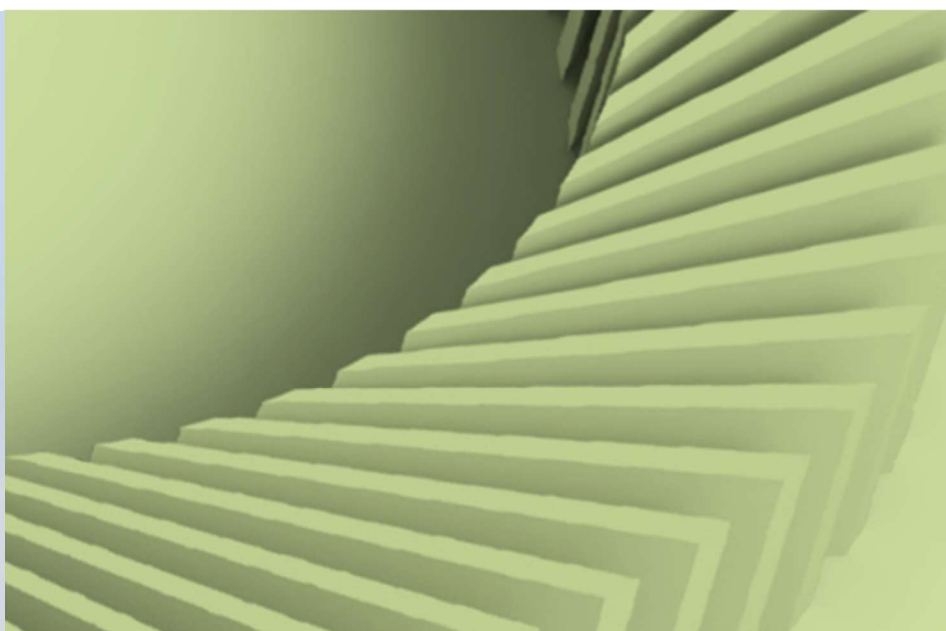


Westchurch Homes

Dumers Lane, Radcliffe

Energy Statement – REV B

August 2025



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Document Title:	Energy Statement – REV B
Date:	August 2025
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Document Control Sheet

Rev	Status	Prepared By	Reviewed By	Issue Date
-	First Issue	BM	JRo	19.11.2024
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1.0 Executive Summary

The proposed development will be located at the former Bealey Industrial Estate at Dumers Lane, Radcliffe. The application seeks approval for the construction of a residential complex consisting of 77 dwellings, ranging from 1 to 4 bed in size, with associated gardens, parking facilities and access roads.

This statement reviews the proposed scheme against the relevant requirements of Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022-2039 – Adopted 21 March 2024 - Policy JP-S2: Carbon and Energy, as stipulated in DocPreAppValidation - 02971E – dated 01 July 2024.

It details the clients proposed specification for meeting the net zero operation carbon emissions target under Policy JP-S2: Carbon and Energy, which will be achieved through the use of an efficient timber frame fabric specification, Air Source Heat Pumps and Solar Photovoltaics.

The statement also demonstrates compliance with all other relevant metrics of Policy JP-S2: Carbon and Energy.

2.0 Introduction

2.1 Purpose of the Report

Instructions were received from Westchurch Homes to produce an Energy Statement for the proposed development at Dumers Lane, Radcliffe. This report has been produced to support the planning application to be submitted for the proposed development, which is situated within the boundaries of Bury Council.

This statement provides a response to the following relevant Bury Council documents and conditions:

- DocPreAppValidation - 02971E – dated 01 July 2024
- Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022-2039 – Adopted 21 March 2024

2.2 Site and Building Description

The development will be located at the former Bealey Industrial Estate at Dumers Lane, Radcliffe. The application seeks approval for the construction of a residential complex consisting of 77 dwellings, ranging from 1 to 4 bed in size, with associated gardens, parking facilities and access roads.

A proposed site layout has been included in Appendix 1.

2.3 Methodology

The proposed specifications, representative housetype drawings and site plan were reviewed to gain a good understanding of the development; following this, SAP calculations for all proposed housetypes have been completed to determine the As Designed performance of the development. Due to the date of this application, it will be considered under the Part L1A 2021 regulations. Therefore, the Elmhurst SAP 10 software has been used to conduct the above calculations.

3.0 Planning Policy

3.1 DocPreAppValidation – 02971E – dated 01 July 2024

“Policy JP-S2: Carbon and Energy requires new development to be net zero carbon in relation to the developments operational carbon emissions. Development proposals should set out how this has been achieved in a Carbon and Energy statement in accordance with the energy hierarchy.

The policy also requires new development to incorporate adequate Electric Vehicle Charging (EVC) points.

A Carbon and Energy statement is required to be submitted with any planning application to demonstrate how the proposal will comply with Policy JP-S2.”

3.2 Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022-2039 – Adopted 21 March 2024 – Policy JP-S2 – Carbon and Energy

As per the PreApp, the relevant elements of Policy JP-S2: Carbon and Energy are detailed below.

“The aim of delivering a carbon neutral Greater Manchester no later than 2038, with a dramatic reduction in greenhouse gas emissions, will be supported through a range of measures including:

5. *An expectation that new development will, unless it can be demonstrated that it is not practicable or financially viable;*
 - a. *Be net zero carbon(29) which applies:*
 - *from adoption- to regulated operational carbon emissions;*

Development proposals should set out how this has been achieved in an energy statement in accordance with the energy hierarchy, which in order of importance seeks to:

- i. Minimise energy demand;*
 - ii. Maximise energy efficiency;*
 - iii. Use renewable energy;*
 - iv. Use low carbon energy; and*
 - v. Utilise other energy sources.*
- b. Incorporate adequate electric vehicle charging points, in line with Part S of the Building Regulations, unless superseded by relevant Local Plan policies, to future proof for the likely long-term demand, taking account of the potential maximum energy demand for the site;”*
 - d. In residential developments, achieve energy demand reductions in terms of space heat demand; hot water energy demand and the delivery of on-site renewable energy generation, in accordance with Table 5.1.*

For the period 2021-2025, these targets are as follows;

Space Heat Demand – Houses (30 kWh/m²).

Hot Water Energy Demand – 20% energy demand reduction in the total heat required for water heating.

Renewable Energy Generation Targets - Photovoltaic installation: 20% ground floorspace.

- f. Include a detailed energy statement to demonstrate via site relevant evidence how the development has sought to maximise reductions in carbon emissions in line with relevant policy targets, including the minimisation of overheating risks and appropriate measures for post occupancy evaluation.

4.0 Policy Response

Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022-2039 – Adopted 21 March 2024 – Policy JP-S2 – Carbon and Energy

4.1 5a.

In efforts to reduce the overall carbon emissions associated with the development and to maximise the energy efficiency, the developer has a robust ‘fabric first’ approach to the build specification, which allows it to achieve Compliance with all metrics under Part L 2021.

This has been achieved through building fabric improvements with an uplift on the minimum requirements of Approved Document Part L 2021, and also through specification of efficient mechanical and electrical services. The specification includes for the use of Low / Zero Carbon technology in the form of Air Source Heat Pumps that will serve space and water heating to all plots.

The table below demonstrates how the specification of the development at Dumers Lane compares to the limiting values and minimum efficiencies allowed within Part L 2021:

Table 1: Proposed Specification		
Building Element	Limiting Part L 2021 Specification	Proposed Specification Part L
External Walls U-Value	0.26	0.19 U-Value
Roof U-Value	0.16	0.10 / 0/13 U-Value
Ground Floor U-Value	0.18	0.09 U-Value
Window U-Value	1.60	1.40 U-Value, 0.40 G-Value, BFRD Data
Party Wall U-Value	0.20	0.00 U-Value
Pressure Test	8.00	3.50
Lighting Lumens	75 lm/w	80 lm/w

The development is proposed to adopt a ‘fabric first’ approach to the specification and as detailed above, the proposed U-Values are a significant uplift on the minimum requirements under Part L 2021.

The proposed wall buildup for all houses is a timber frame system with 100mm PIR (0.022 W/mK) insulation to be utilised, which achieves a U-value of 0.19W/m²K. Robust, well insulated cavity walls, roof, floors and openings provide a comfortable environment within the development and reduce the buildings’ reliance on the main heating system. The air permeability target in all units is 3.50 m³/(h.m²), providing a significant improvement over the Notional Building target.

The use of enhanced, build-up-specific thermal bridge details will also ensure that thermal performance is enhanced by minimising heat and energy losses through thermal bridges and air gaps, with an overall Y-Value to be achieved that it is a very significant improvement over both the Default and Notional performance under Part L1A 2021.

Bespoke thermal bridge calculations have been undertaken by a suitably qualified assessor for the timber frame buildups used for all plots on this scheme.

Table 2 below details the Fabric Energy Efficiency performance of the proposed scheme. The worksheets for the sample SAPs utilised for these calculations are located in Appendix 3 of this statement.

Table 2: Part L 2021 Fabric Energy Efficiency	
	Units (kWh/year/m²)
Target Fabric Energy Efficiency (Average)	34.29
Dwelling Fabric Energy Efficiency (Average)	33.27
Percentage Reduction (%)	2.97

Air Source Heat Pumps (ASHP) are proposed to serve space and water heating to all plots at the scheme. Air source heat pumps (ASHP) extract heat from the outdoor air, even when the outside temperatures are very low, for use in space heating and hot water systems. Heat from the air is absorbed into a fluid. This fluid then passes through a heat exchanger into the heat pump, which raises the temperature and then transfers that heat to water. This water can then be circulated using radiators or an underfloor system, to provide electric space heating at COP's of circa 300-400%.

Due to the continuing decarbonisation of the UK energy supply, electricity is increasingly becoming the low carbon choice for heating strategy, and it is expected this will continue as more renewable electricity sources become operational and fossil fuel sources are phased out. The current proposed notional dwelling for the Part L1A 2025 Future Homes Standard for space and water heating to be provided through Air Source Heat Pumps. Therefore, this scheme can be seen to be ahead of the curve on this element, future proofing the scheme when compared against future Part L regulation changes. All plots have ample outside space to site the external elements of the ASHP.

To summarise, all of the main building elements outlined in Table 1 have been designed to provide a thermally efficient building envelope which, allied to efficient mechanical and electrical services, achieves an improvement on the minimum requirements set out within Part L1A 2021.

The below table details the performance of the proposed scheme against all relevant assessment metrics of Part L1A 2021. The tables demonstrate that the representative sample SAP units assessed are predicted to achieve a Dwelling Emission Rate that improves over the Target Emission Rate (TER) by an average of 65.39%. As detailed above, this reduction has been achieved through the minimisation of energy demand, the maximisation of energy efficiency and the use of low carbon energy for both space and water heating.

A more detailed breakdown of the performance of each sample housetype is located in Appendix 2 of this document. The sample SAP calculations that these figures are derived from can be found in Appendix 3 of this document.

Table 3: Part L 2021 Carbon Emissions	
	Units (kgCO₂/year/m²)
Target Emission Rate (Average)	11.21
Dwelling Emission Rate (Average)	3.88
Percentage Reduction (%)	65.39

The statement thus far has demonstrated the predicted performance of the proposed scheme, based on the client's preferred fabric and services specification.

While this achieves a predicted reduction in carbon emissions of 65.39%, it is noted that the policy requires the scheme be net zero with regards to operational regulated carbon emissions.

Therefore, solar photovoltaic (PV) panels will be applied to the scheme with sufficient generation capacity to ensure that this target is achieved. It should be noted that this strategy is still open to review, but in the event an alternative approach is deployed, the zero carbon target will be achieved.

Photovoltaic panels convert solar radiation into direct current electricity. In principle, they are an ideal source of renewable energy as they harness the most abundant source of energy on the Earth, the sun, and they produce electricity, which is the most useful form of energy.

PV's are silent in operation, have no moving parts and have a long life with low maintenance levels. PV systems can be connected to the grid or battery arrays in remote locations.

Grid connected systems consist of PV arrays connected to the grid through a charge controller and an inverter. PV cells are more efficient at lower temperatures so good ventilation should be allowed around the PV modules where possible.

The sample, extrapolated SAP calculations have been utilised to ascertain the remaining carbon emissions for the proposed scheme, and these figures can be reviewed in Appendix 2. The total predicted operational regulated carbon emissions figure for all plots is 25,181.31 kg/CO₂/yr. In order to derive the PV output requirement in kWh/yr, the 25,181.31 kg/CO₂/yr has been converted using the Department for Energy Security and Net Zero "Electricity emissions factors to 2100, kgCO₂e/kWh" for 2024, that is 0.151 kgCO₂e/kWh. Based on this calculation, the PV generation required is a minimum of 166,763.64 kWh/yr.

Therefore, PV generation to meet this figure at a minimum will be installed at the scheme. The policy is not currently specific about whether each dwelling must meet the zero carbon target, or whether this can be achieved site-wide, but under either circumstance the total predicted energy demand for the scheme of 166,763.64 kWh/yr will be achieved.

4.2 5b.

The developer is committed to complying with Part S of the Building Regulations in full, further details of EV charging point location and specification will be confirmed as detailed design develops.

4.3 5d.

The first point of this policy requires that the scheme achieves a space heating demand of no more than 30 kWh/m². Based on the sample SAP calculations undertaken, a sitewide average space heating demand of 26.57 kWh/m² is predicted. Further details of these calculations can be found in Appendix 2 and the sample SAPs are in Appendix 3.

The second element of the policy requires demonstration of a 20% energy demand reduction in the total heat required for water heating. This can be demonstrated through a 20% reduction in actual predicted energy demand for water heating, in comparison with the Part L Notional Building. Table 4 below details the energy demand figures based on the sample SAPs.

Table 4: Part L 2021 Water Heating Energy Use

	Units (kWh/year)
Target Water Heating Energy Usage	217647.50
Dwelling Water Heating Energy Usage	71167.45
Percentage Reduction (%)	67.30

Based on these calculations we can see that the scheme is predicted to achieve a reduction in energy usage of 67.30%, a significant improvement over the 20% reduction requirement

The final part of this policy stipulates that photovoltaic panels should be installed to cover an equivalent of 20% ground floor space. Based on the extrapolated sample SAP calculations, the total ground floor area of the dwelling on site is approximately 2982.39 square metres. The total generation currently projected to be required from PV is 166,763.64 kWh/yr. Taking an industry standard panel to currently be circa 410W output, this equates to approximately 407 panels required. While panel sizes vary somewhat based on manufacturer, 1.7m by 1.1m dimensions can be taken to be representative of industry standard for a 410W Panel. This gives an area per panel of 1.87m², and therefore a total area sitewide of 761.09 m² to be covered by PV panels. This equates to 25.52% of the total ground floor area, in excess of the 20% required under this policy.

4.4 5f.

With regards to overheating, all housetypes at the site will be assessed under Part O of Building Regulations, utilising the Dynamic Simulation Option 2, in line with CIBSE TM59 methodology. As a number of the proposed types for this site have been assessed previously at other Westchurch sites, assessments have already been produced for these. All of these types have achieved Part O Compliance, through a combination of decentralised mechanical ventilation and passive measures. As the types that are yet to be assessed are similar in design to these, we can be confident that they will achieve similar results.

With regards to Post Occupancy Evaluation, the final ownership will rest between the client and the Registered Provider, with the majority of responsibility falling to the Registered Provider. However, the client will work with the Registered Provider to implement a suitable programme of Post Occupancy Evaluation.

5.0 Conclusion

This statement has reviewed the proposed scheme to be located at Dumers Lane, Radcliffe, a residential complex consisting of 77 dwellings, against the relevant requirements of Places for Everyone Joint Development Plan Document for Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan 2022-2039 – Adopted 21 March 2024 - Policy JP-S2: Carbon and Energy, as stipulated in DocPreAppValidation - 02971E – dated 01 July 2024.

The proposed fabric and services specification for the scheme has been detailed, confirming the use of a thermally efficient fabric specification and the use of a low carbon technology in the form of Air Source Heat Pumps to provide space and hot water for all plots. This allows the scheme to achieve a predicted reduction in carbon emissions of 65.39%.

However, Policy JP-S2: Carbon and Energy requires the scheme be net zero with regards to operational regulated carbon emissions. Therefore, solar photovoltaic (PV) panels will be applied to the scheme with sufficient generation capacity to ensure that this target is achieved. The total predicted operational regulated carbon emissions figure for all plots is 25,181.31 kg/CO₂/yr. In order to derive the PV output requirement in kWh/yr, the 25,181.31 kg/CO₂/yr has been converted using the Department for Energy Security and Net Zero “Electricity emissions factors to 2100, kgCO₂e/kWh” for 2024, that is 0.151 kgCO₂e/kWh. Based on this calculation, the PV generation required is a minimum of 166,763.64 kWh/yr. Therefore, PV generation to meet this figure at a minimum will be installed at the scheme

Policy JP-S2: Carbon and Energy requires that the scheme achieves a space heating demand of no more than 30 kWh/m². Based on the sample SAP calculations undertaken, a sitewide space heating demand of 26.57 kWh/m² is predicted.

It is also required that the scheme demonstrates a 20% energy demand reduction in the total heat required for water heating. Based on the sample SAP calculations we can see that the scheme is predicted to achieve a reduction in energy usage of 67.30%, a significant improvement over the 20% reduction requirement.

Policy JP-S2: Carbon and Energy also requires that photovoltaic panels should be installed to cover an equivalent of 20% ground floor space. While the figures are approximate at this stage, it is expected that the PV required to generate the 166,763.64 kWh/yr requirement, would need PV in excess of the 20% target.

The statement has also detailed the clients policies and procedures with regards to Overheating, Post Occupancy Evaluation and Electric Vehicle Charging points.

While the scheme may change as detailed design develops, as may strategies for compliance with the above policies, the intention is that compliance with the policies is maintained.



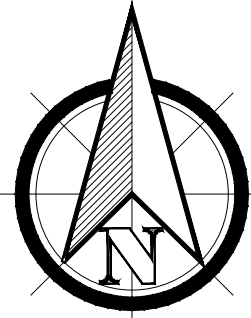
Appendix 1

Proposed Site Plan



LAND OFF DUMERS LANE, RADCLIFFE

general notes:
do not scale the drawing.
all dimensions to be checked on site prior to commencement of work and any
discrepancy shall be immediately reported and resolved prior to work commencing.
this drawing is to be read in conjunction with all relevant drawings and
specifications relating to the job whether or not indicated on the drawing.
copyright reserved to mck associates ltd. and this drawing may not be used or
reproduced without prior written consent.



HOUSETYPE	BEDS	GIAsq ft	GIAm2	NUMBER	TOTAL GIAft2	TOTAL GIAm2
Burghley GF	1	545	50.67	9	4905	456.03
Burghley FF	1	614	57.1	9	5526	513.9
Knareborough	2	769	71.4	6	4614	428.4
Alnwick	3	935	86.9	4	3740	347.6
Chester	3	946	87.9	3	2838	263.7
Gainford	3	974	90.5	4	3896	362
Gainford Alt	3	970	90.1	2	1940	180.2
Peover	3	1023	95.03	14	14322	1330.42
Wollaton	3	1113	103.4	9	10017	930.6
Ripley	4	1115	103.6	6	6690	621.6
Wollaton Alt	3	1142	106.1	1	1142	106.1
Alnwick +	4	1291	119.9	10	12910	1199
				77	72540	6739.55

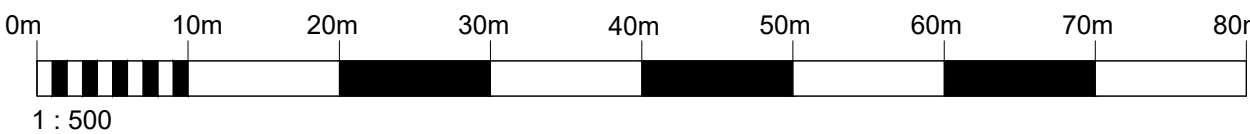
G	22.7.25	PS	Red Edge adjusted to include Wild Street Works. Visitor
F	16.06.25	KLW	Parking Added.
E	28.11.24	KLW	Number of plots reduced, access relocated and all associated
D	26.11.24	KLW	amendments.
C	21.10.24	KLW	Red edge amended to exclude substation.
B	03.10.24	KLW	Bin stores shown for apartments.
A	13.09.24	KLW	Plots around the acoustic bund reconfigured.
Rev	Date	By	Plots 61-79 adjusted and private drive amended to allow for
			acoustic bund.
			Access road relocated and plots 1-8 adjusted to suit.
			Description



Project:
BEALEY IND EST
RADCLIFFE

Drawing Title:
PROPOSED SITE LAYOUT

Drawn:	Checked:	Scale:	Date:
KW		1:500	FEB 2025
Job No:	Drawing No:	Rev:	
1025	SL01	G	



1 : 500



Appendix 2

As Designed SAP Calculation Information



CLIENT	Westchurch Homes
PROJECT	Dumers Lane, Radcliffe
DATE	28.08.2025
REV	B

Housetype	Number of Housetype	Target Emission Rate (TER)	Dwelling Emission Rate (DER)	Total Carbon Emissions (kgCO2/yr.) Excluding PV	Space Heating Demand (kWh/m2)	Target Water Heating Total Energy Usage (kWh/yr.)	Dwelling Water Heating Energy Usage (kWh/yr.)
Alnwick	4	11.16	4.04	1366.72	28.40	11524.68	3816.84
Alnwick ALT	10	10.76	3.61	4257.9	32.22	30890.80	9952.40
Burghley 1F MID	5	11.81	3.92	1143.4	20.25	12564.80	4002.85
Burghley GF MID	5	11.52	3.64	897.65	13.02	11932.35	3838.50
Burghley 1F END	4	12.88	4.44	1037.08	27.21	10014.92	3217.36
Burghley GF END	4	13.08	4.18	824.36	20.9	9485.28	2993.04
Chester	3	10.40	3.77	933.54	23.2	8615.43	2853.90
Gainford	4	11.45	4.13	1463.08	32.18	11635.60	3836.92
Gainford ALT	2	11.74	4.19	742.52	34.28	5813.12	1890.96
Knaresborough MID	2	11.08	3.85	532.38	22.35	5324.14	1715.94
Knaresborough END	4	12.21	4.33	1199	28.88	10609.80	3449.12
Peover	14	10.83	3.92	4972.38	28.93	40973.66	13553.12
Ripley	6	10.34	3.79	2262.9	28.94	17857.80	5893.56
Wollaton END	6	10.91	3.68	2192.52	26.43	18223.32	6083.46
Wollaton MID	4	10.12	3.41	1355.88	21.8	12181.80	4069.48
AVERAGE		11.21	3.88		26.57		
TOTAL				25181.31		217647.50	71167.45



Appendix 3

As Designed SAP Summaries

Summary for Input Data

Property Reference	R4328 Westchurch C Alnwick ALT			Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Alnwick ALT		
Property	R4328 Westchurch C Alnwick ALT				

SAP Rating	83 B	DER	3.61	TER	10.76
Environmental	97 A	% DER < TER			66.45
CO ₂ Emissions (t/year)	0.44	DFEE	36.38	TFEE	37.72
Compliance Check	See BREL	% DFEE < TFEE			3.55
% DPER < TPER	33.36	DPER	37.54	TPER	56.33

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	3	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	75.07	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	18.30 m	42.30 m ²	2.40 m
1st Storey:	18.30 m	42.30 m ²	2.70 m
2nd Storey:	16.10 m	33.50 m ²	2.15 m

8.0 Living Area	19.30	m ²
-----------------	-------	----------------

9.0 External Walls	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	111.33	91.45	0.00	None	19.88	Enter Gross Area
	External Wall 2	Timber Frame	Timber framed wall (one layer of plasterboard)	0.10	9.00	21.00	21.00	0.00	None	0.00	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	50.84	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Internal Wall 1	Plasterboard on timber frame	9.00	136.24

10.0 External Roofs	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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	33.31	33.31	None	0.00	Enter Gross Area	0.00
	External Roof 2	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	11.62	10.25	None	0.00	Enter Gross Area	1.37

Summary for Input Data

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	42.30
Internal Ceiling 2	+1	Plasterboard ceiling, carpeted chipboard floor	33.50

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	42.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	42.30
Internal Floor 2		Plasterboard ceiling, carpeted chipboard floor	18.00	33.50

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
Roof	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	6.72	0
Side Window	Window	External Wall 1	West	3.89	0
Side Window	Window	External Wall 1	East	3.89	0
HGD	HGD	External Wall 1	East	3.33	0
Roof	Roof	External Roof 2	North	1.37	0

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	15.77	0.05	0.05	No
E3 Sill	Independently assessed	13.18	0.04	0.04	No
E4 Jamb	Independently assessed	32.42	0.03	0.03	No
E6 Intermediate floor within a dwelling	Independently assessed	26.10	0.08	0.08	No
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	15.20	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	8.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	2.10	0.03	0.03	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	16.60	0.15	0.15	No
E10 Eaves (insulation at ceiling level)	Independently assessed	10.00	0.05	0.05	No
E12 Gable (insulation at ceiling level)	Independently assessed	6.00	0.06	0.06	No
E13 Gable (insulation at rafter level)	Table K1 - Default	2.00	0.25	0.25	No
E16 Corner (normal)	Table K1 - Default	6.00	0.18	0.18	No
R1 Head of roof window	Independently assessed	2.28	0.04	0.04	Yes
R2 Sill of roof window	Independently assessed	2.28	0.04	0.04	Yes
R3 Jamb of roof window	Independently assessed	2.40	0.04	0.04	Yes
R6 Flat ceiling	Independently assessed	16.60	0.02	0.02	No
R8 Roof to wall (rafter)	Independently assessed	16.60	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	18.30	0.15	0.15	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	4
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
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Summary for Input Data

0.14	In Room Fan	0
	Kitchen	
0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	3
	Other Wet Room	

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 AP ₅₀	3.50	m ² /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No
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Name	Efficacy	Power	Capacity	Count
Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1

	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	0	
In Winter	243.38	
In Summer	294.78	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2

26.0 Heat Networks

Summary for Input Data

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
Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		No	
2	Combi boiler or unvented hot water system	6.00		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	250.00	L
Loss	2.10	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

None

34.0 Small-scale Hydro

0.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data



Property Reference	R4328 Westchurch C Alnwick		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Alnwick	
Property	R4328 Westchurch C Alnwick			

SAP Rating	83 B	DER	4.04	TER	11.16
Environmental	97 A	% DER < TER			63.80
CO ₂ Emissions (t/year)	0.35	DFEE	34.85	TFEE	35.50
Compliance Check	See BREL	% DFEE < TFEE			1.84
% DPER < TPER	27.62	DPER	42.26	TPER	58.39

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	85.37	kJ/m²K

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

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	18.30 m	42.30 m ²	2.40 m
	1st Storey:	18.30 m	42.30 m ²	2.70 m

8.0 Living Area	19.30	m ²
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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
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	93.33	79.30	0.00	None	14.03	Calculate Wall Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	42.84	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	106.24

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
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	42.30	42.30	None	0.00	Enter Gross Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	42.30

Summary for Input Data

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	42.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	42.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	3.58	0
Side Window	Window	External Wall 1	East	0.70	0
Rear Window	Window	External Wall 1	South	4.55	0
HGD	HGD	External Wall 1	South	3.15	0

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	10.82	0.05	0.05	No
E3 Sill	Independently assessed	8.32	0.04	0.04	Yes
E4 Jamb	Independently assessed	23.05	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	18.30	0.15	0.15	Yes
E6 Intermediate floor within a dwelling	Independently assessed	18.30	0.08	0.08	Yes
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	18.30	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	8.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.30	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	2

20.0 Fans, Open Fireplaces, Flues

Number of open chimneys	0
Number of open flues	0

Summary for Input Data

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 AP ₅₀	3.50	m ² /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting					
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1		Database
Percentage of Heat		100.00
Database Ref. No.		105616
Fuel Type		Electricity
SAP Code		0
In Winter		216.15
In Summer		282.15
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2

26.0 Heat Networks

27.0 Secondary Heating

28.0 Water Heating	Main Heating 1
Water Heating	
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

Summary for Input Data

Water use <= 125 litres/person/day	Yes
Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

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	200.00	L
Loss	1.70	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

None

34.0 Small-scale Hydro

0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Burg 1F MID		Issued on Date	29/08/2025
Assessment Reference	Burghley 1F MID	Prop Type Ref	Burghley 1F MID	
Property	R4328 Westchurch C Burg 1F MID			

SAP Rating	86 B	DER	3.92	TER	11.81
Environmental	97 A	% DER < TER			66.81
CO ₂ Emissions (t/year)	0.23	DFEE	28.80	TFEE	30.44
Compliance Check	See BREL	% DFEE < TFEE			5.37
% DPER < TPER	33.65	DPER	41.16	TPER	62.03

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Mid-Terrace
Position of Flat	Top-floor flat
Which Floor	1
2.0 Number of Storeys	2
3.0 Date Built	2023
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	1.00
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

kJ/m²K

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	2.90 m	5.20 m ²	2.40 m
		11.00 m	53.20 m ²	2.70 m

8.0 Living Area	29.50	m ²
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9.0 External Walls	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	36.66	29.75	0.00	None	6.91	Calculate Wall Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	95.40	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Internal Wall 1	Plasterboard on timber frame	9.00	75.00

10.0 External Roofs	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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	53.20	53.20	None	0.00	Calculate Wall Area	0.00

10.1 Party Ceilings

Summary for Input Data



Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	48.90

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	5.30

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	5.20

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	80.00	48.90

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	5.20

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	BFRC, BSI or CERTASS data	Solid Door				0.40			1.10
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Windows	Window	External Wall 1	North	1.95	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Windows	Window	External Wall 1	South	2.57	0
Side Windows	Window	External Wall 1	East	0.48	0

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	5.95	0.05	0.05	No
E3 Sill	Independently assessed	5.04	0.04	0.04	No
E4 Jamb	Independently assessed	13.92	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	2.90	0.15	0.15	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	11.00	0.14	0.14	No
E16 Corner (normal)	Independently assessed	2.70	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.80	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	9.10	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	18.80	0.00	0.00	No
E6 Intermediate floor within a dwelling	Independently assessed	2.90	0.08	0.08	No
E25 Staggered party wall between dwellings	Independently assessed	4.80	0.12	0.12	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	19.40	0.03	0.03	No
E10 Eaves (insulation at ceiling level)	Independently assessed	12.50	0.08	0.08	No
E12 Gable (insulation at ceiling level)	Independently assessed	2.20	0.06	0.06	No

Y-value W/m²K

Description

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	2

Summary for Input Data

SFP from Installer Commissioning Certificate

No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	1

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

No

22.0 Pressure Testing

Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name Lighting 1	Efficacy 80.00	Power 10.00	Capacity 800.00	Count 12

24.0 Main Heating 1

Database		
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	0.00	
In Summer	0.00	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
Controls SAP Code	2207	
PCDF Controls	0	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2

None

Summary for Input Data

26.0 Heat Networks

27.0 Secondary Heating

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
Immersion Heater	Single
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Baths connected to WWHRS	0
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		
1	Combi boiler or unvented hot water system	6.00		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	
Insulation Thickness	0	
Cylinder Volume	150.00	L
Loss	1.22	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

Thermal Store Pipework	within a single casing
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34.0 Small-scale Hydro

Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

None

Summary for Input Data

Property Reference	R4328 Westchurch C Burg GF MID			Issued on Date	29/08/2025
Assessment Reference	Burghley GF M	Prop Type Ref	Burghley GF		
Property	R4328 Westchurch C Burg GF MID				

SAP Rating	88 B	DER	3.64	TER	11.52
Environmental	98 A	% DER < TER			68.40
CO ₂ Emissions (t/year)	0.18	DFEE	22.89	TFEE	24.86
Compliance Check	See BREL	% DFEE < TFEE			7.90
% DPER < TPER	36.43	DPER	38.51	TPER	60.58

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	0
2.0 Number of Storeys	1
3.0 Date Built	2023
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	1.00
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	9.10 m	49.31 m²	2.40 m
		17.77 m	39.31 m²	2.60 m

8.0 Living Area	28.50	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	21.84	15.94	0.00	None	5.90	Calculate Wall Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	66.00	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Wall 1	Plasterboard on timber frame	9.00	62.50

10.1 Party Ceilings	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Party Ceiling 1	Concrete floor slab, carpeted	100.00	49.30

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	49.30

Summary for Input Data

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	80.00	49.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	BFRC, BSI or CERTASS data	Solid Door				0.40			1.10
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Windows	Window	External Wall 1	North	1.32	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Window	Window	External Wall 1	South	2.66	0

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	4.65	0.05	0.05	No
E3 Sill	Independently assessed	3.74	0.04	0.04	No
E4 Jamb	Independently assessed	10.59	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	9.10	0.15	0.15	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	9.10	0.14	0.14	No
E18 Party wall between dwellings	Independently assessed	7.20	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	21.30	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	21.30	0.00	0.00	No
E25 Staggered party wall between dwellings	Independently assessed	2.40	0.12	0.12	No

Y-value W/m²K

Description

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan	0
	Kitchen	
0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	1
	Other Wet Room	

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

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes	
Designed AP ₅₀	3.50	m ² /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	12

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	0.00	
In Summer	0.00	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
Controls SAP Code	2207	
PCDF Controls	0	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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28.0 Water Heating	Main Heating 1
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
Immersion Heater	Single

Summary for Input Data

Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Baths connected to WWHRS	0
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
1	Combi boiler or unvented hot water system	6.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Insulation Thickness	0	
Cylinder Volume	150.00	L
Loss	1.22	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

Thermal Store	None
Thermal Store Pipework	within a single casing

34.0 Small-scale Hydro

Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Burghely 1F		Issued on Date	29/08/2025
Assessment Reference	Burghley 1F	Prop Type Ref	Burghley 1F	
Property	R4328 Westchurch C Burghely 1F			

SAP Rating	84 B	DER	4.44	TER	12.88
Environmental	97 A	% DER < TER			65.53
CO ₂ Emissions (t/year)	0.26	DFEE	35.60	TFEE	35.35
Compliance Check	See BREL	% DFEE < TFEE			-0.70
% DPER < TPER	31.35	DPER	46.52	TPER	67.76

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Mid-Terrace
Position of Flat	Top-floor flat
Which Floor	1
2.0 Number of Storeys	2
3.0 Date Built	2023
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	188.00
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	2.90 m	5.20 m²	2.40 m
		21.00 m	53.20 m²	2.70 m

8.0 Living Area	29.50	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	63.66	56.75	0.00	None	6.91	Calculate Wall Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	47.98	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Wall 1	Plasterboard on timber frame	9.00	75.00

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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	53.20	53.20	None	0.00	Calculate Wall Area	0.00

10.1 Party Ceilings

Summary for Input Data

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Party Ceiling 1	Concrete floor slab, carpeted	100.00	48.90

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	5.30

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	5.20

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	80.00	48.90

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	5.20

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	BFRC, BSI or CERTASS data	Solid Door				0.40			1.10
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Windows	Window	External Wall 1	North	1.95	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Windows	Window	External Wall 1	South	2.57	0
Side Windows	Window	External Wall 1	East	0.48	0

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	5.95	0.05	0.05	No
E3 Sill	Independently assessed	5.04	0.04	0.04	No
E4 Jamb	Independently assessed	13.92	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	2.90	0.15	0.15	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	21.00	0.14	0.14	No
E16 Corner (normal)	Independently assessed	7.80	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	5.40	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	9.10	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	18.80	0.00	0.00	No
E6 Intermediate floor within a dwelling	Independently assessed	2.90	0.08	0.08	No
E25 Staggered party wall between dwellings	Independently assessed	4.80	0.12	0.12	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	9.70	0.03	0.03	No
E10 Eaves (insulation at ceiling level)	Independently assessed	21.00	0.08	0.08	No
E12 Gable (insulation at ceiling level)	Independently assessed	2.20	0.06	0.06	No

Y-value W/m²K

Description

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	2

Summary for Input Data

SFP from Installer Commissioning Certificate

No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	1

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

No

22.0 Pressure Testing

Yes

Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name Lighting 1	Efficacy 80.00	Power 10.00	Capacity 800.00	Count 12

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	207.66	
In Summer	283.45	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
PCDF Controls	0	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

Summary for Input Data

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											
Immersion Heater	Single											
Summer Immersion	No											
Cold Water Source	From mains											
Bath Count	1											
Baths connected to WWHRS	0											
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							
1	Combi boiler or unvented hot water system	6.00		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											
Insulation Thickness	0											
Cylinder Volume	150.00											
Loss	1.22											
Pipes insulation	Fully insulated primary pipework											
In Airing Cupboard	No											
31.0 Thermal Store	None											
Thermal Store Pipework	within a single casing											
34.0 Small-scale Hydro	None											
Electricity Generated	0.00											
Apportioned	0.00											
Connected to dwelling's electricity meter	Yes											
Electricity Generation	Annual											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Recommendations												
Lower cost measures												
None												
Further measures to achieve even higher standards												
None												

Summary for Input Data

Property Reference	R4328 Westchurch C Burghley GF		Issued on Date	29/08/2025
Assessment Reference	R4328 Westchurch C Burghley GF	Prop Type Ref	Burghley GF	
Property	R4328 Westchurch C Burghley GF			

SAP Rating	86 B	DER	4.18	TER	13.08
Environmental	97 A	% DER < TER			68.04
CO ₂ Emissions (t/year)	0.21	DFEE	31.00	TFEE	32.27
Compliance Check	See BREL	% DFEE < TFEE			3.92
% DPER < TPER	36.27	DPER	43.96	TPER	68.98

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North
Property Tenture	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	Maisonette, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	0
2.0 Number of Storeys	1
3.0 Date Built	2023
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	265.10
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	19.30 m	49.31 m²	2.40 m
1st Storey:	17.77 m	39.31 m²	2.60 m

8.0 Living Area	28.50	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	46.32	40.42	0.00	None	5.90	Calculate Wall Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	28.00	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Wall 1	Plasterboard on timber frame	9.00	62.50

10.1 Party Ceilings	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Party Ceiling 1	Concrete floor slab, carpeted	100.00	49.30

11.0 Heat Loss Floors	Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
	Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	49.30

Summary for Input Data

11.1 Party Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Party Floor 1	Lowest occupied	Concrete floor slab, carpeted	80.00	49.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	BFRC, BSI or CERTASS data	Solid Door				0.40			1.10
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Front Windows	Window	External Wall 1	North	1.32	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Window	Window	External Wall 1	South	2.66	0

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	4.65	0.05	0.05	No
E3 Sill	Independently assessed	3.74	0.04	0.04	No
E4 Jamb	Independently assessed	10.59	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	19.30	0.15	0.15	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	19.30	0.14	0.14	No
E16 Corner (normal)	Independently assessed	4.80	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	2.40	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	11.40	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	11.40	0.00	0.00	No
E25 Staggered party wall between dwellings	Independently assessed	2.40	0.12	0.12	No

Y-value W/m²K

Description

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	2
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	1

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

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes	
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	12

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	208.06	
In Summer	286.10	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
PCDF Controls	0	
Delayed Start Stat	No	
Burner Control	Modulating	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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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

Summary for Input Data

Water use <= 125 litres/person/day	Yes
Immersion Heater	Single
Summer Immersion	No
Cold Water Source	From mains
Bath Count	1
Baths connected to WWHRS	0
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
1	Combi boiler or unvented hot water system	6.00		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				
Insulation Thickness	0				
Cylinder Volume	150.00			L	
Loss	1.22			kWh/day	
Pipes insulation	Fully insulated primary pipework				
In Airing Cupboard	No				

31.0 Thermal Store

None	None				
Thermal Store Pipework	within a single casing				

34.0 Small-scale Hydro

None	None				
Electricity Generated	0.00				
Apportioned	0.00			kWh/Year	
Connected to dwelling's electricity meter	Yes				
Electricity Generation	Annual				

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Chester MID		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Chester MID	
Property	R4328 Westchurch C Chester MID			

SAP Rating	84 B	DER	3.77	TER	10.40
Environmental	97 A	% DER < TER			63.75
CO ₂ Emissions (t/year)	0.32	DFEE	29.84	TFEE	31.20
Compliance Check	See BREL	% DFEE < TFEE			4.36
% DPER < TPER	27.26	DPER	39.50	TPER	54.31

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	92.09	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	10.00 m	41.30 m ²	2.40 m
	1st Storey:	10.00 m	41.30 m ²	2.70 m

8.0 Living Area	19.30	m ²
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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
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	51.00	36.99	0.00	None	14.01	Calculate Wall Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	85.76	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	106.24

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
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	41.30	41.30	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	41.30

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	41.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	42.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	3.58	0
Rear Window	Window	External Wall 1	South	5.02	0
HGD	HGD	External Wall 1	South	3.36	0

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	10.37	0.05	0.05	No
E3 Sill	Independently assessed	7.77	0.04	0.04	No
E4 Jamb	Independently assessed	21.48	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	10.00	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	10.00	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	20.40	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	10.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	16.60	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	16.60	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	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

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes	
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	0	
In Winter	208.48	
In Summer	281.15	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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28.0 Water Heating	Main Heating 1
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

Summary for Input Data

Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		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	200.00			L	
Loss	1.70			kWh/day	
Pipes insulation	Fully insulated primary pipework				
In Airing Cupboard	No				

31.0 Thermal Store

None	
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34.0 Small-scale Hydro

None												
Electricity Generated	0.00											
Apportioned	0.00									kWh/Year		
Connected to dwelling's electricity meter	Yes											
Electricity Generation	Annual											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Gainford AL		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Gainford ALT	
Property	R4328 Westchurch C Gainford AL			

SAP Rating	82 B	DER	4.19	TER	11.74
Environmental	96 A	% DER < TER			64.31
CO ₂ Emissions (t/year)	0.38	DFEE	40.32	TFEE	40.32
Compliance Check	See BREL	% DFEE < TFEE			0.01
% DPER < TPER	28.77	DPER	43.71	TPER	61.36

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	81.55	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	22.60 m	44.30 m ²	2.40 m
		22.60 m	44.30 m ²	2.70 m

8.0 Living Area	15.30	m ²
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9.0 External Walls	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	115.26	92.38	0.00	None	22.88	Calculate Wall Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	26.00	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Internal Wall 1	Plasterboard on timber frame	9.00	106.24

10.0 External Roofs	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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.08	9.00	44.30	44.30	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings	Description	Storey	Construction	Area (m ²)
	Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	44.30

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	44.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	44.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	6.74	0
Side Window 1	Window	External Wall 1	East	3.66	0
Rear Window	Window	External Wall 1	South	4.59	0
Rear Door	Door	External Wall 1	South	2.05	0
HGD	HGD	External Wall 1	South	3.78	0

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	16.98	0.05	0.05	No
E3 Sill	Independently assessed	13.18	0.04	0.04	No
E4 Jamb	Independently assessed	37.04	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	22.60	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	22.60	0.08	0.08	No
E16 Corner (normal)	Independently assessed	20.40	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	20.10	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	5.00	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	5.00	0.03	0.03	No
E12 Gable (insulation at ceiling level)	Independently assessed	2.50	0.06	0.06	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	10.20	-0.04	-0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	2

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes	
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting					
	Name Lighting 1	Efficacy 80.00	Power 10.00	Capacity 800.00	Count 15

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	0	
In Winter	229.87	
In Summer	288.17	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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28.0 Water Heating	Main Heating 1
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

Summary for Input Data

Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

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	200.00	L
Loss	1.70	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

None

34.0 Small-scale Hydro

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

None

Summary for Input Data

Property Reference	R4328 Westchurch C Gainford		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Gainford	
Property	R4328 Westchurch C Gainford			

SAP Rating	83 B	DER	4.13	TER	11.45
Environmental	96 A	% DER < TER			63.93
CO ₂ Emissions (t/year)	0.37	DFEE	38.90	TFEE	38.96
Compliance Check	See BREL	% DFEE < TFEE			0.16
% DPER < TPER	27.93	DPER	43.10	TPER	59.80

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	83.93	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	19.30 m	44.30 m ²	2.40 m
	1st Storey:	19.30 m	44.30 m ²	2.70 m

8.0 Living Area	15.30	m ²
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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
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	98.43	78.45	0.00	None	19.98	Calculate Wall Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	42.84	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	106.24

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
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	44.30	44.30	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	44.30

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	44.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	44.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	6.74	0
Side Window 1	Window	External Wall 1	East	3.66	0
HGD	HGD	External Wall 1	West	3.78	0
Side Window 1	Window	External Wall 1	West	3.74	0

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	15.14	0.05	0.05	No
E3 Sill	Independently assessed	12.34	0.04	0.04	No
E4 Jamb	Independently assessed	30.94	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	19.30	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	19.30	0.08	0.08	No
E16 Corner (normal)	Independently assessed	20.40	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	7.00	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	8.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.30	0.03	0.03	No
E12 Gable (insulation at ceiling level)	Independently assessed	12.30	0.06	0.06	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	10.20	-0.04	-0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan	0
	Kitchen	
0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	2
	Other Wet Room	

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

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	No				
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22.0 Pressure Testing	Yes				
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				
	Name Lighting 1	Efficacy 80.00	Power 10.00	Capacity 800.00	Count 15

24.0 Main Heating 1	Database				
Percentage of Heat	100.00 %				
Database Ref. No.	105616				
Fuel Type	Electricity				
SAP Code	0				
In Winter	224.15				
In Summer	284.04				
Model Name	WH-SDC0305J3E5 + WH-UD03JE5				
Manufacturer	Panasonic HVAC UK Ltd				
System Type	Heat Pump				
Controls SAP Code	2207				
Delayed Start Stat	No				
Burner Control	On/Off				
HETAS approved System	No				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	55.00				

25.0 Main Heating 2	None				
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26.0 Heat Networks	None				
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27.0 Secondary Heating	None				
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28.0 Water Heating	Main Heating 1				
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				

Summary for Input Data

Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

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	200.00	L
Loss	1.70	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

None

34.0 Small-scale Hydro

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

None

Summary for Input Data

Property Reference	R4328 Westchurch C Knares MID		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Knaresborough MID	
Property	R4328 Westchurch C Knares MID			

SAP Rating	85 B	DER	3.85	TER	11.08
Environmental	97 A	% DER < TER			65.25
CO ₂ Emissions (t/year)	0.27	DFEE	28.89	TFEE	30.94
Compliance Check	See BREL	% DFEE < TFEE			6.62
% DPER < TPER	30.32	DPER	40.38	TPER	57.96

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North
Property Tenure	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
Which Floor	0
2.0 Number of Storeys	2
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	1.00 kJ/m ² K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	8.40 m	34.60 m ²	2.40 m
	1st Storey:	8.40 m	34.60 m ²	2.70 m

8.0 Living Area	15.30 m ²
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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
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	42.84	31.27	0.00	None	11.57	Calculate Wall Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	85.68	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	99.11

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
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	34.60	34.60	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	34.60

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	34.60

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	34.60

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	4.36	0
Rear Window	Window	External Wall 1	South	3.11	0
Rear Door	Door	External Wall 1	South	2.05	0

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	8.54	0.05	0.05	No
E3 Sill	Independently assessed	6.54	0.04	0.04	No
E4 Jamb	Independently assessed	17.28	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	8.40	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	8.40	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	20.40	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	8.40	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	16.60	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	16.60	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	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

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes
Designed AP ₅₀	3.50 m³/(h.m²) @ 50 Pa
Property Tested?	Yes
Test Method	Blower Door

22.0 Lighting	No
No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1	Database
Percentage of Heat	100.00 %
Database Ref. No.	105616
Fuel Type	Electricity
SAP Code	0
In Winter	0.00
In Summer	0.00
Model Name	WH-SDC0305J3E5 + WH-UD03JE5
Manufacturer	Panasonic HVAC UK Ltd
Controls SAP Code	2207
Delayed Start Stat	No
Burner Control	On/Off
HETAS approved System	No
Is MHS Pumped	Pump in heated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators
Flow Temperature	Enter value
Flow Temperature Value	55.00

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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28.0 Water Heating	Main Heating 1
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
Summer Immersion	No

Summary for Input Data

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
1	Combi boiler or unvented hot water system	6.00		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	150.00	L	
Loss	1.20	kWh/day	
Pipes insulation	Fully insulated primary pipework		
In Airing Cupboard	No		

31.0 Thermal Store

None

34.0 Small-scale Hydro

None	
Electricity Generated	0.00
Apportioned	0.00 kWh/Year
Connected to dwelling's electricity meter	Yes
Electricity Generation	Annual

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

None

Summary for Input Data



Property Reference	R4328 Westchurch C Knaresboro		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Knaresborough	
Property	R4328 Westchurch C Knaresboro			

SAP Rating	83 B	DER	4.33	TER	12.21
Environmental	97 A	% DER < TER			64.54
CO ₂ Emissions (t/year)	0.31	DFEE	35.31	TFEE	36.39
Compliance Check	See BREL	% DFEE < TFEE			2.98
% DPER < TPER	29.16	DPER	45.35	TPER	64.02

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	90.34	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements	Ground floor:	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	1st Storey:	16.70 m	34.60 m ²	2.40 m
		16.70 m	34.60 m ²	2.70 m

8.0 Living Area	15.30	m ²
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9.0 External Walls	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	85.17	73.60	0.00	None	11.57	Calculate Wall Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	42.84	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Internal Wall 1	Plasterboard on timber frame	9.00	99.11

10.0 External Roofs	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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	34.60	34.60	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings	Description	Storey	Construction	Area (m ²)
	Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	34.60

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	34.60

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	34.60

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	4.36	0
Rear Window	Window	External Wall 1	South	3.11	0
Rear Door	Door	External Wall 1	South	2.05	0

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	8.54	0.05	0.05	No
E3 Sill	Independently assessed	6.54	0.04	0.04	No
E4 Jamb	Independently assessed	17.28	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	16.70	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	16.70	0.08	0.08	No
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	16.70	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	8.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.30	0.03	0.03	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan	0
	Kitchen	
0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	2
	Other Wet Room	

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

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes	
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	0	
In Winter	208.33	
In Summer	281.55	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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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

Summary for Input Data

Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		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	150.00	L	
Loss	1.20	kWh/day	
Pipes insulation	Fully insulated primary pipework		
In Airing Cupboard	No		

31.0 Thermal Store

None

34.0 Small-scale Hydro

Electricity Generated	0.00											
Apportioned	0.00											
Connected to dwelling's electricity meter	Yes											
Electricity Generation	Annual											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Peover		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Peover	
Property	R4328 Westchurch C Peover			

SAP Rating	83 B	DER	3.92	TER	10.83
Environmental	97 A	% DER < TER			63.80
CO ₂ Emissions (t/year)	0.36	DFEE	35.27	TFEE	35.83
Compliance Check	See BREL	% DFEE < TFEE			1.56
% DPER < TPER	27.54	DPER	40.98	TPER	56.56

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	87.71	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	19.50 m	45.30 m ²	2.40 m
	1st Storey:	19.50 m	45.30 m ²	2.70 m

8.0 Living Area	20.60	m ²
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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
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	99.45	82.93	0.00	None	16.52	Calculate Wall Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	48.64	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	133.20

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
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	45.30	45.30	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	45.30

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	45.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	45.30

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	4.41	0
Rear Window	Window	External Wall 1	South	6.43	0
HGD	HGD	External Wall 1	South	2.94	0
Side Window	Window	External Wall 1	East	0.70	0

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	11.70	0.05	0.05	No
E3 Sill	Independently assessed	9.30	0.04	0.04	No
E4 Jamb	Independently assessed	29.06	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	19.50	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	19.50	0.08	0.08	No
E16 Corner (normal)	Independently assessed	15.30	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	15.80	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	9.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	9.30	0.03	0.03	No
E12 Gable (insulation at ceiling level)	Independently assessed	3.70	0.06	0.06	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	5.10	-0.04	-0.04	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan	0
	Kitchen	
0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	2
	Other Wet Room	

20.0 Fans, Open Fireplaces, Flues

Summary for Input Data

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	No				
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22.0 Pressure Testing	Yes				
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa			
Property Tested?	Yes				
Test Method	Blower Door				

22.0 Lighting	No				
No Fixed Lighting	No				
	Name Lighting 1	Efficacy 80.00	Power 10.00	Capacity 800.00	Count 15

24.0 Main Heating 1	Database				
Percentage of Heat	100.00 %				
Database Ref. No.	105616				
Fuel Type	Electricity				
SAP Code	0				
In Winter	221.69				
In Summer	282.94				
Model Name	WH-SDC0305J3E5 + WH-UD03JE5				
Manufacturer	Panasonic HVAC UK Ltd				
System Type	Heat Pump				
Controls SAP Code	2207				
Delayed Start Stat	No				
Burner Control	On/Off				
HETAS approved System	No				
Is MHS Pumped	Pump in heated space				
Heating Pump Age	2013 or later				
Heat Emitter	Radiators				
Flow Temperature	Enter value				
Flow Temperature Value	55.00				

25.0 Main Heating 2	None				
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26.0 Heat Networks	None				
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27.0 Secondary Heating	None				
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28.0 Water Heating	Main Heating 1				
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				

Summary for Input Data

Waste Water Heat Recovery Storage System	No
Solar Panel	No
Water use <= 125 litres/person/day	Yes
Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder

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	200.00	L
Loss	1.70	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

None

34.0 Small-scale Hydro

34.0 Small-scale Hydro	None	
Electricity Generated	0.00	
Apportioned	0.00	kWh/Year
Connected to dwelling's electricity meter	Yes	
Electricity Generation	Annual	

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

None

Summary for Input Data



Property Reference	R4328 Westchurch C Ripley		Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Ripley	
Property	R4328 Westchurch C Ripley			

SAP Rating	83 B	DER	3.79	TER	10.34
Environmental	97 A	% DER < TER			63.35
CO ₂ Emissions (t/year)	0.39	DFEE	34.50	TFEE	35.18
Compliance Check	See BREL	% DFEE < TFEE			1.94
% DPER < TPER	26.68	DPER	39.66	TPER	54.09

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	2	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	82.69	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements		Heat Loss Perimeter	Internal Floor Area	Average Storey Height
	Ground floor:	20.50 m	49.70 m ²	2.40 m
	1st Storey:	20.50 m	49.70 m ²	2.70 m

8.0 Living Area	29.60	m ²
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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
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	104.55	90.00	0.00	None	14.55	Calculate Wall Area

Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	46.84	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	106.24

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
External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	49.70	49.70	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	49.70

Summary for Input Data



11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	49.70

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	49.70

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFR, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFR, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	5.03	0
Rear Window	Window	External Wall 1	South	4.14	0
HGD	HGD	External Wall 1	South	3.33	0

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	11.18	0.05	0.05	No
E3 Sill	Independently assessed	8.59	0.04	0.04	No
E4 Jamb	Independently assessed	21.18	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	20.50	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	20.50	0.08	0.08	No
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
E10 Eaves (insulation at ceiling level)	Independently assessed	20.50	0.05	0.05	No
P1 Party wall - Ground floor	Independently assessed	9.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	9.30	0.03	0.03	No

Y-value

 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	3
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan	0
	Kitchen	
0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	2
	Other Wet Room	

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

Summary for Input Data

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	No
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22.0 Pressure Testing	Yes	
Designed AP ₅₀	3.50	m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting	No				
No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	0	
In Winter	224.34	
In Summer	284.17	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2	None
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26.0 Heat Networks	None
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27.0 Secondary Heating	None
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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

Summary for Input Data

Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		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	200.00			L	
Loss	1.70			kWh/day	
Pipes insulation	Fully insulated primary pipework				
In Airing Cupboard	No				

31.0 Thermal Store

None	
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34.0 Small-scale Hydro

None												
Electricity Generated	0.00											
Apportioned	0.00									kWh/Year		
Connected to dwelling's electricity meter	Yes											
Electricity Generation	Annual											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Wollaton MI			Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Wollaton MI		
Property	R4328 Westchurch C Wollaton MI				

SAP Rating	85 B	DER	3.41	TER	10.12
Environmental	97 A	% DER < TER			66.30
CO ₂ Emissions (t/year)	0.35	DFEE	28.07	TFEE	30.03
Compliance Check	See BREL	% DFEE < TFEE			6.54
% DPER < TPER	32.42	DPER	35.77	TPER	52.93

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North
Property Tenure	ND
Transaction Type	6
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
Which Floor	0
2.0 Number of Storeys	3
3.0 Date Built	2025
3.0 Property Age Band	L
4.0 Sheltered Sides	2
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	1.00 kJ/m ² K
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	8.80 m	36.40 m ²	2.40 m
1st Storey:	8.80 m	36.40 m ²	2.70 m
2nd Storey:	8.80 m	26.50 m ²	2.09 m

8.0 Living Area	14.30 m ²
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9.0 External Walls	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	57.88	46.41	0.00	None	11.47	Enter Gross Area
	External Wall 2	Timber Frame	Timber framed wall (one layer of plasterboard)	0.10	9.00	12.32	12.32	0.00	None	0.00	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	127.46	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Internal Wall 1	Plasterboard on timber frame	9.00	136.24

10.0 External Roofs	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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	22.88	22.88	None	0.00	Enter Gross Area	0.00
	External Roof 2	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	16.72	14.67	None	0.00	Enter Gross Area	2.05

Summary for Input Data

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	36.40
Internal Ceiling 2	+1	Plasterboard ceiling, carpeted chipboard floor	26.50

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	36.40

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	36.40
Internal Floor 2		Plasterboard ceiling, carpeted chipboard floor	18.00	26.50

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
Roof	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	4.32	0
Roof Front	Roof	External Roof 2	North	1.03	0
Roof Rear	Roof	External Roof 2	South	1.03	0
Rear Door	Door	External Wall 1	South	2.05	0
Rear Window	Window	External Wall 1	South	3.05	0

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	8.67	0.05	0.05	No
E3 Sill	Independently assessed	6.67	0.04	0.04	No
E4 Jamb	Independently assessed	19.11	0.03	0.03	No
E6 Intermediate floor within a dwelling	Independently assessed	14.50	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	20.40	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	16.60	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.80	0.03	0.03	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	8.80	0.15	0.15	No
E10 Eaves (insulation at ceiling level)	Independently assessed	8.80	0.05	0.05	No
R1 Head of roof window	Independently assessed	2.28	0.04	0.04	Yes
R2 Sill of roof window	Independently assessed	2.28	0.04	0.04	Yes
R3 Jamb of roof window	Independently assessed	2.40	0.04	0.04	Yes
R6 Flat ceiling	Independently assessed	8.80	0.02	0.02	No
R8 Roof to wall (rafter)	Independently assessed	8.80	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	8.80	0.15	0.15	No
E18 Party wall between dwellings	Independently assessed	6.00	0.12	0.12	No
P5 Party wall - Roof (insulation at rafter level)	Independently assessed	4.40	0.24	0.24	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	4
SFP from Installer Commissioning Certificate	No

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0

Summary for Input Data

0.11	In Room Fan Other	0
	Wet Room	
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other	0
	Wet Room	
0.08	Through Wall Fan	1
	Kitchen	
0.08	Through Wall Fan	3
	Other Wet Room	

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

No

22.0 Pressure Testing

Yes	
Designed AP ₅₀	3.50 m ³ /(h.m ²) @ 50 Pa
Property Tested?	Yes
Test Method	Blower Door

22.0 Lighting

No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1

Database	
Percentage of Heat	100.00 %
Database Ref. No.	105616
Fuel Type	Electricity
SAP Code	0
In Winter	0.00
In Summer	0.00
Model Name	WH-SDC0305J3E5 + WH-UD03JE5
Manufacturer	Panasonic HVAC UK Ltd
Controls SAP Code	2207
Delayed Start Stat	No
Burner Control	On/Off
HETAS approved System	No
Is MHS Pumped	Pump in heated space
Heating Pump Age	2013 or later
Heat Emitter	Radiators
Flow Temperature	Enter value
Flow Temperature Value	55.00

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
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Summary for Input Data

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
Summer Immersion	No
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
1	Combi boiler or unvented hot water system	6.00		No	
2	Combi boiler or unvented hot water system	6.00		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	250.00	L
Loss	2.10	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

None

34.0 Small-scale Hydro

None	
Electricity Generated	0.00
Apportioned	0.00
Connected to dwelling's electricity meter	Yes
Electricity Generation	Annual

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

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4328 Westchurch C Wollaton			Issued on Date	29/08/2025
Assessment Reference	00001	Prop Type Ref	Wollaton		
Property	R4328 Westchurch C Wollaton				

SAP Rating	84 B	DER	3.68	TER	10.91
Environmental	97 A	% DER < TER			66.27
CO ₂ Emissions (t/year)	0.37	DFEE	32.59	TFEE	33.91
Compliance Check	See BREL	% DFEE < TFEE			3.88
% DPER < TPER	32.67	DPER	38.50	TPER	57.18

Assessor Details	Mr. Benjamin Matthews	Assessor ID	P388-0001
Client			

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

Orientation	North	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Suburban	
1.0 Property Type	House, Semi-Detached	
Which Floor	0	
2.0 Number of Storeys	3	
3.0 Date Built	2025	
3.0 Property Age Band	L	
4.0 Sheltered Sides	2	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	82.36	kJ/m²K
7.0 Electricity Tariff	Standard	
Smart electricity meter fitted	No	
Smart gas meter fitted	No	

7.0 Measurements	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	17.10 m	36.40 m ²	2.40 m
1st Storey:	17.10 m	36.40 m ²	2.70 m
2nd Storey:	15.10 m	26.50 m ²	2.09 m

8.0 Living Area	14.30	m ²
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9.0 External Walls	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
	External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	100.21	88.74	0.00	None	11.47	Enter Gross Area
	External Wall 2	Timber Frame	Timber framed wall (one layer of plasterboard)	0.10	9.00	12.32	12.32	0.00	None	0.00	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m ² K)	Kappa (kJ/m ² K)	Area (m ²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	63.83	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	Internal Wall 1	Plasterboard on timber frame	9.00	136.24

10.0 External Roofs	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
	External Roof 1	External Plane Roof	Plasterboard, insulated at ceiling level	0.10	9.00	22.88	22.88	None	0.00	Enter Gross Area	0.00
	External Roof 2	External Slope Roof	Plasterboard, insulated slope	0.13	9.00	16.72	14.67	None	0.00	Enter Gross Area	2.05

Summary for Input Data

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	36.40
Internal Ceiling 2	+1	Plasterboard ceiling, carpeted chipboard floor	26.50

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heatloss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	36.40

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	18.00	36.40
Internal Floor 2		Plasterboard ceiling, carpeted chipboard floor	18.00	26.50

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	Manufacturer	Solid Door				0.00			1.10
HGD	BFRC, BSI or CERTASS data	Half Glazed Door	Double Low-E Soft 0.05			0.40		1.00	1.40
Window	BFRC, BSI or CERTASS data	Window	Double Low-E Soft 0.05			0.40		1.00	1.40
Roof	Manufacturer	Roof Window	Double Low-E Soft 0.05			0.63		0.70	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Door	Door	External Wall 1	North	2.05	0
Front Window	Window	External Wall 1	North	4.32	0
Roof Front	Roof	External Roof 2	North	1.03	0
Roof Rear	Roof	External Roof 2	South	1.03	0
Rear Door	Door	External Wall 1	South	2.05	0
Rear Window	Window	External Wall 1	South	3.05	0

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	8.67	0.05	0.05	No
E3 Sill	Independently assessed	6.67	0.04	0.04	No
E4 Jamb	Independently assessed	19.11	0.03	0.03	No
E6 Intermediate floor within a dwelling	Independently assessed	23.40	0.08	0.08	No
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	8.30	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	4.40	0.03	0.03	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	8.80	0.15	0.15	No
E10 Eaves (insulation at ceiling level)	Independently assessed	8.80	0.05	0.05	No
E12 Gable (insulation at ceiling level)	Independently assessed	4.40	0.06	0.06	No
E13 Gable (insulation at rafter level)	Table K1 - Default	2.20	0.25	0.25	No
E16 Corner (normal)	Table K1 - Default	3.00	0.18	0.18	No
R1 Head of roof window	Independently assessed	2.28	0.04	0.04	Yes
R2 Sill of roof window	Independently assessed	2.28	0.04	0.04	Yes
R3 Jamb of roof window	Independently assessed	2.40	0.04	0.04	Yes
R6 Flat ceiling	Independently assessed	8.80	0.02	0.02	No
R8 Roof to wall (rafter)	Independently assessed	8.80	0.01	0.01	No
E5 Ground floor (normal)	Independently assessed	17.10	0.15	0.15	No
E18 Party wall between dwellings	Independently assessed	3.00	0.12	0.12	No
P5 Party wall - Roof (insulation at rafter level)	Independently assessed	2.20	0.24	0.24	No

Y-value W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Mechanical extract ventilation - decentralised
MV Reference Number	500776
Duct Type	Rigid
Wet Rooms	4
SFP from Installer Commissioning Certificate	No

Summary for Input Data

19.1 Mechanical extract ventilation - Decentralised

SFP	Fan/Room Type	Count
0.14	In Room Fan Kitchen	0
0.11	In Room Fan Other Wet Room	0
0.00	In Duct Fan Kitchen	0
0.00	In Duct Fan Other Wet Room	0
0.08	Through Wall Fan Kitchen	1
0.08	Through Wall Fan Other Wet Room	3

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	3.50	m ² /(h.m ²) @ 50 Pa
Property Tested?	Yes	
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No				
	Name	Efficacy	Power	Capacity	Count
	Lighting 1	80.00	10.00	800.00	15

24.0 Main Heating 1

	Database	
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	0	
In Winter	222.38	
In Summer	283.03	
Model Name	WH-SDC0305J3E5 + WH-UD03JE5	
Manufacturer	Panasonic HVAC UK Ltd	
System Type	Heat Pump	
Controls SAP Code	2207	
Delayed Start Stat	No	
Burner Control	On/Off	
HETAS approved System	No	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Radiators	
Flow Temperature	Enter value	
Flow Temperature Value	55.00	

25.0 Main Heating 2

26.0 Heat Networks

Summary for Input Data

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

Summer Immersion

No

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

1

Combi boiler or unvented hot water system

6.00

No

2

Combi boiler or unvented hot water system

6.00

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

250.00

L

Loss

2.10

kWh/day

Pipes insulation

Fully insulated primary pipework

In Airing Cupboard

No

31.0 Thermal Store

None

34.0 Small-scale Hydro

None

Electricity Generated

0.00

Apportioned

0.00

kWh/Year

Connected to dwelling's electricity meter

Yes

Electricity Generation

Annual

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None