

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jan 2025 10:17:44

Project Information			
Assessed By	Bradley Jenkins	Building Type	House, Detached
OCDEA Registration	EES/028309	Assessment Date	2025-01-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	158 m ²
Site Reference	67 Southcote Lane	Plot Reference	XEI-1032
Address	67 Southcote Lane, Reading, RG30 3AQ		

Client Details	
Name	Earley Builders
Company	Earley Builders
Address	NA, NA, NA

This report covers items included within the SAP calculations. It is not a complete report of regulations compliance.

1a Target emission rate and dwelling emission rate		
Fuel for main heating system	Electricity	
Target carbon dioxide emission rate	8.99 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	3.77 kgCO ₂ /m ²	OK

1b Target primary energy rate and dwelling primary energy		
Target primary energy	46.92 kWh _{PE} /m ²	
Dwelling primary energy	39.98 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	37.4 kWh/m ²	OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.14	Walls (2) (0.16)	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	Heatloss Floor 1 (0.11)	OK
Roofs	0.16	0.12	Roof (2) (0.16)	OK
Windows, doors, and roof windows	1.6	1	North East Glazing (1)	OK
Rooflights	2.2	1	North East Rooflights, North East (1)	OK

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))		
Name	Net area [m ²]	U-Value [W/m ² K]
Exposed wall: Walls (1)	165.96	0.14 (!)
Exposed wall: Walls (2)	20.3	0.16
Ground floor: Heatloss Floor 1, Heatloss Floor 1	72	0.11
Exposed roof: Roof (1)	40.62	0.1 (!)
Exposed roof: Roof (2)	17.39	0.16
Exposed roof: Roof (3)	15.13	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 ² K]
North East Glazing, Glazing	10.34	North East	0.7	1 (!)
North East Rooflights, Rooflights	1.16	North East	0.7	1
South West Glazing, Glazing	12.71	South West	0.7	1 (!)
South West Rooflights, Rooflights	1.16	South West	0.7	1
South East Glazing, Glazing	5.19	South East	0.7	1 (!)
North West Glazing, Glazing	0.6	North West	0.7	1 (!)
Roof Windows, Rooflights	1.15	South West	0.7	1

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))	
Building part 1 - Main Dwelling: Thermal bridging calculated from linear thermal transmittances for each junction	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E1: Steel lintel with perforated steel base plate	Calculated by person with suitable expertise	0.068	
External wall	E3: Sill	Calculated by person with suitable expertise	0.044	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.07	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.066	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.049	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E12: Gable (insulation at ceiling level)	SAP table default	0.25	
External wall	E13: Gable (insulation at rafter level)	SAP table default	0.25	
External wall	E14: Flat roof	SAP table default	0.16	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.037 (!)	
External wall	E17: Corner (inverted - internal area greater than external area)	Calculated by person with suitable expertise	-0.028 (!)	
External wall	E24: Eaves (insulation at ceiling level - inverted)	SAP table default	0.15	
Roof	R1: Head of roof window	SAP table default	0.24	
Roof	R2: Sill of roof window	SAP table default	0.24	
Roof	R3: Jamb of roof window	SAP table default	0.24	
Roof	R6: Flat ceiling	SAP table default	0.12	
Roof	R8: Roof to wall (rafter)	SAP table default	0.12	

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

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

4 Space heating

Main heating system 1: Heat pump with radiators or underfloor heating - Electricity		
Efficiency	362.2%	
Emitter type	Underfloor	
Flow temperature	35°C	
System type	Heat Pump	
Manufacturer	Samsung	
Model	AE080CXYDEK/EU	
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water

Cylinder/store - type: Cylinder		
Capacity	250 litres	
Declared heat loss	2 kWh/day	
Primary pipework insulated	Yes	
Manufacturer		
Model		
Commissioning		
Waste water heat recovery system 1 - type: N/A		
Efficiency		
Manufacturer		
Model		

6 Controls		
Main heating 1 - type: Time and temperature zone control by arrangement of plumbing and electrical services		
Function		
Ecodesign class		
Manufacturer		
Model		
Water heating - type: Cylinder thermostat and HW separately timed		
Manufacturer		
Model		
7 Lighting		
Minimum permitted light source efficacy	75 lm/W	
Lowest light source efficacy	80.5 lm/W	OK
External lights control	N/A	
8 Mechanical ventilation		
System type: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	1.5 W/(l/s)	
Specific fan power	0.99 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	88%	OK
Manufacturer/Model	Sentinel Kinetic Plus B	
Commissioning		
9 Local generation		
N/A		
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: D.Vokes	Assessor ID:	
Name: 26.01.26	Date:	
b. Client Declaration		
N/A		

Predicted Energy Assessment



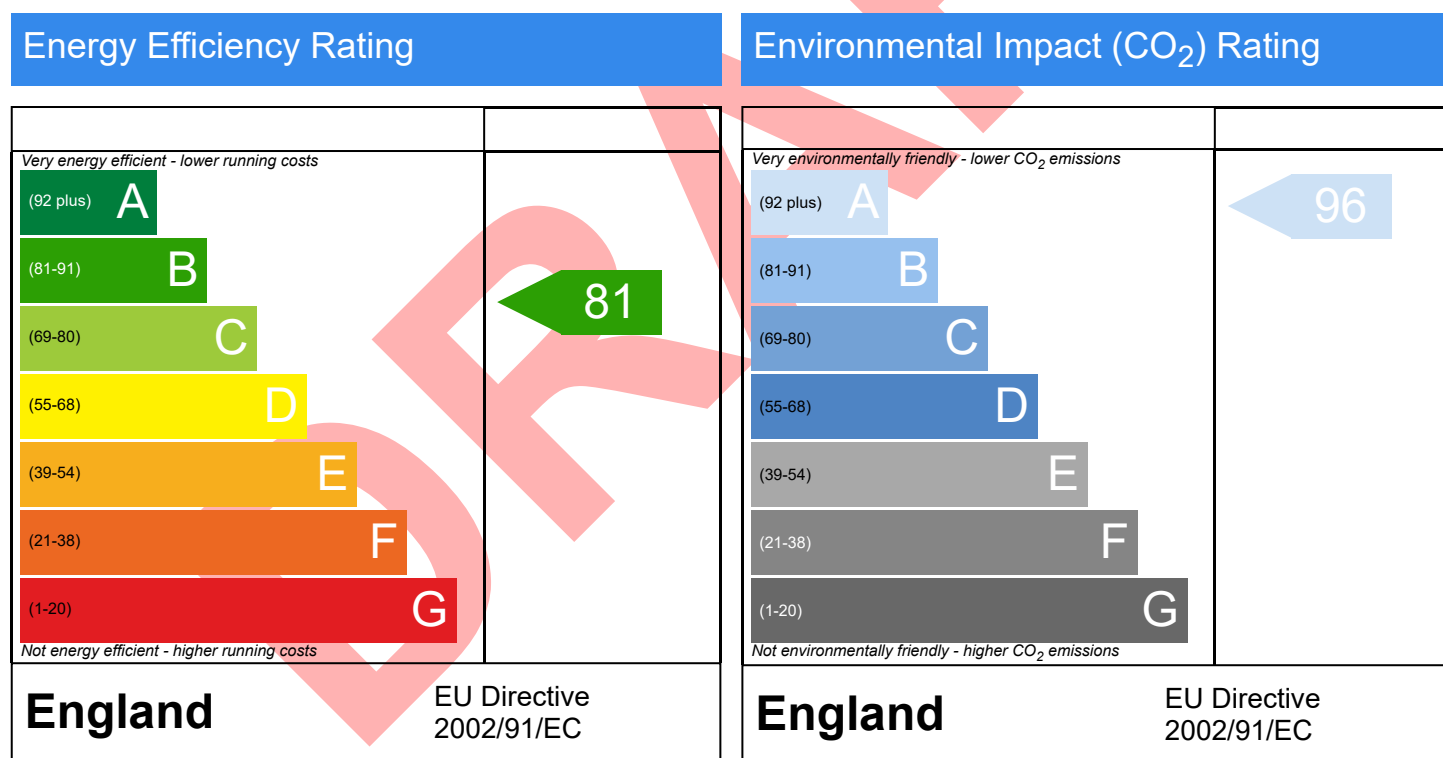
67, Southcote Lane, Reading, Berkshire, RG30 3AQ

Dwelling type:
Date of assessment:
Produced by:
Total floor area:
DRRN:

House, Detached
16/01/2025
Bradley Jenkins
157.8 m²

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.



The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating the less impact it has on the environment.

Energy Report



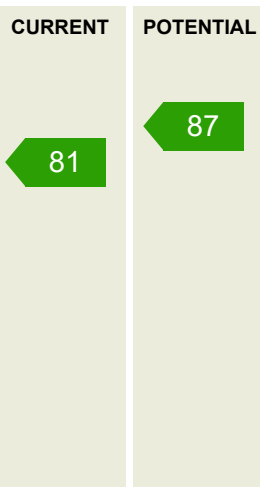
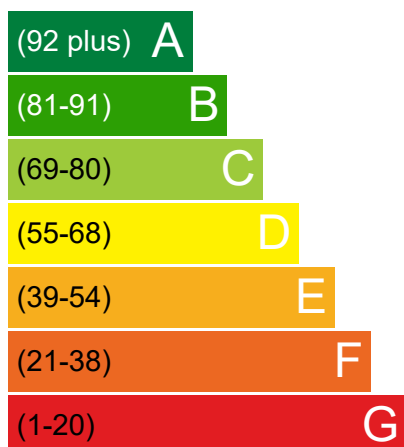
Dwelling Address	67, Southcote Lane, Reading, Berkshire, RG30 3AQ
Reference	67 Southcote Lane-XEI-1032
Assessment Date	14/01/2025
Submission Date	
Property Type	House, Detached
Total Floor Area	158

This Energy Report has been generated using the UK's National Calculation Methodology for dwellings, Standard Assessment Procedure (SAP). This methodology is used to assess the energy efficiency of dwellings which is calculated based on a dwelling's heating, hot water, ventilation and lighting usage.

This document is not an Energy Performance Certificate (EPC) as required by the Energy Performance of Buildings Regulations

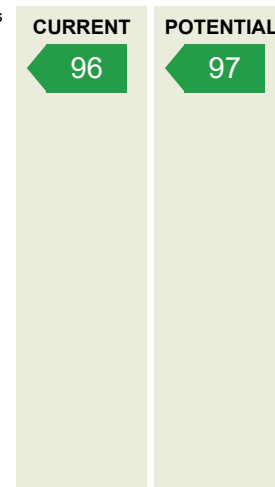
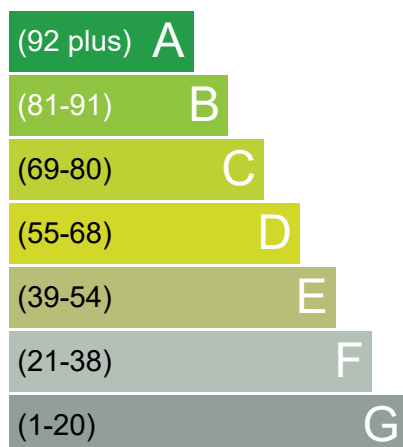
Energy Efficiency Rating

Most energy efficient - lower running costs

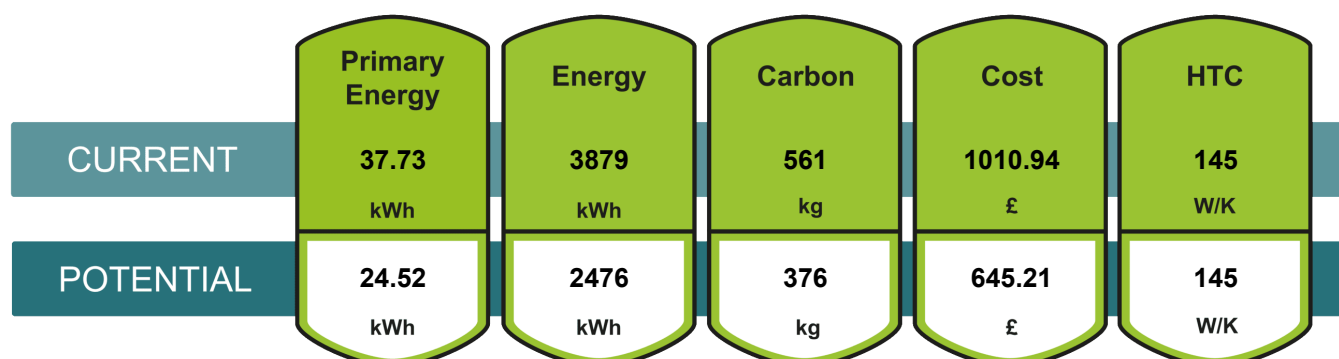


Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home



Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
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Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.14 W/m ² K	Very Good
Roof	Average thermal transmittance 0.12 W/m ² K	Very Good
Floor	Average thermal transmittance 0.11 W/m ² K	Very Good
Windows	High performance glazing	Very Good
Main heating	Air source heat pump, underfloor, electric	Very Good
Main heating controls	Time and temperature zone control	Very Good
Secondary heating	None	
Hot water	From main system	Average
Lighting	Good lighting efficiency	Good
Air tightness	Air permeability [AP50] = 5.0 m ³ /h.m ² (assumed)	Good

Recommendations

The recommended measures provided below will help to improve the energy efficiency of the dwelling. To reach the dwelling's potential energy rating all of the recommended measures shown below would need to be installed. Having these measures installed individually or in any other order may give a different result when compared with the cumulative potential rating.

Recommended measures	Cumulative savings (per year)	Cumulative rating	Typical costs	Incremental savings (per year)	Cumulative CO2 rating
Solar water heating	£97	B 82	£4,000 - £6,000	£97	A 96
Photovoltaic	£366	B 87	£3,500 - £5,500	£269	A 97

The typical cost is based on average installation prices across the country so may not be representative of the actual costs in your area.

Estimated energy costs of the dwelling

The table below shows the estimated running costs of the space and water heating and lighting within the dwelling. It does not include the energy used from household appliances. The estimated annual costs after potential improvements indicates the total energy cost if all recommended measures named above were installed.

	Estimated annual costs	Estimated annual costs after potential improvements	Potential future savings
Lighting 	£82	£82	
Heating 	£430	£451	
Hot Water 	£499	£382	
New Technologies e.g. Impact of PV	£0	-(£269)	
TOTAL	£1011	£645	

Estimated energy use and potential savings



Space Heating

971

kWh per year



Water Heating

1916

kWh per year

About this document

Created by:
Company/Trading name:
Phone number:
Email address:

Disclaimer

This Energy Report should not under any circumstances be treated as a Condition Survey and cannot be used to indicate that any element of the dwelling (e.g. heating system) is working correctly.

This Energy Report must not be used in situations where an Energy Performance Certificate (EPC) is required.

This Energy Report is generated from a set of data inputs which may not reflect the actual dimensions, services or construction of the dwelling.

The calculation used to generate this report reflects the SAP Methodology current at the time of report generation.

Glossary terms for additional metrics

Primary Energy	The measure of the energy required for lighting, heating and hot water in a property. This includes the efficiency of the property's heating system, power station efficiency for electricity and the energy used to produce the fuel and deliver it to the property.
Energy Used	The estimated amount of fuel energy for lighting, heating and hot water for the property. The estimate is based on typical usage which is likely to be different to actual consumption.
Carbon (CO ₂)	The current emissions based on the energy estimates.
Cost	The estimated cost of energy. The cost of each unit of fuel is based on an industry standard which is likely to be different to those the occupier actually pays.
Heat Transfer Coefficient	Heat flow through the property envelope where internal and external temperatures are different.