

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 27 Mar 2025 14:28:55

Project Information			
Assessed By	Michael Woodbridge	Building Type	House, Detached
OCDEA Registration	EES/022767	Assessment Date	2025-03-27

Dwelling Details			
Assessment Type	As designed	Total Floor Area	191 m ²
Site Reference	Plot 02	Plot Reference	Plot 02
Address	Reed House, Jackson Lane Plot 02, Reed, SG8 8AB		

Client Details	
Name	David Tait
Company	David Tait
Address	Reed House, Royston, SG8 8AB

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	8.02 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.81 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	42.17 kWh _{PE} /m ²		
Dwelling primary energy	40.07 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	36.6 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.22	Walls (1) (0.22)	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	Floor (0.11)	OK
Roofs	0.16	0.1	Roof (1) (0.1)	OK
Windows, doors, and roof windows	1.6	1.27	FR D (1.4)	OK
Rooflights	2.2	N/A	N/A	N/A

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))			
Name	Net area [m ²]	U-Value [W/m ² K]	
Exposed wall: Walls (1)	142.3519	0.22	
Sheltered wall: Walls (2)	15.74	0.21	
Ground floor: Floor, Floor	95.58	0.11	
Exposed roof: Roof (1)	95.58	0.1 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
FR W1 & W4, Window	1.869	South	0.7	1.2
FR W1 & W4, Window	1.869	South	0.7	1.2
FR W2 & W3, Window	0.525	South	0.7	1.2
FR W2 & W3, Window	0.525	South	0.7	1.2
FR D, Door	1.9201	South	N/A	1.4
FR W5 - W7, Window	1.869	South	0.7	1.2
FR W5 - W7, Window	1.869	South	0.7	1.2
FR W5 - W7, Window	1.869	South	0.7	1.2
REA W1, Window	0.525	North	0.7	1.2
REA W2, Window	1.26	North	0.7	1.2
REA PD, Glazed Doors	8.44	North	0.7	1.4
REA W3, Window	1.26	North	0.7	1.2
REA W4 & W6, Window	1.869	North	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
REA W4 & W6, Window	1.869	North	0.7	1.2
REA W5, Window	1.26	North	0.7	1.2

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)	Government-approved scheme	0.022 (!)	
External wall	E3: Sill	Government-approved scheme	0.025 (!)	
External wall	E4: Jamb	Government-approved scheme	0.02 (!)	
External wall	E5: Ground floor (normal)	Government-approved scheme	0.072	
External wall	E6: Intermediate floor within a dwelling	Government-approved scheme	0.003 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.015 (!)	
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.044	
External wall	E16: Corner (normal)	Government-approved scheme	0.043	
External wall	E17: Corner (inverted - internal area greater than external area)	Government-approved scheme	-0.085	

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	5.01 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	405.3%
Emitter type	Radiators
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Daikin Europe N.V.
Model	ERLQ006CAV3 + EHBH08CA9W
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	150 litres
Declared heat loss	2.5 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	85 lm/W	OK
External lights control	N/A	
8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
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:	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: Thu 27 Mar 2025 14:28:55

Project Information			
Assessed By	Michael Woodbridge	Building Type	House, Detached
OCDEA Registration	EES/022767	Assessment Date	2025-03-27

Dwelling Details			
Assessment Type	As designed	Total Floor Area	200 m ²
Site Reference	Plot 05	Plot Reference	Plot 05
Address	Reed House, Jackson Lane Plot 02, Reed, SG8 8AB		

Client Details	
Name	David Tait
Company	David Tait
Address	Reed House, Royston, SG8 8AB

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	8.3 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.89 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	43.86 kWh _{PE} /m ²		
Dwelling primary energy	40.82 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	42.5 kWh/m ²		
Dwelling fabric energy efficiency	41.9 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.22	Walls (1) (0.22)	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	Floor (0.11)	OK
Roofs	0.16	0.1	Roof (1) (0.1)	OK
Windows, doors, and roof windows	1.6	1.28	FR D (1.4)	OK
Rooflights	2.2	N/A	N/A	N/A

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))			
Name	Net area [m ²]	U-Value [W/m ² K]	
Exposed wall: Walls (1)	151.1217	0.22	
Sheltered wall: Walls (2)	13.1	0.21	
Ground floor: Floor, Floor	111.1	0.11	
Exposed roof: Roof (1)	111.1	0.1 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
FR W1 W2 & W5 W6, Window	2.1	East	0.7	1.2
FR W1 W2 & W5 W6, Window	2.1	East	0.7	1.2
FR W1 W2 & W5 W6, Window	2.1	East	0.7	1.2
FR W1 W2 & W5 W6, Window	2.1	East	0.7	1.2
FR W3 & W4, Window	0.903	East	0.7	1.2
FR W3 & W4, Window	0.903	East	0.7	1.2
FR D, Door	2.11	East	N/A	1.4
FR W7 W8, Window	0.525	East	0.7	1.2
FR W7 W8, Window	0.525	East	0.7	1.2
FR D, Door	1.7302	East	N/A	1.4
FR W9 - W13, Window	1.98	East	0.7	1.2
FR W9 - W13, Window	1.98	East	0.7	1.2
FR W9 - W13, Window	1.98	East	0.7	1.2

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
FR W9 - W13, Window	1.98	East	0.7	1.2
FR W9 - W13, Window	1.98	East	0.7	1.2
REA PD X 2, Glazed Doors	7.596	West	0.7	1.4
REA PD X 2, Glazed Doors	7.596	West	0.7	1.4
REA W1, Window	1.7675	West	0.7	1.2
REA W2 W3, Window	0.525	West	0.7	1.2
REA W2 W3, Window	0.525	West	0.7	1.2
REA PD, Glazed Doors	1.9201	West	0.7	1.4
REA W4 - W8, Window	1.4645	West	0.7	1.2
REA W4 - W8, Window	1.4645	West	0.7	1.2
REA W4 - W8, Window	1.4645	West	0.7	1.2
REA W4 - W8, Window	1.4645	West	0.7	1.2
REA W4 - W8, Window	1.4645	West	0.7	1.2

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)	Government-approved scheme	0.022 (!)	
External wall	E3: Sill	Government-approved scheme	0.025 (!)	
External wall	E4: Jamb	Government-approved scheme	0.02 (!)	
External wall	E5: Ground floor (normal)	Government-approved scheme	0.072	
External wall	E6: Intermediate floor within a dwelling	Government-approved scheme	0.003 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.015 (!)	
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.044	
External wall	E16: Corner (normal)	Government-approved scheme	0.043	
External wall	E17: Corner (inverted - internal area greater than external area)	Government-approved scheme	-0.085	

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	5.01 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	403.7%
Emitter type	Radiators
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Daikin Europe N.V.
Model	ERLQ006CAV3 + EHBH08CA9W
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	150 litres
Declared heat loss	2.5 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	85 lm/W	OK
External lights control	N/A	
8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
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:	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: Thu 27 Mar 2025 14:28:55

Project Information			
Assessed By	Michael Woodbridge	Building Type	Bungalow, Detached
OCDEA Registration	EES/022767	Assessment Date	2025-03-27

Dwelling Details			
Assessment Type	As designed	Total Floor Area	42 m ²
Site Reference	Plot 010	Plot Reference	Plot 010
Address	Reed House, Jackson Lane Plot 02, Reed, SG8 8AB		

Client Details	
Name	David Tait
Company	David Tait
Address	Reed House, Royston, SG8 8AB

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	14.98 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	7.12 kgCO ₂ /m ²		OK

1b Target primary energy rate and dwelling primary energy			
Target primary energy	80.01 kWh _{PE} /m ²		
Dwelling primary energy	75.27 kWh _{PE} /m ²		OK

1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	52.5 kWh/m ²		
Dwelling fabric energy efficiency	48.7 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.22	Walls (1) (0.22)	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	Floor (0.11)	OK
Roofs	0.16	0.1	Roof (1) (0.1)	OK
Windows, doors, and roof windows	1.6	1.28	REA D (1.4)	OK
Rooflights	2.2	N/A	N/A	N/A

2b Envelope elements (better than typically expected values are flagged with a subsequent (!))			
Name	Net area [m ²]	U-Value [W/m ² K]	
Exposed wall: Walls (1)	56.9269	0.22	
Sheltered wall: Walls (2)	8.3	0.21	
Ground floor: Floor, Floor	41.98	0.11	
Exposed roof: Roof (1)	41.98	0.1 (!)	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
REA W1 , Window	1.197	East	0.7	1.2
REA D, Glazed Doors	1.9201	East	0.7	1.4
FR W1 - W3, Window	1.197	West	0.7	1.2
FR W1 - W3, Window	1.197	West	0.7	1.2
FR W1 - W3, Window	1.197	West	0.7	1.2
SID D, Glazed Doors	1.785	North	0.7	1.4
SID W, Window	0.84	North	0.7	1.2

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)	Government-approved scheme	0.022 (!)	
External wall	E3: Sill	Government-approved scheme	0.025 (!)	
External wall	E4: Jamb	Government-approved scheme	0.02 (!)	
External wall	E5: Ground floor (normal)	Government-approved scheme	0.072	
External wall	E10: Eaves (insulation at ceiling level)	Government-approved scheme	0.015 (!)	
External wall	E12: Gable (insulation at ceiling level)	Government-approved scheme	0.044	
External wall	E16: Corner (normal)	Government-approved scheme	0.043	
External wall	E17: Corner (inverted - internal area greater than external area)	Government-approved scheme	-0.085	

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	5.01 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	261.4%
Emitter type	Radiators
Flow temperature	45°C
System type	Heat Pump
Manufacturer	Vaillant Group UK Ltd
Model	aroTHERM plus 5kW & AI
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	150 litres
Declared heat loss	2.5 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	85 lm/W	OK
External lights control	N/A	

8 Mechanical ventilation		
System type: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
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: Name:	Assessor ID: Date:	
b. Client Declaration		
N/A		

Predicted Energy Assessment



Plot 02, Reed House, Jackson Lane, Reed, SG8 8AB

Dwelling type:

House, Detached

Date of assessment:

27/03/2025

Produced by:

Dominique Stockford

Total floor area:

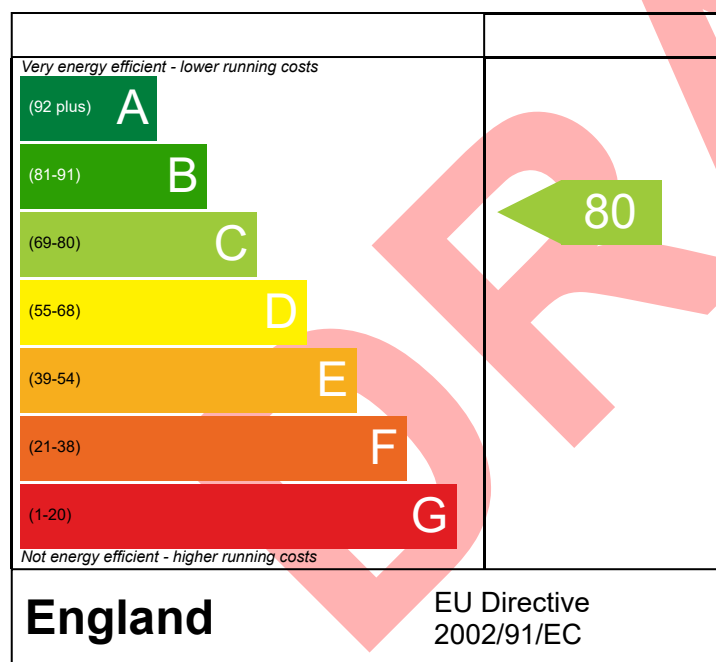
191.16 m²

DRRN:

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.

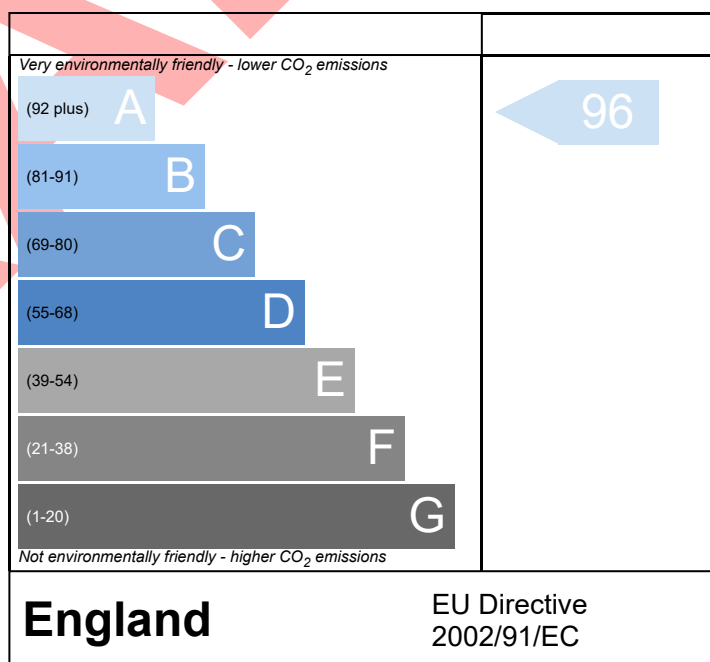
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



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.

Environmental Impact (CO₂) Rating



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.

Predicted Energy Assessment



Plot 02, Reed House, Jackson Lane, Reed, SG8 8AB

Dwelling type:

House, Detached

Date of assessment:

27/03/2025

Produced by:

Dominique Stockford

Total floor area:

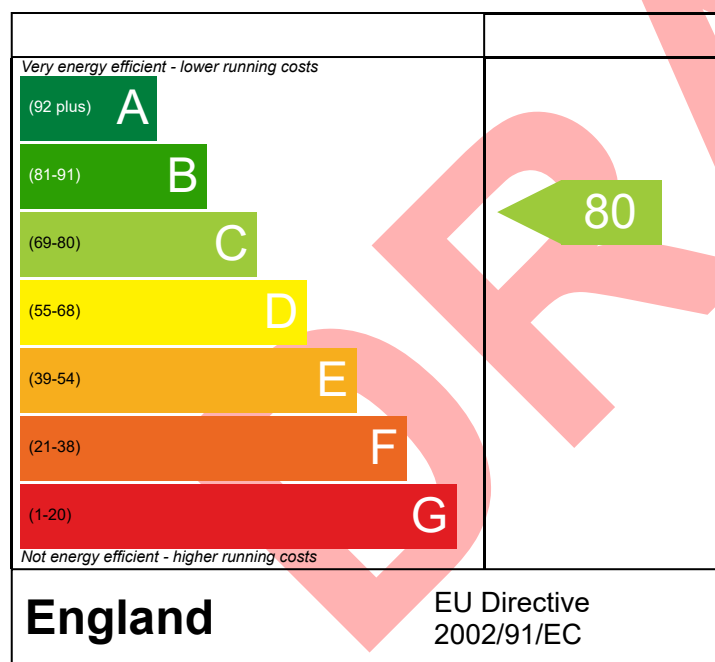
200.42 m²

DRRN:

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.

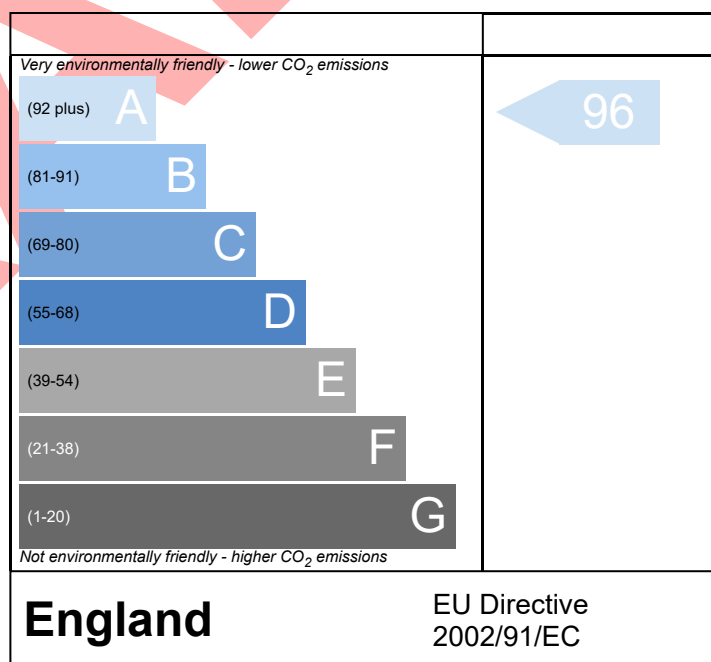
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



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.

Environmental Impact (CO₂) Rating



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.

Predicted Energy Assessment



Plot 02, Reed House, Jackson Lane, Reed, SG8 8AB

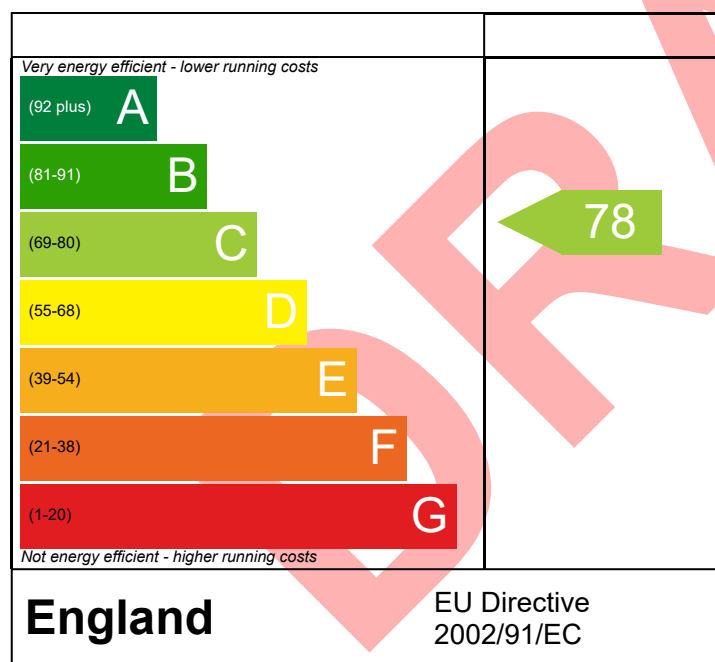
Dwelling type:
Date of assessment:
Produced by:
Total floor area:
DRRN:

Bungalow, Detached
27/03/2025
Dominique Stockford
41.98 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.

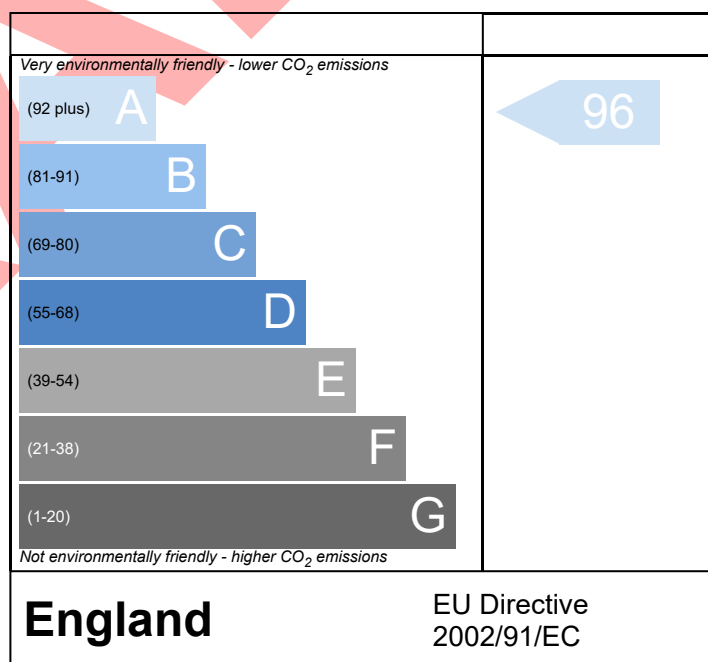
The energy performance has been assessed using the Government approved SAP 10 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO₂) emissions.

Energy Efficiency Rating



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.

Environmental Impact (CO₂) Rating



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.