Nash Manor, Nutbourne

Energy Statement

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Revision Schedule

Revision No.	Date	Details of Change
Rev 00	12/12/2025	First Issue

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1.0 Introduction

Hunter Development Holdings Limited have instructed impact Sustainability Ltd to prepare an energy statement for the proposed residential development 'Nash Manor' in Nutbourne.

The proposed development is residential in nature and involves the demolition of an agricultural barn and the erection of a 3no. bedroom dwelling with the retention of existing access arrangements, parking and landscaping.

Under Horsham District Planning Framework (adopted November 2015) Policy 36 – Appropriate Energy Use it must be demonstrated that site wide CO_2 emissions are reduced as far as practicable through the consideration of passive design measures, energy efficient design and Low or Zero Carbon (LZC) technologies in accordance with he energy hierarchy. Furthermore, heating and cooling systems should consider the use of district heat networks and / or CHP where viable.

This report therefore provides a summary of the energy assessment undertaken and the proposed energy strategy in accordance with local policy requirements. The energy strategy has been prepared following the energy hierarchy:

Be lean: use less energy

Be clean: supply energy efficiently

Be green: use renewable energy

This report has been completed by George Kent of Impact Sustainability Ltd, who is a registered Non-Domestic Low Carbon Energy Assessor (LCEA). George has 18 years continuous experience in energy simulation and consultancy and is not professionally connected or affiliated with any LZC technology or manufacturer. George is therefore considered to be an 'Energy Specialist'.

2.0 Planning Policy

The site is located within the district of Horsham and so is subject to Horsham District Council's Planning Policies. Within the Horsham District Planning Framework (November 2015), Policy 36 Strategic Policy addresses 'Appropriate Energy Use.' Within this policy it is confirmed that all development will be required to contribute to clean, efficient energy in Horsham based on the following hierarchy:

Be lean: use less energy, e.g., through demand reduction

Be clean: supply energy efficiently – e.g., through heat networks

Be green: use renewable energy sources

Furthermore, developments within heat priority areas or strategic development locations will be expected to connect to district heat networks where they exist using the following hierarchy or be 'network ready' to allow for a future connection if one does not already exist.

1. Connection to existing (C)CHP distribution networks
2. Site wide renewable (C)CHP
3. Site wide gas-fired (C)CHP
4. Site wide renewable community heating/cooling
5. Site wide gas-fired community heating/cooling
6. Individual building renewable heating
7. Individual building heating, with the exception of electric heating

Compliance with the above must be demonstrated through the submission of an Energy Statement, which quantifies how the development will comply with the energy hierarchy. The aim of this energy statement is to therefore demonstrate compliance with HDC's Planning Framework (Nov 2025) Policy 36.

An excerpt from the Planning Framework document showing Policy 36 is provided in figure 2.1 below.

Policy 36

Strategic Policy: Appropriate Energy Use

Energy hierarchy

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

1. Lean – use less energy – e.g. through demand reduction
2. Clean – supply energy efficiently – e.g. through heat networks
3. Green – use renewable energy sources

District Heating and Cooling

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

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

1. Connection to existing (C)CHP distribution networks
2. Site wide renewable (C)CHP
3. Site wide gas-fired (C)CHP
4. Site wide renewable community heating/cooling
5. Site wide gas-fired community heating/cooling
6. Individual building renewable heating
7. Individual building heating, with the exception of electric heating

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

Energy Statements

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

Developments in Heat Priority Areas and strategic developments should demonstrate and quantify how the development will comply with the heating and cooling hierarchy. Horsham District Council will work proactively with applicants on major developments to ensure these requirements are met.

Renewable energy schemes

The Council will permit schemes for renewable energy (e.g. solar) where they do not have a significant adverse effect on landscape and townscape character, biodiversity, heritage or cultural assets or amenity value. Community initiatives which seek to deliver renewable and low carbon energy will be encouraged.

Figure 2.1 HDC's Planning Framework (Nov 2015) Policy 36

3.0 Baseline Assessment

3.1 Summary

To determine the potential energy and CO_2 savings available from the application of the energy hierarchy a baseline must first be established. This baseline is derived from an Approved Document Part L1 2021 compliance calculation and determining the Target Emission Rate (TER) from a Standard Assessment Procedure (SAP) calculation using NCM (National Calculation Methodology) approved software. This is the benchmark emission rate as calculated by the software that the dwelling must meet or exceed to comply with Building Regulations.

A SAP assessment has therefore been completed upon the proposed detached dwelling. The geometry data inputs to these calculations have been based upon the following planning issue drawings issued by Lloyd Harden Architecture:

- 002 – Proposed Site Plan
- 004 – Proposed GF and FF Plans
- 005 – Proposed Elevations 1
- 006 – Proposed Elevations 2

3.2 Baseline Assessment Results

Table 3.1 below shows the CO_2 breakdown of the baseline compliance analysis. The baseline annual CO_2 emissions for the proposed dwelling are 4,128 kg. This is the CO_2 emissions level achieved by an approved Document Part L1 2021 compliant development using approved compliance software and calculation methodology.

Plot	Total Area m^2	Part L 2021 TER ($kg/m^2/yr$)	Total CO_2 (kg/yr)
Nash Manor	516.6	7.99	4,128

Table 3.1 Annual Baseline CO_2 Emissions

4.0 'Be Lean' Assessment

4.1 Summary

The first step of the energy hierarchy is to improve a building's energy demand through the specification of thermally efficient building fabric and services. To reduce this energy demand from the building high performance thermal insulation will be specified where possible to reduce envelope u-values below what is required for AD L1 2021 compliance.

The building fabric construction details have been based upon design information provided by project team and similar project experience. These have been included within the assessment models as shown in table 4.1 below. The adventitious air permeability rate from the building is 3 m^3/hr/m^2 at a pressure of 50 Pa.

Building Element	Construction	U-Value W/m²K	Part L 2021 U-Value W/m²K
Ground Floor	Concrete slab with rigid insulation and screed above	0.11	0.18
Intermediate Floor	Timber joists	N/A	N/A
External Walls	Timber frame construction with insualt9on between and over frame, any external finish	0.18	0.26
Roof	Tiles on timber frame, insulation between and over rafters, plaster skim. Flat roof construction to balcony	0.13	0.18
Windows/ doors (g-value=0.30)	Powder coated aluminium framed triple glazing, soft coat low-e	0.80	1.60
Partitions	Generally lightweight stud walls	N/A	N/A
Target thermal bridging Y value (based on ROI building regs Ψ values for timber framed construction		0.03	N/A

Table 4.1 Building Fabric Constructions

The building services strategy fully considers the opportunities for low regulated energy use within the building. A Ground Source Heat Pump is proposed to deliver both space heating and hot water, which has a high efficiency (known as Coefficient Of Performance, or COP) compared to traditional gas-fired systems. This system will also utilise grid electricity, which has lower CO_2 emissions per kWh than mains gas.

The ventilation strategy adopted will be whole house mechanical ventilation with heat recovery (MVHR). This system supplies fresh air throughout the dwelling, whilst simultaneously extracting stale air from wet rooms. Both flows pass through a heat exchanger, where up to 90% of the thermal energy from the extract air is recovered and used to pre-heat the supply air. This heat recovery ensures ventilation heat loads are minimised, whilst also providing a continuous supply of fresh air. The fan energy used is very low when compared to the amount of thermal energy recovered. Lighting throughout the houses will be low energy LED.

Table 4.2 below provides details of the 'be lean' services strategy.

System	System Details	Delivery Method / Controls	Zones
Heating	Ground Source Heat Pump (assumed Master Therm AquaMaster in SAP calculation)	Underfloor heating	All areas
Ventilation	Whole house MVHR (assumed Nuaire MRXBOXAB ECO3 in SAP calculation)	Rigid ducting throughout houses	All areas
Hot water	From main heating system, assumed 200L storage volume	2.28 kWh losses per day	All areas
Lighting	LED, assumed 85 lms/W	Manual control	All areas

Table 4.2 Building Services Systems & Performance Data

4.2 Be Lean' Assessment Results

Table 4.3 below shows the CO_2 breakdown of the 'be lean' compliance model. The total annual CO_2 emissions resulting from this stage are 1,756kg, which is a 57.4% reduction below the baseline figure.

Plot	Total Area m^2	Part L 2021 TER ($kg/m^2/yr$)	Part L 2021 DER ($kg/m^2/yr$)	Total CO_2 (kg/yr)
Nash Manor	516.6	7.99	3.40	1,756
Percentage Reduction below Baseline				57.4%

Table 4.3 Annual 'Be Lean' CO_2 Emissions

5.0 'Be Clean' Assessment

5.1 District Heat Networks

HDC Planning Framework Policy 36 stipulates a requirement for the viability of connection to district heating systems to be assessed. The 'West Sussex Sustainable Energy Study' was completed by the Centre for Sustainable Energy in October 2009, in which it is confirmed that the town of Horsham is considered to be a 'Heat Priority Area'. This is defined as an area *"in which conditions are likely to favour larger scale, more economic and effective forms of sustainable energy generation such as CHP with district heating (and/or cooling)."*

However, the proposed development site lies approximately 10 miles to the South-West of Horsham in a rural location. At the time of writing no current heat network exists within or near to the village of Nutbourne and there are no proposed future networks due to the rural location. Therefore, connection to a district heating system is not a viable option at this location.

In order to allow provision for connection to a district heating system in the future the heating system would need to be designed with future connection capability in mind. This is better suited large scale development, where a communal heating strategy can be adopted.

Therefore, connection to heat networks is not considered to be a viable option for the application site.

5.2 Combined Heat & Power

Combined heat and power (CHP), also known as cogeneration, is the simultaneous generation of thermal and electrical energy from a single stream of fuel. A CHP engine burns fuel to run a turbine, which in turn generates electricity. The 'waste' heat from the combustion process is then used to provide heating and hot water within the building. In this way electricity from conventional power stations is displaced and the substantial conversion, transmission and distribution losses are avoided. The resulting efficiency gives typical small-scale CHP installations a simple payback period of between 3 and 5 years, beyond which the units continue to save energy right up until the end of the life of the plant.

Systems must be 'heat lead' for high efficiency, which best suits applications to situations where there is a significant demand for heat for long periods of time, such as hospitals, hotels and leisure centres. As the development is residential in nature the house will have a relatively high hot water demand, although this will likely only be at peak times such as in the mornings and evenings. This usage profile is not well suited to CHP, as the engines require a continuous load to ensure they operate all the time and realise the potential carbon savings. Therefore, if CHP were to be utilised this would have to be micro scale to ensure the output matches the base hot water load of each building. Even with a micro-scale CHP engine it is likely that a large buffer vessel would be required to ensure continuous operation.

Furthermore, CHP does not perform particularly well against the current Part L1 2021 standard, as the gas used to generate the electricity within the unit actually has higher CO_2 emissions per kWh than grid supplied electricity. A CHP engine would therefore put the house at a disadvantage in terms of building regulations and planning policy compliance.

For the reasons stated above no further reduction in emissions can be achieved from the 'be clean' stage of the analysis.

6.0 'Be Green' Assessment

6.1 Summary

The commentary below provides an overview of the potential LZC technologies available for specification within the development and present the associated opportunities and constraints.

- **Biomass Heating** – Fuel storage / access concerns and high level of maintenance required not suited to this development type. Also concerns surrounding local air quality. Not viable.
- **Ground Source Heat Pump** – Sufficient site area available for horizontal system, although a vertical system could also be considered. There is unlikely to be any interference with underground infrastructure in this rural setting and a GSHP would offer a significant reduction in energy use and CO_2 emissions. However, these have already been considered within the 'be lean' section. Viable and already included.
- **Air Source Heat Pump** – Air source heat pumps are viable and could be utilised to deliver the heating demand to the building. However, these will have a lower efficiency (COP) than a GSHP and so would only be considered if the GSHP was later found to be unviable. Viable, but GSHP preferred.
- **Wind Turbine** – Local planning policy is unlikely to permit this technology in this location. Not viable.
- **Solar Thermal Panels** – Energy can only be used when there is a demand in the building, otherwise it is 'dumped' and hot water demand from the property will be low. Furthermore, the site is overshadowed by trees and tall buildings and this would significantly impact on performance. Not viable.
- **Photovoltaics** – Sufficient roof space with an appropriate aspect is available to install an array. This will offer year round energy and carbon reductions and will also generate electricity to power the GSHP. Viable

6.2 'Be Green' Strategy & Results

The above appraisal concludes that a GSHP with PV array would be the most viable technology for consideration within the energy strategy. However, as the GSHP has been considered within the 'be lean' strategy this cannot be counted again and so the 'be green' strategy considers the use of a PV array only.

Therefore, a 5 kWp South-West facing PV array has been included within the SAP assessment, which will be located on the pitched roof. This array will comprise approximately 10no 500Wp panels, which will occupy approximately 20sqm of roof space.

Table 6.1 below shows the CO_2 breakdown of the 'be green' compliance model. The total annual CO_2 emissions resulting from this stage are 1,224kg, which is a 70.3% reduction below the baseline figure.

Plot	Total Area m^2	Part L 2021 TER ($kg/m^2/yr$)	Part L 2021 DER ($kg/m^2/yr$)	Total CO_2 (kg/yr)
Nash Manor	516.6	7.99	3.40	1,224
Percentage Reduction below Baseline				70.3%

Table 4.3 Annual 'Be Green' CO_2 Emissions

7.0 Proposed Energy and LZC Technology Strategy

An energy strategy for the proposed development of 'Nash Manor' in Nutbourne has been assessed in accordance with Horsham District Council Planning Framework policy based upon the energy hierarchy:

Be Lean: use less energy

Be Clean: supply energy efficiently

Be Green: use renewable energy

Following this approach has resulted in an energy efficient scheme that has minimised CO_2 emissions associated with the use of regulated energy through improvements to the thermal performance of the building envelope and high efficiency building services strategy. These measures have resulted in a reduction in annual CO_2 emissions of 57.4% below the Part L 2021 baseline.

Connection to a district heat network is not a viable option as there are no existing networks in the close vicinity of the site. The development type and scale is not well suited to a potential connection in the future and so a 'network ready' energy strategy nis not deemed to be appropriate.

An LZC technology appraisal has been completed, which concludes that an GSHP and PV array would be the most suitable options for inclusion. However, the GSHP has already been included in the 'be lean' assessment and so cannot be counted twice. A PV array of 5kWp comprising 10no 500Wp South-West facing panels is therefore proposed, to be located upon the pitched roof.

The results of the energy hierarchy analysis followed within this energy strategy are shown in table 7.1 and figure 7.1 below. These demonstrate that a total reduction of 70.3% below the Part L 2021 baseline is achieved.

Energy Hierarchy Stage	CO_2 Emissions (kg/yr)	CO_2 Reduction (kg/yr)	Reduction from 2021 baseline (%)	Reduction from 2013 Baseline (%)
Part L 2021 Baseline	4,128			
'Be Lean' Dwelling	1,756	2,371	57.4%	57.4%
'Be Green' Dwelling	1,224	2,903	12.9%	70.3%

Table 7.1 Results of energy hierarchy analysis using Part L1 2021

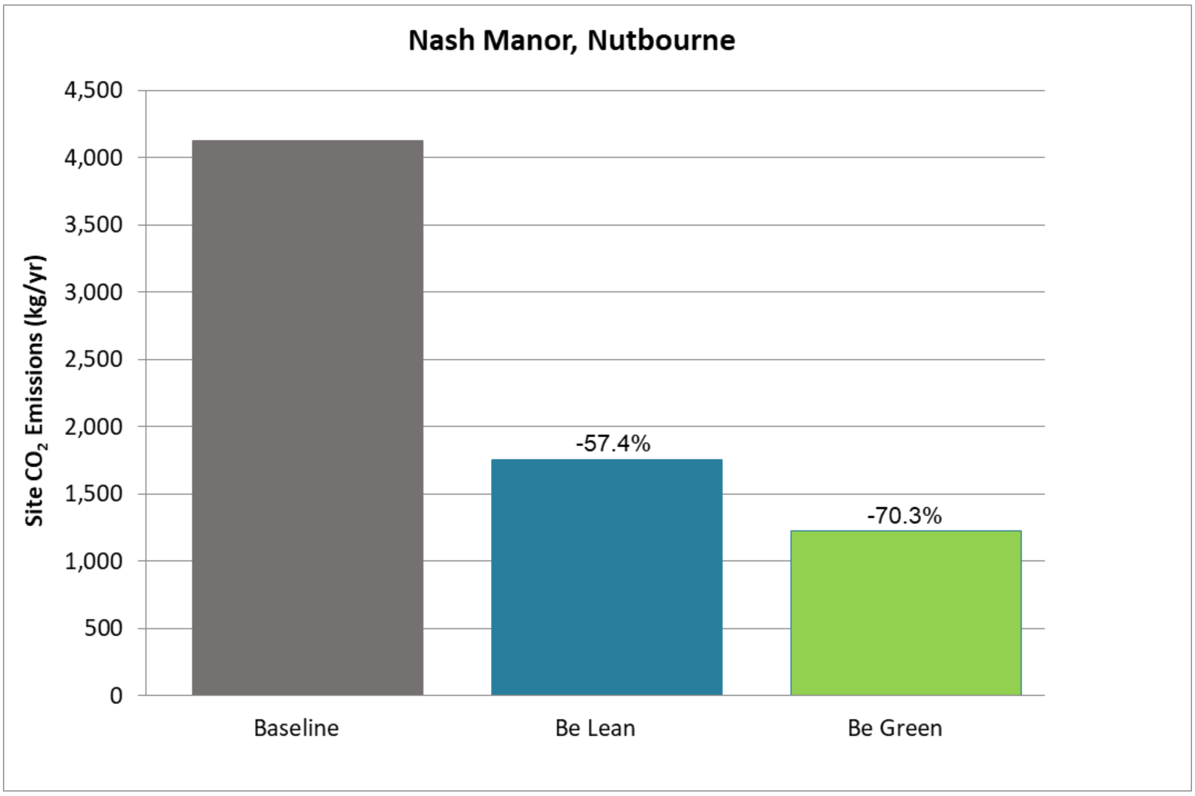

Figure 7.1 Graphical results of energy hierarchy analysis Part L1 2021

8.0 Appendix 1 – 'Be Lean' and 'Be Green' SAP Summaries

Summary for Input Data

elmhurst energy

Plot Reference	Nash Manor	Issued on Date	12/12/2025
Assessment Reference	Be Lean	Plot Type Ref	
Plot Address	Nash Manor, Nutbourne, PO5	SAP Version	10.2

SAP Rating	80 C	DER	3.40	TER	7.99
Environmental	96 A	% DER < TER			57.45
CO_2 Emissions (t/year)	1.6	DFEE	47.83	TFEE	48.67
Compliance Check	See BREL	% DFEE < TFEE			1.72
% DPER < TPER	17.91	DPER	35.88	TPER	43.70

Assessor Details	Mr. George Kent	Assessor ID	BQ97-0001
Client			

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

Orientation	Northwest	
Property Tenture	1	
Transaction Type	6	
Terrain Type	Rural	
1.0 Property Type	House, Detached	
2.0 Number of Storeys	2	
3.0 Date Built	2026	
4.0 Sheltered Sides	0	
5.0 Sunlight/Shade	Average or unknown	
6.0 Thermal Mass Parameter	Precise calculation	
Thermal Mass	98.29	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:	76.00 m	282.00 m²	2.75 m
1st Storey:	70.00 m	234.60 m²	4.15 m

8.0 Living Area 149.36 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Timber	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18	9.00	414.36	301.23	0.00	None	113.13	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Wall 1	Plasterboard on timber frame	9.00	821.32

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
Flat Roof	External Flat Roof	Plasterboard, insulated flat roof	0.10	9.00	47.40	47.40	None	0.00	Enter Gross Area	0.00
Pitched Roof	External Slope Roof	Plasterboard, insulated slope	0.11	9.00	321.32	321.32	None	0.00	Enter Gross Area	0.00

10.2 Internal Ceilings

Description	Storey	Construction	Kappa	Area (m²)
Ceiling	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	9.00	234.60

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Slab on ground, screed over insulation	0.13	None	0.00	110.00	282.00

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)

Internal Floor	+1	Plasterboard ceiling, carpeted chipboard floor	18.00	234.60

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Triple Glazing	Manufacturer	Window	Triple glazed			0.29		0.70	0.80
Solid Door	Manufacturer	Solid Door				0.00			1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
NE	Triple Glazing	Timber	North East	41.88	
NW	Triple Glazing	Timber	North West	6.60	
NW Door	Solid Door	Timber	North West	2.10	
SE	Triple Glazing	Timber	South East	48.07	
SE Door	Solid Door	Timber	South East	2.10	
SW	Triple Glazing	Timber	South West	12.38	

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)	Non Gov Approved Schemes	78.16	0.08	0.08	ROI	No
E3 Sill	Non Gov Approved Schemes	38.75	0.03	0.03	ROI	No
E4 Jamb	Non Gov Approved Schemes	105.40	0.04	0.04	ROI	No
E5 Ground floor (normal)	Non Gov Approved Schemes	76.00	0.02	0.02	ROI	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	47.90	0.08	0.08	ROI	No
E16 Corner (normal)	Non Gov Approved Schemes	37.42	0.03	0.03	ROI	No
E11 Eaves (insulation at rafter level)	Non Gov Approved Schemes	40.00	0.04	0.04	ROI	No
E13 Gable (insulation at rafter level)	Non Gov Approved Schemes	36.00	0.02	0.02	ROI	No
E14 Flat roof	Independently assessed	28.10	0.05	0.05	ROI	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	10.64	-0.01	-0.01	ROI	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	22.10	0.15	0.15		No
R4 Ridge (vaulted ceiling)	Table K1 - Default	51.00	0.12	0.12		No

Y-value 0.03 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	7
Manufacturer SFP	1.36
Duct Type	Rigid
MVHR Efficiency	87.00
Wet Rooms	7
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 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

Summary for Input Data

21.0 Fixed Cooling System	No	
22.0 Pressure Testing	Yes	
Designed AP_{50}	3.00	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	

22.0 Lighting

No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8.00	680.00	25

24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	102153	
Fuel Type	Electricity	
In Winter	437.71	
In Summer	170.14	
Model Name	AquaMaster Inverter	
Manufacturer	Master Therm CZ s.r.o.	
System Type	Heat Pump	
Controls SAP Code	2207	
Controls description	Time and temperature zone control by arrangement	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	35.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
27.0 Secondary Heating	SAP table	
SAP Code	633	
Heating System Description	Solid fuel Closed room heater	
Fuel Type	Wood Logs	
SHS efficiency	60.00	%
HETAS Approved System	No	

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	No
Cold Water Source	From mains
Bath Count	2
Immersion Only Heating Hot Water	No

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Combi boiler or unvented hot water system	11.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	2.28	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None

34.0 Small-scale Hydro	None

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

Recommendations
Lower cost measures
None
Further measures to achieve even higher standards
None

Summary for Input Data

elmhurst energy

Plot Reference	Nash Manor	Issued on Date	12/12/2025
Assessment Reference	Be Green	Plot Type Ref	
Plot Address	Nash Manor, Nutbourne, PO5	SAP Version	10.2

SAP Rating	85 B	DER	2.37	TER	7.99
Environmental	97 A	% DER < TER			70.34
CO_2 Emissions (t/year)	0.98	DFEE	47.83	TFEE	48.67
Compliance Check	See BREL	% DFEE < TFEE			1.72
% DPER < TPER	36.93	DPER	27.56	TPER	43.70

Assessor Details	Mr. George Kent	Assessor ID	BQ97-0001
Client			

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12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Triple Glazing	Manufacturer	Window	Triple glazed			0.29		0.70	0.80
Solid Door	Manufacturer	Solid Door				0.00			1.40

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
NE	Triple Glazing	Timber	North East	41.88	
NW	Triple Glazing	Timber	North West	6.60	
NW Door	Solid Door	Timber	North West	2.10	
SE	Triple Glazing	Timber	South East	48.07	
SE Door	Solid Door	Timber	South East	2.10	
SW	Triple Glazing	Timber	South West	12.38	

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)	Non Gov Approved Schemes	78.16	0.08	0.08	ROI	No
E3 Sill	Non Gov Approved Schemes	38.75	0.03	0.03	ROI	No
E4 Jamb	Non Gov Approved Schemes	105.40	0.04	0.04	ROI	No
E5 Ground floor (normal)	Non Gov Approved Schemes	76.00	0.02	0.02	ROI	No
E6 Intermediate floor within a dwelling	Non Gov Approved Schemes	47.90	0.08	0.08	ROI	No
E16 Corner (normal)	Non Gov Approved Schemes	37.42	0.03	0.03	ROI	No
E11 Eaves (insulation at rafter level)	Non Gov Approved Schemes	40.00	0.04	0.04	ROI	No
E13 Gable (insulation at rafter level)	Non Gov Approved Schemes	36.00	0.02	0.02	ROI	No
E14 Flat roof	Independently assessed	28.10	0.05	0.05	ROI	No
E17 Corner (inverted – internal area greater than external area)	Non Gov Approved Schemes	10.64	-0.01	-0.01	ROI	No
E24 Eaves (insulation at ceiling level - inverted)	Table K1 - Default	22.10	0.15	0.15		No
R4 Ridge (vaulted ceiling)	Table K1 - Default	51.00	0.12	0.12		No

Y-value 0.03 W/m²K

19.0 Mechanical Ventilation

Mechanical Ventilation

Mechanical Ventilation System Present	Yes
Approved Installation	No
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500501
Configuration	7
Manufacturer SFP	1.36
Duct Type	Rigid
MVHR Efficiency	87.00
Wet Rooms	7
SFP from Installer Commissioning Certificate	No
MVHR System Location	Inside heated envelope (installed exclusively)
Duct Installation Specification	Level 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}	3.00 m³/(h.m²) @ 50 Pa
Test Method	Blower Door
22.0 Lighting	
No Fixed Lighting	No

Name	Efficacy	Power	Capacity	Count
Lighting 1	85.00	8.00	680.00	25

24.0 Main Heating 1	Database
Percentage of Heat	100.00 %
Database Ref. No.	102153
Fuel Type	Electricity
In Winter	437.71
In Summer	170.14
Model Name	AquaMaster Inverter
Manufacturer	Master Therm CZ s.r.o.
System Type	Heat Pump
Controls SAP Code	2207
Controls description	Time and temperature zone control by arrangement
Is MHS Pumped	Pump in heated space
Heating Pump Age	2013 or later
Heat Emitter	Underfloor
Underfloor Heating	Yes - Pipes in thin screed
Flow Temperature	Enter value
Flow Temperature Value	35.00
25.0 Main Heating 2	None
26.0 Heat Networks	None
27.0 Secondary Heating	SAP table
SAP Code	633
Heating System Description	Solid fuel Closed room heater
Fuel Type	Wood Logs
SHS efficiency	60.00 %
HETAS Approved System	No
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	No
Cold Water Source	From mains
Bath Count	2
Immersion Only Heating Hot Water	No

28.1 Showers

Summary for Input Data

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To
Shower	Combi boiler or unvented hot water system	11.00		No	

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	No	
Cylinder In Heated Space	No	
Independent Time Control	No	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	2.28	kWh/day
Pipes insulation	Fully insulated primary pipework	

31.0 Thermal Store	None

32.0 Photovoltaic Unit	One Dwelling
Export Capable Meter?	Yes
Connected To Dwelling	Yes
Diverter	No
Battery Capacity [kWh]	0.00

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
5.00	South West	30°	None Or Little		No	1.00		SW PV

34.0 Small-scale Hydro	None

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

Recommendations
Lower cost measures
None
Further measures to achieve even higher standards
None