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Our Ref : EA-57

Sent By : E-Mail

16 July 2026

Dear Luigi

ENERGY STATEMENT (PLANNING)

Report By :	Joe Solti Accredited Assessor
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Further to receipt of drawings, we are pleased to present our report as follows.

Development Details

Site Location :	Land at New Barn Farm, Capel Road, Rusper, Horsham
Development :	10 New Dwellings (2 x 2 Bed Semi-Detached) + (3 x 2 Bed Detached) + (2 x 4 Bed Detached) + (3 x 5 Bed Detached)
Local Authority :	Horsham District Council
Planning Policy (36) :	Appropriate Energy Use (Energy Hierarchy)
Planning Policy (37) :	(1) Maximise Energy Efficiency and Integrate Decentralised, Renewable and Low Carbon Energy (2) Limit Water Use to 110 Litres/Person/Day

EA-57

Site Location :

Land at New Barn Farm, Capel Road, Rusper, Horsham

POLICY 36

Strategic Policy : Appropriate Energy Use

Energy Hierarchy

All development will be required to contribute to clean, efficient energy in Horsham based on the following hierarchy :

- (1) Lean - use less energy - eg through demand reduction
- (2) Clean - supply energy efficiently - eg through heat networks
- (3) Green - use renewable energy sources

District Heating & Cooling

Commercial and residential developments in Heat Priority Areas or the strategic development locations will be expected to connect to district heating networks where they exist using the following hierarchy, or incorporate the necessary infrastructure for connection to future network.

Development should demonstrate that the heating and cooling systems have been selected in accordance with the following heating and cooling hierarchy :

- (1) Connection to existing (C)CHP distribution networks (not available)
- (2) Site wide renewable (C)CHP (not suitable - single dwelling)
- (3) Site wide gas-fired (C)CHP (not suitable -single dwelling)
- (4) Site wide renewable community heating/cooling (not suitable - single dwelling)
- (5) Site wide gas-fired community heating/cooling (not suitable - single dwelling)
- (6) Individual building renewable heating = most suitable**
- (7) Individual building heating, with the exception of electric heating

All (C)CHP must be of a scale and operated to maximise the potential for carbon reduction. Where site-wide (C)CHP is proposed, consideration must be given to extending the network to adjacent sites.

Energy Statements

All applications for residential or commercial development must include an Energy Statement demonstrating and quantifying how the development will comply with the Energy Hierarchy.

EA-57

Site Location :

Land at New Barn Farm, Capel Road, Rusper, Horsham

BASELINE CO2

Calculations (SAP) :

Part L1A Compliant

2 Bed Semi (N) : 4.23 kg CO2 per m2 Floor Area : 154 m2

2 Bed Semi (S) : 3.94 kg CO2 per m2 Floor Area : 154 m2

2 Bed Detached (3) : 4.40 kg CO2 per m2 Floor Area : 130 m2

4 Bed Detached (2) : 3.36 kg CO2 per m2 Floor Area : 248 m2

5 Bed Detached (3) : 3.47 kg CO2 per m2 Floor Area : 248 m2

Total Emissions :

7,222.42 kg CO2 per year

BE LEAN CO2

Calculations (SAP) :

Energy Efficiency Measures

2 Bed Semi (N) : 3.98 kg CO2 per m2 Floor Area : 154 m2

2 Bed Semi (S) : 3.57 kg CO2 per m2 Floor Area : 154 m2

2 Bed Detached (3) : 3.87 kg CO2 per m2 Floor Area : 130 m2

4 Bed Detached (2) : 2.88 kg CO2 per m2 Floor Area : 248 m2

5 Bed Detached (3) : 3.00 kg CO2 per m2 Floor Area : 248 m2

Total Emissions :

6,332.48 kg CO2 per year

CO2 Saving :

889.94 kg CO2 per year = 12.32 %

EA-57

Site Location : Land at New Barn Farm, Capel Road, Rusper, Horsham

BE CLEAN CO2

Calculations (SAP) : Heat Networks (Not Available)

2 Bed Semi (N) : 3.98 kg CO2 per m2 Floor Area : 154 m2

2 Bed Semi (S) : 3.57 kg CO2 per m2 Floor Area : 154 m2

2 Bed Detached (3) : 3.87 kg CO2 per m2 Floor Area : 130 m2

4 Bed Detached (2) : 2.88 kg CO2 per m2 Floor Area : 248 m2

5 Bed Detached (3) : 3.00 kg CO2 per m2 Floor Area : 248 m2

Total Emissions : 6,332.48 kg CO2 per year

CO2 Saving : 0.00 kg CO2 per year = 0.00 %

BE GREEN CO2

Calculations (SAP) : Renewables (Solar PV - with export capable meter + battery)

2 Bed Semi (N) : -0.95 kg CO2 per m2 Floor Area : 154 m2

2 Bed Semi (S) : -1.37 kg CO2 per m2 Floor Area : 154 m2

2 Bed Detached (3) : 0.46 kg CO2 per m2 Floor Area : 130 m2

4 Bed Detached (2) : 0.09 kg CO2 per m2 Floor Area : 248 m2

5 Bed Detached (3) : 0.16 kg CO2 per m2 Floor Area : 248 m2

Total Emissions : -14.20 kg CO2 per year

CO2 Saving : 6,346.68 kg CO2 per year = 100.22 %

EA-57

Site Location :

Land at New Barn Farm, Capel Road, Rusper, Horsham

POLICY 37

Sustainable Construction

Proposals must seek to improve the sustainability of development. To deliver sustainable design, development should incorporate the following measures where appropriate according to the type of development and location :

(1) Maximise energy efficiency and integrate the use of decentralised, renewable and low carbon energy.

(2) Limit water use to 110 litres/person/day

(3)-(8) By others

All new development will be required to provide satisfactory arrangements for the storage of refuse and recyclable materials as an integral part of the design.

New homes and workplaces should include the provision of high-speed broadband access and enable provision of future technologies where available.

1. Maximise Energy Efficiency & Integrate Decentralised, Renewables and Low Carbon Energy

The building is to be designed with a "fabric first approach" to minimise energy requirements, incorporating excellent fabric insulation and air-tightness, advanced detailing, and low energy use ventilation and lighting (ie LEDs and/or CFLs).

Heating is to be by air source heat pump (preferably Products Characteristic Database listed), with advanced heating controls. Installer MCS certified.

Solar PV with battery storage is then added to further reduce energy use and carbon emissions.

See SAP Calculations attached to this report.

2. Limit Water Use to 110 Litres/Person/Day

Water use is to be reduced and suitably minimised by the fitting of low water use sanitary fittings (taps/showers), dual flush WCs, and low water use (and energy efficient) dishwashers and washing machines.

See Water Efficiency Calculations attached to this report.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:02:40

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5701	Plot Reference	EA5701 (Base)
Address	New Barn Farm 2 Bed Semi-Detached (N) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	8.79 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.23 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	46.1 kWh _{PE} /m ²		
Dwelling primary energy	44.2 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	35.7 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	107.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (N), Windows	10	North	0.7	1.3
Windows (E), Windows	5.5	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	0.214	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data



Plot Reference	EA5701	Issued on Date	16/07/2026
Assessment Reference	EA5701 (Base)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	79 C	DER	4.23	TER	8.79
Environmental	96 A	% DER < TER			51.88
CO ₂ Emissions (t/year)	0.59	DFEE	35.72	TFEE	36.47
Compliance Check	See BREL	% DFEE < TFEE			2.06
% DPER < TPER	4.12	DPER	44.20	TPER	46.10

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East
Property Tenture	ND
Transaction Type	6
Terrain Type	Rural
1.0 Property Type	House, Semi-Detached
2.0 Number of Storeys	2
3.0 Date Built	2026
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Enter TMP value
Thermal Mass	200.00

7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50	m²
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9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	107.50	0.00	None	17.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (N)	Windows	Wall	North	10.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.21	0.21	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	20.40	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£94	B 81	A 96

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£285
£693

B 85
A 97

A 97
A 99

Energy Report



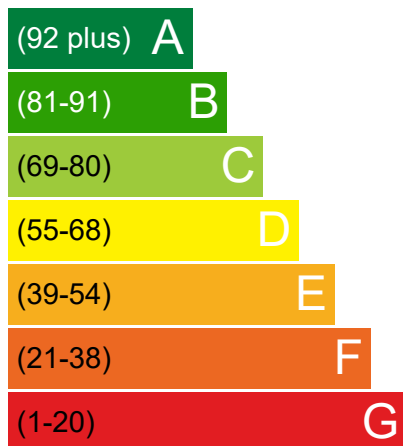
Dwelling Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5701-EA5701 (Base)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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.

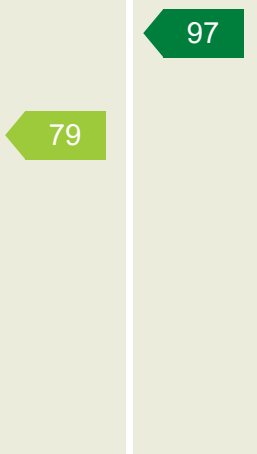
This document is not an Energy Performance Certificate (EPC) as required by the Energy Performance of Buildings Regulations

Energy Efficiency Rating

Most energy efficient - lower running costs

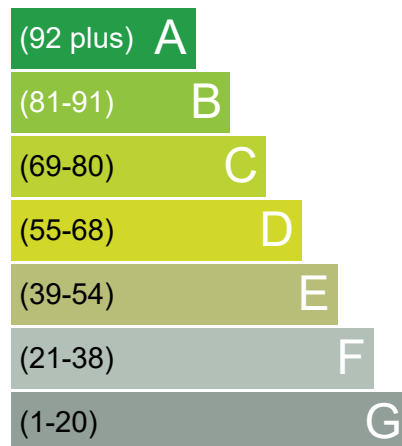


CURRENT POTENTIAL

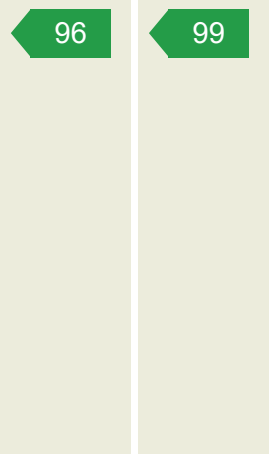


Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



CURRENT POTENTIAL



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	39.93 kWh	3975 kWh	588 kg	1099.77 £	135 W/K
POTENTIAL	2.11 kWh	102 kWh	60 kg	28.12 £	135 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£94	B 81	£4,000 - £7,000	£94	A 96
Photovoltaic	£379	B 85	£8,000 - £10,000	£285	A 97

Wind turbine	£1072		£5,000 - £20,000	£693	
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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		£90	£90	
Heating		£580	£603	
Hot Water		£430	£312	
New Technologies e.g. Impact of PV		£0	-(£977)	
TOTAL		£1100	£28	

Estimated energy use and potential savings



Space Heating

1802

kWh per year



Water Heating

1554

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:02:40

Project Information			
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OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
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Dwelling carbon dioxide emission rate	3.98 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	46.1 kWh _{PE} /m ²		
Dwelling primary energy	41.64 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	32.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	107.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (N), Windows	10	North	1.0	1.3
Windows (E), Windows	5.5	East	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data



Plot Reference	EA5701	Issued on Date	16/07/2026
Assessment Reference	EA5701 (Lean)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	80 C	DER	3.98	TER	8.79
Environmental	96 A	% DER < TER			54.72
CO ₂ Emissions (t/year)	0.55	DFEE	32.54	TFEE	36.47
Compliance Check	See BREL	% DFEE < TFEE			10.77
% DPER < TPER	9.68	DPER	41.64	TPER	46.10

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²

7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50	m²
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9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	107.50	0.00	None	17.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	BFRG, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (N)	Windows	Wall	North	10.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.05	0.05	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	20.40	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 82	A 96

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£282
£693

B 86
A 98

A 97
A 99

Energy Report



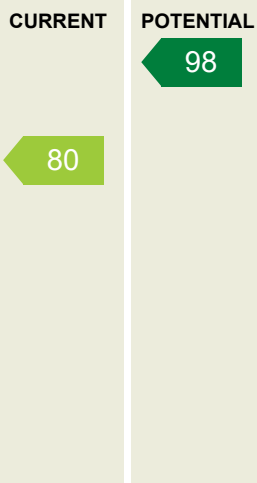
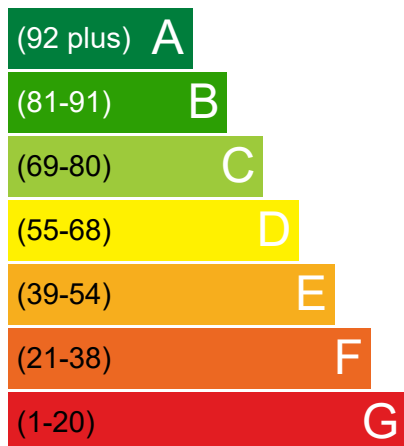
Dwelling Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5701-EA5701 (Lean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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

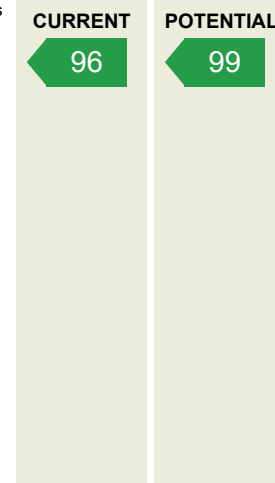
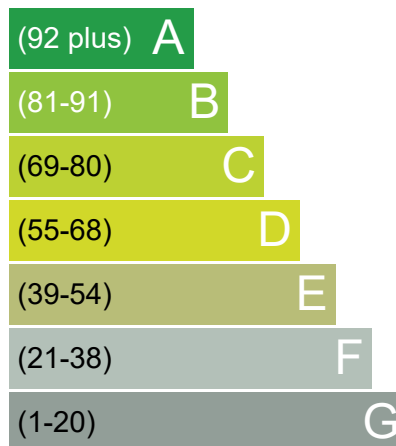
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	37.49 kWh	3734 kWh	551 kg	1033.18 £	132 W/K
POTENTIAL	-0.26 kWh	-132 kWh	25 kg	-36.58 £	132 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 82	£4,000 - £7,000	£95	A 96
Photovoltaic	£377	B 86	£8,000 - £10,000	£282	A 97

Wind turbine	£1070	 A 98	£5,000 - £20,000	£693	 A 99
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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		£90	£90	
Heating		£514	£536	
Hot Water		£430	£312	
New Technologies e.g. Impact of PV		£0	-(£975)	
TOTAL		£1033	-(£37)	

Estimated energy use and potential savings



Space Heating

1562

kWh per year



Water Heating

1554

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:02:40

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5701	Plot Reference	EA5701 (Clean)
Address	New Barn Farm 2 Bed Semi-Detached (N) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	8.79 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.98 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	46.1 kWh _{PE} /m ²		
Dwelling primary energy	41.64 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	32.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	107.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (N), Windows	10	North	1.0	1.3
Windows (E), Windows	5.5	East	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data



Plot Reference	EA5701	Issued on Date	16/07/2026
Assessment Reference	EA5701 (Clean)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	80 C	DER	3.98	TER	8.79
Environmental	96 A	% DER < TER			54.72
CO ₂ Emissions (t/year)	0.55	DFEE	32.54	TFEE	36.47
Compliance Check	See BREL	% DFEE < TFEE			10.77
% DPER < TPER	9.68	DPER	41.64	TPER	46.10

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements	Ground floor: 1st Storey:	Heat Loss Perimeter 25.00 m 25.00 m	Internal Floor Area 77.00 m² 77.00 m²	Average Storey Height 2.40 m 2.60 m
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8.0 Living Area	55.50	m²
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9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	107.50	0.00	None	17.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	BFRG, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (N)	Windows	Wall	North	10.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.05	0.05	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	20.40	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 82	A 96

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£282
£693

B 86
A 98

A 97
A 99

Energy Report



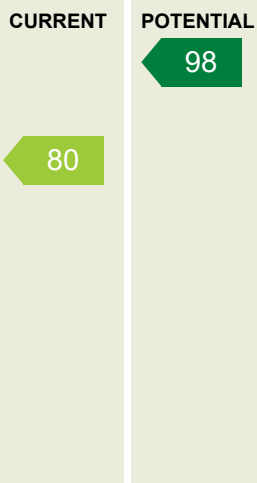
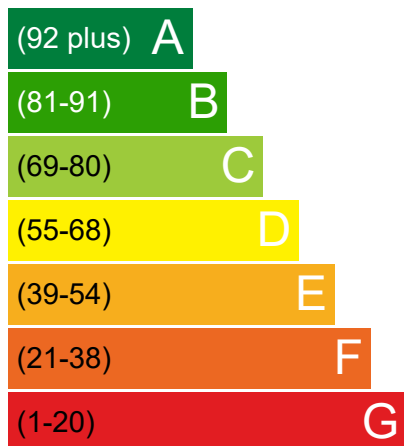
Dwelling Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5701-EA5701 (Clean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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

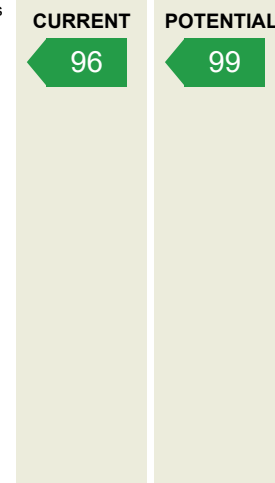
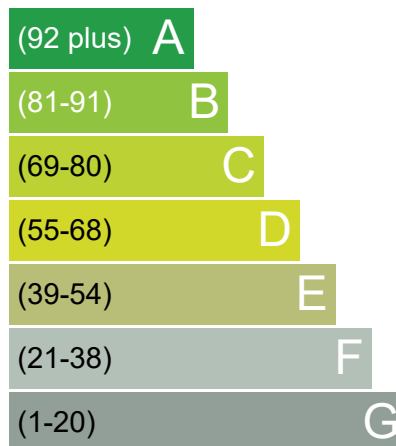
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	37.49 kWh	3734 kWh	551 kg	1033.18 £	132 W/K
POTENTIAL	-0.26 kWh	-132 kWh	25 kg	-36.58 £	132 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 82	£4,000 - £7,000	£95	A 96
Photovoltaic	£377	B 86	£8,000 - £10,000	£282	A 97

Wind turbine	£1070	 A 98	£5,000 - £20,000	£693	 A 99
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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		£90	£90	
Heating		£514	£536	
Hot Water		£430	£312	
New Technologies e.g. Impact of PV		£0	-(£975)	
TOTAL		£1033	-(£37)	

Estimated energy use and potential savings



Space Heating

1562

kWh per year



Water Heating

1554

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:02:40

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5701	Plot Reference	EA5701 (Green)
Address	New Barn Farm 2 Bed Semi-Detached (N) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	8.79 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	-0.95 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	46.1 kWh _{PE} /m ²		
Dwelling primary energy	-2.8 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	32.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	107.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (N), Windows	10	North	1.0	1.3
Windows (E), Windows	5.5	East	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	7.92 kWp	
Orientation	Horizontal	
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:	Assessor ID:	
Name:	Date:	
b. Client Declaration		
N/A		

Summary for Input Data



Plot Reference	EA5701	Issued on Date	16/07/2026
Assessment Reference	EA5701 (Green)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	103 A	DER	-0.95	TER	8.79
Environmental	101 A	% DER < TER			110.81
CO ₂ Emissions (t/year)	-0.31	DFEE	32.54	TFEE	36.47
Compliance Check	See BREL	% DFEE < TFEE			10.77
% DPER < TPER	106.07	DPER	-2.80	TPER	46.10

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50	m²
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9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	107.50	0.00	None	17.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	BFRG, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (N)	Windows	Wall	North	10.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.05	0.05	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	20.40	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table		
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

32.0 Photovoltaic Unit

One Dwelling	
Export Capable Meter?	Yes
Connected To Dwelling	Yes
Diverter	No

Summary for Input Data



Battery Capacity [kWh]

8.00

PV Cells kWp

Orientation

Elevation

Overshading

FGHRS

MCS Certificate

Overshading
Factor

MCS
Certificate
Reference

Panel
Manufacturer

7.92

Horizontal

Horizontal

None Or Little

No

1.00

34.0 Small-scale Hydro

None

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

Typical Cost

Typical savings per year

Ratings after improvement
SAP rating Environmental Impact

Solar water heating
Photovoltaic
Wind turbine

£5,000 - £20,000

£755

A 104
0
A 117

A 101
0
A 104

Energy Report



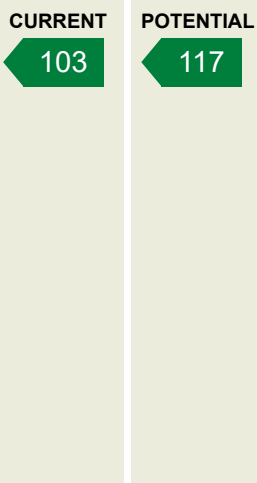
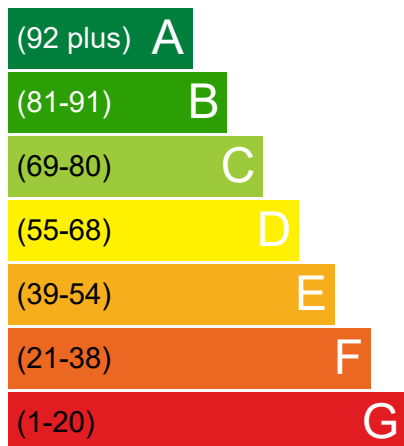
Dwelling Address	2 Bed Semi-Detached (N), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5701-EA5701 (Green)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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

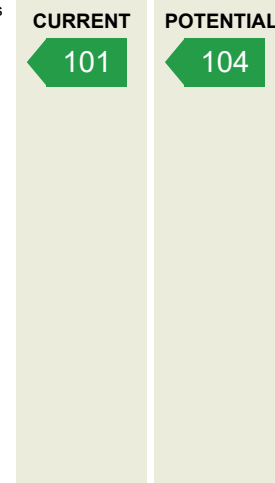
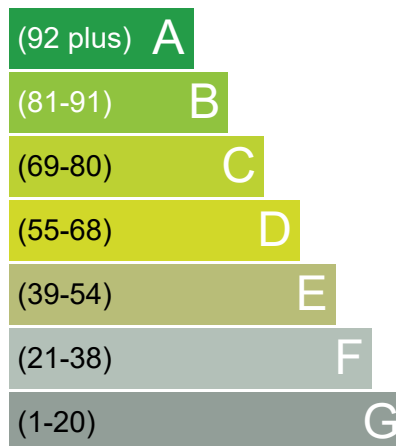
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	-10.67 kWh	-3119 kWh	-309 kg	-293.68 £	132 W/K
POTENTIAL	-38.82 kWh	-6695 kWh	-805 kg	-1048.54 £	132 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£35	A 104			A 101
Wind turbine	£790	A 117	£5,000 - £20,000	£755	A 104

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 	£90	£90	
Heating 	£514	£514	
Hot Water 	£430	£430	
New Technologies e.g. Impact of PV	-(£1327)	-(£2082)	
TOTAL	-(£294)	-(£1049)	

Estimated energy use and potential savings



Space Heating

1562

kWh per year



Water Heating

1554

kWh per year

About this document

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

Disclaimer

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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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:04

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5702	Plot Reference	EA5702 (Base)
Address	New Barn Farm 2 Bed Semi-Detached (S) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.89 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.94 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	41.22 kWh _{PE} /m ²		
Dwelling primary energy	41.22 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	32.4 kWh/m ²		
Dwelling fabric energy efficiency	31.7 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	106.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (S), Windows	11	South	0.7	1.3
Windows (E), Windows	5.5	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	0.214	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data



Plot Reference	EA5702	Issued on Date	16/07/2026
Assessment Reference	EA5702 (Base)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	81 B	DER	3.94	TER	7.89
Environmental	96 A	% DER < TER			50.06
CO ₂ Emissions (t/year)	0.54	DFEE	31.70	TFEE	32.42
Compliance Check	See BREL	% DFEE < TFEE			2.21
% DPER < TPER	0.00	DPER	41.22	TPER	41.22

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²

7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50	m²
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9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	106.50	0.00	None	18.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (S)	Windows	Wall	South	11.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.21	0.21	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	21.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 82	A 96

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£283
£693

B 87
A 99

A 97
A 99

Energy Report



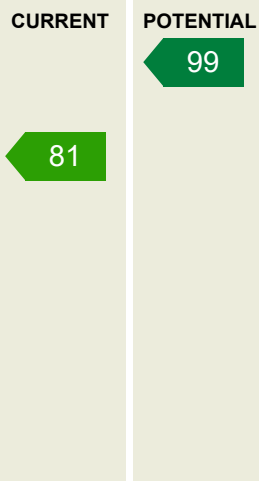
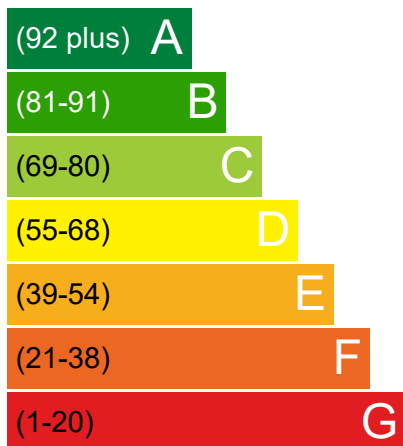
Dwelling Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5702-EA5702 (Base)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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.

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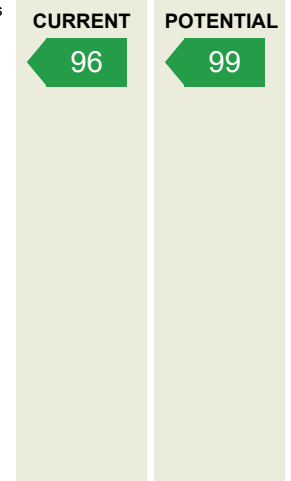
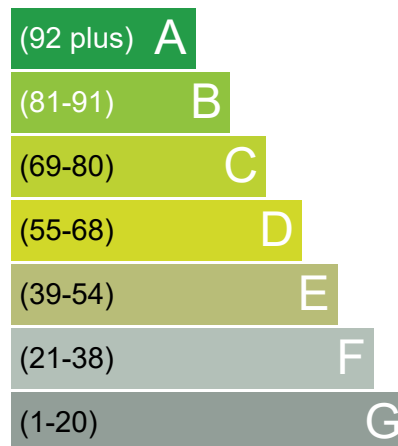
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	37.07 kWh	3693 kWh	545 kg	1021.76 £	136 W/K
POTENTIAL	-0.69 kWh	-174 kWh	18 kg	-48.12 £	136 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 82	£4,000 - £7,000	£95	A 96
Photovoltaic	£377	B 87	£8,000 - £10,000	£283	A 97

Energy Report

Wind turbine	£1070	 A 99	£5,000 - £20,000	£693	 A 99
--------------	-------	--	------------------	------	--

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		£89	£89	
Heating		£503	£526	
Hot Water		£430	£312	
New Technologies e.g. Impact of PV		£0	-(£975)	
TOTAL		£1022	-(£48)	

Estimated energy use and potential savings



Space Heating

1525

kWh per year



Water Heating

1554

kWh per year

About this document

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

Disclaimer

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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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:05

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5702	Plot Reference	EA5702 (Lean)
Address	New Barn Farm 2 Bed Semi-Detached (S) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.89 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.57 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	41.22 kWh _{PE} /m ²		
Dwelling primary energy	37.33 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	32.4 kWh/m ²		
Dwelling fabric energy efficiency	26.9 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	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	106.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (S), Windows	11	South	1.0	1.3
Windows (E), Windows	5.5	East	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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

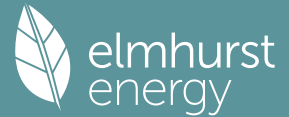
Function	
Ecodesign class	
Manufacturer	
Model	

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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data



Plot Reference	EA5702	Issued on Date	16/07/2026
Assessment Reference	EA5702 (Lean)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	82 B	DER	3.57	TER	7.89
Environmental	96 A	% DER < TER			54.75
CO ₂ Emissions (t/year)	0.49	DFEE	26.91	TFEE	32.42
Compliance Check	See BREL	% DFEE < TFEE			16.99
% DPER < TPER	9.43	DPER	37.33	TPER	41.22

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50	m²
-----------------	-------	----

9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	106.50	0.00	None	18.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	BFRG, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (S)	Windows	Wall	South	11.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.05	0.05	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	21.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 84	A 97

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£280
£693

B 88
A 100

A 97
A 100

Energy Report



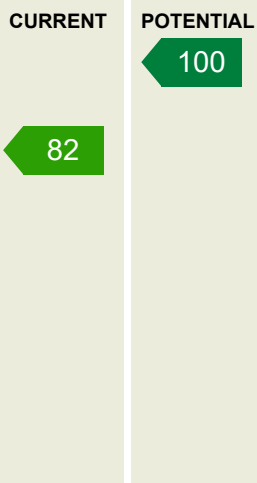
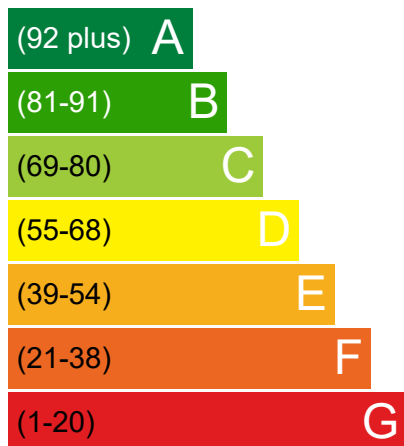
Dwelling Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5702-EA5702 (Lean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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

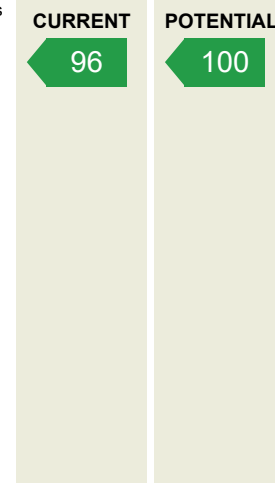
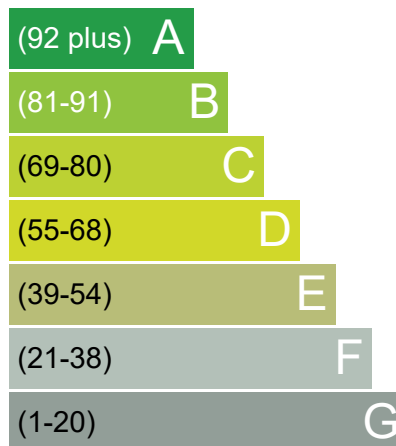
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	33.53 kWh	3345 kWh	492 kg	925.49 £	133 W/K
POTENTIAL	-4.14 kWh	-513 kWh	-34 kg	-142.00 £	133 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 84	£4,000 - £7,000	£95	A 97
Photovoltaic	£375	B 88	£8,000 - £10,000	£280	A 97

Wind turbine	£1067	 A 100	£5,000 - £20,000	£693	 A 100
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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		£89	£89	
Heating		£407	£430	
Hot Water		£430	£312	
New Technologies e.g. Impact of PV		£0	-(£972)	
TOTAL		£925	-(£142)	

Estimated energy use and potential savings



Space Heating

1177

kWh per year



Water Heating

1554

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:04

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5702	Plot Reference	EA5702 (Clean)
Address	New Barn Farm 2 Bed Semi-Detached (S) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.89 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.57 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	41.22 kWh _{PE} /m ²		
Dwelling primary energy	37.33 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	32.4 kWh/m ²		
Dwelling fabric energy efficiency	26.9 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	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	106.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (S), Windows	11	South	1.0	1.3
Windows (E), Windows	5.5	East	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data



Plot Reference	EA5702	Issued on Date	16/07/2026
Assessment Reference	EA5702 (Clean)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	82 B	DER	3.57	TER	7.89
Environmental	96 A	% DER < TER			54.75
CO ₂ Emissions (t/year)	0.49	DFEE	26.91	TFEE	32.42
Compliance Check	See BREL	% DFEE < TFEE			16.99
% DPER < TPER	9.43	DPER	37.33	TPER	41.22

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East
Property Tenture	ND
Transaction Type	6
Terrain Type	Rural
1.0 Property Type	House, Semi-Detached
2.0 Number of Storeys	2
3.0 Date Built	2026
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Enter TMP value
Thermal Mass	200.00 kJ/m²K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50 m²
-----------------	----------

9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	106.50	0.00	None	18.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	BFRG, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (S)	Windows	Wall	South	11.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.05	0.05	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	21.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table	SAP table	
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

34.0 Small-scale Hydro

None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Recommendations

Lower cost measures
None

Summary for Input Data



Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 84	A 97
Photovoltaic	£8,000 - £10,000	£280	B 88	A 97
Wind turbine	£5,000 - £20,000	£693	A 100	A 100

Energy Report



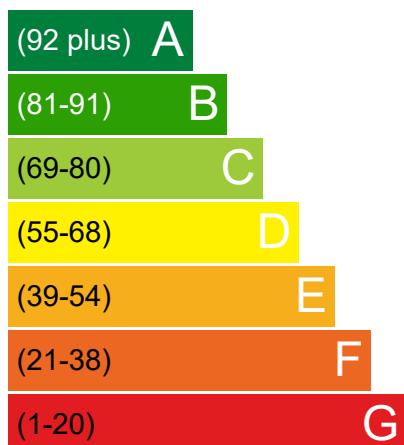
Dwelling Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5702-EA5702 (Clean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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.

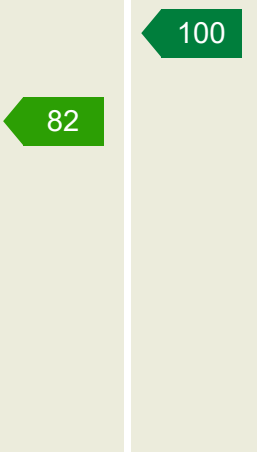
This document is not an Energy Performance Certificate (EPC) as required by the Energy Performance of Buildings Regulations

Energy Efficiency Rating

Most energy efficient - lower running costs

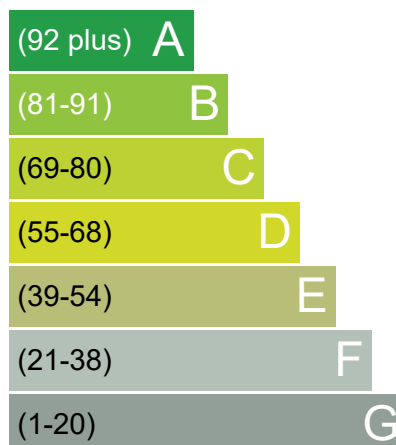


CURRENT POTENTIAL

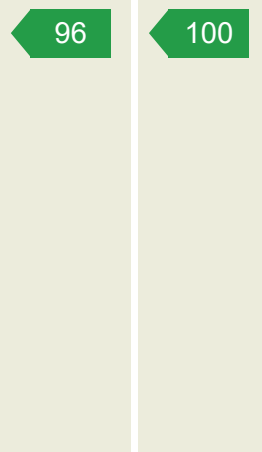


Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



CURRENT POTENTIAL



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	33.53 kWh	3345 kWh	492 kg	925.49 £	133 W/K
POTENTIAL	-4.14 kWh	-513 kWh	-34 kg	-142.00 £	133 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 84	£4,000 - £7,000	£95	A 97
Photovoltaic	£375	B 88	£8,000 - £10,000	£280	A 97

Wind turbine	£1067	 A 100	£5,000 - £20,000	£693	 A 100
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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		£89	£89	
Heating		£407	£430	
Hot Water		£430	£312	
New Technologies e.g. Impact of PV		£0	-(£972)	
TOTAL		£925	-(£142)	

Estimated energy use and potential savings



Space Heating

1177

kWh per year



Water Heating

1554

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:05

Project Information			
Assessed By	Joe Solti	Building Type	House, Semi-detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	154 m ²
Site Reference	EA5702	Plot Reference	EA5702 (Green)
Address	New Barn Farm 2 Bed Semi-Detached (S) Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.89 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	-1.37 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	41.22 kWh _{PE} /m ²		
Dwelling primary energy	-6.85 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	32.4 kWh/m ²		
Dwelling fabric energy efficiency	26.9 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	0.18	Walls (1) (0.18)	OK
Party walls	0.2	0	Party Wall (1) (0)	N/A
Curtain walls	1.6	0	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (1) (0.11)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	106.5	0.18	
Party wall: Party Wall (1)	54	0 (!)	
Ground floor: Ground Floor, Ground Floor	77	0.12	
Exposed roof: Roof (1)	77	0.11	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Front Door	2	East	N/A	1.3
Windows (S), Windows	11	South	1.0	1.3
Windows (E), Windows	5.5	East	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E18: Party wall between dwellings	Calculated by person with suitable expertise	0.05	
Party wall	P1: Ground floor	Calculated by person with suitable expertise	0.043	
Party wall	P4: Roof (insulation at ceiling level)	Calculated by person with suitable expertise	0.028 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	7.92 kWp	
Orientation	Horizontal	
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:	Assessor ID:	
Name:	Date:	
b. Client Declaration		
N/A		

Summary for Input Data



Plot Reference	EA5702	Issued on Date	16/07/2026
Assessment Reference	EA5702 (Green)	Plot Type Ref	EA-57
Plot Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	105 A	DER	-1.37	TER	7.89
Environmental	101 A	% DER < TER			117.36
CO ₂ Emissions (t/year)	-0.37	DFEE	26.91	TFEE	32.42
Compliance Check	See BREL	% DFEE < TFEE			16.99
% DPER < TPER	116.61	DPER	-6.85	TPER	41.22

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	East	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Semi-Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K

7.0 Electricity Tariff	Standard
Smart electricity meter fitted	Yes
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	25.00 m	77.00 m²	2.40 m
		25.00 m	77.00 m²	2.60 m

8.0 Living Area	55.50	m²
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9.0 External Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
	Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		125.00	106.50	0.00	None	18.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall	Filled Cavity with Edge Sealing	Single plasterboard on dabs both sides, lightweight aggregate blocks, cavity or cavity fill	0.00		54.00	0.00	None

10.0 External Roofs	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
	Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	77.00	77.00	None	0.00	Enter Gross Area	0.00

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	77.00

12.0 Opening Types	Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
	Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
	Windows	BFRG, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
	Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Summary for Input Data

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	East	2.00	
Windows (S)	Windows	Wall	South	11.00	
Windows (E)	Windows	Wall	East	5.50	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	17.80	0.05	0.05	No
E3 Sill	Independently assessed	14.10	0.02	0.02	No
E4 Jamb	Independently assessed	21.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	25.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	25.10	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	14.20	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	10.80	0.04	0.04	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	10.80	0.04	0.04	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	10.80	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	2
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

Summary for Input Data

24.0 Main Heating 1

SAP table		
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

32.0 Photovoltaic Unit

One Dwelling	
Export Capable Meter?	Yes
Connected To Dwelling	Yes
Diverter	No

Summary for Input Data



Battery Capacity [kWh]

8.00

PV Cells kWp

Orientation

Elevation

Overshading

FGHRS

MCS Certificate

Overshading
Factor

MCS
Certificate
Reference

Panel
Manufacturer

7.92

Horizontal

Horizontal

None Or Little

No

1.00

34.0 Small-scale Hydro

None

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

Typical Cost

Typical savings per year

Ratings after improvement
SAP rating Environmental Impact

Solar water heating
Photovoltaic
Wind turbine

£5,000 - £20,000

£755

A 106
0
A 119

A 102
0
A 105

Energy Report



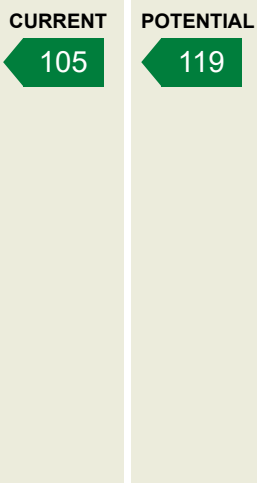
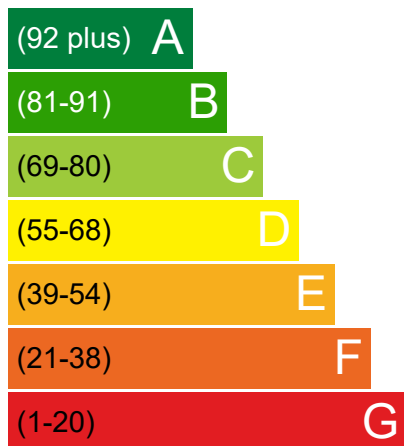
Dwelling Address	2 Bed Semi-Detached (S), New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5702-EA5702 (Green)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Semi-Detached
Total Floor Area	154

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

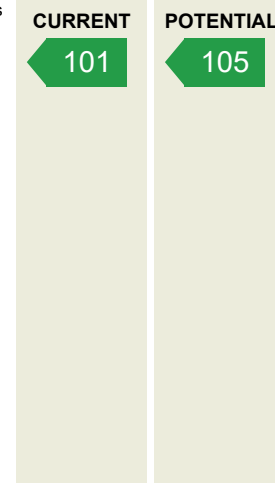
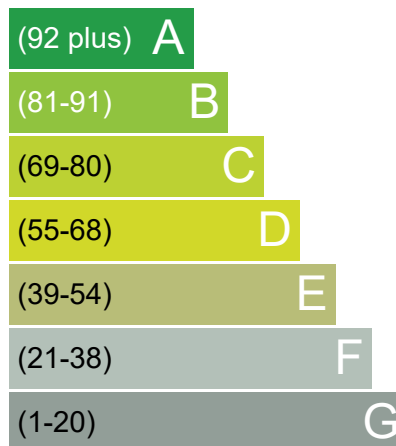
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	-14.41 kWh	-3508 kWh	-369 kg	-393.62 £	133 W/K
POTENTIAL	-42.57 kWh	-7084 kWh	-865 kg	-1148.49 £	133 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£33	A 106			A 102
Wind turbine	£787	A 119	£5,000 - £20,000	£755	A 105

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 	£89	£89	
Heating 	£407	£407	
Hot Water 	£430	£430	
New Technologies e.g. Impact of PV	-(£1319)	-(£2074)	
TOTAL	-(£394)	-(£1148)	

Estimated energy use and potential savings



Space Heating

1177

kWh per year



Water Heating

1554

kWh per year

About this document

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

Disclaimer

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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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	130 m ²
Site Reference	EA5703	Plot Reference	EA5703 (Base)
Address	New Barn Farm 2 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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

1a Target emission rate and dwelling emission rate			
Fuel for main heating system	Electricity		
Target carbon dioxide emission rate	9.14 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	4.4 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	47.63 kWh _{PE} /m ²		
Dwelling primary energy	45.98 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	36.5 kWh/m ²		
Dwelling fabric energy efficiency	36.5 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.12	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	79	0.18
Exposed wall: Walls (2)	5.5	0.18
Exposed wall: Walls (3)	17	0.18
Ground floor: Ground Floor, Ground Floor	67	0.12
Exposed roof: Roof (1)	52	0.11
Exposed roof: Roof (2)	23	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]
Front Door, Front Door	2	North	N/A	1.3
Windows (N), Windows	5	North	0.7	1.3
Windows (S), Windows	12	South	0.7	1.3
Windows (S), Windows	2	South	0.7	1.3
Windows (E), Windows	3.5	East	0.7	1.3
Windows (W), Windows	6.5	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	0.214	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

3 Hot water	
Cylinder/store - type: Cylinder	
Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5703	Issued on Date	16/07/2026
Assessment Reference	EA5703 (Base)	Plot Type Ref	EA-57
Plot Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	79 C	DER	4.40	TER	9.14
Environmental	96 A	% DER < TER			51.86
CO ₂ Emissions (t/year)	0.51	DFEE	36.51	TFEE	36.52
Compliance Check	See BREL	% DFEE < TFEE			0.00
% DPER < TPER	3.47	DPER	45.98	TPER	47.63

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	33.00 m	67.00 m²	2.40 m
	1st Storey:	31.00 m	63.00 m²	2.50 m

8.0 Living Area	51.00	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		108.00	79.00	0.00	None	29.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		7.50	5.50	0.00	None	2.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		17.00	17.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	52.00	52.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	23.00	23.00	None	0.00	Enter Gross Area	0.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	67.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Front Door	Wall	North	2.00	

Summary for Input Data



Windows (N)	Windows	Wall	North	5.00
Windows (S)	Windows	Wall	South	12.00
Windows (S)	Windows	Wall (dormer)	South	2.00
Windows (E)	Windows	Wall	East	3.50
Windows (W)	Windows	Wall	West	6.50

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	23.80	0.21	0.21	No
E3 Sill	Independently assessed	13.70	0.02	0.02	No
E4 Jamb	Independently assessed	32.10	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	33.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	31.00	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	2.10	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	7.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	18.90	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	17.00	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	3
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

24.0 Main Heating 1

Summary for Input Data

Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

	None
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26.0 Heat Networks

	None
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27.0 Secondary Heating

	None
--	------

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00
Loss	2.00
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

	None
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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 81	A 96
Photovoltaic	£8,000 - £10,000	£275	B 86	A 97
Wind turbine	£5,000 - £20,000	£693	A 100	A 100

Energy Report



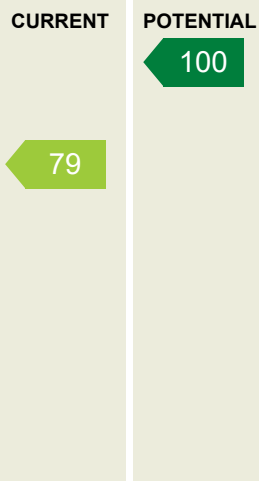
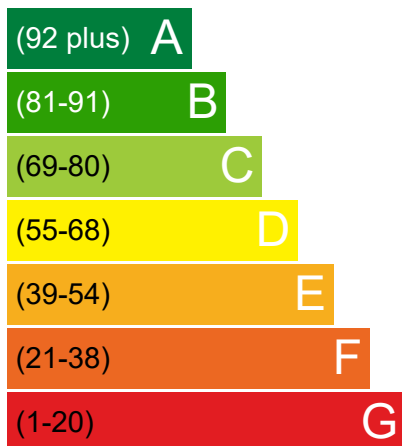
Dwelling Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5703-EA5703 (Base)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	130

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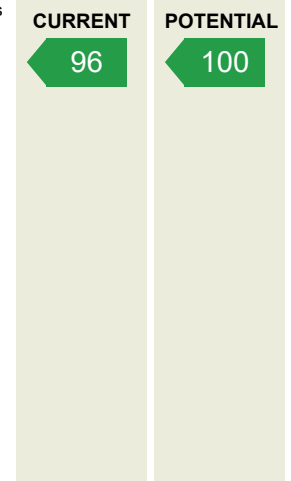
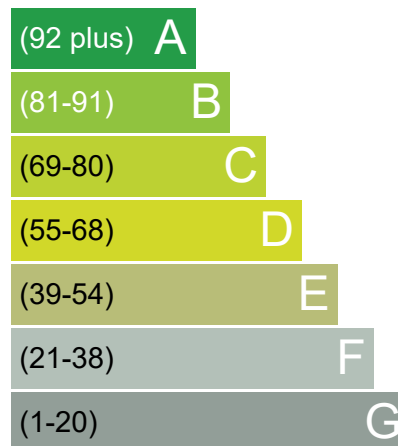
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	41.09 kWh	3454 kWh	510 kg	955.86 £	139 W/K
POTENTIAL	-3.31 kWh	-384 kWh	-13 kg	-106.12 £	139 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
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Roof	Average thermal transmittance 0.12 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 81	£4,000 - £7,000	£95	A 96
Photovoltaic	£369	B 86	£8,000 - £10,000	£275	A 97

Energy Report

Wind turbine	£1062		£5,000 - £20,000	£693	
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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		£71	£71	
Heating		£458	£481	
Hot Water		£426	£309	
New Technologies e.g. Impact of PV		£0	-(£967)	
TOTAL		£956	-(£106)	

Estimated energy use and potential savings



Space Heating

1412

kWh per year



Water Heating

1541

kWh per year

About this document

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

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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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	130 m ²
Site Reference	EA5703	Plot Reference	EA5703 (Lean)
Address	New Barn Farm 2 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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

1a Target emission rate and dwelling emission rate

Fuel for main heating system	Electricity
Target carbon dioxide emission rate	9.14 kgCO ₂ /m ²
Dwelling carbon dioxide emission rate	3.87 kgCO ₂ /m ² OK

1b Target primary energy rate and dwelling primary energy

Target primary energy	47.63 kWh _{PE} /m ²
Dwelling primary energy	40.49 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	30.7 kWh/m ² OK

2a Fabric U-values

Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.12	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	79	0.18
Exposed wall: Walls (2)	5.5	0.18
Exposed wall: Walls (3)	17	0.18
Ground floor: Ground Floor, Ground Floor	67	0.12
Exposed roof: Roof (1)	52	0.11
Exposed roof: Roof (2)	23	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]
Front Door, Front Door	2	North	N/A	1.3
Windows (N), Windows	5	North	1.0	1.3
Windows (S), Windows	12	South	1.0	1.3
Windows (S), Windows	2	South	1.0	1.3
Windows (E), Windows	3.5	East	1.0	1.3
Windows (W), Windows	6.5	West	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%	
Emitter type	Both radiators and underfloor	
Flow temperature		
System type	Air source heat pump	
Manufacturer		
Model		
Commissioning		
Secondary heating system: N/A		
Fuel	N/A	
Efficiency	N/A	
Commissioning		

5 Hot water

Cylinder/store - type: Cylinder		
Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5703	Issued on Date	16/07/2026
Assessment Reference	EA5703 (Lean)	Plot Type Ref	EA-57
Plot Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	82 B	DER	3.87	TER	9.14
Environmental	96 A	% DER < TER			57.66
CO ₂ Emissions (t/year)	0.45	DFEE	30.70	TFEE	36.52
Compliance Check	See BREL	% DFEE < TFEE			15.93
% DPER < TPER	14.99	DPER	40.49	TPER	47.63

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	33.00 m	67.00 m²	2.40 m
	1st Storey:	31.00 m	63.00 m²	2.50 m

8.0 Living Area	51.00	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		108.00	79.00	0.00	None	29.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		7.50	5.50	0.00	None	2.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		17.00	17.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	52.00	52.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	23.00	23.00	None	0.00	Enter Gross Area	0.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	67.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data



Front Door	Front Door	Wall	North	2.00
Windows (N)	Windows	Wall	North	5.00
Windows (S)	Windows	Wall	South	12.00
Windows (S)	Windows	Wall (dormer)	South	2.00
Windows (E)	Windows	Wall	East	3.50
Windows (W)	Windows	Wall	West	6.50

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	23.80	0.05	0.05	No
E3 Sill	Independently assessed	13.70	0.02	0.02	No
E4 Jamb	Independently assessed	32.10	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	33.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	31.00	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	2.10	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	7.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	18.90	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	17.00	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	3
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

24.0 Main Heating 1

Summary for Input Data

Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00
Loss	2.00
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 83	A 97
Photovoltaic	£8,000 - £10,000	£272	B 88	A 97
Wind turbine	£5,000 - £20,000	£693	A 102	A 100

Energy Report



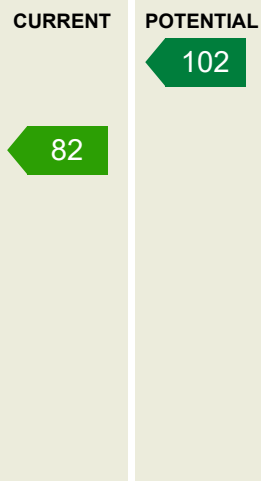
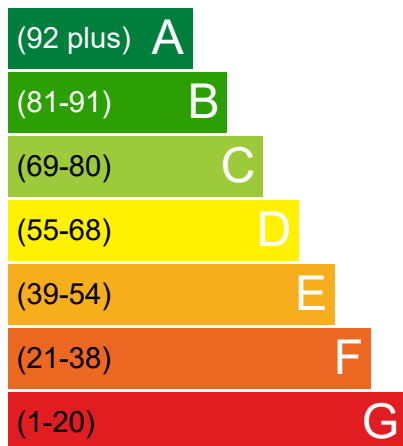
Dwelling Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5703-EA5703 (Lean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	130

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

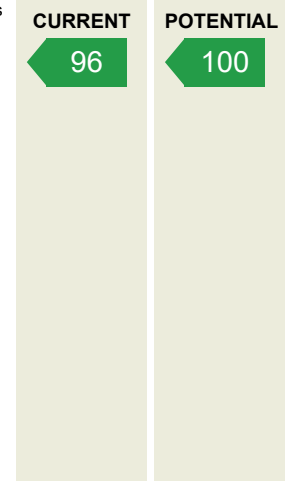
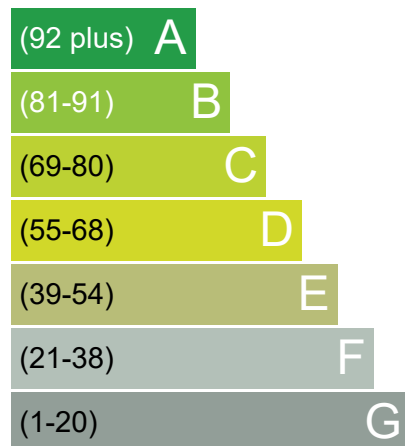
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report



	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	36.24 kWh	3053 kWh	448 kg	844.73 £	135 W/K
POTENTIAL	-8.04 kWh	-775 kWh	-73 kg	-214.44 £	135 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.12 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 83	£4,000 - £7,000	£95	A 97
Photovoltaic	£367	B 88	£8,000 - £10,000	£272	A 97

Wind turbine	£1059	 A 102	£5,000 - £20,000	£693	 A 100
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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		£71	£71	
Heating		£347	£369	
Hot Water		£426	£309	
New Technologies e.g. Impact of PV		£0	-(£964)	
TOTAL		£845	-(£214)	

Estimated energy use and potential savings



Space Heating

1010

kWh per year



Water Heating

1541

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	130 m ²
Site Reference	EA5703	Plot Reference	EA5703 (Clean)
Address	New Barn Farm 2 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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

1a Target emission rate and dwelling emission rate

Fuel for main heating system	Electricity
Target carbon dioxide emission rate	9.14 kgCO ₂ /m ²
Dwelling carbon dioxide emission rate	3.87 kgCO ₂ /m ² OK

1b Target primary energy rate and dwelling primary energy

Target primary energy	47.63 kWh _{PE} /m ²
Dwelling primary energy	40.49 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	30.7 kWh/m ² OK

2a Fabric U-values

Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.12	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	79	0.18
Exposed wall: Walls (2)	5.5	0.18
Exposed wall: Walls (3)	17	0.18
Ground floor: Ground Floor, Ground Floor	67	0.12
Exposed roof: Roof (1)	52	0.11
Exposed roof: Roof (2)	23	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]
Front Door, Front Door	2	North	N/A	1.3
Windows (N), Windows	5	North	1.0	1.3
Windows (S), Windows	12	South	1.0	1.3
Windows (S), Windows	2	South	1.0	1.3
Windows (E), Windows	3.5	East	1.0	1.3
Windows (W), Windows	6.5	West	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5703	Issued on Date	16/07/2026
Assessment Reference	EA5703 (Clean)	Plot Type Ref	EA-57
Plot Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	82 B	DER	3.87	TER	9.14
Environmental	96 A	% DER < TER			57.66
CO ₂ Emissions (t/year)	0.45	DFEE	30.70	TFEE	36.52
Compliance Check	See BREL	% DFEE < TFEE			15.93
% DPER < TPER	14.99	DPER	40.49	TPER	47.63

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	33.00 m	67.00 m²	2.40 m
	1st Storey:	31.00 m	63.00 m²	2.50 m

8.0 Living Area	51.00	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		108.00	79.00	0.00	None	29.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		7.50	5.50	0.00	None	2.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		17.00	17.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	52.00	52.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	23.00	23.00	None	0.00	Enter Gross Area	0.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	67.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data



Front Door	Front Door	Wall	North	2.00
Windows (N)	Windows	Wall	North	5.00
Windows (S)	Windows	Wall	South	12.00
Windows (S)	Windows	Wall (dormer)	South	2.00
Windows (E)	Windows	Wall	East	3.50
Windows (W)	Windows	Wall	West	6.50

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	23.80	0.05	0.05	No
E3 Sill	Independently assessed	13.70	0.02	0.02	No
E4 Jamb	Independently assessed	32.10	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	33.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	31.00	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	2.10	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	7.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	18.90	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	17.00	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	3
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

24.0 Main Heating 1

Summary for Input Data

Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00
Loss	2.00
Pipes insulation	Fully insulated primary pipework

L kWh/day

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£95	B 83	A 97
Photovoltaic	£8,000 - £10,000	£272	B 88	A 97
Wind turbine	£5,000 - £20,000	£693	A 102	A 100

Energy Report



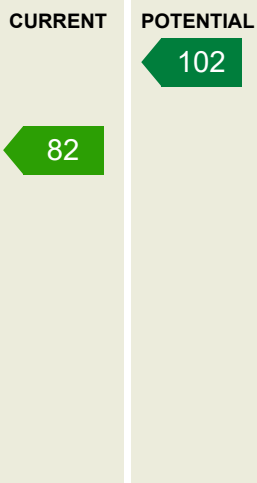
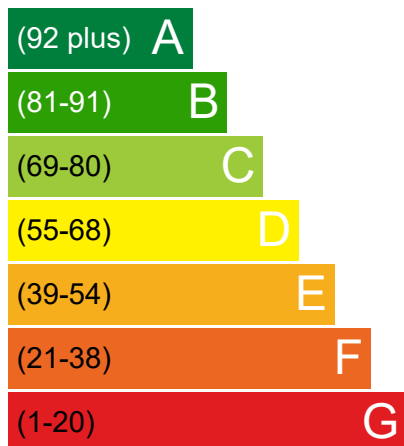
Dwelling Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5703-EA5703 (Clean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	130

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

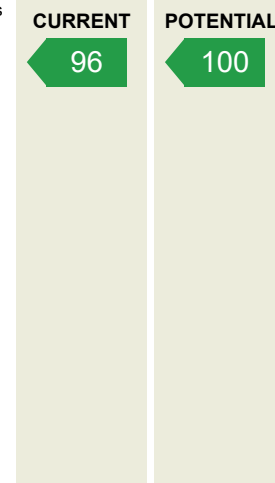
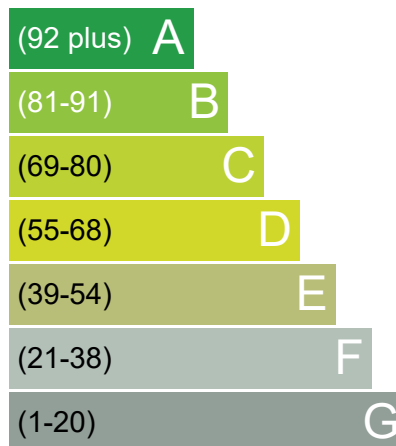
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report



	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	36.24 kWh	3053 kWh	448 kg	844.73 £	135 W/K
POTENTIAL	-8.04 kWh	-775 kWh	-73 kg	-214.44 £	135 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.12 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£95	B 83	£4,000 - £7,000	£95	A 97
Photovoltaic	£367	B 88	£8,000 - £10,000	£272	A 97

Wind turbine	£1059	 A 102	£5,000 - £20,000	£693	 A 100
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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		£71	£71	
Heating		£347	£369	
Hot Water		£426	£309	
New Technologies e.g. Impact of PV		£0	-(£964)	
TOTAL		£845	-(£214)	

Estimated energy use and potential savings



Space Heating

1010

kWh per year



Water Heating

1541

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:04:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	130 m ²
Site Reference	EA5703	Plot Reference	EA5704 (Green)
Address	New Barn Farm 2 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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

1a Target emission rate and dwelling emission rate

Fuel for main heating system	Electricity
Target carbon dioxide emission rate	9.14 kgCO ₂ /m ²
Dwelling carbon dioxide emission rate	0.46 kgCO ₂ /m ² OK

1b Target primary energy rate and dwelling primary energy

Target primary energy	47.63 kWh _{PE} /m ²
Dwelling primary energy	5.8 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	30.7 kWh/m ² OK

2a Fabric U-values

Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.12	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	79	0.18
Exposed wall: Walls (2)	5.5	0.18
Exposed wall: Walls (3)	17	0.18
Ground floor: Ground Floor, Ground Floor	67	0.12
Exposed roof: Roof (1)	52	0.11
Exposed roof: Roof (2)	23	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]
Front Door, Front Door	2	North	N/A	1.3
Windows (N), Windows	5	North	1.0	1.3
Windows (S), Windows	12	South	1.0	1.3
Windows (S), Windows	2	South	1.0	1.3
Windows (E), Windows	3.5	East	1.0	1.3
Windows (W), Windows	6.5	West	1.0	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	3.96 kWp	
Orientation	South	
Pitch	45°	
Overshading	None or very little	
Manufacturer		
MCS certificate		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
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		

Summary for Input Data

Plot Reference	EA5703	Issued on Date	16/07/2026
Assessment Reference	EA5704 (Green)	Plot Type Ref	EA-57
Plot Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	98 A	DER	0.46	TER	9.14
Environmental	100 A	% DER < TER			94.97
CO ₂ Emissions (t/year)	-0.04	DFEE	30.70	TFEE	36.52
Compliance Check	See BREL	% DFEE < TFEE			15.93
% DPER < TPER	87.81	DPER	5.80	TPER	47.63

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	33.00 m	67.00 m²	2.40 m
	1st Storey:	31.00 m	63.00 m²	2.50 m

8.0 Living Area	51.00	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		108.00	79.00	0.00	None	29.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		7.50	5.50	0.00	None	2.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		17.00	17.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	52.00	52.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	23.00	23.00	None	0.00	Enter Gross Area	0.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	67.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data



Front Door	Front Door	Wall	North	2.00
Windows (N)	Windows	Wall	North	5.00
Windows (S)	Windows	Wall	South	12.00
Windows (S)	Windows	Wall (dormer)	South	2.00
Windows (E)	Windows	Wall	East	3.50
Windows (W)	Windows	Wall	West	6.50

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	23.80	0.05	0.05	No
E3 Sill	Independently assessed	13.70	0.02	0.02	No
E4 Jamb	Independently assessed	32.10	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	33.10	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	31.00	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	2.10	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	7.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	18.90	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	17.00	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
MVHR Duct Insulated	Insulated Ducts
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	3
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Outside heated envelope (not installed exclusively)

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	25

24.0 Main Heating 1

Summary for Input Data

Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
Cold Water Source	From mains	
Bath Count	1	
Supplementary Immersion	No	
Immersion Only Heating Hot Water	No	
28.1 Showers		
Description	Shower Type	Flow Rate [l/min] Rated Power [kW] Connected Connected To
Showers	Unknown	8.00 No
28.3 Waste Water Heat Recovery System		
29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
Connected To Dwelling	Yes	
Diverter	No	
Battery Capacity [kWh]	8.00	

Summary for Input Data



PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
3.96	South	45°	None Or Little		No	1.00		

34.0 Small-scale Hydro

None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating	£4,000 - £7,000	£76	A 100	A 100
Photovoltaic			0	0
Wind turbine	£5,000 - £20,000	£755	A 116	A 104

Energy Report



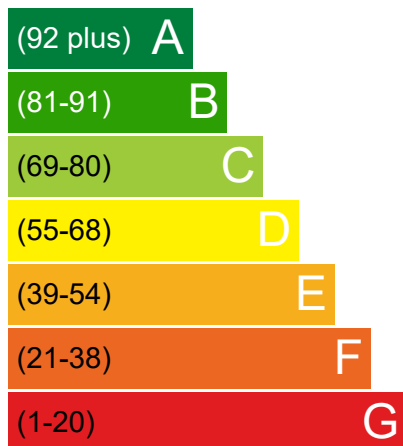
Dwelling Address	2 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5703-EA5704 (Green)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	130

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

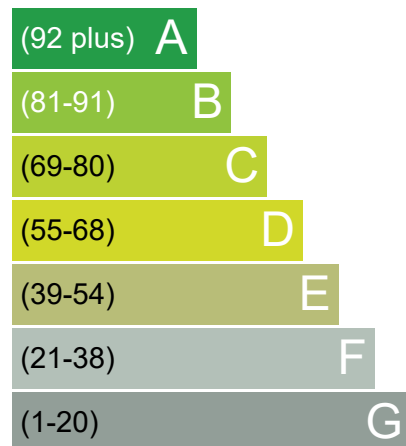


CURRENT POTENTIAL

98 116

Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



CURRENT POTENTIAL

100 104

Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	-1.52 kWh	-692 kWh	-40 kg	-51.64 £	135 W/K
POTENTIAL	-38.02 kWh	-4611 kWh	-578 kg	-882.18 £	135 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.12 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£76	A 100	£4,000 - £7,000	£76	A 100
Wind turbine	£831	A 116	£5,000 - £20,000	£755	A 104

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		£71	£71	
Heating		£347	£369	
Hot Water		£426	£309	
New Technologies e.g. Impact of PV		-(£896)	-(£1632)	
TOTAL		-(£52)	-(£882)	

Estimated energy use and potential savings



Space Heating

1010

kWh per year



Water Heating

1541

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:10

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5704	Plot Reference	EA5704 (Base)
Address	New Barn Farm 4 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	6.75 kgCO ₂ /m ²
Dwelling carbon dioxide emission rate	3.36 kgCO ₂ /m ² OK

1b Target primary energy rate and dwelling primary energy

Target primary energy	35.9 kWh _{PE} /m ²
Dwelling primary energy	34.83 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	36.8 kWh/m ² OK

2a Fabric U-values

Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	111	0.18
Exposed wall: Walls (2)	15	0.18
Exposed wall: Walls (3)	23	0.18
Ground floor: Ground Floor, Ground Floor	137	0.12
Exposed roof: Roof (1)	116	0.11
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	West	N/A	1.3
Windows (S), Windows	17	South	0.7	1.3
Windows (E), Windows	15.5	East	0.7	1.3
Windows (E), Windows	5	East	0.7	1.3
Windows (W), Windows	8.5	West	0.7	1.3
Windows (W), Windows	5	West	0.7	1.3
Roof Windows (E), Rooflights	2	East	0.7	1.3
Roof Windows (W), Rooflights	2	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	0.214	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5704	Issued on Date	16/07/2026
Assessment Reference	EA5704 (Base)	Plot Type Ref	EA-57
Plot Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	82 B	DER	3.36	TER	6.75
Environmental	96 A	% DER < TER			50.22
CO ₂ Emissions (t/year)	0.73	DFEE	36.81	TFEE	36.92
Compliance Check	See BREL	% DFEE < TFEE			0.29
% DPER < TPER	2.99	DPER	34.83	TPER	35.90

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	West	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m²	2.40 m
	1st Storey:	48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
-----------------	-------	----

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	111.00	0.00	None	43.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Door	Front Door	Wall	West	2.00	

Summary for Input Data

Windows (S)	Windows	Wall	South	17.00	
Windows (E)	Windows	Wall	East	15.50	
Windows (E)	Windows	Wall (dormer)	East	5.00	
Windows (W)	Windows	Wall	West	8.50	
Windows (W)	Windows	Wall (dormer)	West	5.00	
Roof Windows (E)	Rooflights	Roof (skeiling)	East	2.00	45
Roof Windows (W)	Rooflights	Roof (skeiling)	West	2.00	45

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	37.50	0.21	0.21	No
E3 Sill	Independently assessed	20.00	0.02	0.02	No
E4 Jamb	Independently assessed	45.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	40

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating			B 83	A 96

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£308
£693

B 86
A 94

A 97
A 98

Energy Report



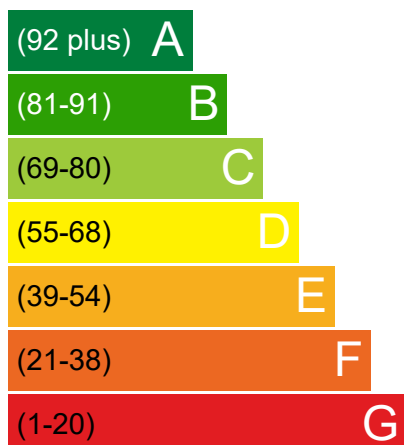
Dwelling Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5704-EA5704 (Base)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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.

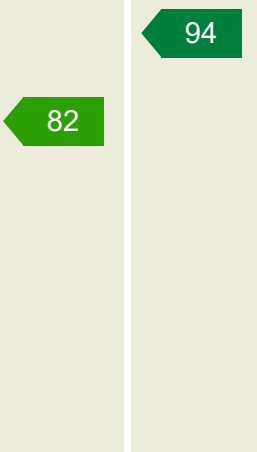
This document is not an Energy Performance Certificate (EPC) as required by the Energy Performance of Buildings Regulations

Energy Efficiency Rating

Most energy efficient - lower running costs

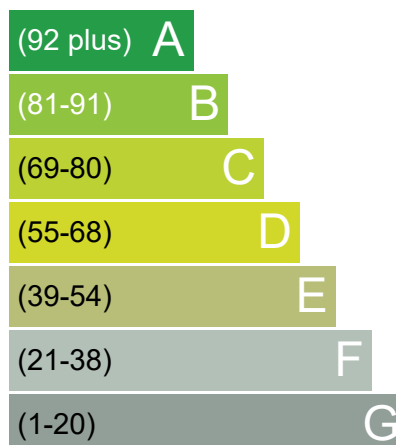


CURRENT POTENTIAL

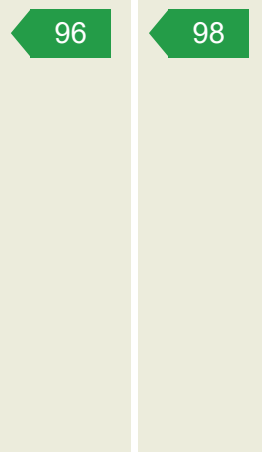


Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



CURRENT POTENTIAL



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	30.55 kWh	4877 kWh	729 kg	1349.60 £	227 W/K
POTENTIAL	8.57 kWh	1261 kWh	233 kg	348.83 £	227 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£96	B 83			A 96
Photovoltaic	£404	B 86	£8,000 - £10,000	£308	A 97

Wind turbine	£1096	 A 94	£5,000 - £20,000	£693	 A 98
--------------	-------	--	------------------	------	--

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		£99	£99	
Heating		£811	£811	
Hot Water		£439	£439	
New Technologies e.g. Impact of PV		£0	-(£1001)	
TOTAL		£1350	£349	

Estimated energy use and potential savings



Space Heating

2467

kWh per year



Water Heating

1588

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:10

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5704	Plot Reference	EA5705 (Lean)
Address	New Barn Farm 4 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	6.75 kgCO ₂ /m ²	
Dwelling carbon dioxide emission rate	2.88 kgCO ₂ /m ²	OK

1b Target primary energy rate and dwelling primary energy		
Target primary energy	35.9 kWh _{PE} /m ²	
Dwelling primary energy	29.91 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	31.6 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	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	111	0.18
Exposed wall: Walls (2)	15	0.18
Exposed wall: Walls (3)	23	0.18
Ground floor: Ground Floor, Ground Floor	137	0.12
Exposed roof: Roof (1)	116	0.11
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	West	N/A	1.3
Windows (S), Windows	17	South	1.0	1.3
Windows (E), Windows	15.5	East	1.0	1.3
Windows (E), Windows	5	East	1.0	1.3
Windows (W), Windows	8.5	West	1.0	1.3
Windows (W), Windows	5	West	1.0	1.3
Roof Windows (E), Rooflights	2	East	0.7	1.3
Roof Windows (W), Rooflights	2	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder	
Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5704	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Lean)	Plot Type Ref	EA-57
Plot Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	85 B	DER	2.88	TER	6.75
Environmental	97 A	% DER < TER			57.33
CO ₂ Emissions (t/year)	0.62	DFEE	31.60	TFEE	36.92
Compliance Check	See BREL	% DFEE < TFEE			14.42
% DPER < TPER	16.70	DPER	29.91	TPER	35.90

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	West	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m²	2.40 m
	1st Storey:	48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	111.00	0.00	None	43.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data

Front Door	Front Door	Wall	West	2.00	
Windows (S)	Windows	Wall	South	17.00	
Windows (E)	Windows	Wall	East	15.50	
Windows (E)	Windows	Wall (dormer)	East	5.00	
Windows (W)	Windows	Wall	West	8.50	
Windows (W)	Windows	Wall (dormer)	West	5.00	
Roof Windows (E)	Rooflights	Roof (skeliling)	East	2.00	45
Roof Windows (W)	Rooflights	Roof (skeliling)	West	2.00	45

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	37.50	0.05	0.05	No
E3 Sill	Independently assessed	20.00	0.02	0.02	No
E4 Jamb	Independently assessed	45.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	40

Summary for Input Data

24.0 Main Heating 1

0 Main Heating 1	SAP table	
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

1.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating			B 86	A 97

Summary for Input Data



Photovoltaic	£8,000 - £10,000	£305	B 88	A 97
Wind turbine	£5,000 - £20,000	£693	A 96	A 99

Energy Report



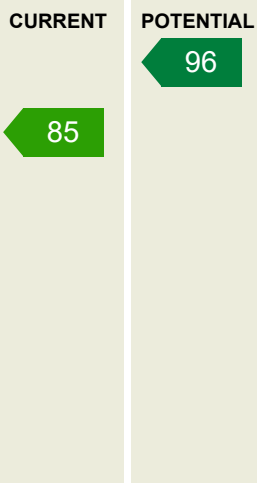
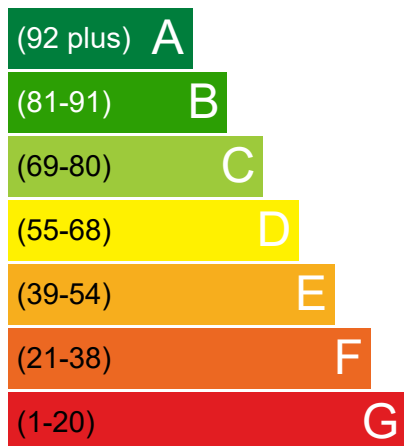
Dwelling Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5704-EA5705 (Lean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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

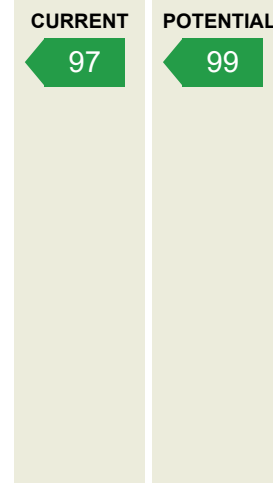
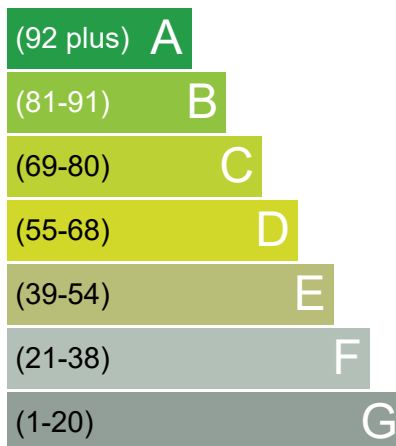
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	26.13 kWh	4181 kWh	622 kg	1156.88 £	221 W/K
POTENTIAL	4.22 kWh	575 kWh	127 kg	159.19 £	221 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£96	B 86			A 97
Photovoltaic	£401	B 88	£8,000 - £10,000	£305	A 97

Wind turbine	£1094	 A 96	£5,000 - £20,000	£693	 A 99
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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		£99	£99	
Heating		£618	£618	
Hot Water		£439	£439	
New Technologies e.g. Impact of PV		£0	-(£998)	
TOTAL		£1157	£159	

Estimated energy use and potential savings



Space Heating

1771

kWh per year



Water Heating

1588

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:10

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5704	Plot Reference	EA5705 (Clean)
Address	New Barn Farm 4 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	6.75 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	2.88 kgCO ₂ /m ²		OK

1b Target primary energy rate and dwelling primary energy			
Target primary energy	35.9 kWh _{PE} /m ²		
Dwelling primary energy	29.91 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	31.6 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	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	111	0.18
Exposed wall: Walls (2)	15	0.18
Exposed wall: Walls (3)	23	0.18
Ground floor: Ground Floor, Ground Floor	137	0.12
Exposed roof: Roof (1)	116	0.11
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	West	N/A	1.3
Windows (S), Windows	17	South	1.0	1.3
Windows (E), Windows	15.5	East	1.0	1.3
Windows (E), Windows	5	East	1.0	1.3
Windows (W), Windows	8.5	West	1.0	1.3
Windows (W), Windows	5	West	1.0	1.3
Roof Windows (E), Rooflights	2	East	0.7	1.3
Roof Windows (W), Rooflights	2	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
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External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder	
Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5704	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Clean)	Plot Type Ref	EA-57
Plot Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	85 B	DER	2.88	TER	6.75
Environmental	97 A	% DER < TER			57.33
CO ₂ Emissions (t/year)	0.62	DFEE	31.60	TFEE	36.92
Compliance Check	See BREL	% DFEE < TFEE			14.42
% DPER < TPER	16.70	DPER	29.91	TPER	35.90

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	West	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m²	2.40 m
	1st Storey:	48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
-----------------	-------	----

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	111.00	0.00	None	43.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data

Front Door	Front Door	Wall	West	2.00	
Windows (S)	Windows	Wall	South	17.00	
Windows (E)	Windows	Wall	East	15.50	
Windows (E)	Windows	Wall (dormer)	East	5.00	
Windows (W)	Windows	Wall	West	8.50	
Windows (W)	Windows	Wall (dormer)	West	5.00	
Roof Windows (E)	Rooflights	Roof (skeliling)	East	2.00	45
Roof Windows (W)	Rooflights	Roof (skeliling)	West	2.00	45

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	37.50	0.05	0.05	No
E3 Sill	Independently assessed	20.00	0.02	0.02	No
E4 Jamb	Independently assessed	45.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	40

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating			B 86	A 97

Summary for Input Data



Photovoltaic
Wind turbine

£8,000 - £10,000
£5,000 - £20,000

£305
£693

B 88
A 96

A 97
A 99

Energy Report



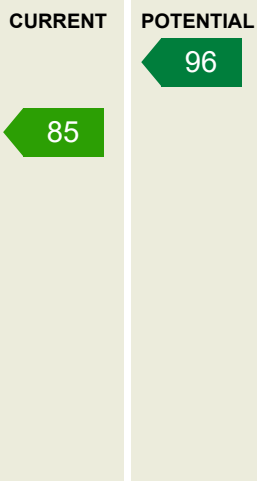
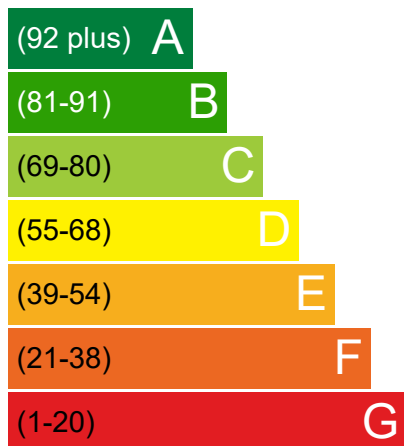
Dwelling Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5704-EA5705 (Clean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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

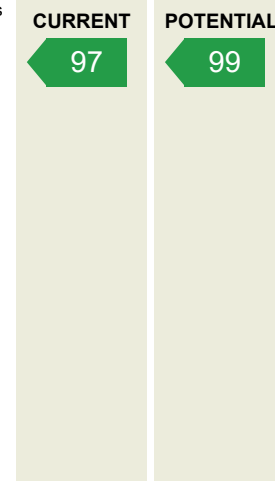
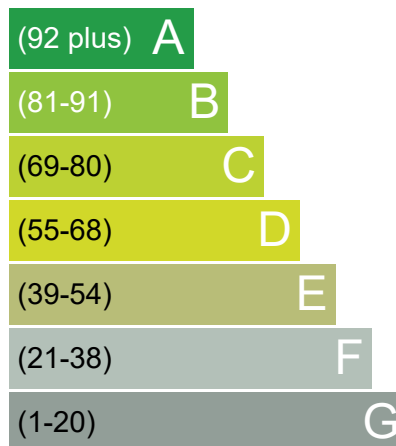
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	26.13 kWh	4181 kWh	622 kg	1156.88 £	221 W/K
POTENTIAL	4.22 kWh	575 kWh	127 kg	159.19 £	221 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£96	B 86			A 97
Photovoltaic	£401	B 88	£8,000 - £10,000	£305	A 97

Wind turbine	£1094	 A 96	£5,000 - £20,000	£693	 A 99
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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		£99	£99	
Heating		£618	£618	
Hot Water		£439	£439	
New Technologies e.g. Impact of PV		£0	-(£998)	
TOTAL		£1157	£159	

Estimated energy use and potential savings



Space Heating

1771

kWh per year



Water Heating

1588

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:10

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5704	Plot Reference	EA5705 (Green)
Address	New Barn Farm 4 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	6.75 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	0.09 kgCO ₂ /m ²		OK

1b Target primary energy rate and dwelling primary energy			
Target primary energy	35.9 kWh _{PE} /m ²		
Dwelling primary energy	2.56 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	31.6 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	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]	
Exposed wall: Walls (1)	111	0.18	
Exposed wall: Walls (2)	15	0.18	
Exposed wall: Walls (3)	23	0.18	
Ground floor: Ground Floor, Ground Floor	137	0.12	
Exposed roof: Roof (1)	116	0.11	
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	West	N/A	1.3
Windows (S), Windows	17	South	1.0	1.3
Windows (E), Windows	15.5	East	1.0	1.3
Windows (E), Windows	5	East	1.0	1.3
Windows (W), Windows	8.5	West	1.0	1.3
Windows (W), Windows	5	West	1.0	1.3
Roof Windows (E), Rooflights	2	East	0.7	1.3
Roof Windows (W), Rooflights	2	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	

Secondary heating system: N/A

Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water

Cylinder/store - type: Cylinder

Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	4.62 kWp	
Orientation	East	
Pitch	45°	
Overshading	None or very little	
Manufacturer		
MCS certificate		
Technology type: Photovoltaic system (2)		
Peak power	3.3 kWp	
Orientation	West	
Pitch	45°	
Overshading	None or very little	
Manufacturer		
MCS certificate		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
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		

Summary for Input Data

Plot Reference	EA5704	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Green)	Plot Type Ref	EA-57
Plot Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	100 A	DER	0.09	TER	6.75
Environmental	100 A	% DER < TER			98.67
CO ₂ Emissions (t/year)	-0.16	DFEE	31.60	TFEE	36.92
Compliance Check	See BREL	% DFEE < TFEE			14.42
% DPER < TPER	92.88	DPER	2.56	TPER	35.90

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	West	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m²	2.40 m
	1st Storey:	48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	111.00	0.00	None	43.00	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data

Front Door	Front Door	Wall	West	2.00	
Windows (S)	Windows	Wall	South	17.00	
Windows (E)	Windows	Wall	East	15.50	
Windows (E)	Windows	Wall (dormer)	East	5.00	
Windows (W)	Windows	Wall	West	8.50	
Windows (W)	Windows	Wall (dormer)	West	5.00	
Roof Windows (E)	Rooflights	Roof (skeliling)	East	2.00	45
Roof Windows (W)	Rooflights	Roof (skeliling)	West	2.00	45

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	37.50	0.05	0.05	No
E3 Sill	Independently assessed	20.00	0.02	0.02	No
E4 Jamb	Independently assessed	45.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

	Yes	
Designed AP ₅₀	5.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
Name	Efficacy	Power	Capacity	Count	
Lighting	75.00	10.00	750.00	40	

Summary for Input Data

24.0 Main Heating 1

SAP table		
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

32.0 Photovoltaic Unit

One Dwelling	
Export Capable Meter?	Yes
Connected To Dwelling	Yes
Diverter	No

Summary for Input Data



Battery Capacity [kWh]

8.00

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
4.62	East	45°	None Or Little		No	1.00		
3.30	West	45°	None Or Little		No	1.00		

34.0 Small-scale Hydro

None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating			A 100	A 100
Photovoltaic			0	0
Wind turbine	£5,000 - £20,000	£755	A 109	A 102

Energy Report



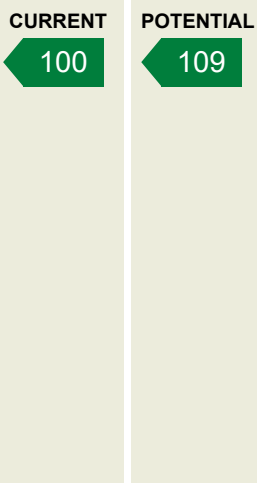
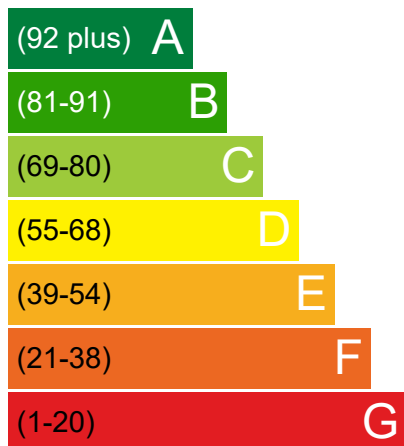
Dwelling Address	4 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5704-EA5705 (Green)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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.

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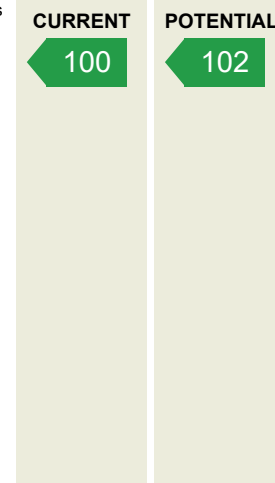
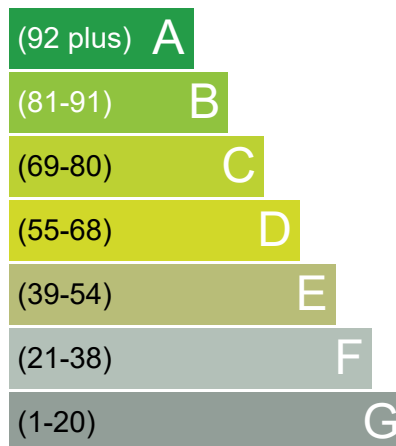
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	-3.69 kWh	-1937 kWh	-157 kg	-187.44 £	221 W/K
POTENTIAL	-21.18 kWh	-5513 kWh	-653 kg	-942.31 £	221 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£42	A 100			A 100
Wind turbine	£797	A 109	£5,000 - £20,000	£755	A 102

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 	£99	£99	
Heating 	£618	£618	
Hot Water 	£439	£439	
New Technologies e.g. Impact of PV	-(£1344)	-(£2099)	
TOTAL	-(£187)	-(£942)	

Estimated energy use and potential savings



Space Heating

1771

kWh per year



Water Heating

1588

kWh per year

About this document

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

Disclaimer

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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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5705	Plot Reference	EA5705 (Base)
Address	New Barn Farm 5 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.09 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.47 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	37.71 kWh _{PE} /m ²		
Dwelling primary energy	35.94 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	38.2 kWh/m ²		
Dwelling fabric energy efficiency	38.2 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	110.5	0.18
Exposed wall: Walls (2)	15	0.18
Exposed wall: Walls (3)	23	0.18
Ground floor: Ground Floor, Ground Floor	137	0.12
Exposed roof: Roof (1)	116	0.11
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	South West	N/A	1.3
Windows (NE), Windows	15.5	North East	0.7	1.3
Windows (NE), Windows	5	North East	0.7	1.3
Windows (SE), Windows	17	South East	0.7	1.3
Windows (SW), Windows	7	South West	0.7	1.3
Windows (SW), Windows	5	South West	0.7	1.3
Roof Windows (NE), Rooflights	2	North East	0.7	1.3
Roof Windows (SW), Rooflights	2	South West	0.7	1.3
Side Door, Front Door	2	North West	N/A	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	0.214	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	

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	219.3%
Emitter type	Both radiators and underfloor
Flow temperature	
System type	Air source heat pump
Manufacturer	
Model	
Commissioning	
Secondary heating system: N/A	
Fuel	N/A
Efficiency	N/A
Commissioning	

5 Hot water	
Cylinder/store - type: Cylinder	
Capacity	300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5705	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Base)	Plot Type Ref	EA-57
Plot Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	82 B	DER	3.47	TER	7.09
Environmental	96 A	% DER < TER			51.06
CO ₂ Emissions (t/year)	0.75	DFEE	38.19	TFEE	38.22
Compliance Check	See BREL	% DFEE < TFEE			0.08
% DPER < TPER	4.70	DPER	35.94	TPER	37.71

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	Southwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m ²	2.40 m
	1st Storey:	48.00 m	111.00 m ²	2.50 m

8.0 Living Area	65.20	m ²
-----------------	-------	----------------

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	110.50	0.00	None	43.50	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Gross Area(m ²)	Nett Area (m ²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m ² K)	Shelter Code	Shelter Factor	Kappa (kJ/m ² K)	Area (m ²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m ² K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	Manufacturer	Window	Double Low-E Soft 0.05			0.63		0.70	1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Door	Front Door	Wall	South West	2.00	

Summary for Input Data

Windows (NE)	Windows	Wall	North East	15.50	
Windows (NE)	Windows	Wall (dormer)	North East	5.00	
Windows (SE)	Windows	Wall	South East	17.00	
Windows (SW)	Windows	Wall	South West	7.00	
Windows (SW)	Windows	Wall (dormer)	South West	5.00	
Roof Windows (NE)	Rooflights	Roof (skeiling)	North East	2.00	45
Roof Windows (SW)	Rooflights	Roof (skeiling)	South West	2.00	45
Side Door	Front Door	Wall	North West	2.00	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	38.70	0.21	0.21	No
E3 Sill	Independently assessed	24.80	0.02	0.02	No
E4 Jamb	Independently assessed	49.50	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
Lighting	75.00	10.00	750.00	40

Summary for Input Data

24.0 Main Heating 1

SAP table	
Percentage of Heat	100.00 %
Fuel Type	Electricity
SAP Code	224
In Winter	219.30
In Summer	190.40
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in unheated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators and Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Unknown

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Cylinder Volume	300.00 L
Loss	2.00 kWh/day
Pipes insulation	Fully insulated primary pipework

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement SAP rating	Environmental Impact
Solar water heating			B 83	A 96

Summary for Input Data



Photovoltaic	£8,000 - £10,000	£309	B 85	A 97
Wind turbine	£5,000 - £20,000	£693	A 93	A 98

Energy Report



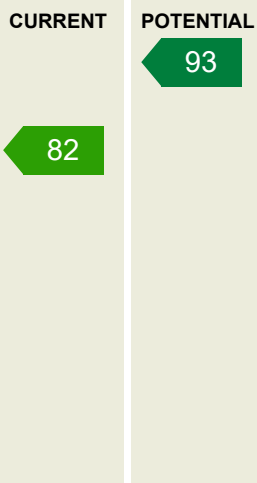
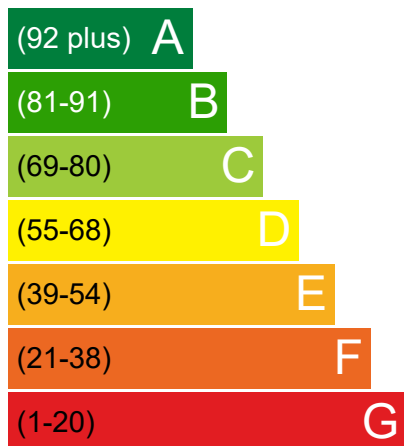
Dwelling Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5705-EA5705 (Base)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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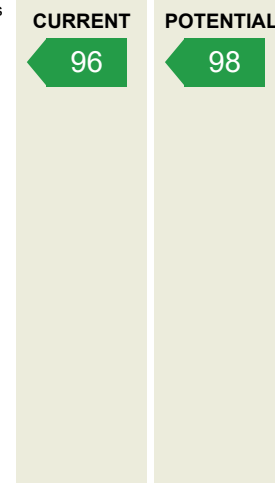
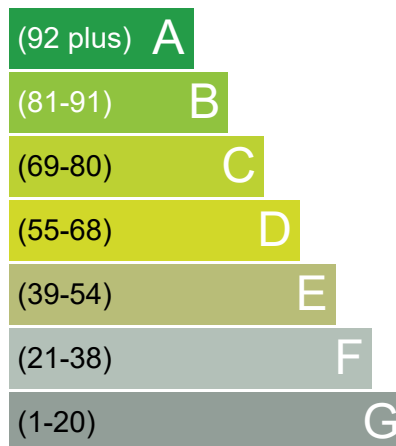
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	31.58 kWh	5042 kWh	754 kg	1395.00 £	228 W/K
POTENTIAL	9.59 kWh	1422 kWh	258 kg	393.44 £	228 W/K

Breakdown of property's energy performance

Each feature is assessed as one of the following:

Very Poor	Poor	Average	Good	Very Good
-----------	------	---------	------	-----------

Feature	Description	Energy Performance
Walls	Average thermal transmittance 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£96	B 83			A 96
Photovoltaic	£405	B 85	£8,000 - £10,000	£309	A 97

Wind turbine	£1097	 A 93	£5,000 - £20,000	£693	 A 98
--------------	-------	--	------------------	------	--

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 	£99	£99	
Heating 	£856	£856	
Hot Water 	£439	£439	
New Technologies e.g. Impact of PV	£0	-(£1002)	
TOTAL	£1395	£393	

Estimated energy use and potential savings



Space Heating

2631

kWh per year



Water Heating

1588

kWh per year

About this document

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

Disclaimer

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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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5705	Plot Reference	EA5705 (Lean)
Address	New Barn Farm 5 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.09 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.0 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	37.71 kWh _{PE} /m ²		
Dwelling primary energy	31.13 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	38.2 kWh/m ²		
Dwelling fabric energy efficiency	33.0 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	110.5	0.18
Exposed wall: Walls (2)	15	0.18
Exposed wall: Walls (3)	23	0.18
Ground floor: Ground Floor, Ground Floor	137	0.12
Exposed roof: Roof (1)	116	0.11
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	South West	N/A	1.3
Windows (NE), Windows	15.5	North East	1.0	1.3
Windows (NE), Windows	5	North East	1.0	1.3
Windows (SE), Windows	17	South East	1.0	1.3
Windows (SW), Windows	7	South West	1.0	1.3
Windows (SW), Windows	5	South West	1.0	1.3
Roof Windows (NE), Rooflights	2	North East	0.7	1.3
Roof Windows (SW), Rooflights	2	South West	0.7	1.3
Side Door, Front Door	2	North West	N/A	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	
3 Air permeability (better than typically expected values are flagged with a subsequent (!))				
Maximum permitted air permeability at 50Pa		8 m³/hm²		
Dwelling air permeability at 50Pa		5 m³/hm², Design value		OK
Air permeability test certificate reference				
4 Space heating				
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity				
Efficiency		219.3%		
Emitter type		Both radiators and underfloor		
Flow temperature				
System type		Air source heat pump		
Manufacturer				
Model				
Commissioning				
Secondary heating system: N/A				
Fuel		N/A		
Efficiency		N/A		
Commissioning				
5 Hot water				
Cylinder/store - type: Cylinder				
Capacity		300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5705	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Lean)	Plot Type Ref	EA-57
Plot Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	84 B	DER	3.00	TER	7.09
Environmental	97 A	% DER < TER			57.69
CO ₂ Emissions (t/year)	0.65	DFEE	32.99	TFEE	38.22
Compliance Check	See BREL	% DFEE < TFEE			13.69
% DPER < TPER	17.44	DPER	31.13	TPER	37.71

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	Southwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m²	2.40 m
	1st Storey:	48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	110.50	0.00	None	43.50	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data



Front Door	Front Door	Wall	South West	2.00	
Windows (NE)	Windows	Wall	North East	15.50	
Windows (NE)	Windows	Wall (dormer)	North East	5.00	
Windows (SE)	Windows	Wall	South East	17.00	
Windows (SW)	Windows	Wall	South West	7.00	
Windows (SW)	Windows	Wall (dormer)	South West	5.00	
Roof Windows (NE)	Rooflights	Roof (skeliling)	North East	2.00	45
Roof Windows (SW)	Rooflights	Roof (skeliling)	South West	2.00	45
Side Door	Front Door	Wall	North West	2.00	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	38.70	0.05	0.05	No
E3 Sill	Independently assessed	24.80	0.02	0.02	No
E4 Jamb	Independently assessed	49.50	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
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Summary for Input Data

Lighting 75.00 10.00 750.00 40

24.0 Main Heating 1

SAP table		
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

Ratings after improvement

Summary for Input Data



	Typical Cost	Typical savings per year	SAP rating	Environmental Impact
Solar water heating			B 85	A 97
Photovoltaic	£8,000 - £10,000	£306	B 87	A 97
Wind turbine	£5,000 - £20,000	£693	A 96	A 99

Energy Report



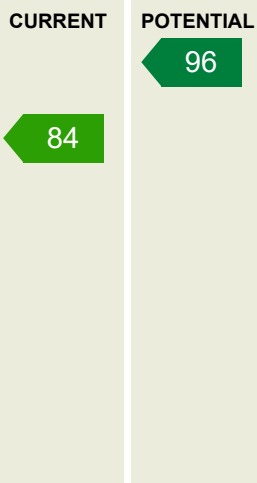
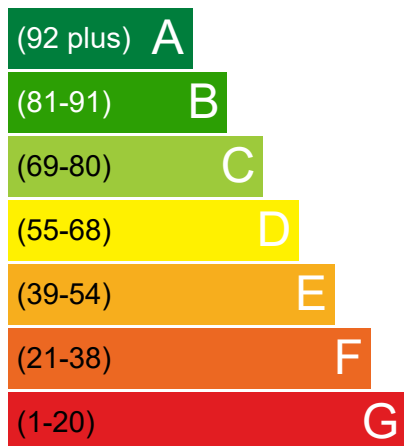
Dwelling Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5705-EA5705 (Lean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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

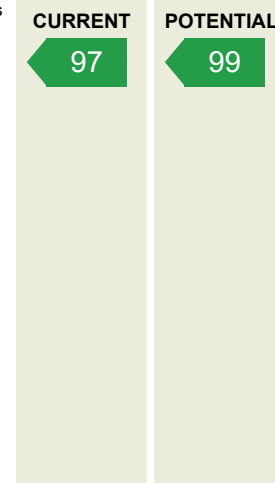
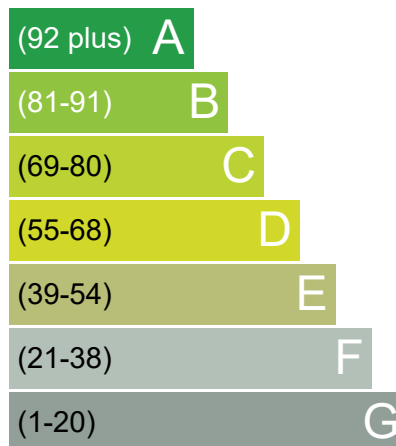
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	27.23 kWh	4355 kWh	649 kg	1204.95 £	221 W/K
POTENTIAL	5.31 kWh	746 kWh	154 kg	206.54 £	221 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£96	B 85			A 97
Photovoltaic	£402	B 87	£8,000 - £10,000	£306	A 97

Wind turbine	£1094	 A 96	£5,000 - £20,000	£693	 A 99
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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		£99	£99	
Heating		£666	£666	
Hot Water		£439	£439	
New Technologies e.g. Impact of PV		£0	-(£998)	
TOTAL		£1205	£207	

Estimated energy use and potential savings



Space Heating

1944

kWh per year



Water Heating

1588

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.

Building Regulations England Part L (BREL) Compliance Report

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

7 Lighting		
Minimum permitted light source efficacy	75 lm/W	
Lowest light source efficacy	75 lm/W	OK
External lights control	N/A	
8 Mechanical ventilation		
System type: Balanced whole-house mechanical ventilation with heat recovery		
Maximum permitted specific fan power	1.5 W/(l/s)	
Specific fan power	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
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		

Summary for Input Data

Plot Reference	EA5705	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Clean)	Plot Type Ref	EA-57
Plot Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	84 B	DER	3.00	TER	7.09
Environmental	97 A	% DER < TER			57.69
CO ₂ Emissions (t/year)	0.65	DFEE	32.99	TFEE	38.22
Compliance Check	See BREL	% DFEE < TFEE			13.69
% DPER < TPER	17.44	DPER	31.13	TPER	37.71

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	Southwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements				
	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	48.00 m	137.00 m²	2.40 m
		48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	110.50	0.00	None	43.50	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data

Front Door	Front Door	Wall	South West	2.00	
Windows (NE)	Windows	Wall	North East	15.50	
Windows (NE)	Windows	Wall (dormer)	North East	5.00	
Windows (SE)	Windows	Wall	South East	17.00	
Windows (SW)	Windows	Wall	South West	7.00	
Windows (SW)	Windows	Wall (dormer)	South West	5.00	
Roof Windows (NE)	Rooflights	Roof (skeliling)	North East	2.00	45
Roof Windows (SW)	Rooflights	Roof (skeliling)	South West	2.00	45
Side Door	Front Door	Wall	North West	2.00	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	38.70	0.05	0.05	No
E3 Sill	Independently assessed	24.80	0.02	0.02	No
E4 Jamb	Independently assessed	49.50	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
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Summary for Input Data

Lighting 75.00 10.00 750.00 40

24.0 Main Heating 1

SAP table		
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

Ratings after improvement

Summary for Input Data



	Typical Cost	Typical savings per year	SAP rating	Environmental Impact
Solar water heating			B 85	A 97
Photovoltaic	£8,000 - £10,000	£306	B 87	A 97
Wind turbine	£5,000 - £20,000	£693	A 96	A 99

Energy Report



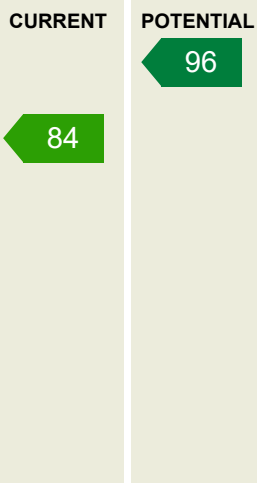
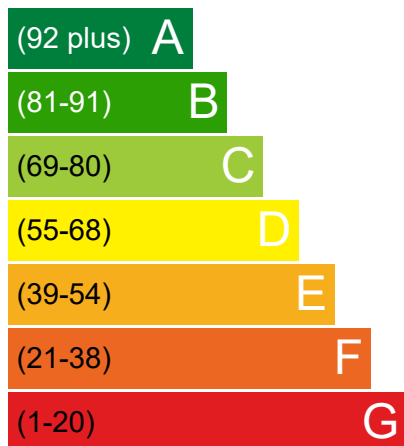
Dwelling Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5705-EA5705 (Clean)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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

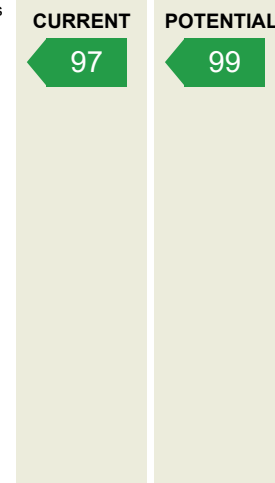
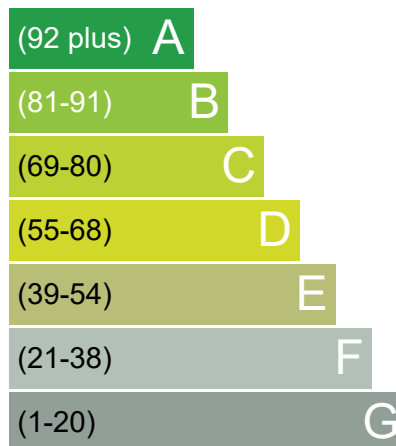
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	27.23 kWh	4355 kWh	649 kg	1204.95 £	221 W/K
POTENTIAL	5.31 kWh	746 kWh	154 kg	206.54 £	221 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£96	B 85			A 97
Photovoltaic	£402	B 87	£8,000 - £10,000	£306	A 97

Wind turbine	£1094	 A 96	£5,000 - £20,000	£693	 A 99
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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		£99	£99	
Heating		£666	£666	
Hot Water		£439	£439	
New Technologies e.g. Impact of PV		£0	-(£998)	
TOTAL		£1205	£207	

Estimated energy use and potential savings



Space Heating

1944

kWh per year



Water Heating

1588

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.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Thu 16 Jul 2026 12:05:39

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2026-07-16

Dwelling Details			
Assessment Type	As designed	Total Floor Area	248 m ²
Site Reference	EA5705	Plot Reference	EA5705 (Green)
Address	New Barn Farm 5 Bed Detached Capel Road, Rusper		

Client Details	
Name	.
Company	.
Address	39 Plovers Road, Horsham, RH13 5PD

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	7.09 kgCO ₂ /m ²
Dwelling carbon dioxide emission rate	0.16 kgCO ₂ /m ² OK

1b Target primary energy rate and dwelling primary energy

Target primary energy	37.71 kWh _{PE} /m ²
Dwelling primary energy	3.41 kWh _{PE} /m ² OK

1c Target fabric energy efficiency and dwelling fabric energy efficiency

Target fabric energy efficiency	38.2 kWh/m ²
Dwelling fabric energy efficiency	33.0 kWh/m ² OK

2a Fabric U-values

Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.18	Walls (1) (0.18)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.11	Roof (2) (0.13)	OK
Windows, doors, and roof windows	1.6	1.3	Front Door (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 ² K]
Exposed wall: Walls (1)	110.5	0.18
Exposed wall: Walls (2)	15	0.18
Exposed wall: Walls (3)	23	0.18
Ground floor: Ground Floor, Ground Floor	137	0.12
Exposed roof: Roof (1)	116	0.11
Exposed roof: Roof (2)	24	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]
Front Door, Front Door	2	South West	N/A	1.3
Windows (NE), Windows	15.5	North East	1.0	1.3
Windows (NE), Windows	5	North East	1.0	1.3
Windows (SE), Windows	17	South East	1.0	1.3
Windows (SW), Windows	7	South West	1.0	1.3
Windows (SW), Windows	5	South West	1.0	1.3
Roof Windows (NE), Rooflights	2	North East	0.7	1.3
Roof Windows (SW), Rooflights	2	South West	0.7	1.3
Side Door, Front Door	2	North West	N/A	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	0.05	
External wall	E3: Sill	Calculated by person with suitable expertise	0.02 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.015 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.053	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.001 (!)	
External wall	E10: Eaves (insulation at ceiling level)	Calculated by person with suitable expertise	0.056	
External wall	E12: Gable (insulation at ceiling level)	Calculated by person with suitable expertise	0.036 (!)	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.038 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.018 (!)	
External wall	E13: Gable (insulation at rafter level)	Calculated by person with suitable expertise	0.038 (!)	
3 Air permeability (better than typically expected values are flagged with a subsequent (!))				
Maximum permitted air permeability at 50Pa		8 m³/hm²		
Dwelling air permeability at 50Pa		5 m³/hm², Design value		OK
Air permeability test certificate reference				
4 Space heating				
Main heating system 1: Heat pump with radiators or underfloor heating - Electricity				
Efficiency		219.3%		
Emitter type		Both radiators and underfloor		
Flow temperature				
System type		Air source heat pump		
Manufacturer				
Model				
Commissioning				
Secondary heating system: N/A				
Fuel		N/A		
Efficiency		N/A		
Commissioning				
5 Hot water				
Cylinder/store - type: Cylinder				
Capacity		300 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	75 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	0.57 W/(l/s)	OK
Minimum permitted heat recovery efficiency	73%	
Heat recovery efficiency	80%	OK
Manufacturer/Model	MVHR (PCDB)	
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	5.28 kWp	
Orientation	North East	
Pitch	45°	
Overshading	None or very little	
Manufacturer		
MCS certificate		
Technology type: Photovoltaic system (2)		
Peak power	3.3 kWp	
Orientation	South West	
Pitch	45°	
Overshading	None or very little	
Manufacturer		
MCS certificate		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
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		

Summary for Input Data

Plot Reference	EA5705	Issued on Date	16/07/2026
Assessment Reference	EA5705 (Green)	Plot Type Ref	EA-57
Plot Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex	SAP Version	10.2

SAP Rating	99 A	DER	0.16	TER	7.09
Environmental	100 A	% DER < TER			97.74
CO ₂ Emissions (t/year)	-0.15	DFEE	32.99	TFEE	38.22
Compliance Check	See BREL	% DFEE < TFEE			13.69
% DPER < TPER	90.95	DPER	3.41	TPER	37.71

Assessor Details	Mr. Joe Solti	Assessor ID	5122-0001
Client	LDV Architecture, .		

SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	Southwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Enter TMP value	
Thermal Mass	200.00	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	Yes	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	48.00 m	137.00 m²	2.40 m
	1st Storey:	48.00 m	111.00 m²	2.50 m

8.0 Living Area	65.20	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.18		154.00	110.50	0.00	None	43.50	Enter Gross Area
Wall (dormer)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		25.00	15.00	0.00	None	10.00	Enter Gross Area
Wall (ashlar)	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18		23.00	23.00	0.00	None	0.00	Enter Gross Area

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Roof	External Plane Roof	Plasterboard, insulated at ceiling level	0.11	9.00	116.00	116.00	None	0.00	Enter Gross Area	0.00
Roof (skeiling)	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	28.00	24.00	None	0.00	Enter Gross Area	4.00

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	137.00

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Front Door	Manufacturer	Half Glazed Door	Double Low-E Soft 0.05			0.63		0.70	1.30
Windows	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.63			1.30
Rooflights	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.30

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
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Summary for Input Data



Front Door	Front Door	Wall	South West	2.00	
Windows (NE)	Windows	Wall	North East	15.50	
Windows (NE)	Windows	Wall (dormer)	North East	5.00	
Windows (SE)	Windows	Wall	South East	17.00	
Windows (SW)	Windows	Wall	South West	7.00	
Windows (SW)	Windows	Wall (dormer)	South West	5.00	
Roof Windows (NE)	Rooflights	Roof (skeliling)	North East	2.00	45
Roof Windows (SW)	Rooflights	Roof (skeliling)	South West	2.00	45
Side Door	Front Door	Wall	North West	2.00	

14.0 Conservatory

15.0 Draught Proofing

 %

16.0 Draught Lobby

17.0 Thermal Bridging

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	38.70	0.05	0.05	No
E3 Sill	Independently assessed	24.80	0.02	0.02	No
E4 Jamb	Independently assessed	49.50	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	47.90	0.05	0.05	No
E6 Intermediate floor within a dwelling	Independently assessed	47.90	0.00	0.00	No
E10 Eaves (insulation at ceiling level)	Independently assessed	4.00	0.06	0.06	No
E12 Gable (insulation at ceiling level)	Independently assessed	17.50	0.04	0.04	No
E16 Corner (normal)	Independently assessed	34.40	0.04	0.04	No
E11 Eaves (insulation at rafter level)	Independently assessed	20.50	0.02	0.02	No
E13 Gable (insulation at rafter level)	Independently assessed	8.00	0.04	0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Mechanical Ventilation data Type	Data Sheet
Type	Balanced mechanical ventilation with heat recovery
Manufacturer SFP	0.57
Duct Type	Rigid
MVHR Efficiency	80.00
Wet Rooms	4
Brand, Model	MVHR (PCDB)
SFP from Installer Commissioning Certificate	Yes
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0
Number of chimneys/flues attached to closed fire	0
Number of flues attached to solid fuel boiler	0
Number of flues attached to other heater	0
Number of blocked chimneys	0
Number of intermittent extract fans	0
Number of passive vents	0
Number of flueless gas fires	0

21.0 Fixed Cooling System

22.0 Pressure Testing

Designed AP₅₀ m³/(h.m²) @ 50 Pa

Test Method

22.0 Lighting

No Fixed Lighting

Name	Efficacy	Power	Capacity	Count
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Summary for Input Data

Lighting 75.00 10.00 750.00 40

24.0 Main Heating 1

SAP table		
Percentage of Heat	100.00	%
Fuel Type	Electricity	
SAP Code	224	
In Winter	219.30	
In Summer	190.40	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in unheated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators and Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Unknown	

25.0 Main Heating 2

None

26.0 Heat Networks

None

27.0 Secondary Heating

None

28.0 Water Heating

Water Heating	Main Heating 1
SAP Code	901
Flue Gas Heat Recovery System	No
Waste Water Heat Recovery Instantaneous System 1	No
Waste Water Heat Recovery Instantaneous System 2	No
Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Cold Water Source	From mains
Bath Count	1
Supplementary Immersion	No
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Showers	Unknown	8.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

Hot Water Cylinder		
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	300.00	L
Loss	2.00	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store

None

32.0 Photovoltaic Unit

One Dwelling	
Export Capable Meter?	Yes
Connected To Dwelling	Yes

Summary for Input Data



Diverter	No										
Battery Capacity [kWh]	8.00										
PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer			
5.28	North East	45°	None Or Little		No	1.00					
3.30	South West	45°	None Or Little		No	1.00					

34.0 Small-scale Hydro

None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
Solar water heating			A 100	A 100
Photovoltaic			0	0
Wind turbine	£5,000 - £20,000	£755	A 109	A 102

Energy Report



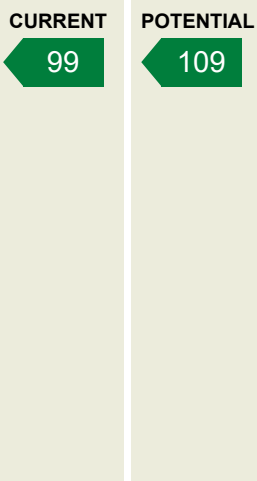
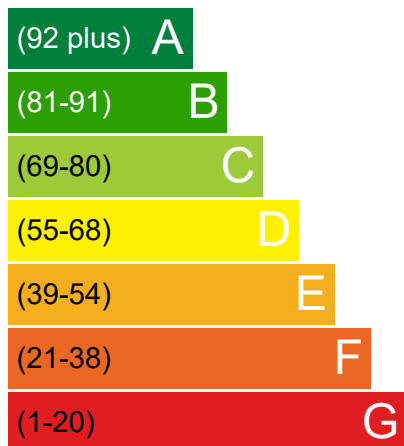
Dwelling Address	5 Bed Detached, New Barn Farm, Capel Road, Rusper, West Sussex
Reference	EA5705-EA5705 (Green)
SAP Version	10.2
Assessment Date	10/06/2026
Submission Date	
Property Type	House, Detached
Total Floor Area	248

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

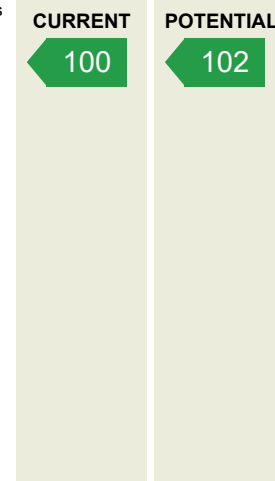
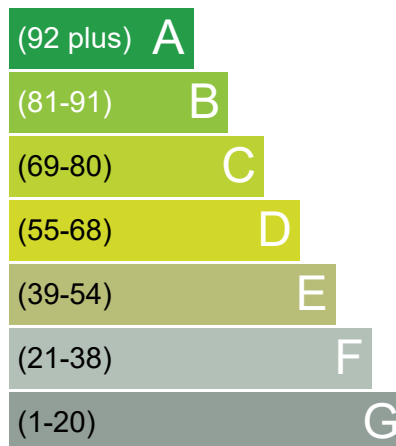
Energy Efficiency Rating

Most energy efficient - lower running costs



Carbon Dioxide (CO2) Emissions Rating

Very environmentally friendly - lower CO2 emissions



Additional ratings for your home

Energy Report

	Primary Energy	Energy	Carbon	Cost	HTC
CURRENT	-2.99 kWh	-1897 kWh	-146 kg	-156.36 £	221 W/K
POTENTIAL	-20.47 kWh	-5472 kWh	-642 kg	-911.23 £	221 W/K

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 0.18 W/m ² K	Very Good
Roof	Average thermal transmittance 0.11 W/m ² K	Very Good
Floor	Average thermal transmittance 0.12 W/m ² K	Very Good
Windows	High performance glazing	Good
Main heating	Air source heat pump, radiators and underfloor, electric	Average
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	£40	A 100			A 100
Wind turbine	£795	A 109	£5,000 - £20,000	£755	A 102

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 	£99	£99	
Heating 	£666	£666	
Hot Water 	£439	£439	
New Technologies e.g. Impact of PV	-(£1361)	-(£2116)	
TOTAL	-(£156)	-(£911)	

Estimated energy use and potential savings



Space Heating

1944

kWh per year



Water Heating

1588

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.

Part G Compliance Report

PROJECT DETAILS

Project Reference: EA5701G
Client: PK Trading Ltd
Property: 2 Bed Dwelling
New Barn Farm, Capel Road
Rusper

Local Authority: Horsham District Council
Agent: LDV Architecture

Assessor: Joe Solti
Address: Therm Energy Ltd
Contact: 01903 884357
Software: G-Calc 2015 version 3.0.2
Prepared on: 16-Jul-26

RESULT SUMMARY

By following the Government's national calculation methodology for assessing water efficiency in new dwellings this 2 bed dwelling, as designed, achieves a water consumption of 110 litres per person per day.

Compliance with Building Regulation 36(1) has been demonstrated.

Table 1: The Water Calculator for New Dwellings

Installation Type	Unit of measure	Value	Use factor	Fixed use	litres/person/day
WC(single flush)	Flush volume (litres)		4.42	0.00	0
WC(dual flush)	Full flush vol.	6	1.46	0.00	8.76
	Part flush vol.	3	2.96	0.00	8.88
WC(multiple fittings)	Average effective Flush vol. (litres)		4.42	0.00	0
Taps(excl. Kitchen)	Flow rate (litres/min)	6	1.58	1.58	11.06
Bath (shower also present)	Capacity to overflow (litres)	180	0.11	0.00	19.8
Shower (bath also present)	Flow rate (litres/min)	8	4.37	0.00	34.96
Bath only	Capacity to overflow (litres)	0	0.50	0.00	0
Shower only	Flow rate (litres/minute)	0	5.6	0.00	0
Kitchen sink taps	Flow rate (litres/minute)	6	0.44	10.36	13
Washing Machine	litres/kg dry load	7.1	2.1	0.0	14.91
Dishwasher	litres/place setting	1.1	3.6	0.0	3.96
Waste disposal	litres/use	0	3.08	0.0	0
Water softener	litres/person/day	0	1.0	0.0	0
Total calculated use (litres/person/day)					115.33
Contribution from greywater (litres/person/day)					-
Contribution from rainwater (litres/person/day)					-
Normalisation factor					0.91
Total Water Consumption. Code for Sustainable Homes (litres/person/day)					105
External water use					5.0
Total Water Consumption. (36(1)) (litres/person/day)					110

Summary of fitting types "As Designed"			
Type	Description	Flow rates, volumes etc.	Qty
Taps	Taps	6 litres/min	1
Baths	Baths	180 litres to overflow	1
Dishwashers	Dishwasher	1.1 litres/place	1
Washing Machines	Washing Machine	7.1 litres/kg	1
Showers	Showers	8 litres/min	1
WC's	Toilets	6 / 3 litres flush vols.	1
Kitchen/Utility taps	Taps	6 litres/min	1

The lower section of this table is to be filled in by the builder prior to completion. The descriptions, values and quantities should represent the 'as built' specification. Please note the values above represent design values and should not be exceeded without prior consultation with the agent/designer (LDV Architecture).
The completed table should be returned to the assessor: Joe Solti (Contact: 01903 884357).

Declaration of fitting types "As Built"			
Type	Make and Model	Flow rates, volumes etc.	Qty
Taps			
Baths			
Dishwashers			
Washing Machines			
Showers			
WC's			
Kitchen/Utility taps			

Project ref: EA5701G - 2 Bed Dwelling

The above declaration of fittings, values and quantities is a true reflection of those installed on this project.

Name: Signature: Date:

-----End of Report-----

Part G Compliance Report

PROJECT DETAILS

Project Reference: EA5702G
Client: PK Trading Ltd
Property: 3 Bed Dwelling
New Barn Farm, Capel Road
Rusper

Local Authority: Horsham District Council
Agent: LDV Architecture

Assessor: Joe Solti
Address: Therm Energy Ltd
Contact: 01903 884357
Software: G-Calc 2015 version 3.0.2
Prepared on: 16-Jul-26

RESULT SUMMARY

By following the Government's national calculation methodology for assessing water efficiency in new dwellings this 3 bed dwelling, as designed, achieves a water consumption of 110 litres per person per day.

Compliance with Building Regulation 36(1) has been demonstrated.

Table 1: The Water Calculator for New Dwellings

Installation Type	Unit of measure	Value	Use factor	Fixed use	litres/person/day
WC(single flush)	Flush volume (litres)		4.42	0.00	0
WC(dual flush)	Full flush vol.	6	1.46	0.00	8.76
	Part flush vol.	3	2.96	0.00	8.88
WC(multiple fittings)	Average effective Flush vol. (litres)		4.42	0.00	0
Taps(excl. Kitchen)	Flow rate (litres/min)	6	1.58	1.58	11.06
Bath (shower also present)	Capacity to overflow (litres)	180	0.11	0.00	19.8
Shower (bath also present)	Flow rate (litres/min)	8	4.37	0.00	34.96
Bath only	Capacity to overflow (litres)	0	0.50	0.00	0
Shower only	Flow rate (litres/minute)	0	5.6	0.00	0
Kitchen sink taps	Flow rate (litres/minute)	6	0.44	10.36	13
Washing Machine	litres/kg dry load	7.1	2.1	0.0	14.91
Dishwasher	litres/place setting	1.1	3.6	0.0	3.96
Waste disposal	litres/use	0	3.08	0.0	0
Water softener	litres/person/day	0	1.0	0.0	0
Total calculated use (litres/person/day)					115.33
Contribution from greywater (litres/person/day)					-
Contribution from rainwater (litres/person/day)					-
Normalisation factor					0.91
Total Water Consumption. Code for Sustainable Homes (litres/person/day)					105
External water use					5.0
Total Water Consumption. (36(1)) (litres/person/day)					110

Summary of fitting types "As Designed"			
Type	Description	Flow rates, volumes etc.	Qty
Taps	Taps	6 litres/min	1
Baths	Baths	180 litres to overflow	1
Dishwashers	Dishwasher	1.1 litres/place	1
Washing Machines	Washing Machine	7.1 litres/kg	1
Showers	Showers	8 litres/min	1
WC's	Toilets	6 / 3 litres flush vols.	1
Kitchen/Utility taps	Taps	6 litres/min	1

The lower section of this table is to be filled in by the builder prior to completion. The descriptions, values and quantities should represent the 'as built' specification. Please note the values above represent design values and should not be exceeded without prior consultation with the agent/designer (LDV Architecture).
The completed table should be returned to the assessor: Joe Solti (Contact: 01903 884357).

Declaration of fitting types "As Built"			
Type	Make and Model	Flow rates, volumes etc.	Qty
Taps			
Baths			
Dishwashers			
Washing Machines			
Showers			
WC's			
Kitchen/Utility taps			

Project ref: EA5702G - 3 Bed Dwelling

The above declaration of fittings, values and quantities is a true reflection of those installed on this project.

Name: Signature: Date:

-----End of Report-----

Part G Compliance Report

PROJECT DETAILS

Project Reference: EA5703G
Client: PK Trading Ltd
Property: 4 Bed Dwelling
New Barn Farm, Capel Road
Rusper

Local Authority: Horsham District Council
Agent: LDV Architecture

Assessor: Joe Solti
Address: Therm Energy Ltd
Contact: 01903 884357
Software: G-Calc 2015 version 3.0.2
Prepared on: 16-Jul-26

RESULT SUMMARY

By following the Government's national calculation methodology for assessing water efficiency in new dwellings this 4 bed dwelling, as designed, achieves a water consumption of 110 litres per person per day.

Compliance with Building Regulation 36(1) has been demonstrated.

Table 1: The Water Calculator for New Dwellings

Installation Type	Unit of measure	Value	Use factor	Fixed use	litres/person/day
WC(single flush)	Flush volume (litres)		4.42	0.00	0
WC(dual flush)	Full flush vol.	6	1.46	0.00	8.76
	Part flush vol.	3	2.96	0.00	8.88
WC(multiple fittings)	Average effective Flush vol. (litres)		4.42	0.00	0
Taps(excl. Kitchen)	Flow rate (litres/min)	6	1.58	1.58	11.06
Bath (shower also present)	Capacity to overflow (litres)	180	0.11	0.00	19.8
Shower (bath also present)	Flow rate (litres/min)	8	4.37	0.00	34.96
Bath only	Capacity to overflow (litres)	0	0.50	0.00	0
Shower only	Flow rate (litres/minute)	0	5.6	0.00	0
Kitchen sink taps	Flow rate (litres/minute)	6	0.44	10.36	13
Washing Machine	litres/kg dry load	7.1	2.1	0.0	14.91
Dishwasher	litres/place setting	1.1	3.6	0.0	3.96
Waste disposal	litres/use	0	3.08	0.0	0
Water softener	litres/person/day	0	1.0	0.0	0
Total calculated use (litres/person/day)					115.33
Contribution from greywater (litres/person/day)					-
Contribution from rainwater (litres/person/day)					-
Normalisation factor					0.91
Total Water Consumption. Code for Sustainable Homes (litres/person/day)					105
External water use					5.0
Total Water Consumption. (36(1)) (litres/person/day)					110

Summary of fitting types "As Designed"			
Type	Description	Flow rates, volumes etc.	Qty
Taps	Taps	6 litres/min	1
Baths	Baths	180 litres to overflow	1
Dishwashers	Dishwasher	1.1 litres/place	1
Washing Machines	Washing Machine	7.1 litres/kg	1
Showers	Showers	8 litres/min	1
WC's	Toilets	6 / 3 litres flush vols.	1
Kitchen/Utility taps	Taps	6 litres/min	1

The lower section of this table is to be filled in by the builder prior to completion. The descriptions, values and quantities should represent the 'as built' specification. Please note the values above represent design values and should not be exceeded without prior consultation with the agent/designer (LDV Architecture).
The completed table should be returned to the assessor: Joe Solti (Contact: 01903 884357).

Declaration of fitting types "As Built"			
Type	Make and Model	Flow rates, volumes etc.	Qty
Taps			
Baths			
Dishwashers			
Washing Machines			
Showers			
WC's			
Kitchen/Utility taps			

Project ref: EA5703G - 4 Bed Dwelling

The above declaration of fittings, values and quantities is a true reflection of those installed on this project.

Name: Signature: Date:

-----End of Report-----