

**KG Designs**

Longacre
Bentons Lane
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Horsham
RH13 8NW

Therm Energy Limited

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Our Ref : DE-04

Sent By : E-Mail

20 May 2025

Dear Dave

ENERGY STATEMENT (PLANNING)

Report By :

Joe Solti Accredited Assessor

Further to receipt of drawings, we are pleased to present our report as follows.

Development Details

Site Location :

Sunnyside, Bentons Lane, Horsham RH13 8NW

Development :

1 New Detached 4 Bedroom Dwelling (Replacement Dwelling)

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

DE-04

Site Location :

Sunnyside, Bentons Lane, Horsham RH13 8NW

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

- (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.

DE-04

Site Location :	Sunnyside, Bentons Lane, Horsham RH13 8NW
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BASELINE CO2

Calculations (SAP) :	Part L1A Compliant
Total Emissions :	3.53 kg CO2 per m2
Total Emissions :	1,006.05 kg CO2 per year

BE LEAN CO2

Calculations (SAP) :	Energy Efficiency Measures
Total Emissions :	3.52 kg CO2 per m2
Total Emissions :	1,003.20 kg CO2 per year
CO2 Saving :	2.85 kg CO2 per year = 0.28 %

BE CLEAN CO2

Calculations (SAP) :	Heat Networks (Not Available)
Total Emissions :	3.52 kg CO2 per m2
Total Emissions :	1,003.20 kg CO2 per year
CO2 Saving :	0.00 kg CO2 per year = 0.00 %

BE GREEN CO2

Calculations (SAP) :	Renewables (Solar PV - min 2.7kW with export capable meter)
Total Emissions :	2.47 kg CO2 per m2
Total Emissions :	703.95 kg CO2 per year
CO2 Saving :	299.25 kg CO2 per year = 29.83 %

DE-04

Site Location :

Sunnyside, Bentons Lane, Horsham RH13 8NW

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).

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

Solar PV (min 2.7kW) is then added to 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 Calculation attached to this report.

Construction and Insulation

<u>Element</u>	<u>U-Value</u> (W/m ² K)
<u>Exposed Wall</u> (brick) 102.5mm facing brick outer leaf + 50mm residual (clear) cavity + 60mm PIR insulation + 100mm standard aircrete 3.6N block inner leaf + plaster or plasterboard on dabs internal finish.	0.22
<u>Exposed Wall</u> (clad) Cladding + timber battens + 9mm external grade plywood + timber frame (100mm PIR insulation between) + 40mm PIR insulation to inside face of frame + 12.5mm plasterboard.	0.17
<u>Ground Floor</u> 75mm screed + 150mm PIR insulation + suspended concrete beam and block floor.	0.12
<u>Roof</u> 120mm PIR insulation (between rafters/joists) + 40mm PIR insulation (under rafters/joists) + battens + plasterboard.	0.15
<u>Windows & Doors</u> PVC-u frame double-glazed + 16mm cavity (argon gas fill) + soft coat low-E glass + warm edge spacer, or similar to achieve U-value of 1.20W/m ² K (or better).	1.20

Heating, Ventilation & RenewablesMain Heating System

Electric air source heat pump (ground floor = underfloor heating, first floor = radiators). MCS installer.

Water Heating

From electric air source heat pump. Hot water cylinder (factory PIR insulation, heat loss TBC kWh/day) + thermostat.

Heating Controls

Time and temperature zoned heating controls.

Ventilation

Background ventilators + intermittent extract fans (Approved Document F1, 2010).

Solar PV

Solar PV panels = 2.70 kW/peak, on south-facing roof of garage (export capable meter).

OtherDetailing

Block/insulation construction details (limiting thermal bridging and air leakage) fully adopted in accordance with Recognised Construction Details (RCD).

Lighting

Low energy lighting with minimum luminous efficacy of 75 light source lumens/circuit-watt (per light fitting).

Air TightnessDesign air permeability is 5m³/h/m² at 50 Pa - to be achieved by air pressure test.

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 20 May 2025 12:11:37

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2025-05-20

Dwelling Details			
Assessment Type	As designed	Total Floor Area	285 m ²
Site Reference	DE0401	Plot Reference	DE0401 (BASE)
Address	Sunnyside Bentons Lane, Horsham, RH13 8NW		

Client Details	
Name	.
Company	KG Designs
Address	Longacre, Bentons Lane, Dial Post, Horsham, RH13 8NW

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	6.98 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.53 kgCO ₂ /m ²		OK

1b Target primary energy rate and dwelling primary energy			
Target primary energy	37.25 kWh _{PE} /m ²		
Dwelling primary energy	36.45 kWh _{PE} /m ²		OK

1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	38.4 kWh/m ²		
Dwelling fabric energy efficiency	38.3 kWh/m ²		OK

2a Fabric U-values				
Element	Maximum permitted average U-Value [W/m ² K]	Dwelling average U-Value [W/m ² K]	Element with highest individual U-Value	
External walls	0.26	0.19	Walls (1) (0.22)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	1.6	1.2	Front Door (1.2)	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	0.22
Exposed wall: Walls (2)	116	0.17
Ground floor: Ground Floor, Ground Floor	152	0.12
Exposed roof: Roof (1)	147	0.15
Exposed roof: Roof (2)	13	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Doors	2	North	N/A	1.2
Rear Door, Doors	2	South	N/A	1.2
Windows (N), Windows	9	North	0.7	1.2
Windows (N), Windows	4.5	North	0.7	1.2
Windows (S), Windows	16.5	South	0.7	1.2
Windows (S), Windows	11.5	South	0.7	1.2
Windows (E), Windows	4	East	0.7	1.2
Windows (E), Windows	2	East	0.7	1.2
Windows (W), Windows	1.5	West	0.7	1.2

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

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.194	
External wall	E3: Sill	Calculated by person with suitable expertise	0.021 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.016 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.054	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.008 (!)	
External wall	E15: Flat roof with parapet	SAP table default	0.3	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.045	

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	5.2 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: Open fire in grate	
Fuel	Dual fuel appliance (mineral and wood)
Efficiency	37.0%
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

5 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: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.		
Signed: Name:	Assessor ID: Date:	
b. Client Declaration		
N/A		

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 20 May 2025 12:12:03

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2025-05-20

Dwelling Details			
Assessment Type	As designed	Total Floor Area	285 m ²
Site Reference	DE0401	Plot Reference	DE0402 (BE LEAN)
Address	Sunnyside Bentons Lane, Horsham, RH13 8NW		

Client Details	
Name	.
Company	KG Designs
Address	Longacre, Bentons Lane, Dial Post, Horsham, RH13 8NW

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	6.98 kgCO ₂ /m ²
Dwelling carbon dioxide emission rate	3.52 kgCO ₂ /m ² OK

1b Target primary energy rate and dwelling primary energy

Target primary energy	37.25 kWh _{PE} /m ²
Dwelling primary energy	36.34 kWh _{PE} /m ² OK

1c Target fabric energy efficiency and dwelling fabric energy efficiency

Target fabric energy efficiency	38.4 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	0.19	Walls (1) (0.22)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	1.6	1.2	Front Door (1.2)	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	0.22
Exposed wall: Walls (2)	116	0.17
Ground floor: Ground Floor, Ground Floor	152	0.12
Exposed roof: Roof (1)	147	0.15
Exposed roof: Roof (2)	13	0.15

2c Openings (better than typically expected values are flagged with a subsequent (!))

Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Doors	2	North	N/A	1.2
Rear Door, Doors	2	South	N/A	1.2
Windows (N), Windows	9	North	0.7	1.2
Windows (N), Windows	4.5	North	0.7	1.2
Windows (S), Windows	16.5	South	0.7	1.2
Windows (S), Windows	11.5	South	0.7	1.2
Windows (E), Windows	4	East	0.7	1.2
Windows (E), Windows	2	East	0.7	1.2
Windows (W), Windows	1.5	West	0.7	1.2

2d Thermal bridging (better than typically expected values are flagged with a subsequent (!))

Building part 1: Thermal bridging calculated from linear thermal transmittances for each junction

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.194	
External wall	E3: Sill	Calculated by person with suitable expertise	0.021 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.016 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.054	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.008 (!)	
External wall	E15: Flat roof with parapet	SAP table default	0.3	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.045	

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: Open fire in grate

Fuel	Dual fuel appliance (mineral and wood)
Efficiency	37.0%
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: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
This declaration by the assessor is confirmation that the contents of this BREL Compliance Report are a true and accurate reflection based upon the design information submitted for this dwelling for the purpose of carrying out the "As designed" assessment, and that the supporting documentary evidence (SAP Conventions, Appendix 1 (documentary evidence) schedules the minimum documentary evidence required) has been reviewed in the course of preparing this BREL Compliance Report.		
Signed: Name:	Assessor ID: Date:	
b. Client Declaration		
N/A		

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 20 May 2025 12:12:28

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2025-05-20

Dwelling Details			
Assessment Type	As designed	Total Floor Area	285 m ²
Site Reference	DE0401	Plot Reference	DE0403 (BE CLEAN)
Address	Sunnyside Bentons Lane, Horsham, RH13 8NW		

Client Details	
Name	.
Company	KG Designs
Address	Longacre, Bentons Lane, Dial Post, Horsham, RH13 8NW

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	6.98 kgCO ₂ /m ²		
Dwelling carbon dioxide emission rate	3.52 kgCO ₂ /m ²		OK
1b Target primary energy rate and dwelling primary energy			
Target primary energy	37.25 kWh _{PE} /m ²		
Dwelling primary energy	36.34 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	38.4 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	0.19	Walls (1) (0.22)	OK
Party walls	0.2	N/A	N/A	N/A
Curtain walls	1.6	N/A	N/A	N/A
Floors	0.18	0.12	Ground Floor (0.12)	OK
Roofs	0.16	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	1.6	1.2	Front Door (1.2)	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	0.22
Exposed wall: Walls (2)	116	0.17
Ground floor: Ground Floor, Ground Floor	152	0.12
Exposed roof: Roof (1)	147	0.15
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2c Openings (better than typically expected values are flagged with a subsequent (!))				
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Windows (N), Windows	4.5	North	0.7	1.2
Windows (S), Windows	16.5	South	0.7	1.2
Windows (S), Windows	11.5	South	0.7	1.2
Windows (E), Windows	4	East	0.7	1.2
Windows (E), Windows	2	East	0.7	1.2
Windows (W), Windows	1.5	West	0.7	1.2

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

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.194	
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External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.045	

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: Open fire in grate	
Fuel	Dual fuel appliance (mineral and wood)
Efficiency	37.0%
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

5 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: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
Commissioning		
9 Local generation		
N/A		
10 Heat networks		
N/A		
11 Supporting documentary evidence		
N/A		
12 Declarations		
a. Assessor Declaration		
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Signed: Name:	Assessor ID: Date:	
b. Client Declaration		
N/A		

Building Regulations England Part L (BREL) Compliance Report

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

Date: Tue 20 May 2025 12:12:54

Project Information			
Assessed By	Joe Solti	Building Type	House, Detached
OCDEA Registration	EES/003578	Assessment Date	2025-05-20

Dwelling Details			
Assessment Type	As designed	Total Floor Area	285 m ²
Site Reference	DE0401	Plot Reference	DE0404 (BE GREEN)
Address	Sunnyside Bentons Lane, Horsham, RH13 8NW		

Client Details	
Name	.
Company	KG Designs
Address	Longacre, Bentons Lane, Dial Post, Horsham, RH13 8NW

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Target primary energy	37.25 kWh _{PE} /m ²		
Dwelling primary energy	27.81 kWh _{PE} /m ²		OK
1c Target fabric energy efficiency and dwelling fabric energy efficiency			
Target fabric energy efficiency	38.4 kWh/m ²		
Dwelling fabric energy efficiency	38.2 kWh/m ²		OK

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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	0.15	Roof (1) (0.15)	OK
Windows, doors, and roof windows	1.6	1.2	Front Door (1.2)	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	0.22	
Exposed wall: Walls (2)	116	0.17	
Ground floor: Ground Floor, Ground Floor	152	0.12	
Exposed roof: Roof (1)	147	0.15	
Exposed roof: Roof (2)	13	0.15	

2c Openings (better than typically expected values are flagged with a subsequent (!))				
Name	Area [m ²]	Orientation	Frame factor	U-Value [W/m ² K]
Front Door, Doors	2	North	N/A	1.2
Rear Door, Doors	2	South	N/A	1.2
Windows (N), Windows	9	North	0.7	1.2
Windows (N), Windows	4.5	North	0.7	1.2
Windows (S), Windows	16.5	South	0.7	1.2
Windows (S), Windows	11.5	South	0.7	1.2
Windows (E), Windows	4	East	0.7	1.2
Windows (E), Windows	2	East	0.7	1.2
Windows (W), Windows	1.5	West	0.7	1.2

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

Main element	Junction detail	Source	Psi value [W/mK]	Drawing / reference
External wall	E2: Other lintels (including other steel lintels)	Calculated by person with suitable expertise	0.194	
External wall	E3: Sill	Calculated by person with suitable expertise	0.021 (!)	
External wall	E4: Jamb	Calculated by person with suitable expertise	0.016 (!)	
External wall	E5: Ground floor (normal)	Calculated by person with suitable expertise	0.054	
External wall	E6: Intermediate floor within a dwelling	Calculated by person with suitable expertise	0.004 (!)	
External wall	E11: Eaves (insulation at rafter level)	Calculated by person with suitable expertise	0.008 (!)	
External wall	E15: Flat roof with parapet	SAP table default	0.3	
External wall	E16: Corner (normal)	Calculated by person with suitable expertise	0.045	

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: Open fire in grate	
Fuel	Dual fuel appliance (mineral and wood)
Efficiency	37.0%
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: N/A		
Maximum permitted specific fan power	N/A	
Specific fan power	N/A	N/A
Minimum permitted heat recovery efficiency	N/A	
Heat recovery efficiency	N/A	N/A
Manufacturer/Model		
Commissioning		
9 Local generation		
Technology type: Photovoltaic system (1)		
Peak power	2.7 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		

Part G Compliance Report

PROJECT DETAILS

Project Reference: DE0401G
Client:
Property: Sunnyside
Bentons Lane
Horsham RH13 8NW

Local Authority: Horsham District Council
Agent: KG Designs

Assessor: Joe Solti
Address: Therm Energy Ltd
Contact: 01903 884357
Software: G-Calc 2015 version 3.0.2
Prepared on: 20-May-25

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 109.4 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	2.1	0.0	14.7
Dishwasher	litres/place setting	1	3.6	0.0	3.6
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)					114.76
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)					104.4
External water use					5.0
Total Water Consumption. (36(1)) (litres/person/day)					109.4

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 litres/place	1
Washing Machines	Washing Machine	7 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 (KG Designs).
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: DE0401G - Sunnyside

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

Name: Signature: Date:

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