	H+H 22/029/EW 21/CN01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.094	H+H 22/029/EW 21/CI01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311/E16/01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311/E16/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC HEAT2	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	189 litres	
Declared heat loss	1.52 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	70.7%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

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	82 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.025 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	5 x 400Wp panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	139 m^2
Site Reference	Plot 014 Fairburn Det	Plot Reference	Issue A
Address	Plot 014 Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.16 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.1 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*47.85 kWh$_{PE}$/m^2*	
Dwelling primary energy	47.52 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.0 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.4)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	129.522025	0.23
Ground floor: Jetfloor, Jetfloor	70.87	0.11
Exposed roof: Roof (1)	66.81	0.09 **(!)**
Exposed roof: Roof (2)	2.27	0.17
Exposed roof: Roof (3)	0.4	0.17
Exposed roof: Roof (4)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 1 Front Door	2.373825	North	N/A	1.1 **(!)**
D2, Type 6 Rear Door	2.1441	South	N/A	1.4
D3, French door	3.15	South	0.7	1.3
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D3w(b), French door	0.846	South	0.7	1.3
W1, Window	1.59	North	0.7	1.3
W1(a), Window	0.645	North West	0.7	1.3
W1(b), Window	0.645	North East	0.7	1.3
W2, Window	1.365	North	0.7	1.3
W3, Window	0.71925	East	0.7	1.3
W4, Window	1.2276	South	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W5, Window	1.5345	North	0.7	1.3
W6, Window	1.092	North	0.7	1.3
W7, Window	1.092	North	0.7	1.3
W8, Window	0.71925	East	0.7	1.3
W9, Window	1.2276	South	0.7	1.3
W10, Window	0.822	South	0.7	1.3
W11, Window	1.2276	South	0.7	1.3
W12, Window	0.71925	West	0.7	1.3
D3w(c), Window	1.656	West	0.7	1.3
D3w(d), Window	1.656	East	0.7	1.3

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	0.032 **(!)**	H+H EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	H-H 22/029/EW 21/SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	H-H 22/029/EW 21/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic (closed eaves)
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	H+H 22/029/EW 21/RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.067	H+H 22/029/EW 21/RV03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	H+H 22/029/EW 21/RV04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	H+H 22/029/EW 21/RE22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.074	H+H 22/029/EW 21/RE25
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.055	TE 311/E24/01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	H+H 22/029/EW 21/RG22
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311/E14/01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	H+H 22/029/EW 21/CN01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.094	H+H 22/029/EW 21/CI01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311/E16/01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311/E16/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC HEAT2	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	189 litres	
Declared heat loss	1.52 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	70.7%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

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	82 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.025 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	5 x 400Wp panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	138 m^2
Site Reference	Plot 015 Conwy Det	Plot Reference	Issue A
Address	Plot 015 Southend Road, Billericay, CM11		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.63 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.1 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.33 kWh_{PE}/m^2*	
Dwelling primary energy	47.32 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.2 kWh/m^2*	
Dwelling fabric energy efficiency	38.9 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (3) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	153.627125	0.23
Ground floor: Jetfloor, Jetfloor	69.04	0.11
Exposed roof: Roof (1)	66.63	0.09 **(!)**
Exposed roof: Roof (2)	0.97	0.15
Exposed roof: Roof (3)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
W1, Opening Type 1	1.716	North	0.7	1.3
D3, Opening Type 1	5.145	South	0.7	1.3
W1 Sidelight, Opening Type 1	0.8415	North West	0.7	1.3
W1 Sidelight, Opening Type 1	0.8415	North East	0.7	1.3
W2, Opening Type 1	1.5945	North	0.7	1.3
W4, Opening Type 1	1.5945	East	0.7	1.3
W5, Opening Type 1	1.5945	South	0.7	1.3
D2, Opening Type 1	3.255	West	0.7	1.3
W6, Opening Type 1	0.76125	South	0.7	1.3
W7, Opening Type 1	1.43505	North	0.7	1.3
W8, Opening Type 1	1.43505	North	0.7	1.3
W9, Opening Type 1	1.43505	North	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W10, Opening Type 1	0.76125	East	0.7	1.3
W11, Opening Type 1	0.375	East	0.7	1.3
W12, Opening Type 1	1.43505	East	0.7	1.3
W13, Opening Type 1	1.43505	West	0.7	1.3
W14, Opening Type 1	0.76125	South	0.7	1.3
W15, Opening Type 1	1.43505	South	0.7	1.3
W3, Opening Type 1	0.76125	East	0.7	1.3
D1, Front door IF	2.490075	North	N/A	1.1 **(!)**

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	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.006 **(!)**	EW21 / IF01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24 45
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.018 **(!)**	TE 401/E24/01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	TE 401/E10/01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.094	EW21 / CI01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic to eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE311/E16/02 45

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Both radiators and underfloor
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC HEAT2
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	190 litres	
Declared heat loss	1.52 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	70.7%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

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	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.43 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:

b. Client Declaration
N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	138 m^2
Site Reference	Plot 016 Conwy Det	Plot Reference	Issue A
Address	Plot 016 Southend Road, Billericay, CM11		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.71 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.19 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.74 kWh_{PE}/m^2*	
Dwelling primary energy	47.81 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.5 kWh/m^2*	
Dwelling fabric energy efficiency	39.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (3) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	153.627125	0.23
Ground floor: Jetfloor, Jetfloor	69.04	0.11
Exposed roof: Roof (1)	66.63	0.09 **(!)**
Exposed roof: Roof (2)	0.97	0.15
Exposed roof: Roof (3)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
W1, Opening Type 1	1.716	South	0.7	1.3
D3, Opening Type 1	5.145	North	0.7	1.3
W1 Sidelight, Opening Type 1	0.8415	South West	0.7	1.3
W1 Sidelight, Opening Type 1	0.8415	South East	0.7	1.3
W2, Opening Type 1	1.5945	South	0.7	1.3
W4, Opening Type 1	1.5945	East	0.7	1.3
W5, Opening Type 1	1.5945	North	0.7	1.3
D2, Opening Type 1	3.255	West	0.7	1.3
W6, Opening Type 1	0.76125	North	0.7	1.3
W7, Opening Type 1	1.43505	South	0.7	1.3
W8, Opening Type 1	1.43505	South	0.7	1.3
W9, Opening Type 1	1.43505	South	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W10, Opening Type 1	0.76125	East	0.7	1.3
W11, Opening Type 1	0.375	East	0.7	1.3
W12, Opening Type 1	1.43505	East	0.7	1.3
W13, Opening Type 1	1.43505	West	0.7	1.3
W14, Opening Type 1	0.76125	North	0.7	1.3
W15, Opening Type 1	1.43505	North	0.7	1.3
W3, Opening Type 1	0.76125	East	0.7	1.3
D1, Front door IF	2.490075	South	N/A	1.1 **(!)**

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	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.006 **(!)**	EW21 / IF01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24 45
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.018 **(!)**	TE 401/E24/01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	TE 401/E10/01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.094	EW21 / CI01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic to eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE311/E16/02 45

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Both radiators and underfloor
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC HEAT2
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	190 litres	
Declared heat loss	1.52 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	70.7%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

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	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.43 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:

b. Client Declaration
N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	92 m^2
Site Reference	Plot 017 Portmore SD	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.8 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.04 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.4 kWh_{PE}/m^2*	
Dwelling primary energy	53.99 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	33.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.77665	0.23
Party wall: Party Wall (1)	43.61	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.93	0.11
Exposed roof: Roof (1)	44.49	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.4931	South	N/A	1.2
D2, French doors	3.255	North	0.7	1.3
W1, Window	1.14	South	0.7	1.3
W2, Window	1.14	North	0.7	1.3
W3, Window	1.2825	South	0.7	1.3
W4, Window	0.7665	South	0.7	1.3
W5, Window	1.2825	North	0.7	1.3
W6, Window	1.2825	North	0.7	1.3
W7, Window	0.76125	West	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Lintels at eaves
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	92 m^2
Site Reference	Plot 018 Portmore SD	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.8 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.04 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.4 kWh_{PE}/m^2*	
Dwelling primary energy	53.99 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	33.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.77665	0.23
Party wall: Party Wall (1)	43.61	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.93	0.11
Exposed roof: Roof (1)	44.49	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.4931	South	N/A	1.2
D2, French doors	3.255	North	0.7	1.3
W1, Window	1.14	South	0.7	1.3
W2, Window	1.14	North	0.7	1.3
W3, Window	1.2825	South	0.7	1.3
W4, Window	0.7665	South	0.7	1.3
W5, Window	1.2825	North	0.7	1.3
W6, Window	1.2825	North	0.7	1.3
W7, Window	0.76125	West	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Lintels at eaves
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	92 m^2
Site Reference	Plot 019 Portmore SD	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.8 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.04 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.4 kWh_{PE}/m^2*	
Dwelling primary energy	53.99 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	33.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.77665	0.23
Party wall: Party Wall (1)	43.61	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.93	0.11
Exposed roof: Roof (1)	44.49	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.4931	South	N/A	1.2
D2, French doors	3.255	North	0.7	1.3
W1, Window	1.14	South	0.7	1.3
W2, Window	1.14	North	0.7	1.3
W3, Window	1.2825	South	0.7	1.3
W4, Window	0.7665	South	0.7	1.3
W5, Window	1.2825	North	0.7	1.3
W6, Window	1.2825	North	0.7	1.3
W7, Window	0.76125	West	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Lintels at eaves
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	92 m^2
Site Reference	Plot 020 Portmore SD	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.8 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.04 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.4 kWh_{PE}/m^2*	
Dwelling primary energy	53.99 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	33.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.77665	0.23
Party wall: Party Wall (1)	43.61	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.93	0.11
Exposed roof: Roof (1)	44.49	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.4931	South	N/A	1.2
D2, French doors	3.255	North	0.7	1.3
W1, Window	1.14	South	0.7	1.3
W2, Window	1.14	North	0.7	1.3
W3, Window	1.2825	South	0.7	1.3
W4, Window	0.7665	South	0.7	1.3
W5, Window	1.2825	North	0.7	1.3
W6, Window	1.2825	North	0.7	1.3
W7, Window	0.76125	West	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Lintels at eaves
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	102 m^2
Site Reference	Plot 021 Stanford Det	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.46 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.04 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*59.95 kWh_{PE}/m^2*	
Dwelling primary energy	59.79 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.4 kWh/m^2*	
Dwelling fabric energy efficiency	39.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.29	D02 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	127.644575	0.23
Ground floor: Jetfloor, Jetfloor	51.14	0.11
Exposed roof: Roof (1)	49.7	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D01, Type 2 Front Door	2.490075	West	N/A	1.2
D02 , French doors	3.234	North	0.7	1.3
W01, Window	1.6305	West	0.7	1.3
W02, Window	1.593	West	0.7	1.3
W03, Window	1.593	South	0.7	1.3
W04, Window	1.14	North	0.7	1.3
W05, Window	1.4337	West	0.7	1.3
W06, Window	0.6525	West	0.7	1.3
W07, Window	1.4337	West	0.7	1.3
W08, Window	1.4337	South	0.7	1.3
W9, Window	0.76125	North	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01 D1-3 Rem
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE311/E6/01 240mm FJ
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic at Eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21/RV02 D1-3

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.40kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 022 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.65 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.41 kWh_{PE}/m^2*	
Dwelling primary energy	52.23 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	34.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	West	N/A	1.2
D2, French doors	5.145	East	0.7	1.3
W1 front, Window	1.3725	West	0.7	1.3
W1 side, Window	0.732	South West	0.7	1.3
W1 side, Window	0.732	North West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	East	0.7	1.3
W3, Window	0.87	West	0.7	1.3
W4, Window	1.14	West	0.7	1.3
W5, Window	1.14	East	0.7	1.3
W6, Window	0.87	East	0.7	1.3
W7, Window	0.96075	West	0.7	1.3
W8, Window	1.092	East	0.7	1.3
W9, Rooflight	1.092	East	0.7	1.7
W10, Rooflight	0.7644	East	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 023 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.65 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.41 kWh_{PE}/m^2*	
Dwelling primary energy	52.23 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	34.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	West	N/A	1.2
D2, French doors	5.145	East	0.7	1.3
W1 front, Window	1.3725	West	0.7	1.3
W1 side, Window	0.732	South West	0.7	1.3
W1 side, Window	0.732	North West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	East	0.7	1.3
W3, Window	0.87	West	0.7	1.3
W4, Window	1.14	West	0.7	1.3
W5, Window	1.14	East	0.7	1.3
W6, Window	0.87	East	0.7	1.3
W7, Window	0.96075	West	0.7	1.3
W8, Window	1.092	East	0.7	1.3
W9, Rooflight	1.092	East	0.7	1.7
W10, Rooflight	0.7644	East	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 024 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.65 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.41 kWh_{PE}/m^2*	
Dwelling primary energy	52.23 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	34.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	West	N/A	1.2
D2, French doors	5.145	East	0.7	1.3
W1 front, Window	1.3725	West	0.7	1.3
W1 side, Window	0.732	South West	0.7	1.3
W1 side, Window	0.732	North West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	East	0.7	1.3
W3, Window	0.87	West	0.7	1.3
W4, Window	1.14	West	0.7	1.3
W5, Window	1.14	East	0.7	1.3
W6, Window	0.87	East	0.7	1.3
W7, Window	0.96075	West	0.7	1.3
W8, Window	1.092	East	0.7	1.3
W9, Rooflight	1.092	East	0.7	1.7
W10, Rooflight	0.7644	East	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:12

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	112 m^2
Site Reference	Plot 025 Rainham	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.65 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.41 kWh_{PE}/m^2*	
Dwelling primary energy	52.23 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	34.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.22	Walls (4) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (4) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.33	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	76.902675	0.23
Exposed wall: Walls (2)	11.53	0.23
Exposed wall: Walls (3)	13.98	0.11 **(!)**
Exposed wall: Walls (4)	2.618	0.27
Party wall: Party Wall (1)	43.21	0 **(!)**
Party wall: Party Wall (2)	11.53	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.69	0.11
Exposed roof: Roof (1)	15.24	0.09 **(!)**
Exposed roof: Roof (2)	6.73	0.11
Exposed roof: Roof (3)	16.3636	0.15
Exposed roof: Roof (4)	1.48	0.19
Exposed roof: Roof (5)	0.88	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.490075	West	N/A	1.2
D2, French doors	5.145	East	0.7	1.3
W1 front, Window	1.3725	West	0.7	1.3
W1 side, Window	0.732	South West	0.7	1.3
W1 side, Window	0.732	North West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W2 , Window	0.525	East	0.7	1.3
W3, Window	0.87	West	0.7	1.3
W4, Window	1.14	West	0.7	1.3
W5, Window	1.14	East	0.7	1.3
W6, Window	0.87	East	0.7	1.3
W7, Window	0.96075	West	0.7	1.3
W8, Window	1.092	East	0.7	1.3
W9, Rooflight	1.092	East	0.7	1.7
W10, Rooflight	0.7644	East	0.7	1.7

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.005 **(!)**	TE 311-E6-02
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.054	TE311/E24/02
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.011 **(!)**	Focus Consultants
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.069	Focus Consultants
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.08	Roofspace (001)10 E13.4
External wall	E14: Flat roof	Calculated by person with suitable expertise	0.039 **(!)**	TE 311-E14-01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E16: Corner (normal)	SAP table default	0.18	Dormer cheek - default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.029 **(!)**	TE 311-E16-01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE 311-E16-02
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default value
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.017 **(!)**	Focus Consultants
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.03 **(!)**	Roofspace (001)12
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.074	Dormer - TE 315-R1-01
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.12	Roofspace (001)13
Roof	R2: Sill of roof window	Calculated by person with suitable	0.126	TE 368-R2-01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
		expertise		
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Roofspace (001)15
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.06	Dormer - TE 315-R3-01
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.031 **(!)**	Focus Consultants
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	STG_IRF_2022-02-10_R7b
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.048	STG_IRF_2022-02-10_R7c
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	STG_IRF_2022-02-10_R7a
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	102 m^2
Site Reference	Plot 026 Stanford Det	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.77 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.21 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.63 kWh_{PE}/m^2*	
Dwelling primary energy	60.33 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*41.9 kWh/m^2*	
Dwelling fabric energy efficiency	41.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.29	D02 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	127.644575	0.23
Ground floor: Jetfloor, Jetfloor	51.14	0.11
Exposed roof: Roof (1)	49.7	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D01, Type 2 Front Door	2.490075	North	N/A	1.2
D02 , French doors	3.234	East	0.7	1.3
W01, Window	1.6305	North	0.7	1.3
W02, Window	1.593	North	0.7	1.3
W03, Window	1.593	West	0.7	1.3
W04, Window	1.14	East	0.7	1.3
W05, Window	1.4337	North	0.7	1.3
W06, Window	0.6525	North	0.7	1.3
W07, Window	1.4337	North	0.7	1.3
W08, Window	1.4337	West	0.7	1.3
W9, Window	0.76125	East	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01 D1-3 Rem
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE311/E6/01 240mm FJ
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic at Eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21/RV02 D1-3

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.40kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:11

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	138 m^2
Site Reference	Plot 027 Conwy Det	Plot Reference	Issue A
Address	Plot 027 Southend Road, Billericay, CM11		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.75 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.31 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.98 kWh$_{PE}$/m^2*	
Dwelling primary energy	48.61 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.9 kWh/m^2*	
Dwelling fabric energy efficiency	39.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (3) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	153.627125	0.23
Ground floor: Jetfloor, Jetfloor	69.04	0.11
Exposed roof: Roof (1)	66.63	0.09 **(!)**
Exposed roof: Roof (2)	0.97	0.15
Exposed roof: Roof (3)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
W1, Opening Type 1	1.716	East	0.7	1.3
D3, Opening Type 1	5.145	West	0.7	1.3
W1 Sidelight, Opening Type 1	0.8415	South East	0.7	1.3
W1 Sidelight, Opening Type 1	0.8415	North East	0.7	1.3
W2, Opening Type 1	1.5945	East	0.7	1.3
W4, Opening Type 1	1.5945	North	0.7	1.3
W5, Opening Type 1	1.5945	West	0.7	1.3
D2, Opening Type 1	3.255	South	0.7	1.3
W6, Opening Type 1	0.76125	West	0.7	1.3
W7, Opening Type 1	1.43505	East	0.7	1.3
W8, Opening Type 1	1.43505	East	0.7	1.3
W9, Opening Type 1	1.43505	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W10, Opening Type 1	0.76125	North	0.7	1.3
W11, Opening Type 1	0.375	North	0.7	1.3
W12, Opening Type 1	1.43505	North	0.7	1.3
W13, Opening Type 1	1.43505	South	0.7	1.3
W14, Opening Type 1	0.76125	West	0.7	1.3
W15, Opening Type 1	1.43505	West	0.7	1.3
W3, Opening Type 1	0.76125	North	0.7	1.3
D1, Front door IF	2.490075	East	N/A	1.1 **(!)**

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	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.083	EW21 / RV04
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.006 **(!)**	EW21 / IF01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24 45
External wall	E24: Eaves (insulation at ceiling level - inverted)	Calculated by person with suitable expertise	0.018 **(!)**	TE 401/E24/01
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.04	TE 401/E10/01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.094	EW21 / CI01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Catnic to eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.034 **(!)**	TE311/E16/02 45

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating

Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Both radiators and underfloor
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC HEAT2
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water		
Cylinder/store - type: Cylinder		
Capacity	190 litres	
Declared heat loss	1.52 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	70.7%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

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	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.835 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:

b. Client Declaration
N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	92 m^2
Site Reference	Plot 028 Portmore SD	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.61 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.05 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.41 kWh_{PE}/m^2*	
Dwelling primary energy	54.49 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.9 kWh/m^2*	
Dwelling fabric energy efficiency	33.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.77665	0.23
Party wall: Party Wall (1)	43.61	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.93	0.11
Exposed roof: Roof (1)	44.49	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.4931	East	N/A	1.2
D2, French doors	3.255	West	0.7	1.3
W1, Window	1.14	East	0.7	1.3
W2, Window	1.14	West	0.7	1.3
W3, Window	1.2825	East	0.7	1.3
W4, Window	0.7665	East	0.7	1.3
W5, Window	1.2825	West	0.7	1.3
W6, Window	1.2825	West	0.7	1.3
W7, Window	0.76125	South	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Lintels at eaves
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	92 m^2
Site Reference	Plot 029 Portmore SD	Plot Reference	Template
Address	Plot x Monaveen Gardens, West Molesey, KT8 3		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.61 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	10.05 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.41 kWh$_{PE}$/m^2*	
Dwelling primary energy	54.49 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.9 kWh/m^2*	
Dwelling fabric energy efficiency	33.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.77665	0.23
Party wall: Party Wall (1)	43.61	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.93	0.11
Exposed roof: Roof (1)	44.49	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 2	2.4931	East	N/A	1.2
D2, French doors	3.255	West	0.7	1.3
W1, Window	1.14	East	0.7	1.3
W2, Window	1.14	West	0.7	1.3
W3, Window	1.2825	East	0.7	1.3
W4, Window	0.7665	East	0.7	1.3
W5, Window	1.2825	West	0.7	1.3
W6, Window	1.2825	West	0.7	1.3
W7, Window	0.76125	South	0.7	1.3

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	0.032 **(!)**	EW21 / LN03
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 **(!)**	TE 311-E6-01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.078	EW21 / RE24
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.04	Lintels at eaves
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.081	Jetfloor
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.077	PW01 / RG22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 400w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:05

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 030 Martham SD	Plot Reference	Issue A
Address	Plot 030 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.22 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.64 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.58 kWh_{PE}/m^2*	
Dwelling primary energy	57.0 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.2 kWh/m^2*	
Dwelling fabric energy efficiency	36.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.3836	0.2
Party wall: Party Wall (1)	41.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	1.83915	North	N/A	1.2
D2, Windows	3.3285	West	0.7	1.3
W1, Windows	1.092	West	0.7	1.3
W2, Windows	1.2285	North	0.7	1.3
W3, Windows	1.2285	North	0.7	1.3
W4, Windows	2.4435	East	0.7	1.3
W6, Windows	1.29675	North	0.7	1.3
W7, Windows	0.71925	North	0.7	1.3
W8, Windows	1.29675	North	0.7	1.3
W9, Windows	1.29675	East	0.7	1.3
W10, Windows	1.29675	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.62 kWp
Orientation	North
Pitch	45°
Overshading	None or very little
Manufacturer	4 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:05

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 031 Mildenhall SD	Plot Reference	Issue A
Address	Plot 031 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.84 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.63 kWh_{PE}/m^2*	
Dwelling primary energy	54.86 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.9 kWh/m^2*	
Dwelling fabric energy efficiency	34.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	East	N/A	1.2
D2, Type 6 Rear Door	1.83915	West	N/A	1.3
W1, Window	2.715	East	0.7	1.3
W2, Window	2.172	West	0.7	1.3
W3, Window	0.71925	East	0.7	1.3
W4, Window	2.57925	East	0.7	1.3
W5, Window	0.71925	South	0.7	1.3
W6, Window	1.29675	West	0.7	1.3
W7, Window	1.29675	West	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	142 m^2
Site Reference	Plot 032 Langley Det	Plot Reference	Issue A
Address	Plot 033 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.27 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	8.87 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*48.41 kWh$_{PE}$/m^2*	
Dwelling primary energy	44.48 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*39.1 kWh/m^2*	
Dwelling fabric energy efficiency	39.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	151.18175	0.2
Exposed wall: Walls (2)	2.3159	0.2
Ground floor: Jetfloor, Jetfloor	70.92	0.11
Exposed roof: Roof (1)	70.92	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^2K]**
D1, Front door type 4	2.1441	East	N/A	1.2
D2, French doors	3.15	West	0.7	1.3
W1, Window	2.715	East	0.7	1.3
W2, Window	2.715	East	0.7	1.3
W3, Window	1.092	South	0.7	1.3
W4, Window	1.365	South	0.7	1.3
W5, Window	1.365	South	0.7	1.3
W6, Window	2.57925	East	0.7	1.3
W7, Window	0.71925	East	0.7	1.3
W8, Window	2.57925	East	0.7	1.3
W9, Window	0.71925	West	0.7	1.3
W10, Window	0.71925	West	0.7	1.3
W11, Window	1.29675	North	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W12, Window	1.29675	South	0.7	1.3
W13, Window	0.6165	South	0.7	1.3
D3, French doors	3.15	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.092	TE 307/E10/26
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.045	TE 307/E17/04

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	Regular boiler
Manufacturer	Ideal Boilers
Model	LOGIC HEAT2
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	190 litres
Declared heat loss	1.52 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.835 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	7 x 405w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:05

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	142 m^2
Site Reference	Plot 033 Cattawade Det	Plot Reference	Issue A
Address	Plot 033 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.27 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.15 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*48.41 kWh$_{PE}$/m^2*	
Dwelling primary energy	46.42 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*39.1 kWh/m^2*	
Dwelling fabric energy efficiency	39.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	151.18175	0.2
Exposed wall: Walls (2)	2.3159	0.2
Ground floor: Jetfloor, Jetfloor	70.92	0.11
Exposed roof: Roof (1)	70.92	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^2K]**
D1, Front door type 4	2.1441	East	N/A	1.2
D2, French doors	3.15	West	0.7	1.3
W1, Window	2.715	East	0.7	1.3
W2, Window	2.715	East	0.7	1.3
W3, Window	1.092	South	0.7	1.3
W4, Window	1.365	South	0.7	1.3
W5, Window	1.365	South	0.7	1.3
W6, Window	2.57925	East	0.7	1.3
W7, Window	0.71925	East	0.7	1.3
W8, Window	2.57925	East	0.7	1.3
W9, Window	0.71925	West	0.7	1.3
W10, Window	0.71925	West	0.7	1.3
W11, Window	1.29675	North	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W12, Window	1.29675	South	0.7	1.3
W13, Window	0.6165	South	0.7	1.3
D3, French doors	3.15	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.092	TE 307/E10/26
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.045	TE 307/E17/04

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	Regular boiler
Manufacturer	Ideal Boilers
Model	LOGIC HEAT2
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	190 litres
Declared heat loss	1.52 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	3.24 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	8 x 405w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:05

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 034 Holywell SD	Plot Reference	Issue A
Address	Plot 034 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.62 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.97 kWh_{PE}/m^2*	
Dwelling primary energy	62.49 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.5 kWh/m^2*	
Dwelling fabric energy efficiency	37.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.63963	0.2
Party wall: Party Wall (1)	41.03	0 **(!)**
Ground floor: Jetfloor, Jetfloor	36.09	0.11
Exposed roof: Roof (1)	36.09	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
D2, French Doors	5.2185	North	0.7	1.3
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	East	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:05

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 035 Holywell SD	Plot Reference	Issue A
Address	Plot 035 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.62 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.97 kWh_{PE}/m^2*	
Dwelling primary energy	62.49 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.5 kWh/m^2*	
Dwelling fabric energy efficiency	37.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.63963	0.2
Party wall: Party Wall (1)	41.03	0 **(!)**
Ground floor: Jetfloor, Jetfloor	36.09	0.11
Exposed roof: Roof (1)	36.09	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
D2, French Doors	5.2185	North	0.7	1.3
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	West	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 036 Martham Det	Plot Reference	Issue A
Address	Plot 036 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.83 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	11.3 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*61.83 kWh_{PE}/m^2*	
Dwelling primary energy	60.37 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.0 kWh/m^2*	
Dwelling fabric energy efficiency	39.9 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	119.9236	0.2
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	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^2K]**
D1, Front Door Type 4	1.83915	West	N/A	1.2
D2, Windows	3.3285	North	0.7	1.3
W1, Windows	1.092	North	0.7	1.3
W2, Windows	1.2285	West	0.7	1.3
W3, Windows	1.2285	West	0.7	1.3
W4, Windows	2.4435	South	0.7	1.3
W6, Windows	1.29675	West	0.7	1.3
W7, Windows	0.71925	West	0.7	1.3
W8, Windows	1.29675	West	0.7	1.3
W9, Windows	1.29675	South	0.7	1.3
W10, Windows	1.29675	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.076	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.058	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.215 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	3 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	80 m^2
Site Reference	Plot 037 Type 50 End	Plot Reference	Issue A
Address	Plot 037 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.1 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.44 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*63.36 kWh_{PE}/m^2*	
Dwelling primary energy	61.82 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.5 kWh/m^2*	
Dwelling fabric energy efficiency	37.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	73.55555	0.2
Party wall: Party Wall (1)	43.88	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.03	0.11
Exposed roof: Roof (1)	40.03	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.2491	West	N/A	1.2
D2, Rear Door	2.2491	East	N/A	1.3
W1, Windows	2.775	West	0.7	1.3
W3, Windows	2.22	East	0.7	1.3
W4, Windows	2.22	West	0.7	1.3
W5, Windows	0.76125	South	0.7	1.3
W6, Windows	2.22	East	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	95 m^2
Site Reference	Plot 038 Type 52 Mid	Plot Reference	Issue A
Address	Plot 038 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.6 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	8.89 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.0 kWh_{PE}/m^2*	
Dwelling primary energy	47.71 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*29.8 kWh/m^2*	
Dwelling fabric energy efficiency	28.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	33.28205	0.2
Party wall: Party Wall (1)	95.84	0 **(!)**
Ground floor: Jetfloor, Jetfloor	47.37	0.11
Exposed roof: Roof (1)	47.37	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.1441	West	N/A	1.2
D2, Rear Door	2.1441	East	N/A	1.3
W1, Windows	2.715	West	0.7	1.3
W2, Windows	2.172	East	0.7	1.3
W4, Windows	2.57925	West	0.7	1.3
W5, Windows	1.29675	East	0.7	1.3
W6, Windows	1.29675	East	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.215 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	3 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	95 m^2
Site Reference	Plot 039 Type 55 End	Plot Reference	Issue A
Address	Plot 039 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.09 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.54 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*57.93 kWh_{PE}/m^2*	
Dwelling primary energy	56.4 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.4 kWh/m^2*	
Dwelling fabric energy efficiency	37.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.26605	0.2
Party wall: Party Wall (1)	47.77	0 **(!)**
Ground floor: Jetfloor, Jetfloor	47.66	0.11
Exposed roof: Roof (1)	47.66	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.1441	North	N/A	1.2
D2, Side Door	2.1441	East	N/A	1.3
W1, Windows	2.715	West	0.7	1.3
W2, Windows	1.092	North	0.7	1.3
W4, Windows	0.71925	North	0.7	1.3
W5, Windows	1.092	North	0.7	1.3
W6, Windows	1.092	East	0.7	1.3
W8, Windows	1.29675	North	0.7	1.3
W3, Windows	0.71925	North	0.7	1.3
W7, Windows	1.29675	West	0.7	1.3
W9, Windows	0.71925	North	0.7	1.3
W10, Windows	1.29675	North	0.7	1.3
W11, Windows	1.29675	East	0.7	1.3

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

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part **1**: 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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.025 kWp
Orientation	North
Pitch	45°
Overshading	None or very little
Manufacturer	5 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	95 m^2
Site Reference	Plot 040 Type 55 SD	Plot Reference	Issue A
Address	Plot 040 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.09 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.54 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*57.93 kWh_{PE}/m^2*	
Dwelling primary energy	56.4 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.4 kWh/m^2*	
Dwelling fabric energy efficiency	37.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.26605	0.2
Party wall: Party Wall (1)	47.77	0 **(!)**
Ground floor: Jetfloor, Jetfloor	47.66	0.11
Exposed roof: Roof (1)	47.66	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.1441	North	N/A	1.2
D2, Side Door	2.1441	West	N/A	1.3
W1, Windows	2.715	East	0.7	1.3
W2, Windows	1.092	North	0.7	1.3
W4, Windows	0.71925	North	0.7	1.3
W5, Windows	1.092	North	0.7	1.3
W6, Windows	1.092	West	0.7	1.3
W8, Windows	1.29675	North	0.7	1.3
W3, Windows	0.71925	North	0.7	1.3
W7, Windows	1.29675	East	0.7	1.3
W9, Windows	0.71925	North	0.7	1.3
W10, Windows	1.29675	North	0.7	1.3
W11, Windows	1.29675	West	0.7	1.3

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

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))				
Building part **1**: 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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	2.025 kWp
Orientation	North
Pitch	45°
Overshading	None or very little
Manufacturer	5 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	107 m^2
Site Reference	Plot 041 Type 54 SD	Plot Reference	Issue A
Address	Plot 041 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.09 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.82 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*52.67 kWh_{PE}/m^2*	
Dwelling primary energy	52.43 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	35.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	83.4643	0.2
Party wall: Party Wall (1)	47.63	0 **(!)**
Ground floor: Jetfloor, Jetfloor	53.5	0.11
Exposed roof: Roof (1)	53.5	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.1441	East	N/A	1.2
D2, Rear Door	2.1441	West	N/A	1.3
W1, Windows	2.715	East	0.7	1.3
W2, Windows	2.172	West	0.7	1.3
W4, Windows	2.57925	East	0.7	1.3
W5, Windows	1.29675	East	0.7	1.3
W6, Windows	1.29675	West	0.7	1.3
W8, Windows	0.71925	South	0.7	1.3
W3, Windows	0.71925	South	0.7	1.3
W7, Windows	2.57925	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	
Technology type: **Photovoltaic system (2)**	
Peak power	0.405 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	1 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 042 Nene SD	Plot Reference	Issue A
Address	Plot 042 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.89 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.69 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*67.49 kWh_{PE}/m^2*	
Dwelling primary energy	62.88 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.6 kWh/m^2*	
Dwelling fabric energy efficiency	38.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.36963	0.2
Party wall: Party Wall (1)	41.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	East	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 043 Nene SD	Plot Reference	Issue A
Address	Plot 043 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.73 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.69 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*66.67 kWh_{PE}/m^2*	
Dwelling primary energy	62.88 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.9 kWh/m^2*	
Dwelling fabric energy efficiency	37.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.36963	0.2
Party wall: Party Wall (1)	41.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	West	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 044 Nene End	Plot Reference	Issue A
Address	Plot 044 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.73 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.69 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*66.67 kWh_{PE}/m^2*	
Dwelling primary energy	62.88 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.9 kWh/m^2*	
Dwelling fabric energy efficiency	37.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.36963	0.2
Party wall: Party Wall (1)	41.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	East	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:06

Project Information			
Assessed By	Alex Dodson	Building Type	House, Mid-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 045 Nene Mid	Plot Reference	Issue A
Address	Plot 045 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.5 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.77 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*60.08 kWh_{PE}/m^2*	
Dwelling primary energy	52.14 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	30.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	29.01888	0.2
Party wall: Party Wall (1)	82.13	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, Mid-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 046 Nene Mid	Plot Reference	Issue A
Address	Plot 046 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.5 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.77 kgCO_2/m^2	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*60.08 kWh$_{PE}$/m^2*	
Dwelling primary energy	52.14 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	30.0 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	0.09	Roof (1) (0.09)	**OK**
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	29.01888	0.2
Party wall: Party Wall (1)	82.13	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 047 Nene End	Plot Reference	Issue A
Address	Plot 047 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.73 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.69 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*66.67 kWh_{PE}/m^2*	
Dwelling primary energy	62.88 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.9 kWh/m^2*	
Dwelling fabric energy efficiency	37.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.36963	0.2
Party wall: Party Wall (1)	41.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	West	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 048 Nene SD	Plot Reference	Issue A
Address	Plot 048 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.73 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.7 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*66.67 kWh_{PE}/m^2*	
Dwelling primary energy	62.89 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.9 kWh/m^2*	
Dwelling fabric energy efficiency	37.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.36963	0.2
Party wall: Party Wall (1)	41.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	West	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
D2, Windows	5.2185	North	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 049 Martham SD	Plot Reference	Issue A
Address	Plot 049 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.86 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.25 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.62 kWh_{PE}/m^2*	
Dwelling primary energy	54.69 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	34.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.3836	0.2
Party wall: Party Wall (1)	41.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	1.83915	West	N/A	1.2
D2, Windows	3.3285	North	0.7	1.3
W1, Windows	1.092	North	0.7	1.3
W2, Windows	1.2285	West	0.7	1.3
W3, Windows	1.2285	West	0.7	1.3
W4, Windows	2.4435	South	0.7	1.3
W6, Windows	1.29675	West	0.7	1.3
W7, Windows	0.71925	West	0.7	1.3
W8, Windows	1.29675	West	0.7	1.3
W9, Windows	1.29675	South	0.7	1.3
W10, Windows	1.29675	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.215 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	3 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	142 m^2
Site Reference	Plot 050 Cattawade Det	Plot Reference	Issue A
Address	Plot 050 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.59 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	9.33 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*50.15 kWh$_{PE}$/m^2*	
Dwelling primary energy	47.39 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*40.6 kWh/m^2*	
Dwelling fabric energy efficiency	40.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	151.18175	0.2
Exposed wall: Walls (2)	2.3159	0.2
Ground floor: Jetfloor, Jetfloor	70.92	0.11
Exposed roof: Roof (1)	70.92	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front door type 4	2.1441	West	N/A	1.2
D2, French doors	3.15	East	0.7	1.3
W1, Window	2.715	West	0.7	1.3
W2, Window	2.715	West	0.7	1.3
W3, Window	1.092	North	0.7	1.3
W4, Window	1.365	North	0.7	1.3
W5, Window	1.365	North	0.7	1.3
W6, Window	2.57925	West	0.7	1.3
W7, Window	0.71925	West	0.7	1.3
W8, Window	2.57925	West	0.7	1.3
W9, Window	0.71925	East	0.7	1.3
W10, Window	0.71925	East	0.7	1.3
W11, Window	1.29675	South	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W12, Window	1.29675	North	0.7	1.3
W13, Window	0.6165	North	0.7	1.3
D3, French doors	3.15	South	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.045	TE 307/E17/04

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	Regular boiler
Manufacturer	Ideal Boilers
Model	LOGIC HEAT2
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	190 litres
Declared heat loss	1.52 kWh/day
Primary pipework insulated	Yes
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	3.24 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	8 x 405w panels
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	80 m^2
Site Reference	Plot 051 Type 50 SD	Plot Reference	Issue A
Address	Plot 051 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.09 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	11.42 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*63.26 kWh$_{PE}$/m^2*	
Dwelling primary energy	61.7 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.6 kWh/m^2*	
Dwelling fabric energy efficiency	37.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	72.7943	0.2
Party wall: Party Wall (1)	43.88	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.03	0.11
Exposed roof: Roof (1)	40.03	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.2491	West	N/A	1.2
D2, Rear Door	2.2491	East	N/A	1.3
W1, Windows	2.775	West	0.7	1.3
W2 (plot 51 only), Windows	0.76125	South	0.7	1.3
W3, Windows	2.22	East	0.7	1.3
W4, Windows	2.22	West	0.7	1.3
W5, Windows	0.76125	South	0.7	1.3
W6, Windows	2.22	East	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	95 m^2
Site Reference	Plot 052 Type 52 SD	Plot Reference	Issue A
Address	Plot 052 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.82 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.44 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.54 kWh_{PE}/m^2*	
Dwelling primary energy	55.98 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*35.5 kWh/m^2*	
Dwelling fabric energy efficiency	35.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.4828	0.2
Party wall: Party Wall (1)	47.92	0 **(!)**
Ground floor: Jetfloor, Jetfloor	47.37	0.11
Exposed roof: Roof (1)	47.37	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.1441	West	N/A	1.2
D2, Rear Door	2.1441	East	N/A	1.3
W1, Windows	2.715	West	0.7	1.3
W2, Windows	2.172	East	0.7	1.3
W4, Windows	2.57925	West	0.7	1.3
W5, Windows	1.29675	East	0.7	1.3
W6, Windows	1.29675	East	0.7	1.3
W7, Windows	0.71925	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	
Technology type: **Photovoltaic system (2)**	
Peak power	0.405 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	1 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 053 Marwood End	Plot Reference	Issue A
Address	Plot 053 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.09 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.81 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.05 kWh_{PE}/m^2*	
Dwelling primary energy	57.56 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*35.9 kWh/m^2*	
Dwelling fabric energy efficiency	35.9 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (3) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.36	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	88.201175	0.2
Exposed wall: Walls (2)	21.46	0.2
Exposed wall: Walls (3)	2.69925	0.27
Party wall: Party Wall (1)	42.69	0 **(!)**
Party wall: Party Wall (2)	21.46	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	West	N/A	1.2
D2, Windows	5.145	East	0.7	1.3
W1, Windows	1.2825	West	0.7	1.3
W2, Windows	0.76125	South	0.7	1.3
W3, Windows	1.14	West	0.7	1.3
W4, Windows	1.14	West	0.7	1.3
W5, Windows	1.14	East	0.7	1.3
W6, Windows	1.14	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W7, Windows	0.87	South	0.7	1.3
W8, Windows	0.96075	West	0.7	1.3
W9, Roof Window	1.274	East	0.7	1.7
W10, Roof Window	1.274	East	0.7	1.7
W11, Roof Window	1.274	West	0.7	1.7

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	0.103	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.114	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.059	TE 307/E18/03
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	SMRF-E12-ETF20
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	3.5 m^3/hm^2, Design value **(!)**	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 054 Marwood Mid	Plot Reference	Issue A
Address	Plot 054 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.87 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.35 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*51.55 kWh_{PE}/m^2*	
Dwelling primary energy	49.74 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*30.0 kWh/m^2*	
Dwelling fabric energy efficiency	29.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (2) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.37	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	47.132425	0.2
Exposed wall: Walls (2)	2.69925	0.27
Party wall: Party Wall (1)	85.39	0 **(!)**
Party wall: Party Wall (2)	42.92	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	West	N/A	1.2
D2, Windows	5.145	East	0.7	1.3
W1, Windows	1.2825	West	0.7	1.3
W3, Windows	1.14	West	0.7	1.3
W4, Windows	1.14	West	0.7	1.3
W5, Windows	1.14	East	0.7	1.3
W6, Windows	1.14	East	0.7	1.3
W8, Windows	0.96075	West	0.7	1.3
W9, Roof Window	1.274	East	0.7	1.7

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W10, Roof Window	1.274	East	0.7	1.7
W11, Roof Window	1.274	West	0.7	1.7

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	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.025 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:07

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 055 Marwood End	Plot Reference	Issue A
Address	Plot 055 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.36 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.98 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*59.53 kWh_{PE}/m^2*	
Dwelling primary energy	58.49 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.1 kWh/m^2*	
Dwelling fabric energy efficiency	37.1 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (3) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.36	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	88.201175	0.2
Exposed wall: Walls (2)	21.46	0.2
Exposed wall: Walls (3)	2.69925	0.27
Party wall: Party Wall (1)	42.69	0 **(!)**
Party wall: Party Wall (2)	21.46	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	West	N/A	1.2
D2, Windows	5.145	East	0.7	1.3
W1, Windows	1.2825	West	0.7	1.3
W2, Windows	0.76125	North	0.7	1.3
W3, Windows	1.14	West	0.7	1.3
W4, Windows	1.14	West	0.7	1.3
W5, Windows	1.14	East	0.7	1.3
W6, Windows	1.14	East	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W7, Windows	0.87	North	0.7	1.3
W8, Windows	0.96075	West	0.7	1.3
W9, Roof Window	1.274	East	0.7	1.7
W10, Roof Window	1.274	East	0.7	1.7
W11, Roof Window	1.274	West	0.7	1.7

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	0.103	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.114	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.059	TE 307/E18/03
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	SMRF-E12-ETF20
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 056 Martham Det	Plot Reference	Issue A
Address	Plot 056 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.62 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.06 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*60.72 kWh_{PE}/m^2*	
Dwelling primary energy	59.06 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*39.1 kWh/m^2*	
Dwelling fabric energy efficiency	38.9 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	119.9236	0.2
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	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^2K]**
D1, Front Door Type 4	1.83915	West	N/A	1.2
D2, Windows	3.3285	South	0.7	1.3
W1, Windows	1.092	South	0.7	1.3
W2, Windows	1.2285	West	0.7	1.3
W3, Windows	1.2285	West	0.7	1.3
W4, Windows	2.4435	North	0.7	1.3
W6, Windows	1.29675	West	0.7	1.3
W7, Windows	0.71925	West	0.7	1.3
W8, Windows	1.29675	West	0.7	1.3
W9, Windows	1.29675	North	0.7	1.3
W10, Windows	1.29675	South	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.076	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.058	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.215 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 057 Mildenhall SD	Plot Reference	Issue A
Address	Plot 057 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.84 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.39 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.61 kWh_{PE}/m^2*	
Dwelling primary energy	56.08 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.6 kWh/m^2*	
Dwelling fabric energy efficiency	34.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	North	N/A	1.2
D2, Type 6 Rear Door	1.83915	South	N/A	1.3
W1, Window	2.715	North	0.7	1.3
W2, Window	2.172	South	0.7	1.3
W3, Window	0.71925	North	0.7	1.3
W4, Window	2.57925	North	0.7	1.3
W5, Window	0.71925	West	0.7	1.3
W6, Window	1.29675	South	0.7	1.3
W7, Window	1.29675	South	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 058 Mildenhall SD	Plot Reference	Issue A
Address	Plot 058 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.84 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.39 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.61 kWh_{PE}/m^2*	
Dwelling primary energy	56.08 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.6 kWh/m^2*	
Dwelling fabric energy efficiency	34.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	North	N/A	1.2
D2, Type 6 Rear Door	1.83915	South	N/A	1.3
W1, Window	2.715	North	0.7	1.3
W2, Window	2.172	South	0.7	1.3
W3, Window	0.71925	North	0.7	1.3
W4, Window	2.57925	North	0.7	1.3
W5, Window	0.71925	East	0.7	1.3
W6, Window	1.29675	South	0.7	1.3
W7, Window	1.29675	South	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	52 m^2
Site Reference	Plot 059 Type 60 GF	Plot Reference	Template
Address	Plot Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.56 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.38 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*71.36 kWh_{PE}/m^2*	
Dwelling primary energy	61.35 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.5 kWh/m^2*	
Dwelling fabric energy efficiency	31.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	59.387385	0.23
Party wall: Party Wall (1)	5.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	52.28	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD	1.812615	East	N/A	1.2
W1, Windows	2.4435	South	0.7	1.3
W2, Windows	2.4435	North	0.7	1.3
W3, Windows	0.6615	North	0.7	1.3
W4, Windows	0.6615	West	0.7	1.3

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	0.028 **(!)**	22/029/EW23/LN02a
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	22/029/EW23/SL01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	22/029/EW23/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	Jetfloor Full Fill v24.2 17/07
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF50 (Rev b)
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	22/029/EW23/CN01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.056	Common area Wall - 100mm cavit
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	PW03a / IF50
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.057	PW03a / CN01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.062	PW03a / EW23
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0 **(!)**	PW03a / PW03

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	52 m^2
Site Reference	Plot 060 Type 60 GF	Plot Reference	Template
Address	Plot Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.56 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.38 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*71.36 kWh_{PE}/m^2*	
Dwelling primary energy	61.35 kWh_{PE}/m^2	**OK**
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.5 kWh/m^2*	
Dwelling fabric energy efficiency	31.6 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	59.387385	0.23
Party wall: Party Wall (1)	5.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	52.28	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD	1.812615	East	N/A	1.2
W1, Windows	2.4435	South	0.7	1.3
W2, Windows	2.4435	North	0.7	1.3
W3, Windows	0.6615	North	0.7	1.3
W4, Windows	0.6615	West	0.7	1.3

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	0.028 **(!)**	22/029/EW23/LN02a
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	22/029/EW23/SL01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	22/029/EW23/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	Jetfloor Full Fill v24.2 17/07
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF50 (Rev b)
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	22/029/EW23/CN01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.056	Common area Wall - 100mm cavit
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	PW03a / IF50
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.057	PW03a / CN01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.062	PW03a / EW23
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0 **(!)**	PW03a / PW03

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:13

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	52 m^2
Site Reference	Plot 061 Type 61 FF	Plot Reference	Template
Address	Plot Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.49 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.46 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*70.97 kWh_{PE}/m^2*	
Dwelling primary energy	61.81 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*32.8 kWh/m^2*	
Dwelling fabric energy efficiency	31.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	59.387385	0.23
Party wall: Party Wall (1)	5.54	0 **(!)**
Exposed roof: Roof (1)	52.28	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD	1.812615	East	N/A	1.2
W1, Windows	2.4435	South	0.7	1.3
W2, Windows	2.4435	North	0.7	1.3
W3, Windows	0.6615	North	0.7	1.3
W4, Windows	0.6615	West	0.7	1.3

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	0.028 **(!)**	22/029/EW23/LN02a
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	22/029/EW23/SL01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	22/029/EW23/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	Jetfloor Full Fill v24.2 17/07
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF50 (Rev b)
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	22/029/EW23/CN01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.056	Common area Wall - 100mm cavit
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	PW03a / IF50
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.057	PW03a / CN01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.062	PW03a / EW23
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0 **(!)**	PW03a / PW03

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:14

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	52 m^2
Site Reference	Plot 062 Type 61 FF	Plot Reference	Template
Address	Plot Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.49 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.46 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*70.97 kWh_{PE}/m^2*	
Dwelling primary energy	61.81 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*32.8 kWh/m^2*	
Dwelling fabric energy efficiency	31.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	59.387385	0.23
Party wall: Party Wall (1)	5.54	0 **(!)**
Exposed roof: Roof (1)	52.28	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD	1.812615	East	N/A	1.2
W1, Windows	2.4435	South	0.7	1.3
W2, Windows	2.4435	North	0.7	1.3
W3, Windows	0.6615	North	0.7	1.3
W4, Windows	0.6615	West	0.7	1.3

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	0.028 **(!)**	22/029/EW23/LN02a
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	22/029/EW23/SL01

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	22/029/EW23/RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.06	Jetfloor Full Fill v24.2 17/07
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF50 (Rev b)
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	22/029/EW23/CN01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.056	Common area Wall - 100mm cavit
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.037 **(!)**	PW03a / IF50
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.057	PW03a / CN01
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.062	PW03a / EW23
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0 **(!)**	PW03a / PW03

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 063 Nene SD	Plot Reference	Issue A
Address	Plot 063 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.81 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.86 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*67.1 kWh_{PE}/m^2*	
Dwelling primary energy	64.23 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*38.7 kWh/m^2*	
Dwelling fabric energy efficiency	38.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.36963	0.2
Party wall: Party Wall (1)	41.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.77	0.11
Exposed roof: Roof (1)	35.77	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	East	N/A	1.2
W1, Windows	1.2285	East	0.7	1.3
W2, Windows	0.71925	North	0.7	1.3
W3, Windows	1.2285	East	0.7	1.3
D2, Windows	5.2185	West	0.7	1.3
W4, Windows	1.2285	East	0.7	1.3
W5, Windows	2.4435	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	North
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 064 Martham SD	Plot Reference	Issue A
Address	Plot 064 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.62 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.0 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.31 kWh_{PE}/m^2*	
Dwelling primary energy	53.59 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	33.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.3836	0.2
Party wall: Party Wall (1)	41.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	1.83915	South	N/A	1.2
D2, Windows	3.3285	West	0.7	1.3
W1, Windows	1.092	West	0.7	1.3
W2, Windows	1.2285	South	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	2.4435	East	0.7	1.3
W6, Windows	1.29675	South	0.7	1.3
W7, Windows	0.71925	South	0.7	1.3
W8, Windows	1.29675	South	0.7	1.3
W9, Windows	1.29675	East	0.7	1.3
W10, Windows	1.29675	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:14

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	70 m^2
Site Reference	Plot 065 Millbeck Det	Plot Reference	Template
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.18 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	12.59 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*70.34 kWh_{PE}/m^2*	
Dwelling primary energy	66.31 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*51.6 kWh/m^2*	
Dwelling fabric energy efficiency	46.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	N/A	N/A	**N/A**
Curtain walls	*1.6*	N/A	N/A	**N/A**
Floors	*0.18*	0.17	Over Car Port (0.18)	OK
Roofs	*0.16*	0.09	Roof (2) (0.17)	OK
Windows, doors, and roof windows	*1.6*	1.28	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	100.5967	0.23
Ground floor: Jetfloor Assumed, Jetfloor Assumed	5.46	0.11
Upper floor: Over Car Port, Over Car Port	58.68	0.18
Exposed roof: Roof (1)	62.7	0.09 **(!)**
Exposed roof: Roof (2)	1.44	0.17

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD Type 4	2.0874	South	N/A	1.2
W1, Window	1.9635	South	0.7	1.3
W2, Window	1.00275	South	0.7	1.3
D4, RD/SD Type 6	1.8144	West	N/A	1.3
W4, Window	0.7035	North	0.7	1.3
W3, Window	1.00275	South	0.7	1.3
W5, Window	1.00275	North	0.7	1.3
W7, Window	1.00275	North	0.7	1.3
W6, Window	0.7035	North	0.7	1.3

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	0.03 **(!)**	Hi Therm
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01 Window Jambs
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02 Door Jambs
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.035 **(!)**	Hitherm at Eaves
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	Jetfloor
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.006 **(!)**	EW21 / IF01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	EW21 / RE22
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E20: Exposed floor (normal)	Calculated by person with suitable expertise	0.057	EW21 / IF02
External wall	E21: Exposed floor (inverted)	Calculated by person with suitable expertise	0.05	GW02 / IF02
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	54.9%
Manufacturer	ZYPHO SA
Model	Slim DW50

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	

Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.16 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.62 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	4 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 066 Holywell SD	Plot Reference	Issue A
Address	Plot 066 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.64 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.39 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*66.17 kWh_{PE}/m^2*	
Dwelling primary energy	61.25 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.6 kWh/m^2*	
Dwelling fabric energy efficiency	36.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.63963	0.23
Party wall: Party Wall (1)	41.03	0 **(!)**
Ground floor: Jetfloor, Jetfloor	36.09	0.11
Exposed roof: Roof (1)	36.09	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
D2, French Doors	5.2185	North	0.7	1.3
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	East	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.03 **(!)**	EW21 / LN02a
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.035 **(!)**	EW21 / LN02a Eaves
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.049	Jetfloor Full Fill Below DPC
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.006 **(!)**	EW21 / IF01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.045	Party Wall - 100mm cavity - 0.
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.037 **(!)**	PW02 / RG22
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	EW21 / RE22

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	52 m^2
Site Reference	Plot 067 Type 58 GF SD	Plot Reference	Issue A
Address	Plot 067 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.77 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.46 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*72.59 kWh_{PE}/m^2*	
Dwelling primary energy	55.95 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.1 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.27	W1 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	42.25955	0.23
Party wall: Party Wall (1)	22.07	0 **(!)**
Ground floor: Jetfloor, Jetfloor	51.64	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD Type 4	2.1462	West	N/A	1.2
W1, Windows	1.23525	South	0.7	1.3
W2, Windows	1.23525	West	0.7	1.3
W3, Windows	1.23525	West	0.7	1.3
W4, Windows	0.71925	North	0.7	1.3
W5, Windows	0.71925	North	0.7	1.3

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	0.03 **(!)**	EW21 / LN02a

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.049	Jetfloor Full Fill Below DPC
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF 50 (Rev b)
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.045	Party Wall - 100mm cavity - 0.
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	82 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	0.16 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	63 m^2
Site Reference	Plot 068 Type 59 FF SD	Plot Reference	Issue A
Address	Plot 068 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.4 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.46 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*70.55 kWh_{PE}/m^2*	
Dwelling primary energy	61.73 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.2 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	225mm TE Plat (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.27	W6 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	65.24585	0.23
Party wall: Party Wall (1)	42.81	0 **(!)**
Ground floor: 225mm TE Plat, 225mm TE Plat	5.95	0.11
Exposed roof: Roof (1)	57.06	0.09 **(!)**
Exposed roof: Roof (2)	2.01	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D9, FD Type 4	2.0874	South	N/A	1.2
W6, Windows	1.098	South	0.7	1.3
W7, Windows	1.098	West	0.7	1.3
W8, Windows	0.6615	West	0.7	1.3
W9, Windows	1.098	West	0.7	1.3
W10, Windows	0.822	North	0.7	1.3
W11, Windows	0.71925	North	0.7	1.3

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	0.03 **(!)**	EW21 / LN02a
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.049	Jetfloor Full Fill Below DPC
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF 50 (Rev b)
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	EW21 / RE22
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.045	Party Wall - 100mm cavity - 0.
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.037 **(!)**	PW02 / RG32
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.035 **(!)**	EW21 / LN02a Eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.044	EW21 / PW01s

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	82 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	0.16 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 069 Mildenhall SD	Plot Reference	Issue A
Address	Plot 069 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.82 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.52 kWh_{PE}/m^2*	
Dwelling primary energy	55.19 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	34.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	South	N/A	1.2
D2, Type 6 Rear Door	1.83915	North	N/A	1.3
W1, Window	2.715	South	0.7	1.3
W2, Window	2.172	North	0.7	1.3
W3, Window	0.71925	South	0.7	1.3
W4, Window	2.57925	South	0.7	1.3
W5, Window	0.71925	East	0.7	1.3
W6, Window	1.29675	North	0.7	1.3
W7, Window	1.29675	North	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:08

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 070 Holywell SD	Plot Reference	Issue A
Address	Plot 070 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.6 kgCO_2/m^2*	
Dwelling carbon dioxide emission rate	11.62 kgCO_2/m^2	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.97 kWh$_{PE}$/m^2*	
Dwelling primary energy	62.5 kWh$_{PE}$/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.5 kWh/m^2*	
Dwelling fabric energy efficiency	37.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.63963	0.2
Party wall: Party Wall (1)	41.03	0 **(!)**
Ground floor: Jetfloor, Jetfloor	36.09	0.11
Exposed roof: Roof (1)	36.09	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	South	N/A	1.2
D2, French Doors	5.2185	North	0.7	1.3
W1, Windows	1.2285	South	0.7	1.3
W2, Windows	0.71925	West	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	1.2285	South	0.7	1.3
W5, Windows	2.4435	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 071 Mildenhall SD	Plot Reference	Issue A
Address	Plot 071 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.7 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*55.87 kWh_{PE}/m^2*	
Dwelling primary energy	55.19 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*33.9 kWh/m^2*	
Dwelling fabric energy efficiency	33.7 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	South	N/A	1.2
D2, Type 6 Rear Door	1.83915	North	N/A	1.3
W1, Window	2.715	South	0.7	1.3
W2, Window	2.172	North	0.7	1.3
W3, Window	0.71925	South	0.7	1.3
W4, Window	2.57925	South	0.7	1.3
W5, Window	0.71925	East	0.7	1.3
W6, Window	1.29675	North	0.7	1.3
W7, Window	1.29675	North	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 072 Mildenhall SD	Plot Reference	Issue A
Address	Plot 072 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.82 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.52 kWh_{PE}/m^2*	
Dwelling primary energy	55.19 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.5 kWh/m^2*	
Dwelling fabric energy efficiency	34.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	South	N/A	1.2
D2, Type 6 Rear Door	1.83915	North	N/A	1.3
W1, Window	2.715	South	0.7	1.3
W2, Window	2.172	North	0.7	1.3
W3, Window	0.71925	South	0.7	1.3
W4, Window	2.57925	South	0.7	1.3
W5, Window	0.71925	West	0.7	1.3
W6, Window	1.29675	North	0.7	1.3
W7, Window	1.29675	North	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 073 Martham End	Plot Reference	Issue A
Address	Plot 073 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.22 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.64 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.58 kWh_{PE}/m^2*	
Dwelling primary energy	57.0 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.2 kWh/m^2*	
Dwelling fabric energy efficiency	36.6 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.3836	0.2
Party wall: Party Wall (1)	41.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	1.83915	North	N/A	1.2
D2, Windows	3.3285	West	0.7	1.3
W1, Windows	1.092	West	0.7	1.3
W2, Windows	1.2285	North	0.7	1.3
W3, Windows	1.2285	North	0.7	1.3
W4, Windows	2.4435	East	0.7	1.3
W6, Windows	1.29675	North	0.7	1.3
W7, Windows	0.71925	North	0.7	1.3
W8, Windows	1.29675	North	0.7	1.3
W9, Windows	1.29675	East	0.7	1.3
W10, Windows	1.29675	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	1.62 kWp
Orientation	North
Pitch	45°
Overshading	None or very little
Manufacturer	4 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Mid-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 074 Mildenhall Mid	Plot Reference	Issue A
Address	Plot 074 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*9.89 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.17 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*51.51 kWh_{PE}/m^2*	
Dwelling primary energy	49.53 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*30.3 kWh/m^2*	
Dwelling fabric energy efficiency	29.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	38.0827	0.2
Party wall: Party Wall (1)	82.68	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	East	N/A	1.2
D2, Type 6 Rear Door	1.83915	West	N/A	1.3
W1, Window	2.715	East	0.7	1.3
W2, Window	2.172	West	0.7	1.3
W3, Window	0.71925	East	0.7	1.3
W4, Window	2.57925	East	0.7	1.3
W6, Window	1.29675	West	0.7	1.3
W7, Window	1.29675	West	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	90 m^2
Site Reference	Plot 075 Mildenhall End	Plot Reference	Issue A
Address	Plot Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.84 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.23 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.63 kWh_{PE}/m^2*	
Dwelling primary energy	54.86 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.9 kWh/m^2*	
Dwelling fabric energy efficiency	34.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.70345	0.2
Party wall: Party Wall (1)	41.34	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.07	0.11
Exposed roof: Roof (1)	45.07	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Type 4 Front Door	1.83915	East	N/A	1.2
D2, Type 6 Rear Door	1.83915	West	N/A	1.3
W1, Window	2.715	East	0.7	1.3
W2, Window	2.172	West	0.7	1.3
W3, Window	0.71925	East	0.7	1.3
W4, Window	2.57925	East	0.7	1.3
W5, Window	0.71925	South	0.7	1.3
W6, Window	1.29675	West	0.7	1.3
W7, Window	1.29675	West	0.7	1.3

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	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 3078/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04 327/327mm
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	Default
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/E13 30° Pitch
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.111	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

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	101.25 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	0.11 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:14

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	59 m^2
Site Reference	Plot 076 Falkirk GF	Plot Reference	1
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*15.17 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	12.66 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*80.35 kWh_{PE}/m^2*	
Dwelling primary energy	70.67 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*39.6 kWh/m^2*	
Dwelling fabric energy efficiency	34.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.25	Walls (2) (0.26)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Nuspan P/A (0.11)	OK
Roofs	*0.16*	0.13	Roof (1) (0.13)	OK
Windows, doors, and roof windows	*1.6*	1.25	GW12 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	35.684	0.25
Exposed wall: Walls (2)	4.02	0.26
Exposed wall: Walls (3)	10.29	0.26
Party wall: Party Wall (1)	18.54	0 **(!)**
Ground floor: Nuspan P/A, Nuspan P/A	59.34	0.11
Exposed roof: Roof (1)	6.11	0.13

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
ED3, Entrance Door	2.226	North	N/A	1.1 **(!)**
GW12, Window	2.52	North	0.7	1.3
GW11, Window	2.52	East	0.7	1.3
GW10, Window	2.52	East	0.7	1.3

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	0.029 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.045	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.25	Sheltered Default
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.23	Sheltered Default
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.031 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.104	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	
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	-0.099	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.041	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.041	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.19 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.135 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	59 m^2
Site Reference	Plot 077 Falkirk GF	Plot Reference	1
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*14.65 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	12.07 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*77.54 kWh_{PE}/m^2*	
Dwelling primary energy	67.45 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.2 kWh/m^2*	
Dwelling fabric energy efficiency	32.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.25	Walls (2) (0.26)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Nuspan P/A (0.11)	OK
Roofs	*0.16*	0.13	Roof (1) (0.13)	OK
Windows, doors, and roof windows	*1.6*	1.25	GW12 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	35.684	0.25
Exposed wall: Walls (2)	4.02	0.26
Exposed wall: Walls (3)	10.29	0.26
Party wall: Party Wall (1)	18.54	0 **(!)**
Ground floor: Nuspan P/A, Nuspan P/A	59.34	0.11
Exposed roof: Roof (1)	6.11	0.13

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
ED3, Entrance Door	2.226	South	N/A	1.1 **(!)**
GW12, Window	2.52	South	0.7	1.3
GW11, Window	2.52	West	0.7	1.3
GW10, Window	2.52	West	0.7	1.3

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	0.029 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.045	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.25	Sheltered Default
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.23	Sheltered Default
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.031 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.104	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	
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	-0.099	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.041	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.041	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.19 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.135 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

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Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	53 m^2
Site Reference	Plot 078 Falkirk MF	Plot Reference	1
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.51 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.54 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.99 kWh_{PE}/m^2*	
Dwelling primary energy	59.07 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*25.1 kWh/m^2*	
Dwelling fabric energy efficiency	24.9 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.25	Walls (2) (0.26)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.27	FW16 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	27.99	0.25
Exposed wall: Walls (2)	2.205404	0.26
Exposed wall: Walls (3)	10.29	0.26
Party wall: Party Wall (1)	18.54	0 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D61, Entrance Door	1.814596	North	N/A	1.1 **(!)**
FW16, Window	2.52	East	0.7	1.3
FW15, Window	2.52	East	0.7	1.3
FW14, Window	2.52	South	0.7	1.3
FW13, Window	2.52	South	0.7	1.3

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	0.029 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.029 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.029 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	
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	-0.099	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.041	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.19 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.135 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

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Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	53 m^2
Site Reference	Plot 079 Falkirk MF	Plot Reference	1
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.37 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.53 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*70.59 kWh_{PE}/m^2*	
Dwelling primary energy	64.39 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*29.0 kWh/m^2*	
Dwelling fabric energy efficiency	29.1 kWh/m^2	FAIL

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.25	Walls (2) (0.26)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.27	FW16 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	27.99	0.25
Exposed wall: Walls (2)	2.205404	0.26
Exposed wall: Walls (3)	10.29	0.26
Party wall: Party Wall (1)	18.54	0 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D61, Entrance Door	1.814596	South	N/A	1.1 **(!)**
FW16, Window	2.52	West	0.7	1.3
FW15, Window	2.52	West	0.7	1.3
FW14, Window	2.52	North	0.7	1.3
FW13, Window	2.52	North	0.7	1.3

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	0.029 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.029 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.029 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	
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	-0.099	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.041	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.19 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.135 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:14

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	53 m^2
Site Reference	Plot 080 Falkirk TF	Plot Reference	1
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*16.33 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	12.62 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*86.55 kWh_{PE}/m^2*	
Dwelling primary energy	70.28 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*42.4 kWh/m^2*	
Dwelling fabric energy efficiency	34.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.25	Walls (2) (0.26)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	0.13	Roof (1) (0.13)	OK
Windows, doors, and roof windows	*1.6*	1.27	SW16 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	27.99	0.25
Exposed wall: Walls (2)	2.205404	0.26
Exposed wall: Walls (3)	10.29	0.26
Party wall: Party Wall (1)	18.54	0 **(!)**
Exposed roof: Roof (1)	53.14	0.13

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D61, Entrance Door	1.814596	North	N/A	1.1 **(!)**
SW16, Window	2.52	East	0.7	1.3
SW15, Window	2.52	East	0.7	1.3
SW14, Window	2.52	South	0.7	1.3
SW13, Window	2.52	South	0.7	1.3

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	0.029 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.031 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.104	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.23	Sheltered Default
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.21	Sheltered Default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	
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	-0.099	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.041	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.018 **(!)**	

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	4.61 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.19 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.135 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:14

Project Information			
Assessed By	Alex Dodson	Building Type	Flat, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	53 m^2
Site Reference	Plot 081 Falkirk TF	Plot Reference	1
Address			

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*17.28 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	13.69 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*91.66 kWh_{PE}/m^2*	
Dwelling primary energy	76.0 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	38.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.25	Walls (2) (0.26)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	N/A	N/A	**N/A**
Roofs	*0.16*	0.13	Roof (1) (0.13)	OK
Windows, doors, and roof windows	*1.6*	1.27	SW16 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	27.99	0.25
Exposed wall: Walls (2)	2.205404	0.26
Exposed wall: Walls (3)	10.29	0.26
Party wall: Party Wall (1)	18.54	0 **(!)**
Exposed roof: Roof (1)	53.14	0.13

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D61, Entrance Door	1.814596	South	N/A	1.1 **(!)**
SW16, Window	2.52	West	0.7	1.3
SW15, Window	2.52	West	0.7	1.3
SW14, Window	2.52	North	0.7	1.3
SW13, Window	2.52	North	0.7	1.3

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	0.029 **(!)**	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.032 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.031 **(!)**	
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.028 **(!)**	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.104	
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.23	Sheltered Default
External wall	E15: Flat roof with parapet	Calculated by person with suitable expertise	0.21	Sheltered Default
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	
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	-0.099	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.037 **(!)**	
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.041	
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.018 **(!)**	

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	4.61 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	45°C
System type	
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.19 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.135 kWp
Orientation	West
Pitch	Horizontal
Overshading	None or very little
Manufacturer	
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 082 Marwood SD	Plot Reference	Issue A
Address	Plot 082 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.36 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.98 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*59.53 kWh_{PE}/m^2*	
Dwelling primary energy	58.49 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.1 kWh/m^2*	
Dwelling fabric energy efficiency	37.0 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (3) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.36	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	88.201175	0.2
Exposed wall: Walls (2)	21.46	0.2
Exposed wall: Walls (3)	2.69925	0.27
Party wall: Party Wall (1)	42.69	0 **(!)**
Party wall: Party Wall (2)	21.46	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	East	N/A	1.2
D2, Windows	5.145	West	0.7	1.3
W1, Windows	1.2825	East	0.7	1.3
W2, Windows	0.76125	North	0.7	1.3
W3, Windows	1.14	East	0.7	1.3
W4, Windows	1.14	East	0.7	1.3
W5, Windows	1.14	West	0.7	1.3
W6, Windows	1.14	West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W7, Windows	0.87	North	0.7	1.3
W8, Windows	0.96075	East	0.7	1.3
W9, Roof Window	1.274	West	0.7	1.7
W10, Roof Window	1.274	West	0.7	1.7
W11, Roof Window	1.274	East	0.7	1.7

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	0.103	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.114	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.059	TE 307/E18/03
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	SMRF-E12-ETF20
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	3.5 m^3/hm^2, Design value **(!)**	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 083 Marwood SD	Plot Reference	Issue A
Address	Plot 083 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.09 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.81 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.05 kWh_{PE}/m^2*	
Dwelling primary energy	57.56 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*35.9 kWh/m^2*	
Dwelling fabric energy efficiency	35.9 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (3) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.36	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	88.201175	0.2
Exposed wall: Walls (2)	21.46	0.2
Exposed wall: Walls (3)	2.69925	0.27
Party wall: Party Wall (1)	42.69	0 **(!)**
Party wall: Party Wall (2)	21.46	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	East	N/A	1.2
D2, Windows	5.145	West	0.7	1.3
W1, Windows	1.2825	East	0.7	1.3
W2, Windows	0.76125	South	0.7	1.3
W3, Windows	1.14	East	0.7	1.3
W4, Windows	1.14	East	0.7	1.3
W5, Windows	1.14	West	0.7	1.3
W6, Windows	1.14	West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W7, Windows	0.87	South	0.7	1.3
W8, Windows	0.96075	East	0.7	1.3
W9, Roof Window	1.274	West	0.7	1.7
W10, Roof Window	1.274	West	0.7	1.7
W11, Roof Window	1.274	East	0.7	1.7

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	0.103	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.114	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.059	TE 307/E18/03
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	SMRF-E12-ETF20
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	3.5 m^3/hm^2, Design value **(!)**	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type		
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 084 Marwood SD	Plot Reference	Issue A
Address	Plot 084 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.23 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.98 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.84 kWh_{PE}/m^2*	
Dwelling primary energy	58.49 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	36.6 kWh/m^2	FAIL

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (3) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.36	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	88.201175	0.2
Exposed wall: Walls (2)	21.46	0.2
Exposed wall: Walls (3)	2.69925	0.27
Party wall: Party Wall (1)	42.69	0 **(!)**
Party wall: Party Wall (2)	21.46	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	East	N/A	1.2
D2, Windows	5.145	West	0.7	1.3
W1, Windows	1.2825	East	0.7	1.3
W2, Windows	0.76125	North	0.7	1.3
W3, Windows	1.14	East	0.7	1.3
W4, Windows	1.14	East	0.7	1.3
W5, Windows	1.14	West	0.7	1.3
W6, Windows	1.14	West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W7, Windows	0.87	North	0.7	1.3
W8, Windows	0.96075	East	0.7	1.3
W9, Roof Window	1.274	West	0.7	1.7
W10, Roof Window	1.274	West	0.7	1.7
W11, Roof Window	1.274	East	0.7	1.7

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	0.103	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.114	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.059	TE 307/E18/03
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	SMRF-E12-ETF20
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	3.5 m^3/hm^2, Design value **(!)**	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type	Combi boiler	
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	106 m^2
Site Reference	Plot 085 Marwood SD	Plot Reference	Issue A
Address	Plot 085 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.21 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.81 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*58.74 kWh_{PE}/m^2*	
Dwelling primary energy	57.56 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	36.3 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (3) (0.27)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.12	Roof (3) (0.19)	OK
Windows, doors, and roof windows	*1.6*	1.36	W9 (1.7)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	88.201175	0.2
Exposed wall: Walls (2)	21.46	0.2
Exposed wall: Walls (3)	2.69925	0.27
Party wall: Party Wall (1)	42.69	0 **(!)**
Party wall: Party Wall (2)	21.46	0 **(!)**
Ground floor: Jetfloor, Jetfloor	35.43	0.11
Exposed roof: Roof (1)	18.56	0.08 **(!)**
Exposed roof: Roof (2)	15.618	0.16
Exposed roof: Roof (3)	1.9	0.19

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	2.490075	East	N/A	1.2
D2, Windows	5.145	West	0.7	1.3
W1, Windows	1.2825	East	0.7	1.3
W2, Windows	0.76125	South	0.7	1.3
W3, Windows	1.14	East	0.7	1.3
W4, Windows	1.14	East	0.7	1.3
W5, Windows	1.14	West	0.7	1.3
W6, Windows	1.14	West	0.7	1.3

Name	Area [m^2]	Orientation	Frame factor	U-Value [W/m^2K]
W7, Windows	0.87	South	0.7	1.3
W8, Windows	0.96075	East	0.7	1.3
W9, Roof Window	1.274	West	0.7	1.7
W10, Roof Window	1.274	West	0.7	1.7
W11, Roof Window	1.274	East	0.7	1.7

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	0.103	TE 307/E2/05
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.036 **(!)**	TE 307/E3/03
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.114	TE 307/E2/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.055	TE 307/E4/11
Roof	R1: Head of roof window	Calculated by person with suitable expertise	0.115	SMRF-R01-016
Roof	R2: Sill of roof window	Calculated by person with suitable expertise	0.113	SMRF-R02-016
Roof	R3: Jamb of roof window	Calculated by person with suitable expertise	0.048	SMRF-E04-ETF23
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.128	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	TE 307/E6/04
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.059	TE 307/E18/03
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.048	SMRF-E12-ETF20
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 **(!)**	SMRF-P04-PTF01
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.058	SMRF-E13-016-020
Party wall	P5: Roof (insulation at rafter level)	Calculated by person with suitable expertise	0.04	SMRF-P05-016
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.048	SMRF-E11-TF020-016
Roof	R6: Flat ceiling	Calculated by person with suitable expertise	0.019 **(!)**	SMRF-R06-016
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	0.044	TE 315/R7/01 Base
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.029 **(!)**	SMRF-R07-016 Cheek
Roof	R7: Flat ceiling (inverted)	Calculated by person with suitable expertise	-0.014 **(!)**	Dormer Head
Roof	R9: Roof to wall (flat ceiling)	Calculated by person with suitable expertise	0.054	TE 315-R9-01

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

Maximum permitted air permeability at 50Pa	*8 m^3/hm^2*	
Dwelling air permeability at 50Pa	3.5 m^3/hm^2, Design value **(!)**	OK
Air permeability test certificate reference		

4 Space heating		
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas		
Efficiency	89.0%	
Emitter type	Radiators	
Flow temperature		
System type	Combi boiler	
Manufacturer	Ideal Boilers	
Model	LOGIC CODE COMBI ESP1	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water		
Cylinder/store - type: N/A		
Capacity	N/A	
Declared heat loss	N/A	
Primary pipework insulated	N/A	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: Instantaneous		
Efficiency	0.0%	
Manufacturer	Recoup Energy Solutions Ltd	
Model	Pipe HEX	

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

Technology type: **Photovoltaic system (2)**	
Peak power	0.81 kWp
Orientation	West
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks

N/A

11 Supporting documentary evidence

N/A

12 Declarations

a. Assessor Declaration

This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.

Signed:	Assessor ID:
Name:	Date:

b. Client Declaration

N/A

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:09

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	72 m^2
Site Reference	Plot 086 Holywell SD	Plot Reference	Issue A
Address	Plot 086 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.53 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.78 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*65.6 kWh_{PE}/m^2*	
Dwelling primary energy	63.84 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.6 kWh/m^2*	
Dwelling fabric energy efficiency	37.5 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	69.63963	0.2
Party wall: Party Wall (1)	41.03	0 **(!)**
Ground floor: Jetfloor, Jetfloor	36.09	0.11
Exposed roof: Roof (1)	36.09	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	1.93362	East	N/A	1.2
D2, French Doors	5.2185	West	0.7	1.3
W1, Windows	1.2285	East	0.7	1.3
W2, Windows	0.71925	North	0.7	1.3
W3, Windows	1.2285	East	0.7	1.3
W4, Windows	1.2285	East	0.7	1.3
W5, Windows	2.4435	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.12 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	North
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, End-terrace
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 087 Martham SD	Plot Reference	Issue A
Address	Plot 087 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.5 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.0 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*54.68 kWh_{PE}/m^2*	
Dwelling primary energy	53.59 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.0 kWh/m^2*	
Dwelling fabric energy efficiency	33.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	78.3836	0.2
Party wall: Party Wall (1)	41.54	0 **(!)**
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door Type 4	1.83915	South	N/A	1.2
D2, Windows	3.3285	West	0.7	1.3
W1, Windows	1.092	West	0.7	1.3
W2, Windows	1.2285	South	0.7	1.3
W3, Windows	1.2285	South	0.7	1.3
W4, Windows	2.4435	East	0.7	1.3
W6, Windows	1.29675	South	0.7	1.3
W7, Windows	0.71925	South	0.7	1.3
W8, Windows	1.29675	South	0.7	1.3
W9, Windows	1.29675	East	0.7	1.3
W10, Windows	1.29675	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.079	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.06	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, Detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	91 m^2
Site Reference	Plot 088 Martham Det	Plot Reference	Issue A
Address	Plot 088 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.07 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.76 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*63.15 kWh_{PE}/m^2*	
Dwelling primary energy	63.05 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*41.2 kWh/m^2*	
Dwelling fabric energy efficiency	41.2 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	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	Jetfloor (0.11)	OK
Roofs	*0.16*	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	119.9236	0.2
Ground floor: Jetfloor, Jetfloor	45.45	0.11
Exposed roof: Roof (1)	45.45	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^2K]**
D1, Front Door Type 4	1.83915	North	N/A	1.2
D2, Windows	3.3285	West	0.7	1.3
W1, Windows	1.092	West	0.7	1.3
W2, Windows	1.2285	North	0.7	1.3
W3, Windows	1.2285	North	0.7	1.3
W4, Windows	2.4435	East	0.7	1.3
W6, Windows	1.29675	North	0.7	1.3
W7, Windows	0.71925	North	0.7	1.3
W8, Windows	1.29675	North	0.7	1.3
W9, Windows	1.29675	East	0.7	1.3
W10, Windows	1.29675	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.076	TE 307/E10/14
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.058	TE 307/E12/04
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.056	TE 307/E16/04

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

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.13 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	45°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	95 m^2
Site Reference	Plot 089 Type 52 SD	Plot Reference	Issue A
Address	Plot 089 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*10.82 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.44 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*56.54 kWh_{PE}/m^2*	
Dwelling primary energy	55.98 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*35.5 kWh/m^2*	
Dwelling fabric energy efficiency	35.4 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	80.4828	0.2
Party wall: Party Wall (1)	47.92	0 **(!)**
Ground floor: Jetfloor, Jetfloor	47.37	0.11
Exposed roof: Roof (1)	47.37	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.1441	East	N/A	1.2
D2, Rear Door	2.1441	West	N/A	1.3
W1, Windows	2.715	East	0.7	1.3
W2, Windows	2.172	West	0.7	1.3
W4, Windows	2.57925	East	0.7	1.3
W5, Windows	1.29675	West	0.7	1.3
W6, Windows	1.29675	West	0.7	1.3
W7, Windows	0.71925	North	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.097	TE 307/E10/13
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	
Technology type: **Photovoltaic system (2)**	
Peak power	0.405 kWp
Orientation	West
Pitch	30°
Overshading	None or very little
Manufacturer	1 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	80 m^2
Site Reference	Plot 090 Type 50 SD	Plot Reference	Issue A
Address	Plot 090 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*11.93 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.34 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*62.43 kWh_{PE}/m^2*	
Dwelling primary energy	61.27 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^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.2	Walls (1) (0.2)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.08	Roof (1) (0.08)	OK
Windows, doors, and roof windows	*1.6*	1.29	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	72.7943	0.2
Party wall: Party Wall (1)	43.88	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.03	0.11
Exposed roof: Roof (1)	40.03	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^2K]**
D1, Front Door	2.2491	East	N/A	1.2
D2, Rear Door	2.2491	West	N/A	1.3
W1, Windows	2.775	East	0.7	1.3
W2 (plot 51 only), Windows	0.76125	South	0.7	1.3
W3, Windows	2.22	West	0.7	1.3
W4, Windows	2.22	East	0.7	1.3
W5, Windows	0.76125	South	0.7	1.3
W6, Windows	2.22	West	0.7	1.3

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	0.111	TE 307/E2/05
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.122	TE 307/E2/07
External wall	E3: Sill	Calculated by person with suitable expertise	0.038 **(!)**	TE 307/E3/03
External wall	E4: Jamb	Calculated by person with suitable expertise	0.059	TE 307/E4/11
External wall	E4: Jamb	Calculated by person with suitable expertise	0.058	TE 307/E4/07
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.13	Jetfloor 150mm grey, Aggregate
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.05	TE 307/E6/04
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.092	TE 307/E10/26
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.058	TE 307/E16/05
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.06	TE 307/E18/03
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.044	Jetfloor Soleplate P1 SW - Agg
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.051	TE 307/P4/02
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.062	TE 355/E25/01

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	House, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	80 m^2
Site Reference	Plot 091 Type 50 SD	Plot Reference	Issue A
Address	Plot 091 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.14 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	11.38 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*63.56 kWh_{PE}/m^2*	
Dwelling primary energy	61.53 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*37.6 kWh/m^2*	
Dwelling fabric energy efficiency	36.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.28	D2 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	73.55555	0.23
Party wall: Party Wall (1)	43.88	0 **(!)**
Ground floor: Jetfloor, Jetfloor	40.03	0.11
Exposed roof: Roof (1)	40.03	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, Front Door	2.2491	East	N/A	1.2
D2, Rear Door	2.2491	West	N/A	1.3
W1, Windows	2.775	East	0.7	1.3
W3, Windows	2.22	West	0.7	1.3
W4, Windows	2.22	East	0.7	1.3
W5, Windows	0.76125	North	0.7	1.3
W6, Windows	2.22	West	0.7	1.3

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	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.049	Jetfloor Full Fill Below DPC
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.006 **(!)**	EW21 / IF01
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.045	Party Wall - 100mm cavity - 0.
Party wall	P2: Intermediate floor within a dwelling	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.037 **(!)**	PW02 / RG22
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.03 **(!)**	EW21 / LN02a
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.035 **(!)**	EW21 / LN02a Eaves
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	EW21 / RE22

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	57.3%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	101.25 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	0.14 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	East
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	52 m^2
Site Reference	Plot 092 Type 58 GF SD	Plot Reference	Issue A
Address	Plot 092 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*13.0 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	9.8 $kgCO_2/m^2$	**OK**
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*68.42 kWh_{PE}/m^2*	
Dwelling primary energy	52.4 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	26.6 kWh/m^2	**OK**

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	**OK**
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	Jetfloor (0.11)	**OK**
Roofs	*0.16*	N/A	N/A	**N/A**
Windows, doors, and roof windows	*1.6*	1.27	W1 (1.3)	**OK**
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	37.91955	0.23
Party wall: Party Wall (1)	25.5	0 **(!)**
Ground floor: Jetfloor, Jetfloor	51.64	0.11

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D1, FD Type 4	2.1462	South	N/A	1.2
W1, Windows	1.23525	East	0.7	1.3
W2, Windows	1.23525	South	0.7	1.3
W3, Windows	1.23525	South	0.7	1.3
W4, Windows	0.71925	West	0.7	1.3
W5, Windows	0.71925	West	0.7	1.3

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	0.03 **(!)**	EW21 / LN02a

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.049	Jetfloor Full Fill Below DPC
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF 50 (Rev b)
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.045	Party Wall - 100mm cavity - 0.
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02

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	4 m^3/hm^2, Design value	**OK**
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: N/A	
Capacity	N/A
Declared heat loss	N/A
Primary pipework insulated	N/A
Manufacturer	
Model	
Commissioning	
Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	51.8%
Manufacturer	Dutch Solar Systems BV
Model	Easyfit+

6 Controls	
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services	
Function	
Ecodesign class	
Manufacturer	
Model	
Water heating - type: N/A	
Manufacturer	
Model	

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	82 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	0.16 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kwp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Building Regulations England Part L (BREL) Compliance Report

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

Date: Fri 29 Aug 2025 14:01:10

Project Information			
Assessed By	Alex Dodson	Building Type	Maisonette, Semi-detached
OCDEA Registration	EES/032708	Assessment Date	2025-08-29

Dwelling Details			
Assessment Type	As designed	Total Floor Area	63 m^2
Site Reference	Plot 093 Type 59 FF SD	Plot Reference	Issue A
Address	Plot 093 Monaveen Gardens, KT8		

Client Details	
Name	BDW Southampton
Company	BDW Homes
Address	Tollbar House, Hedge End, Southampton, SO30 2UH

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	Mains gas	
Target carbon dioxide emission rate	*12.87 $kgCO_2/m^2$*	
Dwelling carbon dioxide emission rate	10.8 $kgCO_2/m^2$	OK
1b Target primary energy rate and dwelling primary energy		
Target primary energy	*67.7 kWh_{PE}/m^2*	
Dwelling primary energy	58.18 kWh_{PE}/m^2	OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency		
Target fabric energy efficiency	*34.7 kWh/m^2*	
Dwelling fabric energy efficiency	33.8 kWh/m^2	OK

2a Fabric U-values				
Element	***Maximum permitted average U-Value [W/m^2K]***	**Dwelling average U-Value [W/m^2K]**	**Element with highest individual U-Value**	
External walls	*0.26*	0.23	Walls (1) (0.23)	OK
Party walls	*0.2*	0	Party Wall (1) (0)	**N/A**
Curtain walls	*1.6*	0	N/A	**N/A**
Floors	*0.18*	0.11	225mm TE Plat (0.11)	OK
Roofs	*0.16*	0.09	Roof (1) (0.09)	OK
Windows, doors, and roof windows	*1.6*	1.27	W6 (1.3)	OK
Rooflights	*2.2*	N/A	N/A	**N/A**

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	**Net area [m^2]**	**U-Value [W/m^2K]**
Exposed wall: Walls (1)	60.58585	0.23
Party wall: Party Wall (1)	47.47	0 **(!)**
Ground floor: 225mm TE Plat, 225mm TE Plat	5.95	0.11
Exposed roof: Roof (1)	57.06	0.09 **(!)**
Exposed roof: Roof (2)	2.01	0.09 **(!)**

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	**Area [m^2]**	**Orientation**	**Frame factor**	**U-Value [W/m^2K]**
D9, FD Type 4	2.0874	East	N/A	1.2
W6, Windows	1.098	East	0.7	1.3
W7, Windows	1.098	South	0.7	1.3
W8, Windows	0.6615	South	0.7	1.3
W9, Windows	1.098	South	0.7	1.3
W10, Windows	0.822	West	0.7	1.3
W11, Windows	0.71925	West	0.7	1.3

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	0.03 **(!)**	EW21 / LN02a
External wall	E3: Sill	Calculated by person with suitable expertise	0.031 **(!)**	EW21 / SL01
External wall	E4: Jamb	Calculated by person with suitable expertise	0.036 **(!)**	EW21 / RV01
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.049	Jetfloor Full Fill Below DPC
External wall	E7: Party floor between dwellings (in blocks of flats)	Calculated by person with suitable expertise	0.04	00/029/EW23/IF 50 (Rev b)
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.124	EW21 / RE21
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.103	EW21 / RE22
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.052	EW21 / CN01
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.053	EW21 / PW01
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.045	Party Wall - 100mm cavity - 0.
Party wall	P3: Intermediate floor between dwellings (in blocks of flats)	SAP table default	0 **(!)**	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.037 **(!)**	PW02 / RG32
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.035 **(!)**	EW21 / LN02a Eaves
External wall	E4: Jamb	Calculated by person with suitable expertise	0.047	EW21 / RV02
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.057	EW21 / RG22
External wall	E25: Staggered party wall between dwellings	Calculated by person with suitable expertise	0.044	EW21 / PW01s

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	4 m^3/hm^2, Design value	OK
Air permeability test certificate reference		

4 Space heating	
Main heating system 1: Boiler with radiators or underfloor heating - Mains gas	
Efficiency	89.0%
Emitter type	Radiators
Flow temperature	
System type	Combi boiler
Manufacturer	Ideal Boilers
Model	LOGIC CODE COMBI ESP1
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

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

Waste water heat recovery system 1 - type: Instantaneous	
Efficiency	70.7%
Manufacturer	Recoup Energy Solutions Ltd
Model	Pipe HEX

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: N/A		
Manufacturer		
Model		

7 Lighting		
Minimum permitted light source efficacy	*75 lm/W*	
Lowest light source efficacy	82 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	0.16 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	
Technology type: **Photovoltaic system (1)**	
Peak power	0.81 kWp
Orientation	South
Pitch	30°
Overshading	None or very little
Manufacturer	2 x 0.405kWp
MCS certificate	

10 Heat networks
N/A

11 Supporting documentary evidence
N/A

12 Declarations	
a. Assessor Declaration	
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.	
Signed: Name:	Assessor ID: Date:
b. Client Declaration	
N/A	

Block Compliance

Block Reference	Energy - Monaveen Gardens Ph1	**Issued on Date**	29/08/2025
Block Name			
Calculation Type	New Build (As Designed)		
Assessor Details	Mr. Alex Dodson	**Assessor ID**	DS02-0001
Client	BDW Homes, BDW Southampton, Tollbar House, Tollbar Way, Hedge End, Southampton, SO30 2UH		

Block Compliance Report - DER

Block Reference: Energy - Monaveen Gardens Ph1	Block Name:			
Property-Assessment Reference	**Floor area (m^2)**	**DER ($kgCO_2/m^2$)**	**TER ($kgCO_2/m^2$)**	**% DER/TER**
Plot 076 Falkirk GF - 1	59.34	12.66	15.17	16.55 %
Plot 077 Falkirk GF - 1	59.34	12.07	14.65	17.61 %
Plot 078 Falkirk MF - 1	53.14	10.54	12.51	15.75 %
Plot 079 Falkirk MF - 1	53.14	11.53	13.37	13.76 %
Plot 080 Falkirk TF - 1	53.14	12.62	16.33	22.72 %
Plot 081 Falkirk TF - 1	53.14	13.69	17.28	20.78 %
Totals:	331.24	73.11	89.31	
Average DER = 12.19 $kgCO_2/m^2$	**% DER/TER**	PASS		
Average TER = 14.89 $kgCO_2/m^2$	18.10 %			

Block Compliance Report - DFEE

Block Reference: Energy - Monaveen Gardens Ph1	Block Name:			
Property-Assessment Reference	**Floor area (m^2)**	**DFEE ($kWh/m^2/yr$)**	**TFEE ($kWh/m^2/yr$)**	**% DFEE/TFEE**
Plot 076 Falkirk GF - 1	59.34	34.55	39.59	12.74 %
Plot 077 Falkirk GF - 1	59.34	31.96	37.20	14.08 %
Plot 078 Falkirk MF - 1	53.14	24.92	25.12	0.76 %
Plot 079 Falkirk MF - 1	53.14	29.13	28.96	-0.60 %
Plot 080 Falkirk TF - 1	53.14	34.35	42.44	19.05 %
Plot 081 Falkirk TF - 1	53.14	38.81	46.67	16.85 %
Totals:	331.24	193.72	219.97	
Average DFEE = 32.32 kWh/m²/yr	**% DFEE/TFEE**	PASS		
Average TFEE = 36.73 kWh/m²/yr	11.99 %			

Block Compliance

elmhurst energy

Block Compliance Report - DPER

Block Reference: Energy - Monaveen Gardens Ph1	Block Name:			
Property-Assessment Reference	**Floor area (m^2)**	**DPER ($kWh/m^2/yr$)**	**TPER ($kWh/m^2/yr$)**	**% DPER/TPER**
Plot 076 Falkirk GF - 1	59.34	70.67	80.35	12.05 %
Plot 077 Falkirk GF - 1	59.34	67.45	77.54	13.01 %
Plot 078 Falkirk MF - 1	53.14	59.07	65.99	10.49 %
Plot 079 Falkirk MF - 1	53.14	64.39	70.59	8.78 %
Plot 080 Falkirk TF - 1	53.14	70.28	86.55	18.80 %
Plot 081 Falkirk TF - 1	53.14	76.00	91.66	17.08 %
Totals:	331.24	407.86	472.68	
Average DPER = 68.02 kWh/m²/yr	**% DPER/TPER**	PASS		
Average TPER = 78.79 kWh/m²/yr	13.67 %			