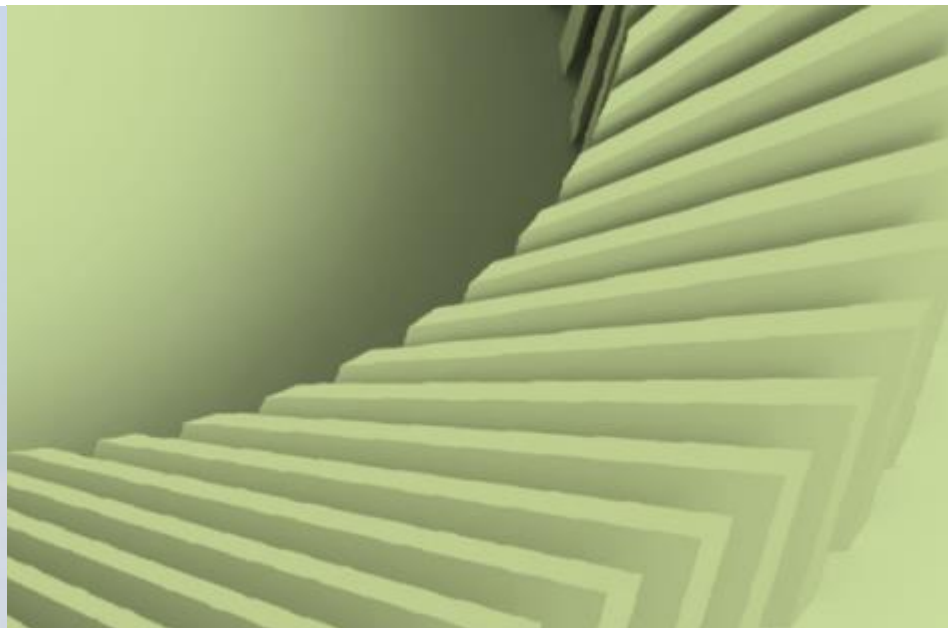


Westchurch Homes

Dumers Lane, Radcliffe

Energy Statement

November 2024



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Create. Deliver. Assess.

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Document Title:	Energy Statement
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Document Control Sheet

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-	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 87 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 87 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:

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, BFRC 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, buildup-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/m ²)
Target Fabric Energy Efficiency (Average)	34.12
Dwelling Fabric Energy Efficiency (Average)	33.37
Percentage Reduction (%)	2.20

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 65.05%. 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 (kgCO ₂ /year/m ²)
Target Emission Rate (Average)	11.16
Dwelling Emission Rate (Average)	3.90
Percentage Reduction (%)	65.05

The statement thus far has demonstrated the predicted performance of the proposed scheme, based on the clients preferred fabric and services specification. While this achieves a predicted reduction in carbon emissions of 65.05%, 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 27,420.03 kg/CO₂/yr. In order to derive the PV output requirement in kWh/yr, the 27,420.03 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 181,589.60 kWh/yr.

Therefore, PV generation to meet this figure at a minimum will be installed at the scheme. The policy is not current 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 181,589.60 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 space heating demand of 26.12 kWh/m² is predicted, with all housetypes achieving below the 30 kWh/m² target. 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	243,246.10
Dwelling Water Heating Energy Usage	79,285.29
Percentage Reduction (%)	67.41

Based on these calculations we can see that the scheme is predicted to achieve a reduction in energy usage of 67.41%, 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 3345.34 square metres. The total generation currently projected to be required from PV is 181,589.60 kWh/yr. Taking an industry standard panel to currently be circa 400W output, this equates to 454 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 400W Panel. This gives an area per panel of 1.87m², and therefore a total area sitewide of 848.98 m² to be covered by PV panels. This equates to 25.37% 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 87 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 65.05%.

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 27,420.03 kg/CO₂/yr. In order to derive the PV output requirement in kWh/yr, the 27,420.03 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 181,589.60 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 26.12 kWh/m² is predicted, with all houstypes achieving below the 30 kWh/m² target.

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 67.41%, 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 181,589.60 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.



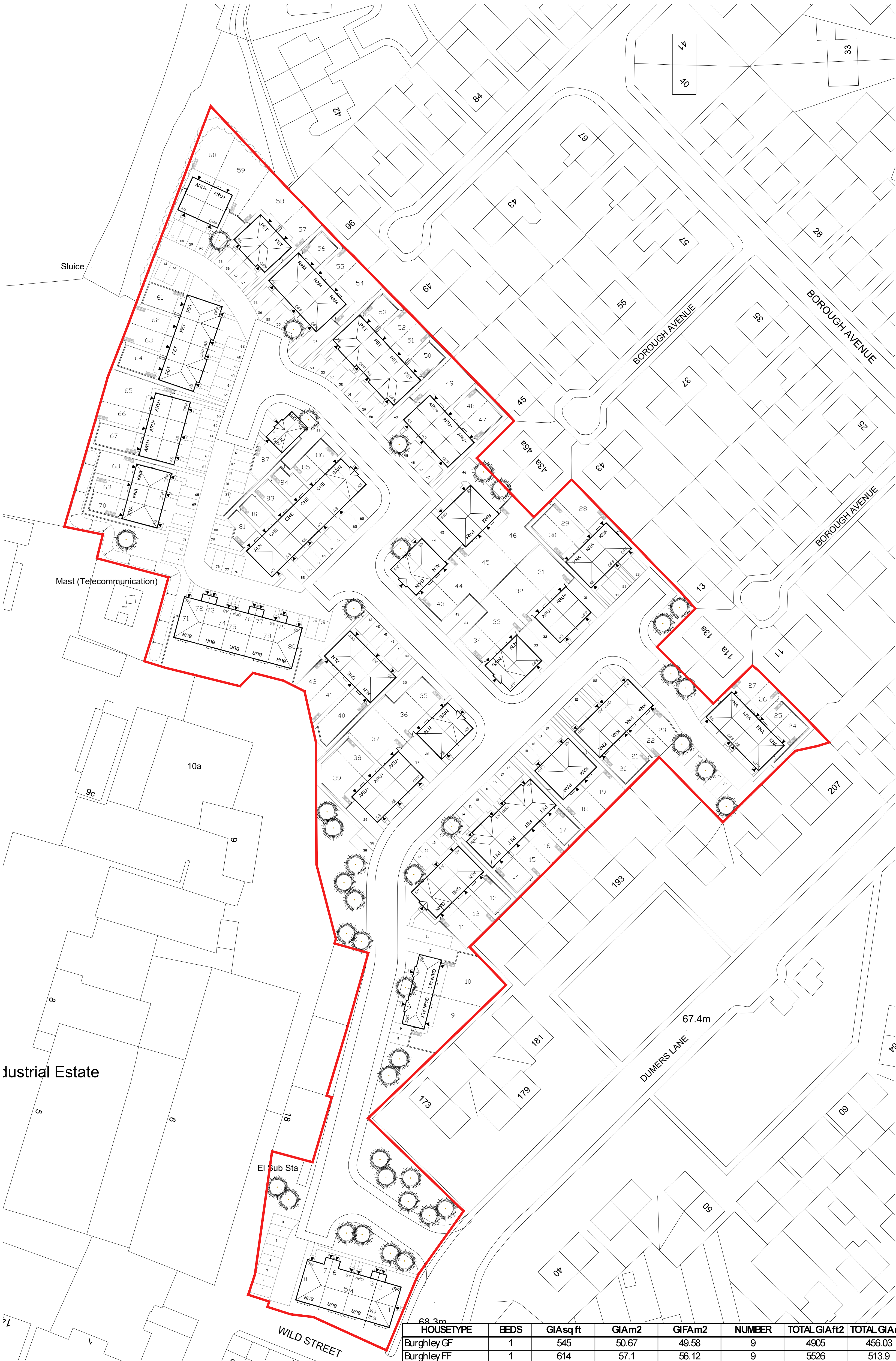
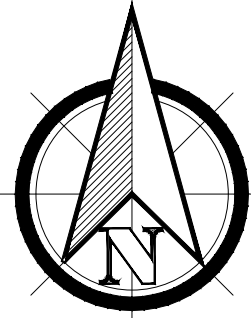
Appendix 1

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.
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reproduced without prior written consent.



C	21.10.24	KLW	Plot around the acoustic bund reconfigured.
B	03.10.24	KLW	Plot 61-79 adjusted and private drive amended to allow for acoustic bund.
A	13.09.24	KLW	Access road relocated and plots 1-8 adjusted to suit.
Rev.	Date	By	Description

Client:

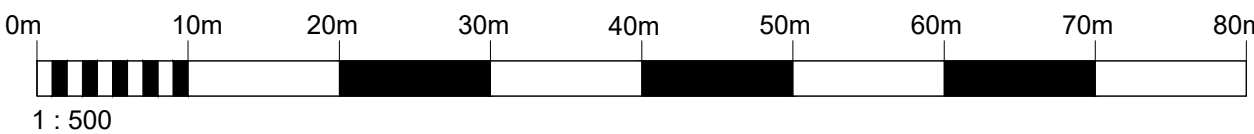


Project:
BEALEY IND EST
RADCLIFFE

Drawing Title:
PROPOSED SITE LAYOUT

Drawn: KW	Checked:	Scale: 1:500	Date: AUG 2024
Job No: 1025	Drawing No: SL01	Rev: C	

HOUSETYPE	BEDS	GIA sqft	GIA m2	GIFA m2	NUMBER	TOTAL GIA ft2	TOTAL GIA m2
Burghley GF	1	545	50.67	49.58	9	4905	456.03
Burghley FF	1	614	57.1	56.12	9	5526	513.9
Knarborough	2	769	71.4	70	14	10766	999.6
Alnwick	3	923	85.7	84.1	7	6461	599.9
Chester	3	946	88	85	6	5676	528
Gainford	3	963	89	87.7	5	4815	445
Gainford Alt	3	963	89	87.7	2	1926	178
Petworth	3	950	88.34	86.53	14	13300	1236.76
Ramsdell	4	1070	99.37	97.58	7	7490	695.59
Arundel +	4	1212	112.5	110.8	13	15756	1462.5
Arundel + Alt	4	1259	116.97	115.94	1	1259	116.97
TOTAL					87	77880	7232.25



1 : 500



Appendix 2

As Designed SAP Calculation Information

CLIENT	Westchurch Homes
PROJECT	Dumers Lane, Radcliffe
DATE	19.11.2024
REV	A



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 Energy Usage (kWh/yr.)	Dwelling Water Heating Energy Usage (kWh/yr.)
Burghley GF END (Plot 01)	4	13.76	4.35	857.52	23.62	9468.16	3001.16
Burghley 1F END (Plot 02)	4	13.41	4.55	1063.2	29.33	10004.24	3226.24
Burghley 1F MID (Plot 03)	5	11.92	3.95	1152.6	20.95	12560.90	4006.25
Burghley GF MID (Plot 04)	5	13.51	4.39	1082.3	23.85	11841.25	3745.15
Gainsford END (Plot 11)	7	10.82	3.88	2394.7	28.87	20386.66	6677.16
Chester MID (Plot 12)	6	10.33	3.7	1778.22	22.07	17113.08	5655.78
Alnwick END (Plot 13)	7	11.1	4	2316.93	27.71	20072.50	6640.62
Petworth END (Plot 14)	8	10.39	3.8	2817.44	27.58	23551.68	7785.36
Petworth MID (Plot 15)	6	9.56	3.52	1958.52	22.62	17711.58	5861.52
Ramsdell SEMI (Plot 18)	6	10.47	3.86	2260.38	28.84	18159.42	6006.00
Knaresborough END (Plot 20)	8	12.42	4.43	2399.76	29.76	21061.12	6852.80
Knaresborough MID (Plot 21)	6	11.17	3.89	1578.12	22.41	15859.98	5111.64
Arundel + END (Plot 31)	11	10.25	3.48	4332.46	28.73	33297.33	10697.28
Arundel + MID (Plot 38)	3	9.23	3.19	1082.19	22.33	9112.23	3011.49
Ramsdell MID (Plot 55)	1	9.51	3.54	345.69	23.29	3035.96	1006.84
AVERAGE		11.16	3.90	27420.03	26.12		
TOTAL						243246.10	79285.29



Appendix 3

As Designed SAP Summaries



Summary for Input Data



Property Reference	R4228 Dumers Lane P01		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P01	Prop Type Ref	Burghley GF END	
Property	R4228 Dumers Lane P01			

SAP Rating	86 B	DER	4.35	TER	13.76
Environmental	97 A	% DER < TER			68.39
CO ₂ Emissions (t/year)	0.22	DFEE	34.64	TFEE	36.09
Compliance Check	See BREL	% DFEE < TFEE			4.01
% DPER < TPER	37.01	DPER	45.61	TPER	72.41

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

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

Orientation	East
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	Maisonette, End-Terrace
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	1
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	264.57
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	37.54	0.00	None	8.78	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	0.10	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	100.00	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	East	3.69	0
Front Doors	Door	External Wall 1	East	1.91	0
Side Windows	Window	External Wall 1	South	1.50	0
Side Windows 2	Window	External Wall 1	North	1.68	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	6.11	0.05	0.05	No
E3 Sill	Independently assessed	5.20	0.04	0.04	No
E4 Jamb	Independently assessed	15.30	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	0.08	0.08	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	Table K1 - Default	2.40	0.24	0.24	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

Number of open flues

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

24.0 Main Heating 1

Percentage of Heat %

Database Ref. No.

Fuel Type

SAP Code

In Winter

In Summer

Model Name

Manufacturer

System Type

Controls SAP Code

PCDF Controls

Delayed Start Stat

Burner Control

HETAS approved System

Is MHS Pumped

Heating Pump Age

Heat Emitter

Flow Temperature

Flow Temperature Value

25.0 Main Heating 2

26.0 Heat Networks

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

28.1 Showers

28.3 Waste Water Heat Recovery System

31.0 Thermal Store

34.0 Small-scale Hydro

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

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4228 Dumers Lane P02		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P02	Prop Type Ref	Burghley 1F END	
Property	R4228 Dumers Lane P02			

SAP Rating	84 B	DER	4.55	TER	13.41
Environmental	97 A	% DER < TER			66.07
CO ₂ Emissions (t/year)	0.27	DFEE	38.67	TFEE	38.77
Compliance Check	See BREL	% DFEE < TFEE			0.26
% DPER < TPER	32.42	DPER	47.58	TPER	70.40

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	Urban
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	1
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
Thermal Mass	183.25
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:	2.90 m	5.20 m²	2.40 m
	1st Storey:	21.00 m	53.20 m²	2.65 m

8.0 Living Area	29.50	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	62.61	50.92	0.00	None	11.69	Calculate Wall Area

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

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	50.00

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	0.10	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	100.00	48.90

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	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	2.15	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Windows	Window	External Wall 1	South	1.31	0
Side Windows	Window	External Wall 1	East	6.32	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	7.85	0.05	0.05	No
E3 Sill	Independently assessed	6.94	0.04	0.04	No
E4 Jamb	Independently assessed	20.75	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	2.90	0.10	0.10	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	21.00	0.08	0.08	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	Table K1 - Default	4.80	0.24	0.24	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	207.93	
In Summer	282.67	
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

26.0 Heat Networks

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Immersion Heater

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

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

Cylinder Stat

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness

Cylinder Volume

L

Loss

kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store Pipework

34.0 Small-scale Hydro

Electricity Generated

Apportioned

kWh/Year

Connected to dwelling's electricity meter

Electricity Generation

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

Recommendations

Summary for Input Data



Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4228 Dumers Lane P03		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P03	Prop Type Ref	Burghley 1F MID	
Property	R4228 Dumers Lane P03			

SAP Rating	86 B	DER	3.95	TER	11.92
Environmental	97 A	% DER < TER			66.86
CO ₂ Emissions (t/year)	0.23	DFEE	29.62	TFEE	31.18
Compliance Check	See BREL	% DFEE < TFEE			5.00
% DPER < TPER	33.66	DPER	41.46	TPER	62.49

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	Urban
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	196.11
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:	2.90 m	5.20 m²	2.40 m
	1st Storey:	11.10 m	53.20 m²	2.65 m

8.0 Living Area	29.50	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	36.38	27.87	0.00	None	8.51	Calculate Wall Area

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	95.90	0.00	None

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	50.00

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	0.10	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	100.00	48.90

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	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	3.19	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Windows	Window	External Wall 1	South	2.71	0
Side Windows	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	5.95	0.05	0.05	No
E3 Sill	Independently assessed	5.04	0.04	0.04	No
E4 Jamb	Independently assessed	17.45	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	2.90	0.10	0.10	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	11.00	0.08	0.08	No
E16 Corner (normal)	Independently assessed	2.40	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	Table K1 - Default	4.80	0.24	0.24	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	12.00	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

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	207.64	
In Summer	284.54	
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

26.0 Heat Networks

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

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	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

Summary for Input Data



Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4228 Dumers Lane P04		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P04	Prop Type Ref	Burghley GF MID	
Property	R4228 Dumers Lane P04			

SAP Rating	85 B	DER	4.39	TER	13.51
Environmental	97 A	% DER < TER			67.51
CO ₂ Emissions (t/year)	0.22	DFEE	34.26	TFEE	34.62
Compliance Check	See BREL	% DFEE < TFEE			1.03
% DPER < TPER	35.29	DPER	46.09	TPER	71.22

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	Urban
1.0 Property Type	Maisonette, Mid-Terrace
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	271.91
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:	9.20 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	22.08	15.56	0.00	None	6.52	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	56.00	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	0.10	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	100.00	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	1.80	0
Front Doors	Door	External Wall 1	North	1.91	0
Rear Windows	Window	External Wall 1	West	2.81	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	4.61	0.05	0.05	No
E3 Sill	Independently assessed	3.70	0.04	0.04	No
E4 Jamb	Independently assessed	11.70	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	9.20	0.15	0.15	No
E7 Party floor between dwellings (in blocks of flats)	Independently assessed	92.00	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	7.20	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	21.40	0.09	0.09	No
P3 Party wall - Intermediate floor between dwellings (in blocks of flats)	Table K1 - Default	21.00	0.00	0.00	No
E25 Staggered party wall between dwellings	Table K1 - Default	2.40	0.24	0.24	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	207.98	
In Summer	285.81	
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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	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

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

Summary for Input Data

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	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	R4228 Dumers Lane P11		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P11	Prop Type Ref	Gainsford END	
Property	R4228 Dumers Lane P11			

SAP Rating	84 B	DER	3.88	TER	10.82
Environmental	97 A	% DER < TER			64.14
CO ₂ Emissions (t/year)	0.35	DFEE	36.23	TFEE	36.55
Compliance Check	See BREL	% DFEE < TFEE			0.89
% DPER < TPER	28.11	DPER	40.50	TPER	56.34

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

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

Orientation	Southwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, End-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
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	93.90
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:	19.70 m	44.10 m²	2.40 m
		19.70 m	44.10 m²	2.70 m

8.0 Living Area	14.70	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	100.47	79.41	0.00	None	21.06	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	83.00	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Wall 1	Plasterboard on timber frame	9.00	120.00

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	44.10	44.10	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings	Description	Storey	Construction	Area (m²)
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Summary for Input Data

Internal Ceiling 1 Lowest occupied Plasterboard ceiling, carpeted chipboard floor 41.60

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	44.10

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	41.60

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	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	South West	7.43	0
Front Doors	Door	External Wall 1	South West	1.91	0
SE HGD	Window	External Wall 1	South East	3.78	0
SW Windows	Window	External Wall 1	South East	4.24	0
NW Windows	Window	External Wall 1	North West	3.70	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	15.69	0.05	0.05	No
E3 Sill	Independently assessed	14.78	0.04	0.04	No
E4 Jamb	Independently assessed	35.22	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	19.70	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	19.70	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	6.20	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	10.00	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	8.30	0.03	0.03	No
E12 Gable (insulation at ceiling level)	Independently assessed	13.50	0.06	0.06	No
E16 Corner (normal)	Independently assessed	20.40	0.04	0.04	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	10.00	-0.04	-0.04	No

Y-value 0.05 W/m²K

Description Calculate bridges

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

Summary for Input Data

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
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 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	12

24.0 Main Heating 1

Database	
Percentage of Heat	100.00 %
Database Ref. No.	105616
Fuel Type	Electricity
SAP Code	104
In Winter	225.90
In Summer	285.31
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

26.0 Heat Networks

None

Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None								
Heat source 2	None								
Heat source 3	None								
Heat source 4	None								
Heat source 5	None								

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
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 Type	Other	
Insulation Thickness	20	
Cylinder Volume	200.00	L
Loss	1.70	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

10 Thermal Store	None
Thermal Store Pipework	within a single casing

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	

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	R4228 Dumers Lane P12		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P12	Prop Type Ref	Chester MID	
Property	R4228 Dumers Lane P12			

SAP Rating	85 B	DER	3.70	TER	10.33
Environmental	97 A	% DER < TER			64.18
CO ₂ Emissions (t/year)	0.3	DFEE	29.46	TFEE	31.02
Compliance Check	See BREL	% DFEE < TFEE			5.01
% DPER < TPER	27.98	DPER	38.75	TPER	53.80

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

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

Orientation Northwest

Property Tenture ND

Transaction Type 6

Terrain Type Urban

1.0 Property Type House, Mid-Terrace

Position of Flat Ground-floor flat

Which Floor 0

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 93.87 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:	9.80 m	40.10 m ²	2.40 m
1st Storey:	9.80 m	40.10 m ²	2.70 m

8.0 Living Area 14.70 m²

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	49.98	35.99	0.00	None	13.99	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	83.00	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	120.00

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	40.10	40.10	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings	Description	Storey	Construction	Area (m ²)
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Summary for Input Data

Internal Ceiling 1 Lowest occupied Plasterboard ceiling, carpeted chipboard floor 41.60

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	40.10

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	40.10

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 West	4.24	0
Front Doors	Door	External Wall 1	North West	1.91	0
SE HGD	Window	External Wall 1	South East	3.36	0
SE Windows	Window	External Wall 1	South East	4.48	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	10.55	0.05	0.05	No
E3 Sill	Independently assessed	9.64	0.04	0.04	No
E4 Jamb	Independently assessed	21.19	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	9.80	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	9.80	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	9.80	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	20.00	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	16.60	0.03	0.03	No

Y-value 0.06 W/m²K

Description Calculate bridges

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

Summary for Input Data

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	m³/(h.m²) @ 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	12

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	208.42	
In Summer	281.31	
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

26.0 Heat Networks

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

28.0 Water Heating
Water Heating

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
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 Type	Other	
Insulation Thickness	20	
Cylinder Volume	200.00	L
Loss	1.70	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	R4228 Dumers Lane P13		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P13	Prop Type Ref	Alnwick END	
Property	R4228 Dumers Lane P13			

SAP Rating	84 B	DER	4.00	TER	11.10
Environmental	97 A	% DER < TER			63.96
CO ₂ Emissions (t/year)	0.34	DFEE	34.76	TFEE	35.42
Compliance Check	See BREL	% DFEE < TFEE			1.87
% DPER < TPER	27.82	DPER	41.82	TPER	57.94

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

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

Orientation	Northwest	
Property Tenture	ND	
Transaction Type	6	
Terrain Type	Urban	
1.0 Property Type	House, End-Terrace	
Position of Flat	Ground-floor flat	
Which Floor	0	
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	87.38	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:	18.70 m	41.40 m ²	2.40 m
	1st Storey:	18.70 m	41.40 m ²	2.70 m

8.0 Living Area	14.70	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	95.37	81.59	0.00	None	13.78	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	41.00	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Wall 1	Plasterboard on timber frame	9.00	120.00

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	41.40	41.40	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m ²)
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Summary for Input Data

Internal Ceiling 1 Lowest occupied Plasterboard ceiling, carpeted chipboard floor 41.60

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	41.40

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	41.60

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Door	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 West	3.54	0
Front Doors	Door	External Wall 1	North West	1.91	0
SE HGD	Window	External Wall 1	South East	3.15	0
SE Windows	Window	External Wall 1	South East	4.48	0
NE Windows	Window	External Wall 1	North East	0.70	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	10.60	0.05	0.05	No
E3 Sill	Independently assessed	9.69	0.04	0.04	No
E4 Jamb	Independently assessed	23.19	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	18.70	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	18.70	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	18.70	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	10.00	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	8.30	0.03	0.03	No
E16 Corner (normal)	Independently assessed	10.00	0.04	0.04	No

Y-value 0.05 W/m²K

Description Calculate bridges

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	

Summary for Input Data

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 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	12

24.0 Main Heating 1

0 Main Heating 1

Database		
Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	215.94	
In Summer	282.12	
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

26.0 Heat Networks

None

Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None								
Heat source 2	None								
Heat source 3	None								
Heat source 4	None								
Heat source 5	None								

27.0 Secondary Heating

None

Summary for Input Data

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 Type	Other	
Insulation Thickness	20	
Cylinder Volume	200.00	L
Loss	1.70	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

10.0 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	R4228 Dumers Lane P14		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P14	Prop Type Ref	Petworth END	
Property	R4228 Dumers Lane P14			

SAP Rating	84 B	DER	3.80	TER	10.39
Environmental	97 A	% DER < TER			63.43
CO ₂ Emissions (t/year)	0.36	DFEE	34.17	TFEE	34.83
Compliance Check	See BREL	% DFEE < TFEE			1.90
% DPER < TPER	26.70	DPER	39.68	TPER	54.13

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

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

Orientation	Northwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, End-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
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	83.87
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:	19.90 m	46.40 m²	2.40 m
	1st Storey:	19.90 m	46.40 m²	2.70 m

8.0 Living Area	14.70	m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	101.49	86.23	0.00	None	15.26	Calculate Wall Area

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	41.00	0.00	None

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	120.00

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	46.40	46.40	None	0.00	Calculate Wall Area	0.00

Description	Storey	Construction	Area (m²)
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Summary for Input Data



Internal Ceiling 1 Lowest occupied Plasterboard ceiling, carpeted chipboard floor 41.60

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	46.40

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	46.40

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 West	4.79	0
Front Doors	Door	External Wall 1	North West	1.91	0
SE HGD	Window	External Wall 1	South East	3.15	0
SE Windows	Window	External Wall 1	South East	4.71	0
SW Windows	Window	External Wall 1	South West	0.70	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	11.02	0.05	0.05	No
E3 Sill	Independently assessed	10.11	0.04	0.04	No
E4 Jamb	Independently assessed	29.35	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	19.90	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	19.90	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	16.90	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	10.00	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	8.30	0.03	0.03	No
E16 Corner (normal)	Independently assessed	15.00	0.04	0.04	No
E12 Gable (insulation at ceiling level)	Independently assessed	3.00	0.06	0.06	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	5.00	-0.04	-0.04	No

Y-value 0.05 W/m²K

Description Calculate bridges

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

Summary for Input Data

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
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 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	12

24.0 Main Heating 1

Database	
Percentage of Heat	100.00 %
Database Ref. No.	105616
Fuel Type	Electricity
SAP Code	104
In Winter	221.97
In Summer	282.98
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

26.0 Heat Networks

None

Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None								
Heat source 2	None								
Heat source 3	None								
Heat source 4	None								
Heat source 5	None								

Summary for Input Data

27.0 Secondary Heating

28.0 Water Heating

Water Heating

SAP Code

Flue Gas Heat Recovery System

Waste Water Heat Recovery Instantaneous System 1

Waste Water Heat Recovery Instantaneous System 2

Waste Water Heat Recovery Storage System

Solar Panel

Water use <= 125 litres/person/day

Immersion Heater

Summer Immersion

Cold Water Source

Bath Count

Baths connected to WWHRS

Supplementary Immersion

Immersion Only Heating Hot Water

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

Cylinder In Heated Space

Independent Time Control

Insulation Type

Insulation Thickness Type

Insulation Thickness

Cylinder Volume L

Loss kWh/day

Pipes insulation

In Airing Cupboard

31.0 Thermal Store

Thermal Store

Thermal Store Pipework

34.0 Small-scale Hydro

None

Electricity Generated

Apportioned kWh/Year

Connected to dwelling's electricity meter

Electricity Generation

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	R4228 Dumers Lane P15		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P15	Prop Type Ref	Petworth MID	
Property	R4228 Dumers Lane P15			

SAP Rating	85 B	DER	3.52	TER	9.56
Environmental	97 A	% DER < TER			63.18
CO ₂ Emissions (t/year)	0.33	DFEE	29.23	TFEE	30.73
Compliance Check	See BREL	% DFEE < TFEE			4.88
% DPER < TPER	25.88	DPER	36.84	TPER	49.71

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

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

Orientation	Northwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
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	87.16
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:	11.60 m	46.40 m²	2.40 m
		11.60 m	46.40 m²	2.70 m

8.0 Living Area	14.70	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	59.16	44.60	0.00	None	14.56	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	75.00	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Wall 1	Plasterboard on timber frame	9.00	120.00

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	46.40	46.40	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings	Description	Storey	Construction	Area (m²)
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Summary for Input Data

Internal Ceiling 1 Lowest occupied Plasterboard ceiling, carpeted chipboard floor 41.60

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	46.40

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	46.40

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 West	4.79	0
Front Doors	Door	External Wall 1	North West	1.91	0
SE HGD	Window	External Wall 1	South East	3.15	0
SE Windows	Window	External Wall 1	South East	4.71	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	10.32	0.05	0.05	No
E3 Sill	Independently assessed	9.41	0.04	0.04	No
E4 Jamb	Independently assessed	27.35	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	11.60	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	11.60	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	8.60	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	20.00	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	16.60	0.03	0.03	No
E16 Corner (normal)	Independently assessed	5.00	0.04	0.04	No
E12 Gable (insulation at ceiling level)	Independently assessed	3.00	0.06	0.06	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	5.00	-0.04	-0.04	No

Y-value 0.05 W/m²K

Description Calculate bridges

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	

Summary for Input Data

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
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 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	12

24.0 Main Heating 1

Database	
Percentage of Heat	100.00 %
Database Ref. No.	105616
Fuel Type	Electricity
SAP Code	104
In Winter	214.38
In Summer	281.89
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

26.0 Heat Networks

None

Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None								
Heat source 2	None								
Heat source 3	None								
Heat source 4	None								
Heat source 5	None								

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
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 Type	Other	
Insulation Thickness	20	
Cylinder Volume	200.00	L
Loss	1.70	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	

31.0 Thermal Store

0 Thermal Store	None
Thermal Store Pipework	within a single casing

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	R4228 Dumers Lane P18		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P18	Prop Type Ref	Ramsdell SEMI	
Property	R4228 Dumers Lane P18			

SAP Rating	83 B	DER	3.86	TER	10.47
Environmental	97 A	% DER < TER			63.13
CO ₂ Emissions (t/year)	0.39	DFEE	35.05	TFEE	35.38
Compliance Check	See BREL	% DFEE < TFEE			0.93
% DPER < TPER	26.39	DPER	40.31	TPER	54.76

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

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

Orientation	Northwest
Property Tenure	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, Semi-Detached
Position of Flat	Ground-floor flat
Which Floor	0
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	91.77 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:	19.80 m	48.85 m²	2.40 m
	1st Storey:	19.80 m	48.85 m²	2.70 m

8.0 Living Area	19.40 m²
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Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
External Wall 1	Timber Frame	Timber framed wall (one layer of plasterboard)	0.19	9.00	100.98	85.82	0.00	None	15.16	Calculate Wall Area

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	47.95	0.00	None

Description	Construction	Kappa (kJ/m²K)	Area (m²)
GF	Plasterboard on timber frame	9.00	84.50
FF	Plasterboard on timber frame	9.00	116.90

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	48.85	48.85	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings

Summary for Input Data

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	48.85

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	48.85

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	48.85

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 West	6.11	0
Front Doors	Door	External Wall 1	North West	1.91	0
Rear Door	HGD	External Wall 1	South East	3.33	0
Rear Windows	Window	External Wall 1	South East	3.81	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	11.69	0.05	0.05	No
E3 Sill	Independently assessed	9.20	0.04	0.04	No
E4 Jamb	Independently assessed	23.30	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	19.80	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	19.80	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	19.80	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	8.40	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.40	0.03	0.03	No
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No

Y-value W/m²K

Description

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

Approved Installation

Mechanical Ventilation data Type

Type

MV Reference Number

Duct Type

Wet Rooms

SFP from Installer Commissioning Certificate

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	

Summary for Input Data

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 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	12

24.0 Main Heating 1

Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	223.95	
In Summer	283.89	
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

26.0 Heat Networks

None

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

None

Summary for Input Data

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

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	250.00	L
Loss	2.00	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

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	R4228 Dumers Lane P20		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P20	Prop Type Ref	Knares END	
Property	R4228 Dumers Lane P20			

SAP Rating	83 B	DER	4.43	TER	12.42
Environmental	97 A	% DER < TER			64.33
CO ₂ Emissions (t/year)	0.31	DFEE	36.62	TFEE	37.01
Compliance Check	See BREL	% DFEE < TFEE			1.05
% DPER < TPER	28.87	DPER	46.36	TPER	65.18

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

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

Orientation	Northwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, End-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
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	106.39
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:	16.80 m	33.85 m²	2.40 m
		16.80 m	33.85 m²	2.70 m

8.0 Living Area	15.00	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	85.68	74.83	0.00	None	10.85	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	47.95	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	GF	Plasterboard on timber frame	9.00	84.50
	FF	Plasterboard on timber frame	9.00	116.90

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	33.85	33.85	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings

Summary for Input Data

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	33.85

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	33.85

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	33.85

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 West	4.25	0
Front Doors	Door	External Wall 1	North West	1.91	0
Rear Door	HGD	External Wall 1	South East	1.89	0
Rear Windows	Window	External Wall 1	South East	2.80	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	8.23	0.05	0.05	No
E3 Sill	Independently assessed	6.42	0.04	0.04	No
E4 Jamb	Independently assessed	17.10	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	16.80	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	16.80	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	16.80	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	10.20	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	8.40	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.40	0.03	0.03	No
E16 Corner (normal)	Independently assessed	10.20	0.04	0.04	No

Y-value

0.05 W/m²K

Description

Calculate bridges

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	

Summary for Input Data

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 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	12

24.0 Main Heating 1

		%
Percentage of Heat	100.00	
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	208.32	
In Summer	281.59	
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

26.0 Heat Networks

None

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

None

Summary for Input Data

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

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

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	R4228 Dumers Lane P21		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P21	Prop Type Ref	Knares MID	
Property	R4228 Dumers Lane P21			

SAP Rating	85 B	DER	3.89	TER	11.17
Environmental	97 A	% DER < TER			65.17
CO ₂ Emissions (t/year)	0.27	DFEE	29.41	TFEE	31.01
Compliance Check	See BREL	% DFEE < TFEE			5.16
% DPER < TPER	30.21	DPER	40.78	TPER	58.43

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

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

Orientation	Northwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
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	114.46
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:	8.20 m	33.85 m ²	2.40 m
		8.20 m	33.85 m ²	2.70 m

8.0 Living Area	15.00	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	41.82	30.97	0.00	None	10.85	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	95.00	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
	GF	Plasterboard on timber frame	9.00	84.50
	FF	Plasterboard on timber frame	9.00	116.90

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	33.85	33.85	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings

Summary for Input Data

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	33.85

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	33.85

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	33.85

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 West	4.25	0
Front Doors	Door	External Wall 1	North West	1.91	0
Rear Door	HGD	External Wall 1	South East	1.89	0
Rear Windows	Window	External Wall 1	South East	2.80	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	8.23	0.05	0.05	No
E3 Sill	Independently assessed	6.42	0.04	0.04	No
E4 Jamb	Independently assessed	17.10	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	8.20	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	8.20	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	8.20	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	16.80	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	16.80	0.03	0.03	No

Y-value

0.06 W/m²K

Description

Calculate bridges

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

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

Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	207.77	
In Summer	283.13	
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

26.0 Heat Networks

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

28.0 Water Heating

Summary for Input Data

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

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	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
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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None

Summary for Input Data

Property Reference	R4228 Dumers Lane P38		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P38	Prop Type Ref	ARU + MID	
Property	R4228 Dumers Lane P38			

SAP Rating	85 B	DER	3.19	TER	9.23
Environmental	97 A	% DER < TER			65.44
CO ₂ Emissions (t/year)	0.37	DFEE	28.38	TFEE	28.93
Compliance Check	See BREL	% DFEE < TFEE			1.92
% DPER < TPER	30.74	DPER	33.37	TPER	48.18

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

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

Orientation	Southeast
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
2.0 Number of Storeys	3
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	82.96
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:	9.40 m	39.30 m²	2.38 m
1st Storey:	9.40 m	39.30 m²	2.62 m
2nd Storey:	10.40 m	34.50 m²	2.11 m

8.0 Living Area	11.40	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	47.70	33.91	0.00	None	13.79	Enter Gross Area
	Stud	Timber Frame	Timber framed wall (one layer of plasterboard)	0.10	9.00	7.70	7.70	0.00	None	0.00	Enter Gross Area
	Dormer	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18	9.00	6.10	4.60	0.00	None	1.50	Enter Gross Area

9.1 Party Walls	Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Area (m²)	Shelter Res	Shelter
	Party Wall 1	Filled Cavity with Edge Sealing	Double plasterboard on both sides, twin timber f rame with/without sheathing board	0.00	20.00	125.40	0.00	None

9.2 Internal Walls	Description	Construction	Kappa (kJ/m²K)	Area (m²)
	Internal Wall 1	Plasterboard on timber frame	9.00	125.00

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	22.09	22.09	None	0.00	Enter Gross Area	0.00

Summary for Input Data



External Roof 2	External Slope	Plasterboard, insulated slope	0.13	9.00	19.74	18.69	None	0.00	Enter Gross Area	1.05
Dormer	External Flat Roof	Plasterboard, insulated flat roof	0.10	9.00	2.12	2.12	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Area (m ²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	39.30
Internal Ceiling 2	+1	Plasterboard ceiling, carpeted chipboard floor	34.50

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m ² K)	Shelter Code	Shelter Factor	Kappa (kJ/m ² K)	Area (m ²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	39.30

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m ² K)	Area (m ²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	39.70
Internal Floor 2		Plasterboard ceiling, carpeted chipboard floor	9.00	34.50

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m ² K)
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
Roof	BFRC, BSI or CERTASS data	Roof Window	Double Low-E Soft 0.05			0.40		1.00	1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m ²)	Pitch
Front Windows	Window	External Wall 1	South East	4.93	0
Front Doors	Door	External Wall 1	South East	1.91	0
Rear Door	HGD	External Wall 1	North West	3.15	0
Rear Windows	Window	External Wall 1	North West	3.80	0
Dormer	Window	Dormer	South East	1.50	0
Roof	Roof	External Roof 2	North West	1.05	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	11.76	0.05	0.05	No
E3 Sill	Independently assessed	9.35	0.04	0.04	No
E4 Jamb	Independently assessed	23.45	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	9.40	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	9.40	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	9.40	0.08	0.08	No
E18 Party wall between dwellings	Independently assessed	20.00	0.04	0.04	No
P1 Party wall - Ground floor	Independently assessed	16.50	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	8.60	0.03	0.03	No
E17 Corner (inverted – internal area greater than external area)	Table K1 - Default	4.80	0.00	0.00	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	7.00	0.24	0.24	No
R1 Head of roof window	Independently assessed	0.90	0.04	0.04	No
R2 Sill of roof window	Independently assessed	0.90	0.04	0.04	No
R3 Jamb of roof window	Independently assessed	2.20	0.05	0.05	No
E24 Eaves (insulation at ceiling level - inverted)	Independently assessed	9.40	0.03	0.03	No
R6 Flat ceiling	Independently assessed	8.20	0.02	0.02	No
R8 Roof to wall (rafter)	Independently assessed	8.20	0.01	0.01	No
R7 Flat ceiling (inverted)	Independently assessed	1.10	0.05	0.05	No
R9 Roof to wall (flat ceiling)	Independently assessed	1.10	0.11	0.11	No
R9 Roof to wall (flat ceiling)	Independently assessed	5.50	0.08	0.08	No
E16 Corner (normal)	Independently assessed	4.80	0.09	0.09	No
R1 Head of roof window	Table K1 - Default	1.20	0.24	0.24	No
R2 Sill of roof window	Table K1 - Default	1.20	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	2.40	0.24	0.24	No

Y-value W/m²K

Description

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present

Summary for Input Data

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
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

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	104
In Winter	222.99
In Summer	283.19
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

Summary for Input Data

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

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

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	
Cylinder Stat	Yes
Cylinder In Heated Space	Yes
Independent Time Control	Yes
Insulation Type	Measured Loss
Insulation Thickness	0
Cylinder Volume	200.00
Loss	1.70
Pipes insulation	Fully insulated primary pipework
In Airing Cupboard	No

L
kWh/day

31.0 Thermal Store

Thermal Store Pipework	within a single casing
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Summary for Input Data



34.0 Small-scale Hydro

Electricity Generated	None	
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	R4228 Dumers Lane P55		Issued on Date	18/11/2024
Assessment Reference	R4228 Dumers Lane P55	Prop Type Ref	Ramsdell MID	
Property	R4228 Dumers Lane P55			

SAP Rating	85 B	DER	3.54	TER	9.51
Environmental	97 A	% DER < TER			62.78
CO ₂ Emissions (t/year)	0.35	DFEE	29.63	TFEE	30.72
Compliance Check	See BREL	% DFEE < TFEE			3.56
% DPER < TPER	25.24	DPER	37.06	TPER	49.57

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

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

Orientation	Southwest
Property Tenture	ND
Transaction Type	6
Terrain Type	Urban
1.0 Property Type	House, Mid-Terrace
Position of Flat	Ground-floor flat
Which Floor	0
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	97.18
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:	10.80 m	48.85 m ²	2.40 m
	1st Storey:	10.80 m	48.85 m ²	2.70 m

8.0 Living Area	19.40	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	55.08	39.92	0.00	None	15.16	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	95.00	0.00	None

Description	Construction	Kappa (kJ/m ² K)	Area (m ²)
GF	Plasterboard on timber frame	9.00	84.50
FF	Plasterboard on timber frame	9.00	116.90

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	48.85	48.85	None	0.00	Calculate Wall Area	0.00

10.2 Internal Ceilings

Summary for Input Data

Description	Storey	Construction	Area (m²)
Internal Ceiling 1	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	48.85

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.09	None	0.00	75.00	48.85

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor 1		Plasterboard ceiling, carpeted chipboard floor	9.00	48.85

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	South West	6.11	0
Front Doors	Door	External Wall 1	South West	1.91	0
Rear Door	HGD	External Wall 1	North East	3.33	0
Rear Windows	Window	External Wall 1	North East	3.81	0

14.0 Conservatory

None

15.0 Draught Proofing

100 %

16.0 Draught Lobby

No

17.0 Thermal Bridging

Calculate Bridges

17.1 List of Bridges

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	11.69	0.05	0.05	No
E3 Sill	Independently assessed	9.20	0.04	0.04	No
E4 Jamb	Independently assessed	23.30	0.03	0.03	No
E5 Ground floor (normal)	Independently assessed	10.80	0.15	0.15	No
E6 Intermediate floor within a dwelling	Independently assessed	10.80	0.08	0.08	No
E10 Eaves (insulation at ceiling level)	Independently assessed	19.80	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	16.80	0.09	0.09	No
P4 Party wall - Roof (insulation at ceiling level)	Independently assessed	16.80	0.03	0.03	No

Y-value 0.05 W/m²K

Description Calculate bridges

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

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

Percentage of Heat	100.00	%
Database Ref. No.	105616	
Fuel Type	Electricity	
SAP Code	104	
In Winter	216.79	
In Summer	282.24	
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

26.0 Heat Networks

	Heat Source	Fuel Type	Heating Use	Efficiency	Percentage Of Heat	Heat	Heat Power Ratio	Electrical	Fuel Factor	Efficiency type
Heat source 1	None									
Heat source 2	None									
Heat source 3	None									
Heat source 4	None									
Heat source 5	None									

27.0 Secondary Heating

28.0 Water Heating

Summary for Input Data

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

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	250.00	L
Loss	2.00	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
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Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

None